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Introducing Armstrong Second Look® III, the ceiling that weds the popular linear look with the economy of conventional lay-in acoustical panels.

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## Armstrong

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# CINCINNATI CHALLENGE RUN

Sponsored by Owens-Corning Fiberglas Corporation and the Cincinnati Chapter of the American Institute of Architects, in conjunction with the AIA Convention.

Sunday, June 1, 1980

## Come early to run!

Two running events will be held at this year's convention in Cincinnati. Both will begin at 9:00 a.m. on Sunday, June 1 outside the Convention Center.

For new runners and those doing relatively low mileage, there's a 2.5-mile prediction run. For speedier runners, or those simply doing more mileage, there's a 5-mile combination age group race/prediction run. (You can also enter the 5-mile race in three-person teams.)

The five-mile racers will compete in the following categories:

20-29 Men	20-29 Women
30-34 Men	30-34 Women
35-39 Men	35-39 Women
40-49 Men	40-49 Women
50+ Men	50+ Women

Prediction runners will register before the event their estimate of how long they'll take to complete the 2.5- or 5-mile course. Actual finishing times will be compared to the predictions and those coming closest to their estimates will win. That means everyone, regardless of speed or experience, has a chance to win this test of pacing.

## Post-race Breakfast!

While race officials are tabulating the results, all runners are invited to enjoy a free breakfast buffet and awards ceremony at Stouffer's restaurant. Breakfast will begin at 10:00 a.m. and awards will be presented by Owens-Corning Fiberglas and Cincinnati AIA Chapter officials at 11:00 a.m.

## Lots of Prizes!

In both prediction runs, framed certificates will be awarded to the five men and five women coming closest to their predicted times.

In the 5-mile race, framed certificates will be awarded to first three finishers in each age-group category.

The top three teams in the 5-mile race will receive framed certificates for each team member.

Every runner finishing an event will receive a colorful Cincinnati Challenge pin to sport at the convention.

## Free T-shirts for Early Sign-up!

The first 200 runners to register will receive a special Cincinnati Challenge T-shirt. Sign up now to make sure you'll have this resplendent

garment in your running wardrobe!

The Cincinnati Challenge Run is open to anyone attending the AIA Convention, including exhibitors and spouses.

Entry fee for any of the events is a mere \$2.00 per person (no inflation here!).

## Cincinnati Challenge Run Entry Form

(Send this completed form, along with a check for \$2.00 per person, payable to AIA Journal/Challenge Run, to:

### Mike Wood

AIA Journal  
1735 New York Ave., N.W.  
Washington, D.C. 20006

Name \_\_\_\_\_

Firm/Company \_\_\_\_\_

Business Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

I wish to enter the following event:

2.5 mile prediction run Predicted time \_\_\_\_\_

5 mile prediction run/race Predicted time \_\_\_\_\_

Age on race day \_\_\_\_\_ Sex \_\_\_\_\_

If you are entering the 5-mile race as part of a three-person team, please list your fellow team members: \_\_\_\_\_

In consideration of your accepting my entry, I, intending to be legally bound, do hereby for myself, my heirs, executors and administrators, waive and release forever any and all claims I may accrue against Owens-Corning Fiberglas Corporation, the American Institute of Architects and any and all officials and sponsors of this race, their successors, representative and assigns, for all damages and injuries suffered by me while attending and participating in the Cincinnati Challenge Run on June 1, 1980.

Signed: \_\_\_\_\_

**Note:** Training and proper preparation are important for an enjoyable and injury-free run. Check with your doctor before beginning any exercise program.



2.5 Mile Prediction Run/5.0 Mile Prediction Run/5.0 Mile Race

Circle 2 on information card

# CONTENTS

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- 
- 48 **Cincinnati**  
*A city shaped by the Ohio River and a crescent of hillsides. By Donald Canty*
- 
- 52 **The Shaping of a City's Character**  
*Cincinnati as 'a well preserved queen mother,' stylish and stodgy by turns. By David Bowes*
- 
- 62 **Living in an Architectural Museum**  
*The local impact of the nationally famous buildings of Columbus, Ind. By Allen Freeman*
- 
- 72 **Solar Optics: Projecting Light into Buildings**  
*A new technique gets a limited demonstration. By David Bennett, AIA, and David A. Eijadi*
- 
- 76 **AIA's 25-Year Award Goes to Lever House**  
*Gordon Bunshaft recalls the evolution of its design. By Stanley Abercrombie, AIA*
- 
- 82 **Federal Strings Tighten on Sewer Construction Aid**  
*EPA decides that it is 'not in the business of subsidizing growth.' By Jane A. Silverman*

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4	Events and Letters	84	Books
12	News	128	Advertisers

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**Cover:** Photograph by Allen Freeman of the rotunda in the Art Deco Cincinnati Union Terminal (1933) by Fellheimer & Wagner; Paul Philippe Cret, esthetic adviser; mosaic mural by Winold Reiss.

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## EVENTS

**April 1-2:** Boston Society of Architects annual meeting, Boston.

**April 1-2:** Energy-Conscious Building Design Institute, University of Wisconsin, Madison.

**April 10-11:** Working Drawings Production Techniques Institute, University of Wisconsin, Madison.

**April 10-13:** North Carolina Chapter/AIA spring convention, Raleigh.

**April 14-15:** Managing Solid Wastes Conference, Stouffer's National Center, Arlington, Va. Contact: Energy Bureau Inc., 41 E. 42nd St., New York, N.Y. 10017.

**April 17:** Pursuit of Design Excellence Seminar, New York Institute of Technology, Old Westbury, N.Y., sponsored by the Long Island Chapter/AIA. Contact: Perry B. Goldstein, AIA, 600 Old Country Road, Suite 537, Garden City, N.Y. 11530.

**April 17-20:** Earth Sheltered Design Innovations Conference, Skirvin Plaza Hotel, Oklahoma City. Contact: Office of Architectural Extension, Room 115 Architecture Building, Oklahoma State University, Stillwater, Okla. 74074.

**April 19-27:** Historic Garden Week, sponsored by the Garden Club of Virginia. Contact: Historic Garden Week Headquarters, 12 E. Franklin St., Richmond, Va. 23219.

**April 20-22:** Inter-Society Color Council annual meeting, Genesee Plaza Holiday Inn, Rochester.

**April 21-23:** National Association of Environmental Professionals conference, Washington, D.C. Contact: NAEP, P.O. Box 1223, Alexandria, Va. 22313.

**April 21-23:** Symposium on the American Movie Palace, University of Wisconsin-Milwaukee School of Architecture and Urban Planning.

**April 23-25:** Automated Material Handling & Storage Systems annual conference, Atlanta Hilton, Atlanta. Contact: Material Handling Institute, Inc., 1326 Freeport Road, Pittsburgh, Pa. 15238.

**April 23-27:** Society of Architectural Historians annual meeting, Concourse Hotel, Madison, Wis. Contact: SAH, 1700 Walnut St., Philadelphia, Pa. 19103.

**April 25:** Design/Build Workshop, University of Texas at Austin.

**April 26-27:** Acoustics in Restored/Recycled Buildings Seminar, MIT campus, Cambridge, Mass. Contact: Technology & Conservation, One Emerson Place, Boston, Mass. 02114.

**April 28-May 1:** Noise and Vibration Control conference and exhibition, Hyatt Regency O'Hare, Chicago. Contact: NOISEXPO, 27101 E. Oviatt Road, Bay Village, Ohio 44140.

**April 30-May 2:** Wisconsin Society of Architects convention, Fontana, Wis.

**May 5-9:** International Federation of In-

terior Designers congress, Park Schonbrunn Hotel, Vienna, Austria. Contact: American Society of Interior Designers, 730 Fifth Ave., New York, N.Y. 10019.

**May 12-16:** World Cities Study Tour to Helsinki, Finland, on the theme of rediscovery and communications through space, sponsored by the Institute for Urban Design, with April 11 as registration deadline. Contact: Registrar, SUNY at Purchase, Purchase, N.Y. 10577, (914) 253-5527.

**May 15-17:** Cityscapes Conference (for architects and other professionals whose work is influenced by the quality of city life), University of Regina, Regina, Canada. Contact: University of Regina, Department of Extension, Room 208, College Building, Regina, Sask., Canada S4S 0A2.

**May 28-31:** International Congress on Conservation, Rehabilitation and Recycling, Quebec, Canada. Contact: CRR Congress, School of Architecture, Laval University, Quebec, Canada PQ G1M 7P4.

**May 31-June 4:** Architectural Secretaries Association annual convention, Cincinnati. Contact: Cathy Krieger, AIA Headquarters.

**June 1-4:** AIA annual convention, Cincinnati.

## LETTERS

**The January 1980 Issue:** I read the "Recap" of the 1970s by Stanley Abercrombie, AIA, (p. 38). I would like to pass along my sincerest compliments to the JOURNAL staff for providing an excellent recap of what I feel were very troublesome times in the field of architecture. I feel that all of us are struggling for a new vocabulary for the '80s, and I hope that the conclusions suggested at the end of the article will be read more than once by architects in this country. I look forward to seeing if other architects agree with the conclusions and hope that the entire practice of our profession will improve significantly during the 1980s.

*Louis A. Rossetti, FAIA  
Detroit*

Recap: "Yale A&A in Ruins..." While perhaps attempting to be amusing, Stanley Abercrombie, AIA, presented a factually incorrect opener that was quite misleading and pretty offensive to me.

According to the New Haven fire marshal who conducted an exhaustive investigation of the *fire* (the only explosions being from a few cans of solvent), it was of an accidental nature. Any "observers" who speculated otherwise were uninformed at best.

Delay in restoration was due to some bureaucratic foot-dragging and some retrenchment on the part of the university. Charles Moore's chairmanship had

sparked an educational renaissance in the school, but it was a bit loose around the edges administratively for most of the Old Blues, who were threatened a bit by all of it.

I doubt that any of us in the school at the time saw that building as being symbolically important enough to *attack*—if we had been of that sort of inclination, the Octagon would have been a much more likely target in those days.

"The more things change, the more they remain the same."

*Robert W. Knight, AIA  
Blue Hill, Me.*

My congratulations to James Marston Fitch for his superb article on the state of architecture in the '70s (p. 66). It is probably the best article on contemporary architecture that I've ever read.

*Robert H. Mutrux, AIA  
Fairfield, Conn.*

"A Funny Thing Happened!" To Jimmy Fitch, Bravo! Bravo! Bravo! We needed that breath of fresh air.

*Winston A. Close, FAIA  
Minneapolis*

It was with a great relief and a profound sense of appreciation that I read James Marston Fitch's article.

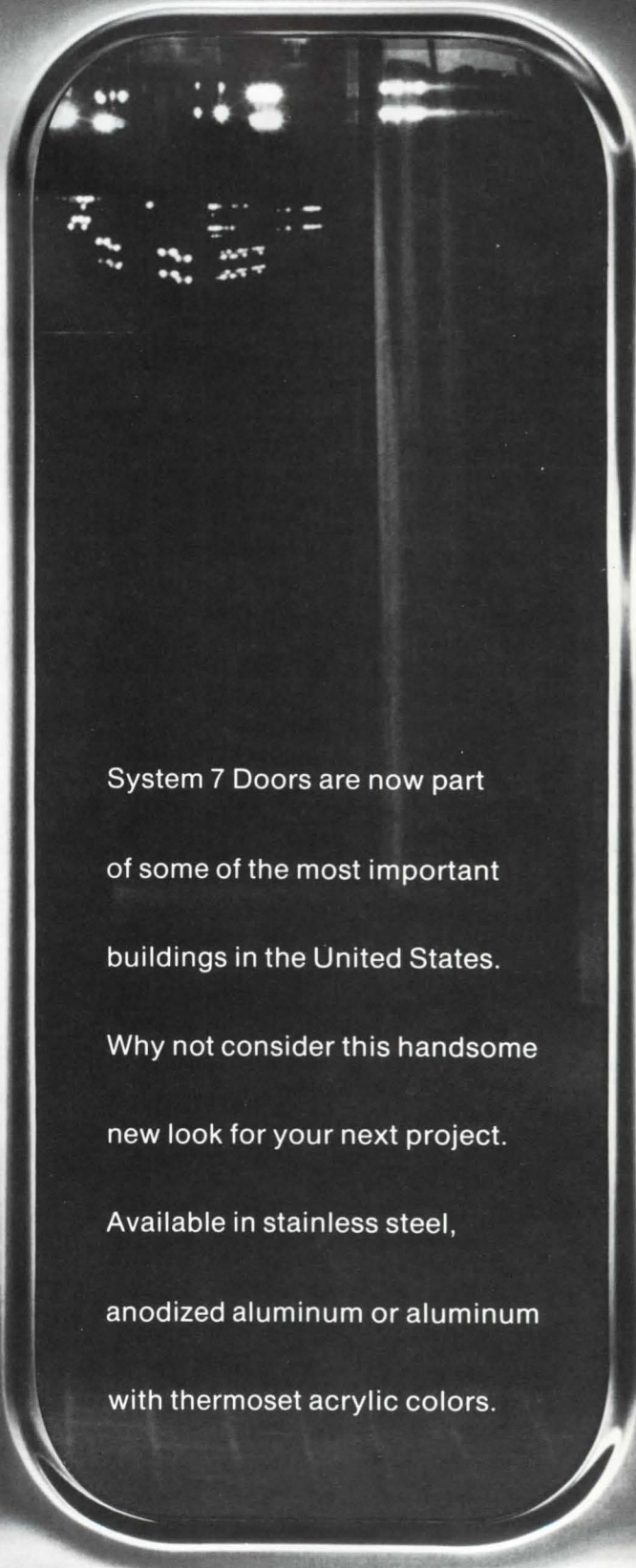
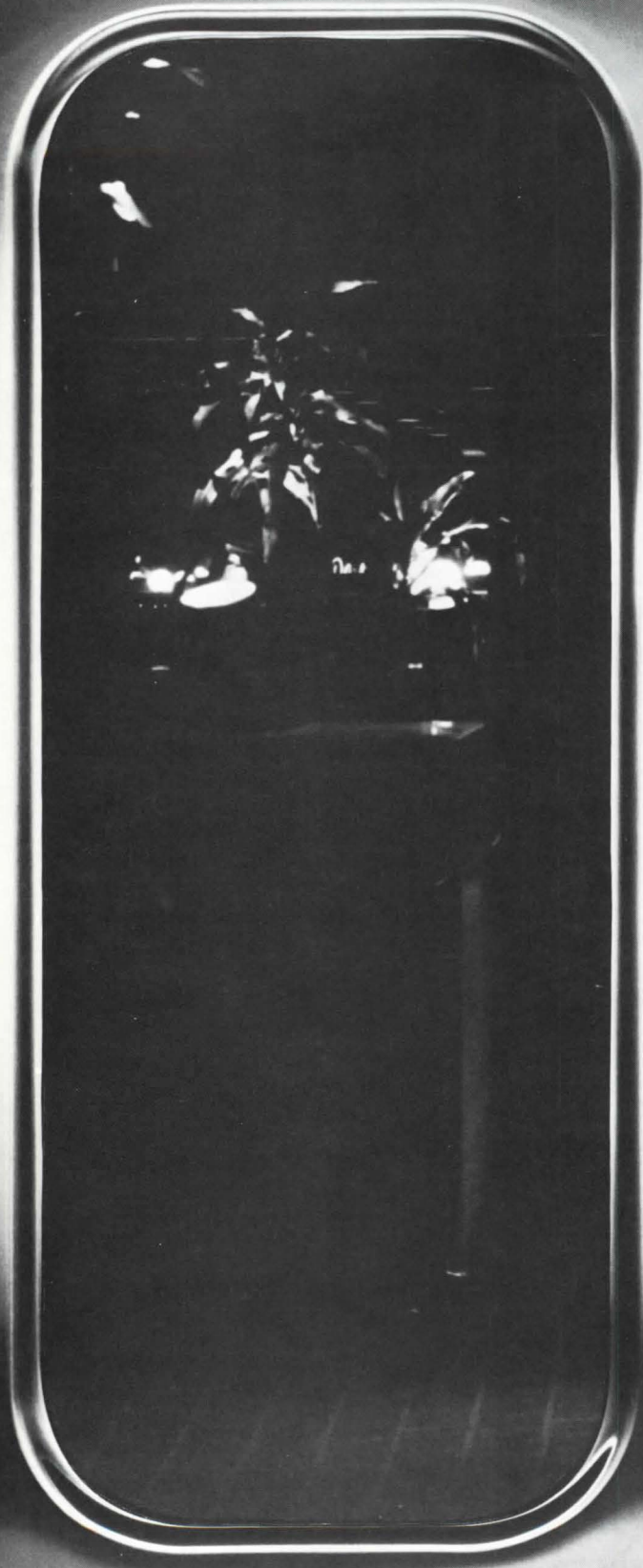
My disbelief was slowly turning to increased anxiety with my reading of each new issue of the architectural press. The joke was becoming a bad dream—all these bizarre designs being taken more and more seriously. Books were authored proposing preposterous ideas that actually got serious attention—they were building them! I could not believe it.

I turned to my colleagues for some reassurance, but was taken aback by their mumbled and inarticulate responses that

*continued on page 9*

**Corrections:** A letter from Peter McCleary in the Dec. '79 issue (p. 6) read in part: "... The inferred accessibility to Charlottesville must then be correlated with the notion that 'harmony and discord' can be derived only from their versions of balance. . . ." The correct word is "concord" rather than "discord." The quotation is from a translation of Alberti's "Ten Books on Architecture," in which beauty is defined as "harmony and concord." The word concord, as McCleary says, is "accurate and hence more to the point." We apologize.

Copyright notice was omitted from page 71 of the January issue, which contained two Saul Steinberg drawings. It should have read: Top, "Vertical Buildings" from *The Labyrinth* © 1960 by Saul Steinberg; bottom, "The Parade Scene" from *The Art of Living*, © 1949 by Saul Steinberg. Reprinted by permission of the Julian Bach Literary Agency, Inc.



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### Letters from page 4

emphasized their own muddled thinking and lack of self-awareness.

Was the Ayatollah syndrome about to take another form and emerge in contemporary architectural expression?

Imagine my relief in reading Fitch's article. Here was someone who was articulate, knowledgeable and who had the intelligence and courage to call an abomination an abomination.

Bravo! Mr. Fitch, you have taken a step for us all who feel that architecture has a long way to go and in a direction that certainly isn't backward! And I would urge the serious architects among us to please put the Venturis and Jencks and their silly ideas aside right now and get on with the real work ahead of us.

Thaddeus E. Kusmierski, AIA  
Berkeley, Calif.

I enjoyed reading the January issue, but am surprised to see that you have fallen in the currently popular vein of assuming that a decade ended with the end of 1979. Can't people count and understand the calendar? Do the same people think we are living in the 19th century until 1999? It may seem so at times.

When we studied architectural history, it was sometimes easier to remember the dates of some buildings as belonging to the 1400s rather than to the 15th century but we all knew that the century did not end until 1500.

So it is with decades since the Year One. A decade begins with 1 and ends with 10. If we want to extol the virtues, vices or accomplishments of the 1970s, OK, but let's not imply that the decade has ended. Franklin S. Webster, FAIA  
Camillus, N.Y.

*Ed. Note:* For the January issue, we used one of the definitions of a decade given in Webster's *Third New International Dictionary* (unabridged edition), i.e., "a 10-year period beginning with a year ending in 0 (as 1900-1909) <the [decade] of the twenties runs from Jan. 1, 1920 to Dec. 31, 1929> . . ."

**Gypsum Resources and Reserves:** I read with concern the news story about a report by Zigurds Grigalis, AIA, in the December '79 issue (p. 66) in which he predicted that worldwide gypsum deposits would be depleted by the end of the century, based on U.S. Bureau of Mines estimates. His contention is a misinterpretation of our data which, if uncorrected, would mislead both AIA members and the general public. The failure to distinguish between the technical terms of "reserves" and "resources" is largely responsible for the erroneous assumption.

First of all, the domestic and foreign

resources and reserves of gypsum are more than adequate for any foreseeable period of time. In the case of gypsum, the total *resources* are those concentrations of naturally occurring material in or on the earth's crust in such form and amount that economic extraction of the gypsum from the concentration is currently or potentially feasible. One can easily examine the geological map of gypsum and anhydrite in the U.S., published by the U.S. Geological Survey in 1962, and conclude that the gypsum *resources* in the U.S. are practically inexhaustible. *Reserves* are estimated from that in-place portion of the demonstrated (measured and indicated) resource, and are only that part which could be economically extracted or produced at the time of determination. Thus, it can be seen that the reserves of gypsum in the U.S. and the world constitute only a small part of the total resources.

Therefore, it appears that Grigalis totally ignored the resource figures for gypsum, and instead relied solely on the much smaller reserve value on which to base his opinion. This is completely erroneous since the transition from resources to reserves is commonplace and is continuously changing due to economics for the assured operation of the plant. Additionally, the determination of economic reserves by drilling, trenching and sampling is a basic requirement for the feasibility study prior to decision for capital investment for mine and plant.

Be assured that there is sufficient gypsum for the foreseeable future, including "by the end of the century," for this versatile building material. Jean W. Pressler  
Nonmetallic Minerals Section  
Bureau of Mines  
Department of the Interior  
Washington, D.C.

We have read with interest that "worldwide gypsum deposits will be used up before the end of this century"—a conclusion with which we in the gypsum industry totally disagree, and think that your readers may be interested in another viewpoint.

The JOURNAL article goes on to say that this appraisal was based upon a U.S. Bureau of Mines estimate of gypsum resources versus the current demand, and although the specific report was not named, we believe that it refers to the chapter on gypsum in the 1975 edition of the U.S. Bureau of Mines' *Mineral Facts and Problems*. If, in fact, this is the source referred to, we think that Grigalis has misinterpreted the data presented, a situation which surprises me somewhat because in the fall of 1977, we corresponded on the question of interpretation of this Bureau of Mines report, and on

our view of the long-term availability of gypsum.

In any event, it is true that two specific numbers are presented in this report as being *conservative* (emphasis added) estimates of world and U.S. gypsum reserves, which when compared to forecasted usage can result in the conclusion that these reserves will be exhausted by the end of the century. However, this conclusion ignores other statements in this same reference which say: "Domestic and foreign resources and reserves of gypsum are adequate for any foreseeable period of time." Or: "The reserves of gypsum in the Paris Basin in France are considered to be almost unlimited." And: "Gypsum beds in Kansas are said to be inexhaustible."

It is difficult for someone not closely involved in the raw material side of the industry to make definitive estimates of gypsum reserves on either domestic or worldwide basis because there is no mechanism whereby companies in the business who have developed factual data concerning their own reserves are required to report them to any central data collecting agency. Thus, the author of the Bureau of Mines article above referred to was forced to use subjective terms when describing resource availability, and when he did attempt to use a definite number, he qualified it as being "conservative."

In our judgment, the two numbers used were "super-conservative" and can be multiplied several times over—a judgment which is based on detailed data respecting our own reserves, as well as information in our files covering literally dozens of known, but so far unworked, gypsum deposits.

The geology of gypsum is such that we believe the total world reserves to be literally inexhaustible, and that the only problem the industry faces as the decades roll on is to acquire and develop those deposits best situated to meet the market's increasing needs—and here and there—to replace those few currently operating deposits which in the foreseeable next 20 to 30 years may become depleted.

For our part, at least, we utilize an ongoing program of review and acquisition of new reserves as may be indicated such that we expect to be able to serve the gypsum market indefinitely.

F.C. Appleyard, Vice President  
Raw Materials Resources  
United States Gypsum Co.  
Chicago

**In Response:** Misunderstandings have occurred which are apparent to the expert in the extractive industry, but may go unnoticed by the average architectural  
*continued on page 127*

## Outside Salt Lake City, Vulcraft and the Army Corps of Engineers

544,400 square feet, to be precise. For a new warehouse facility at Hill Air Force Base. The completed 1361' by 400' building could accommodate thirteen football fields.

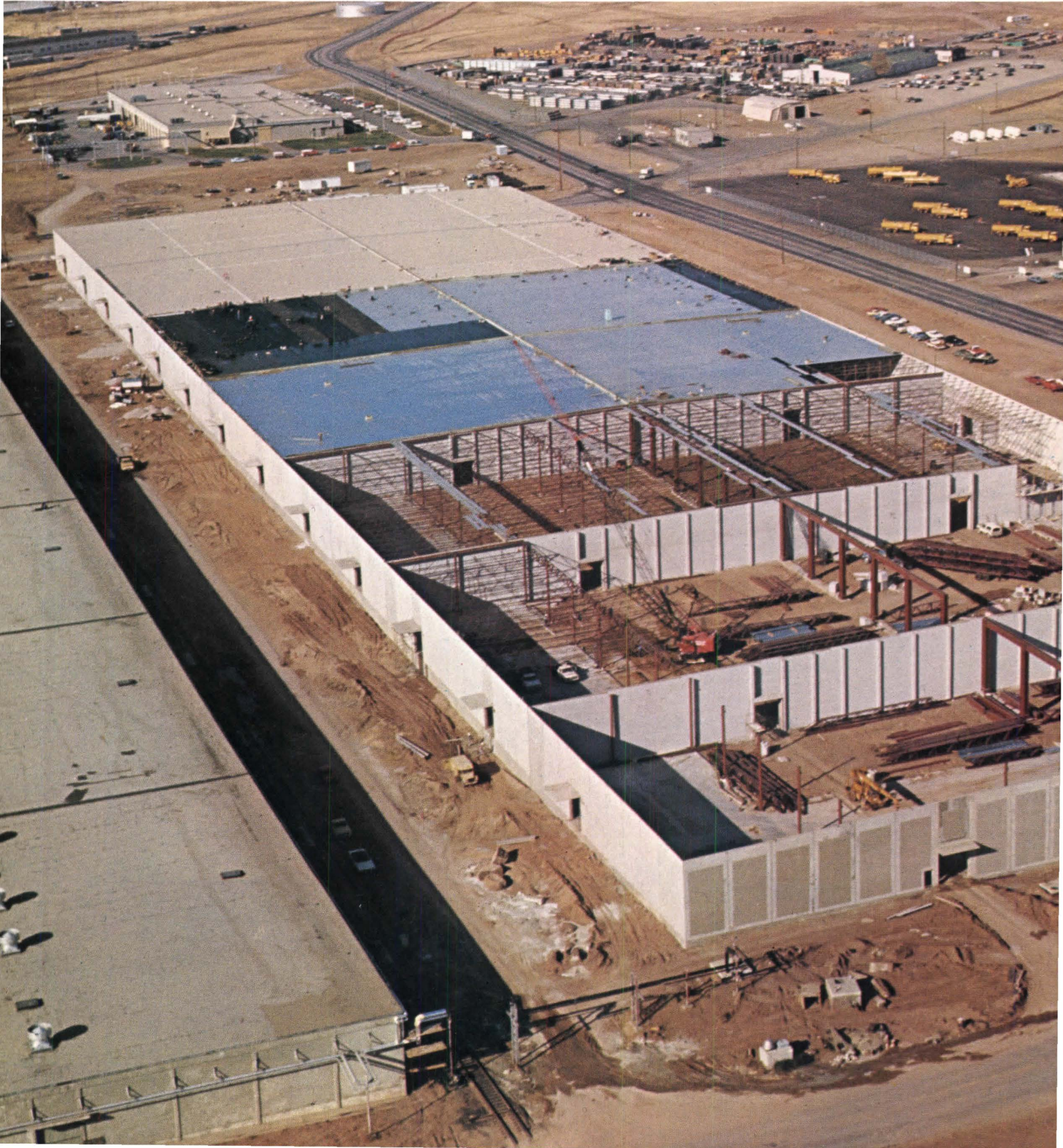
The Corps of Engineers and the Air Force first considered making the facility an all concrete structure like its twenty year old counterpart next door.

Then, Weyher Construction Company value engineered the structural system to see if they could reduce the contract price without altering the function or characteristics of the completed building. And to obtain the greatest possible savings

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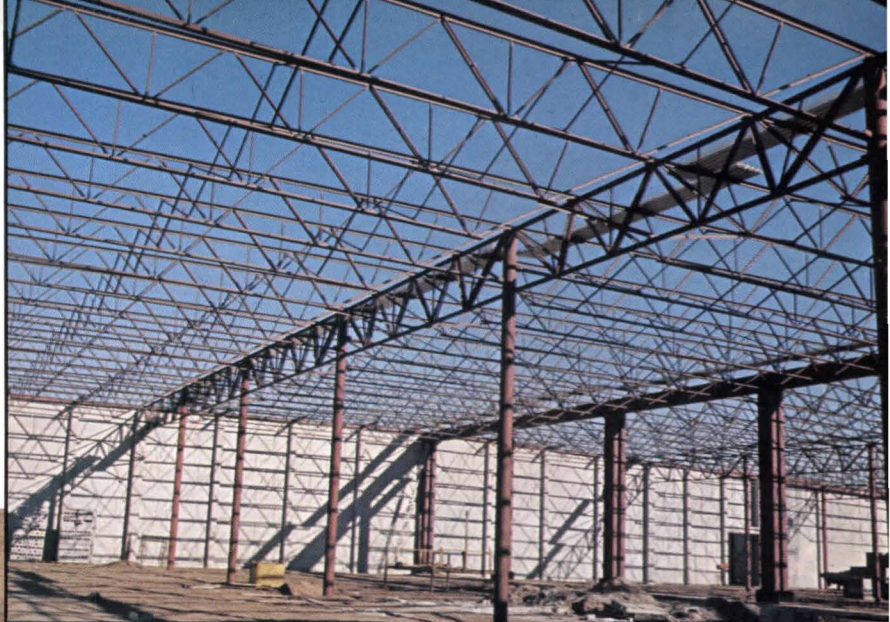
The resulting Value Engineering Change Proposal showed that an estimated \$300,000 could be saved by using Vulcraft steel joists and joist girders instead of reinforced concrete.

When the Army Corps of Engineers and the Air Force saw that Vulcraft joists and joist girders were the least expensive structural system for the job, they gave Weyher Construction the go ahead. Weyher then issued Vulcraft's orders: deliver the joists and joist girders fast. In time to meet the original deadline.

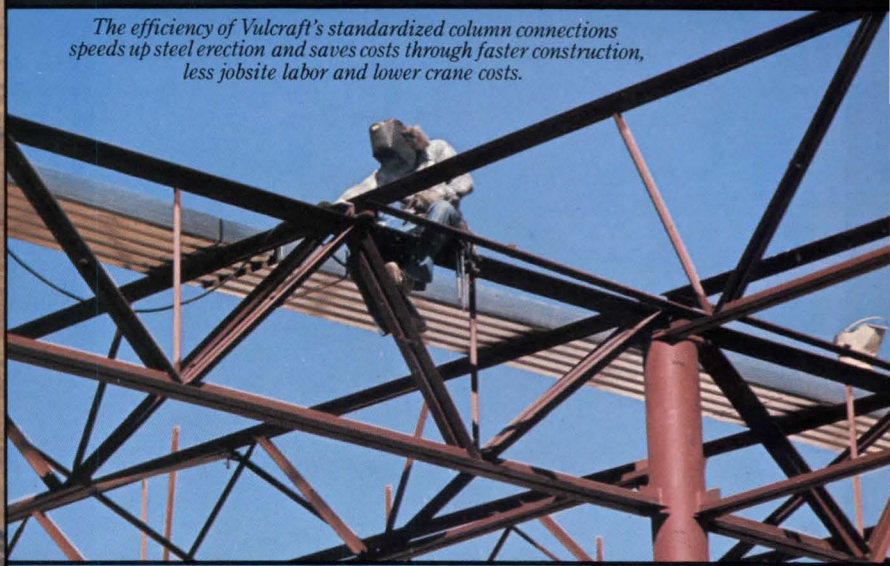


# covered a lot of ground together.

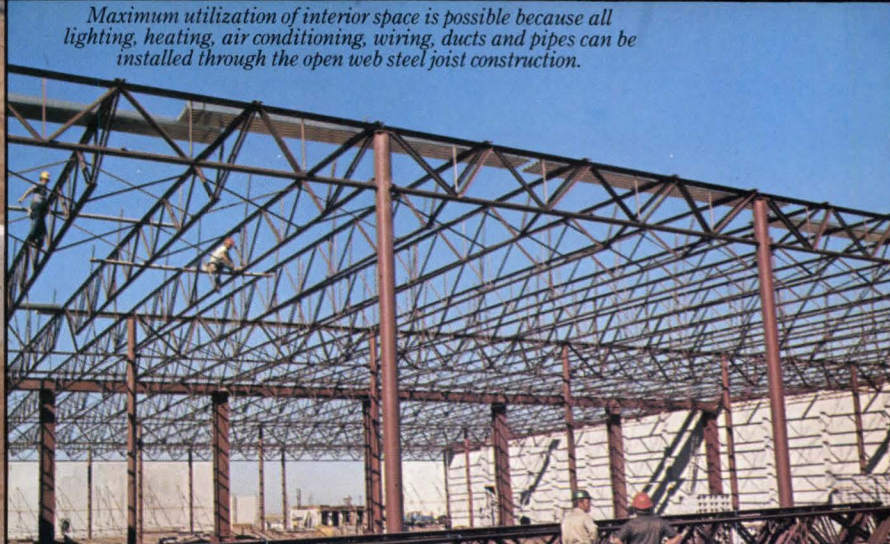
Vulcraft came through with flying colors. Weyher Construction came through with an on-schedule building. And the U.S. Government came through with an estimated \$300,000 savings. The Vulcraft system might be able to save you money on your next job. So contact your local Vulcraft representative for details. Or write Vulcraft, P.O. Box 17656, Charlotte, North Carolina 28211 for your Joist and Joist Girder Specification Guide (See Sweet's 5.2/Vu.). Or call 704/366-7000. What you'll get is action above and beyond the call of duty. No matter how much ground you want to cover.



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# NEWS

## Government

# A/E Groups Oppose Key Items In New Public Buildings Bill

Architectural and engineering organizations have voiced joint opposition to design competitions for federal buildings except for "unique projects of unusual significance." Testifying at a Senate hearing for the Committee on Federal Procurement of Architectural/Engineering Services (COFPAES), R. Randall Vosbeck, FAIA, also urged that a fixed percentage of in-house design not be mandated for GSA's public buildings service.

At issue is a bill recently introduced by Senator Daniel Patrick Moynihan (D.-N.Y.), which is a new legislative charter for GSA's public buildings program (see Jan., p. 27). Among other things, it calls for use of limited design competitions on federal projects costing between \$2,500 and \$25 million and increased use of in-house government architects for project design.

Moynihan had previously introduced the Architectural Quality Act of 1979 (S461) that called for use of design competitions on all federal projects over \$25 million. George E. Kassabaum, FAIA, testifying on S461 for AIA, said that while

competitions may have their place for monuments and single-function buildings, they are not appropriate in most government buildings "where there are complex factors to be weighed" (see Nov. '79, p. 36). Moynihan's new bill—the Public Buildings Act of 1979—essentially replaces his first bill in that for projects expected to cost more than \$25 million, GSA would use "such methods, including design competitions," appropriate to the project.

Instead of design competitions, COFPAES supports GSA's current selection process, which is based on the Brooks bill. "This process," AIA President-Elect Vosbeck said, "was designed to encourage competition among design professionals and to eliminate favoritism from the selection process. The GSA process works well and should not be undercut without ample justification."

Vosbeck maintained that design competitions would hinder small firms competing for federal commissions, that the expense and time involved in such competitions would be exorbitant and that competitions "overemphasize the cosmetics of design" and do not include the full range of reviews required of a team of architects and engineers.

Moynihan's bill also would require that the in-house GSA staff design at least 25 percent of the construction and renovation projects per year. This section of the bill was originally designed to attract talented young professionals to government service. Vosbeck argued that this would not be the case. "Design vitality comes from the private sector," he said. "There is little incentive, or will be, for young architects and engineers to join government service." One reason is that many state licensing laws do not count government service toward registration requirements.

COFPAES, testified Vosbeck, is "committed to the employment of highly moti-

vated design professionals within the federal government, but these A/Es should be utilized to work in concert with outside professionals to ensure the complete evolution of a project."

Rowland G. Freeman III, administrator of GSA, testified that GSA supports developing a greater in-house design capability, although he called the 25 percent requirement overly restrictive. "I am working now to gradually expand our capability in this area," Freeman said.

Freeman acknowledged the need for an overhaul of the public building service. He singled out the submission of a five-year plan for accommodating the public building needs of the government as the most important provision of the bill. "The key to the development of this long-term program will be adequate planning," Freeman said, acknowledging that much remains to be done in this area.

The bill also states that within five years of the date of enactment no more than 40 percent of government offices shall be leased and by 10 years no more than 20 percent. "I agree with the need to focus on the issue of leasing versus federal construction," Freeman said, but again he called for flexible targets. The main barrier to achieving this goal, Freeman suggested, was obtaining enough funding. COFPAES also supports reversing the trend toward leasing rather than constructing. "Over the long term," Vosbeck said, "economics of ownership outweigh the temporary benefits of leasing. . . . From a design standpoint, leased buildings are often developed on a speculative basis with less concern for quality design and economical life cycle cost than would be the case if the government were the owner."

If the federal government turns toward new construction, it could be used as a stabilizing factor in the construction industry, suggested Robert A. Georgine, president of the building and construction trades department, AFL-CIO. This could be accomplished, he said, by planning and constructing public works so that they can be awarded when private construction activity declines and withheld when private activity expands.

Other language in the bill calls for the need to "design and maintain public

*continued on page 15*

## Government

<i>Public buildings bill opposition</i>	above
<i>Artworks for Boston area subways</i>	15
<i>ABA ethical guideline proposals</i>	15
<i>Construction expenditure gains</i>	18
<b>Institute</b>	
<i>New Orleans R/UDAT</i>	18
<i>Five to receive '80 medals</i>	23, 24
<i>Cincinnati convention speakers</i>	28
<i>California leads in membership</i>	28
<i>Victorian architecture cards</i>	35
<i>Tile house competition winners</i>	35
<i>Government affairs survey</i>	38
<i>'Basic building code' revisions</i>	38
<b>Energy</b>	
<i>Reactions to DOE's building energy performance standards</i>	42
<i>Italian/American joint effort</i>	104
<i>Dead Sea energy potential</i>	104
<i>Solar advocates vs. policy makers</i>	108



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## Government from page 12

buildings in such a manner that they bear visual testimony to the dignity, enterprise, vigor and stability of the American government," a provision which COFPAES supports. Freeman urged that the committee consider appropriate cost parameters in setting design standards, "as we believe that costs constraints are a significant factor in housing decisions on the scope and character of federal construction projects." COFPAES urged that performance rather than prescriptive design standards be set.

While disagreeing strongly with the design competitions and in-house staff provisions, COFPAES supports other provisions of the bill as being "very constructive both in terms of bringing order to the public building process and enhancing the architectural quality of federal buildings." At the hearing, support was voiced by COFPAES for the following:

- the appointment by the President of the head of GSA's public buildings service, recommending a six-year tenure;
- the re-establishment of the position of supervising architect so long as the individual is a licensed architect;
- the call for attention to suitable scale, local zoning, energy saving features, barrier free design and accessibility for the handicapped;
- the encouragement for GSA to undertake research and evaluation to improve public buildings and offices.

Other interested groups testified at the Senate hearing, although none of them discussed design competitions. Maudine R. Cooper, representing the National Urban League, Inc., urged that urban areas be given first priority for the siting of federal facilities. While the bill does not specify that federal buildings be located in cities, it states that "federal agency offices shall be located in reasonable proximity to other governmental and private offices." The Urban League is concerned that new federal buildings will be located in suburban areas close to other federal offices. Cooper also suggested that priority be given to the most distressed city within a given region, in socioeconomic, business and employment terms. The bill calls for an even distribution of federal offices in proportion to the geographic distribution of the nation's population.

The bill also states that GSA should locate federal agency offices in existing public buildings and, if space is not available, in buildings of historic, architectural or cultural significance. This system is currently used by GSA as mandated by the Public Buildings Cooperative Use Act of 1976. However, at the hearing the Advisory Council on Historic Preservation, represented by Executive Director Robert R. Garvey, criticized GSA for not acquiring historic buildings for reuse as

federal office space. Since the passage of the cooperative use act, the council has recommended to GSA that it acquire eight historic buildings. Not one has been bought by GSA. Therefore, the council recommended that the bill call for the identification of historic buildings suitable for federal space as an integral element of GSA's project development process.

Garvey said that the law should recognize certain factors involved in historic preservation that are not quantifiable in dollar terms, such as the contribution of a historically or architecturally significant building to the visual environment of a city and the function of the building as a symbol of local pride and public spirit. Garvey added that cost estimating techniques need to be reviewed to ensure that renovation costs are accurately projected and that statutory preference for the use of historic buildings should be extended to leasing.

## 20 Selected to Create Artworks For Boston Area Subway Line

The Cambridge (Mass.) Arts Council and the Massachusetts Bay Transportation Authority (MBTA) have announced the selection of 20 artists to create artworks for the new subway stations on MBTA's Red Line Northwest Extension. MBTA, through "Arts on the Line," as the art project is called, is the first mass transit system in the U.S. to so comprehensively integrate the arts into its facilities.

The joint project was initiated in 1978 under a grant from the Department of Transportation. The Cambridge Arts Council developed a plan whereby artists throughout the country were invited to send in slides of recent work. The slides became a part of MBTA's "artbank" and were used by a jury of artists and art professionals to select artworks to enhance four new subway stations. The artists chosen received commissions varying from \$1,000 to \$10,000.

The proposals by the artists include painted tiles for passageways, large metal sculptures that move in the wind caused by approaching trains, and handcrafted benches (below, a model for a series of benches by William Keyser). The artworks will be installed when the stations approach their completion date in 1983.

Architects for the four MBTA subway

stations to be adorned with the artwork are Skidmore, Owings & Merrill (Harvard Square), Cambridge Seven Associates (Porter Square), Wallace, Floyd, Ellenzweig, Moore, Inc. (Alewife station) and Goody, Clancy Associates (Davis Square).

## ABA Ethical Guideline Proposals Geared to Complaints by Clients

New relationships with clients and with society as a whole are called for in recommendations for a new code of professional responsibility for the American Bar Association. The proposed guidelines, presented by a special commission at ABA's mid-year meeting in Chicago last month, will have to go through a year of debate, hearings and revisions before a decision is made by ABA's house of delegates on whether to adopt the new ethical guidelines. Already, the commission has drawn up six model codes since the summer of 1977.

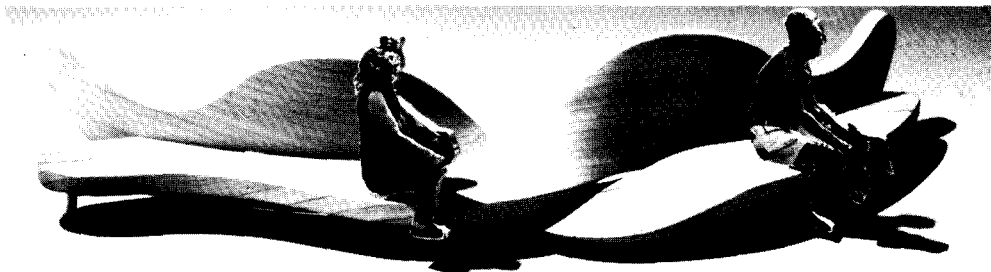
The proposals place emphasis upon the removal of three complaints of clients: incompetence, dishonesty and high fees. Also, they would change some of the traditional lawyer-client confidentiality, requiring the lawyer to reveal confidential information in some cases.

ABA's current ethical guidelines say that a lawyer "should be competent." Under the new proposals, however, a level would be required of "specific legal knowledge, skill, efficiency, thoroughness and preparation employed in acceptable practice by lawyers undertaking similar matters."

Current guidelines say that a lawyer should not "neglect" a client's case. But as a commission member said, delay causes a client "endless anxiety" and can affect his legal interests. Under the new proposals, the lawyer would be required to "attend promptly to a client's affairs, giving them adequate attention until complete."

Further, the lawyer would be required to state in writing what the fees would be before services are rendered. Also among the proposed guidelines is the requirement that lawyers who work together are responsible for each other's professional conduct. For example, a lawyer in a supervisory role would be liable if he failed to take steps to prevent the mis-

*continued on page 18*



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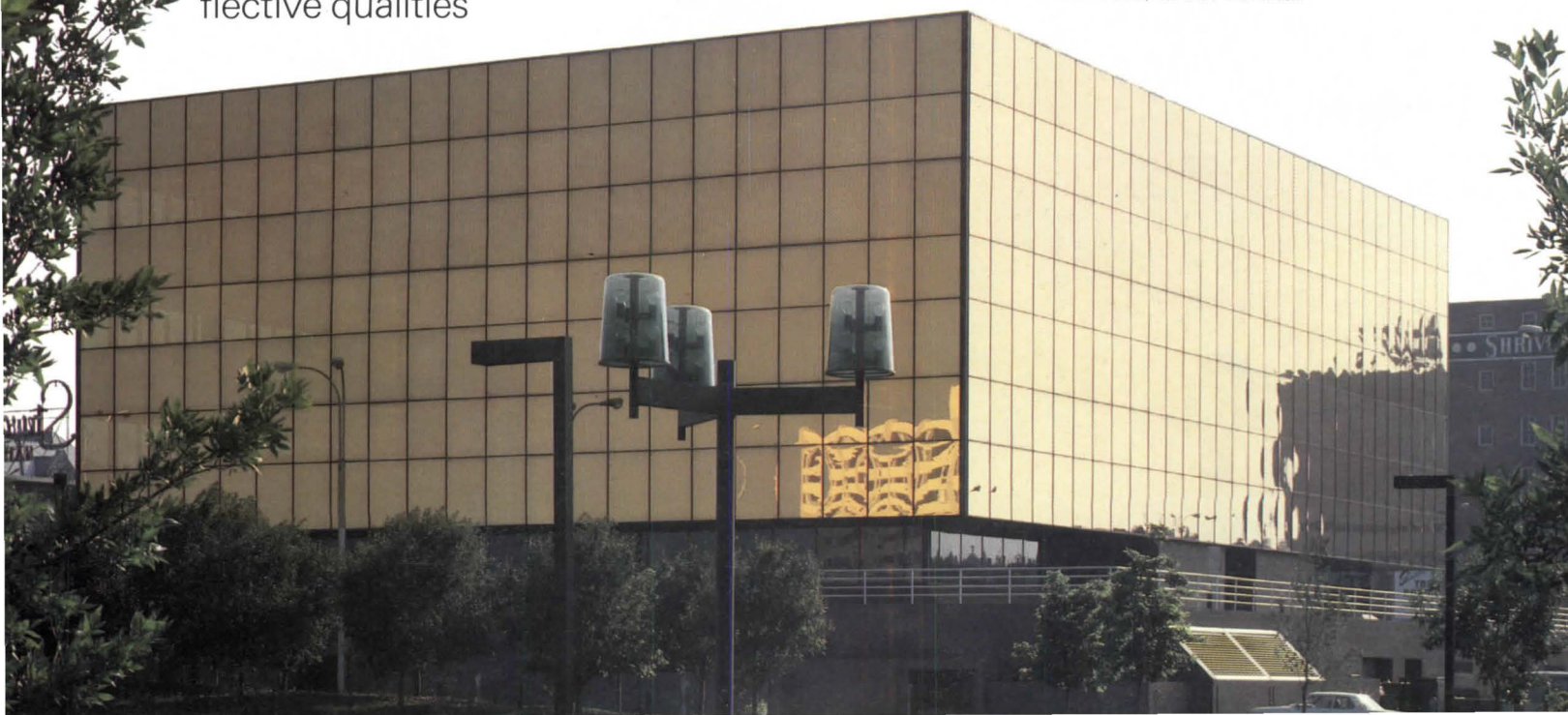
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**Government** from page 15  
conduct of his associates.

In a change from the old rules of lawyer-client confidentiality, the proposed new guidelines would require a lawyer to disclose perjury on the part of the client if the lawyer were unable to prevent it.

Lawyers would be permitted to use radio, television, direct mail, newspapers and directories for advertising, providing they met rules of accuracy and taste.

In the matter of the lawyer's relationship to society as a whole, the lawyer would be required to "render unpaid public interest legal service" and to report the extent of such service on an annual basis.

A commentator on the proposed ethical guidelines has said that they are "only an ideal of lawyer behavior." If the guidelines are adopted by the house of delegates, they must also be accepted by the supreme courts of the various states, with a state being able to accept or reject specific provisions. Adherence to the code would depend upon voluntary compliance and on local and state bar enforcement measures.

## Construction Expenditure Gains Included in President's Budget

President Carter's proposed budget for fiscal year 1981 is about 9 percent higher than the budget request of FY '80, but the increase will hardly offset an inflation rate of 10 percent.

Some of the budget items that would affect the construction industry are the following proposals:

- GSA seeks \$101.7 million for new buildings—up from \$87 million in FY '80.
- The Veterans Administration is asking for \$2.8 billion in facility design and construction funds over the next five years. In FY '81, \$660 million would be expended for facility construction projects including nursing homes and outpatient clinics.
- HUD has budgeted \$5.2 billion in new contract authority in order to add about 300,000 additional subsidized housing units. About 176,000 units would be newly constructed, with the remainder of the funds going for renting existing apartments.
- With the expansion of total funds for defense purposes, military construction spending would increase by \$1 billion, to a new total proposal of \$3.3 billion. Family housing funds, including construction of 2,650 houses, would rise to \$2 billion as compared with the \$1.5 billion in the FY '80 budget.
- The budget for energy conservation would increase from \$814.6 million in 1980 to \$1.1 billion in FY '81. Solar energy research would rise from \$136.8 million to \$176.3 million.

## The Institute

# New Orleans R/UDAT Focuses On Neglected Downtown Plaza

Duncan Plaza, a triangular green space in front of New Orleans' city hall and adjacent to the Superdome, a freeway and downtown highrises, was the subject of AIA's first Regional/Urban Design Assistance Team of the '80s. The challenge was to turn this neglected space into a lively focus of urban activity and the arts.

It was recognized as a difficult project. The R/UDAT's analysis of the site called the plaza a "classic piece of 1950s site planning, with its nonalignment of buildings, nonaxial approaches, deliberate disregard of the street grid . . . to the point that it seems almost comical in this post-modern era."

In an unusual recommendation, one of the R/UDAT's proposals was the creation of a design team led by a major sculptor. The whole plaza would be "conceived as material for a single work of sculptural art," said the R/UDAT. The city has since contacted five sculptors to appraise interest in the project.

Sponsored by the New Orleans Chapter/AIA and the City of New Orleans under a grant from the National Endowment for the Arts, the New Orleans R/UDAT was the first ever devoted to the arts. Pittsburgh architect/planner David Lewis, AIA, team chairman, said that "not since Bernini" has a sculptor been in charge of the design of a major civic space.

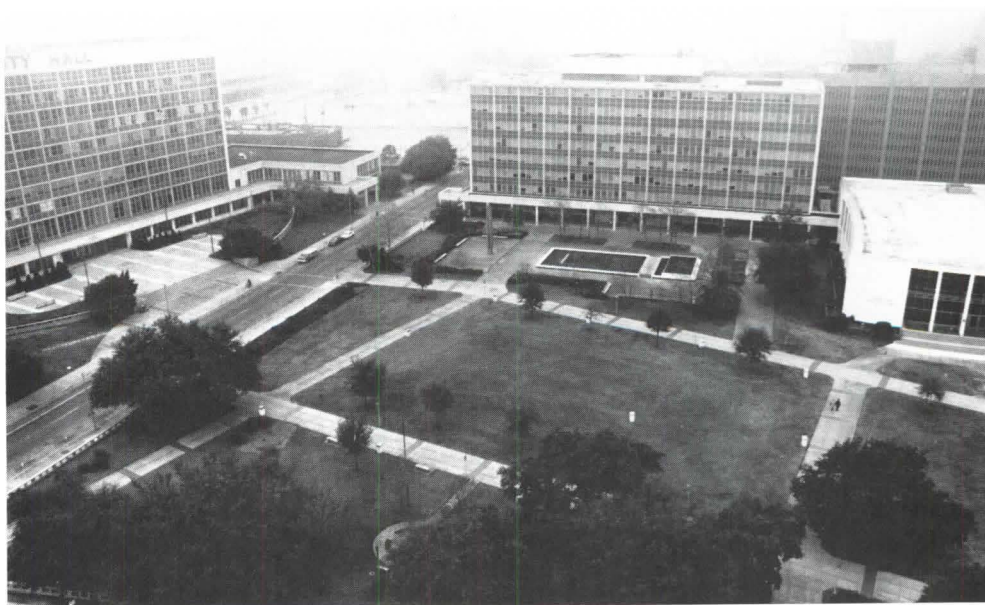
Other R/UDAT members were Houston arts council executive John Blaine; Yale University architectural professor/sculptor Kent Bloomer; NEA's scholar-

in-residence/architect Lance Jay Brown; Cambridge, Mass., architect/urban designer Gary Johnson; environmental psychologist Florence C. Ladd, Wellesley College's dean of students; New York city sculptor Mary Miss; Philadelphia environmental designer and planner Laurie D. Olin, and Berkeley, Calif., urban designer John M. Woodbridge, FAIA, formerly executive director of the Pennsylvania Avenue Development Corporation, Washington, D.C. New Orleans coordinator was Marion A. McCollam, human affairs programs coordinator from the mayor's office.

The chain of events that brought the R/UDAT to New Orleans began when Mayor Ernest ("Dutch") Morial noticed from his office window overlooking Duncan Plaza an absence of people and activity.

With the hope of having a "people place" in the city's front yard and to make "visual art a part of the urban landscape," Morial appointed a "committee for sculpture in Duncan Plaza" headed by New Orleans art patron Dr. Richard Levy. The committee, aided by project consultant Grover Mouton, met with Michael Pittas, director of the architecture, planning and design program of the National Endowment for the Arts, and received funding for the R/UDAT in the hope of creating proposals for the development of a "sculptural landscape" for the area. A R/UDAT steering committee of local citizens comprised of artists and

*continued on page 23*





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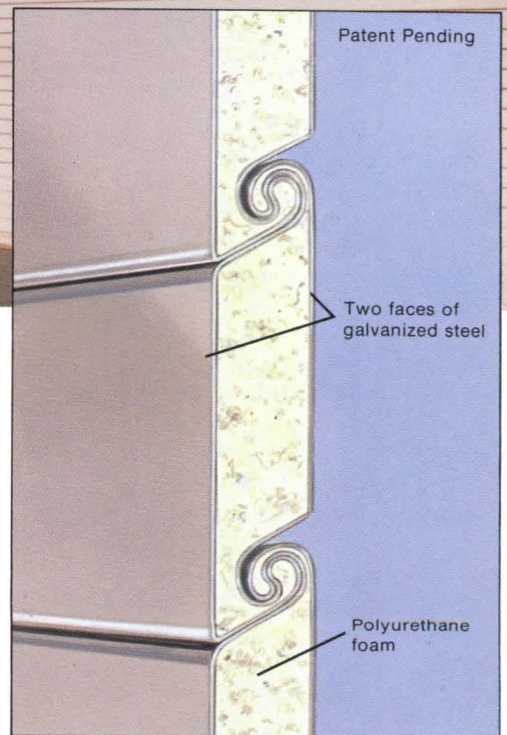
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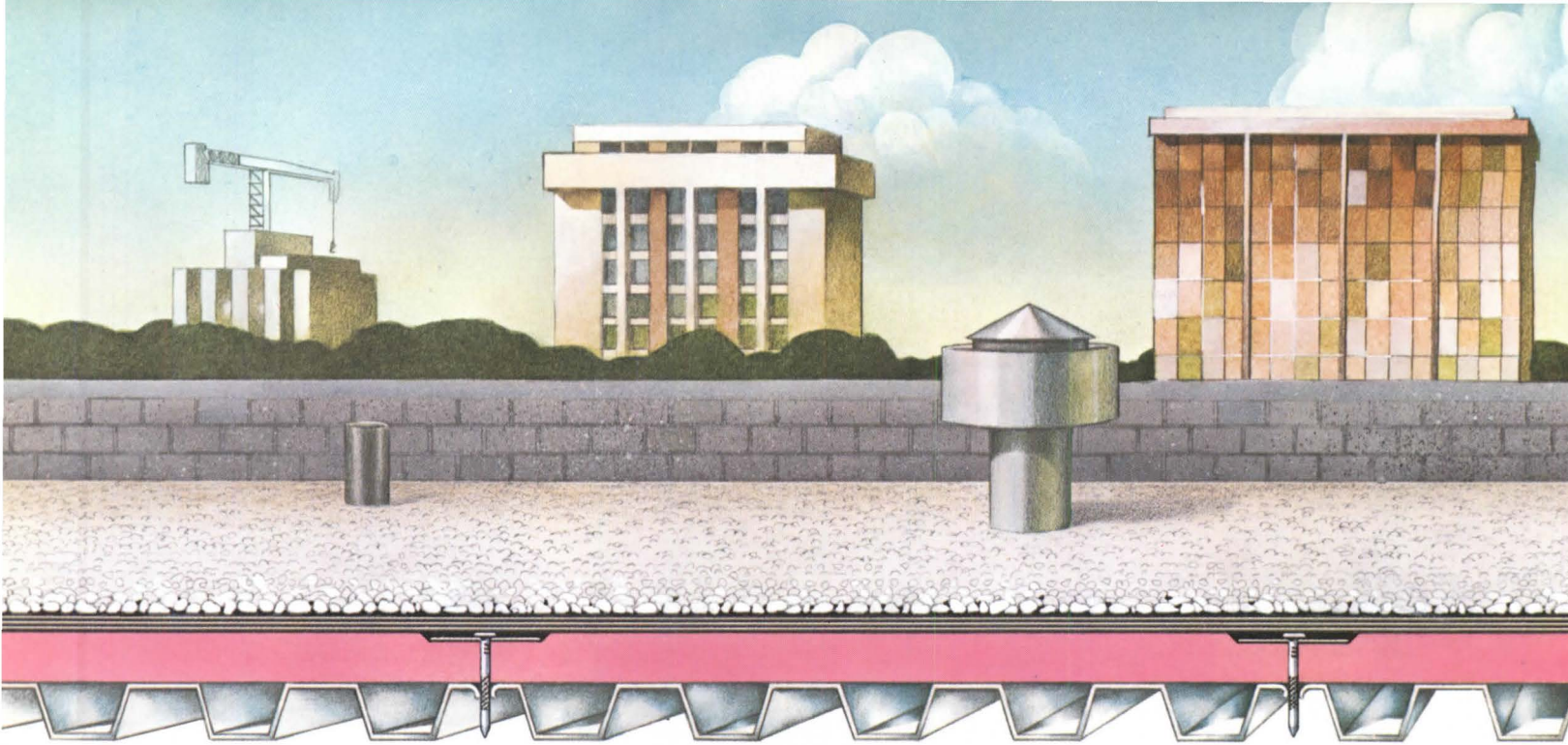
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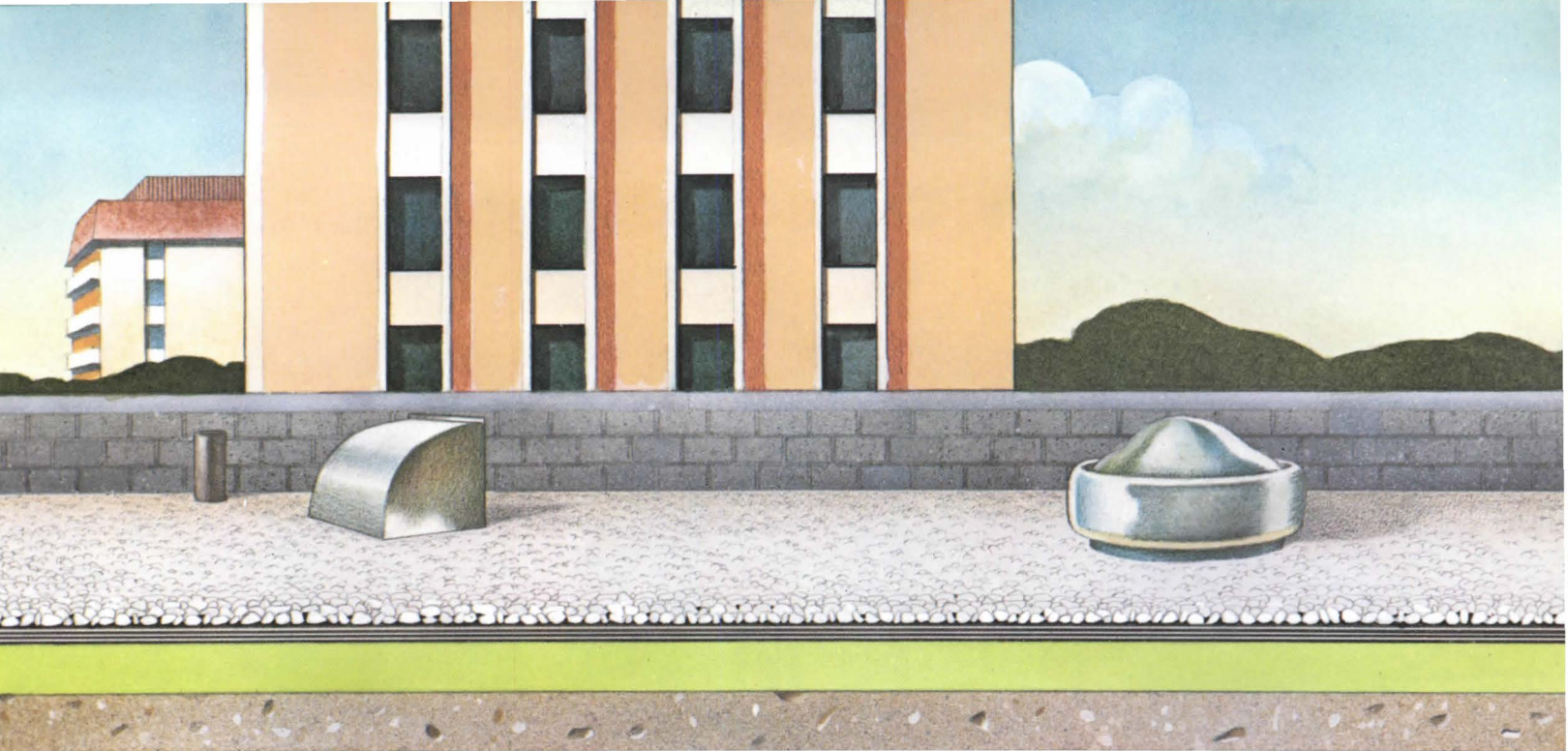
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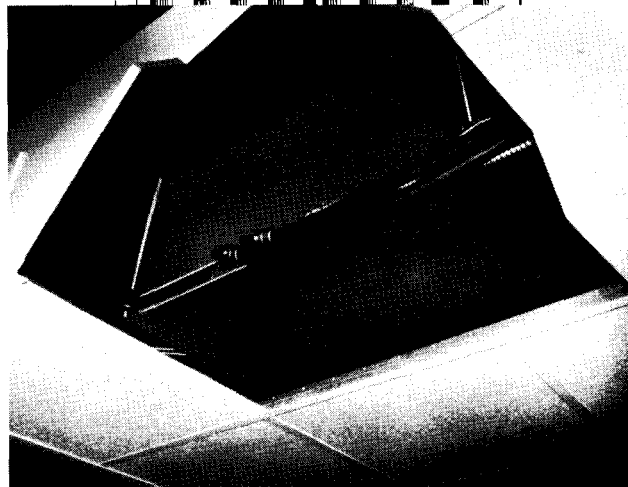
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## Institute from page 18

architects, media experts, business people, educators, community volunteers and planners was formed, supported by staff members of the mayor's office. The committee was chaired by Geoffrey Platt Jr., executive director of the Arts Council of Greater New Orleans which sponsors popular concerts at Duncan Plaza.

The thrust of the resulting R/UDAT's proposal was to "create a contemporary place so powerful in its own terms that it can be ranked beside its two great predecessors" (Jackson Square and Lafayette Square.)

As the team listened to briefings from city officials, toured the city and heard public testimony, it became clear that its design would be tempered by physical, financial and social ramifications.

These ramifications included the inherent problems of the site and its immediate area, the financial limitations of the city, consideration of its citizens' needs and the fact that Duncan Plaza is known only by location.

The team began its analysis of the site. Originally a cypress swamp, the triangular area that is now Duncan Plaza was part of a black community that housed Funky Butt Hall, one of the birthplaces of jazz, before redevelopment razed the area for the city and state government complex.

The R/UDAT site analysis stated: "The whole complex reminds one of a Beaux-Arts scheme struck by an earthquake, so that nothing quite lines up, but in fact this avoidance of axiality and direct circulation paths was a very self-conscious part of '50s design." The New Orleans Public Library was "the only building of the group regarded as a major architectural achievement when it was designed."

Addressing the public's request for intimacy and shade in the vast sunny plaza, the team recommended that the city plant live oaks and other plants indigenous to Louisiana, as they would require less maintenance yet create spatial definition and keep the "green" in the midst of the complex. Acknowledging the city's maintenance budget limitations, the team also recommended that better building materials be used to save money over the long run.

Flexible seating, exhibition space for art and a setting for both ceremonial events and the performing arts—temporary or permanent—were suggested. Areas for the display of cultural heritage and art of New Orleans' minorities, as well as consideration for children, the handicapped and the elderly were recommended.

They also recommended a home ownership program be established for a large public housing complex near Duncan

Plaza so that the lower income families could build equity in their neighborhood. Because the site is isolated by an expressway, a large hospital complex and a cemetery, the team suggested that streets and walks be reintegrated into the complex to tie it back into the community.

The team discerned that Duncan Plaza was never a destination, but rather a shortcut to the Superdome adjacent or to the government buildings. A plan to tie it into the mainstream of the city's older parks and squares was proposed.

The team recommended heavily planting the Basin Street-Loyola Avenue axis with trees to visually tie it into Duncan Plaza and Congo Square, symbolically important to New Orleans minority groups, at the other end of the axis. By creating new people-generating developments and uses along Loyola, a heavily trafficked boulevard lined with building backsides, the plaza complex could be pulled into the city's proposed Megalink system of pedestrian walkways in the central business district and French Quarter, the team suggested. In this way, Duncan Plaza would be linked to the city's older parks and public spaces—through Loyola Avenue to Congo Square that was on a direct axis to the French Quarter's Jackson Square down Orleans Street and from Bourbon Street east to Union Street and north back to city hall and a proposed art center.

The team acknowledged that a "hybrid budget" would have to be established to finance the design as it was recognized that the city was undergoing budgetary problems. As one team member noted: "The cost of Bernini's work was not insignificant; in today's scheme, the cost of St. Peter's would probably equal the cost of building the Interstate from Maine to Miami and back."

To assure that the redesign of the plaza would not be a product of outsiders, the team proposed that the artist(s) selected to perform the project "should undergo a full citizen participation process so that all needs can be heard and accommodated . . . so Duncan Plaza will gain a contextual richness of content and form." *Joy Brandon, a Washington, D.C., editorial consultant*

## '80 Medals: Boucher of HABS, Records Preservation Committee

AIA gives medals on an annual basis to individuals or organizations who have inspired or influenced architectural practice. The 1980 winners in this category include photographer Jack E. Boucher and the Committee for the Preservation of Architectural Records.

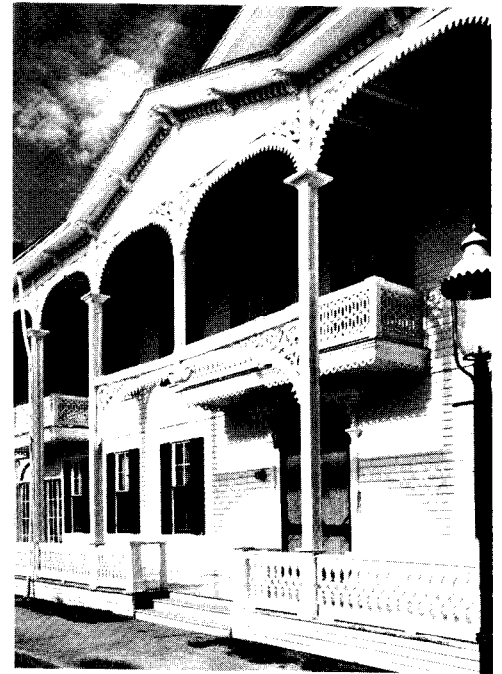
Boucher, a professional photographer for 29 years, concentrates on recording

historic structures. He is the supervisor of photography and pictorial records for the office of historic preservation of the Interior Department's heritage conservation and recreation service. He has held that position since 1958, except for three years when he directed New Jersey's historic structures and sites preservation program. A major portion of his time has been spent in the production of architectural photographs for the Historic American Buildings Survey.

Having studied photography at the Winona School for Professional Photography, Boucher expanded his knowledge of historic architecture at the national trust of England school of Attingham and at the European traveling summer school of restorationists. He has produced more than 55,000 photographs of more than 6,000 structures in the U.S., Mexico, Canada, the Caribbean and Europe and has written and illustrated four books.

His work has been featured in countless books, magazines and journals and has been widely exhibited at the Library of Congress and in traveling exhibits.

Boucher has also been involved in ex-



perimentation relating to photographic documentation, holography, color photography and the preservation of color prints and negatives.

The Committee for the Preservation of Architectural Records, a national clearinghouse for architectural information, was formed by architectural historians, librarians, museum curators and archivists who were united in their inability to find architectural records. The committee's definition of architectural records includes drawings, blueprints, photographs, diaries, contracts, bills, specifications and business and personal correspondence. It works to locate these materials and to encourage their preservation.

*continued on page 24*

In 1974 the committee received a grant from the Architectural League of New York and another from the New York State Council on the Arts, which enabled it to begin a guide to architectural resources in the five boroughs of New York City and to survey more than 600 institutions in the state. A grant from the National Endowment for the Humanities in 1976 allowed the committee to continue its work and to expand to a national organization to develop a catalog of architectural records in American collections. Supplementary funding was supplied by AIA's college of fellows and the National Endowment for the Arts.

Recently, the committee entered an agreement with the Library of Congress to ensure the continuation and expansion of the national catalog (see Feb. p. 74), thus allowing the committee to resume its original task of locating and preserving architectural documents in New York city and state.

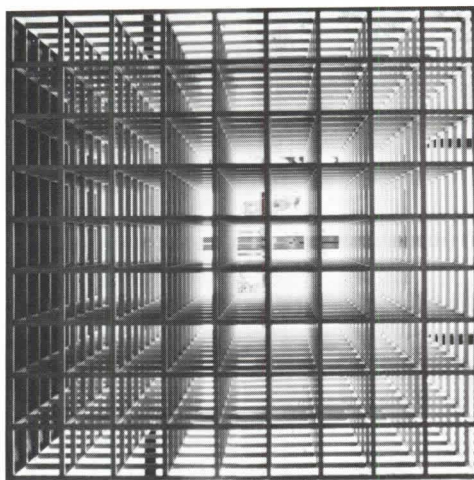
## '80 Medals: Artist Sol LeWitt And Stonecutter John Benson

Sol LeWitt, an originator of conceptual art and one of the most important contemporary artists, and John Benson, a stonecutter/calligrapher whose work graces many buildings and monuments, will each receive a medal at the AIA convention in Cincinnati. The medal is given annually to artists and craftsmen whose work is related to architecture.

LeWitt uses simple geometries, severely limited colors, neutral surface textures and a systematic approach of serially combining simple elements arranged to pre-established rules. For example, one structure shows all possible arrangements of five cubes on a 25-square grid with sides touching (571 possibilities).

LeWitt's three-dimensional works ("structures") are based on the single geometrical motif of the cube; his related wall structures vary from three-dimensional works to low reliefs; his two-dimensional works include drawings, prints and photographs, and his wall drawings (such as "Lines Not Long, Not Straight, Not Touching" or "Ten Thousand Lines, Ten Inches Long") turn walls of museums and galleries into environmental artworks.

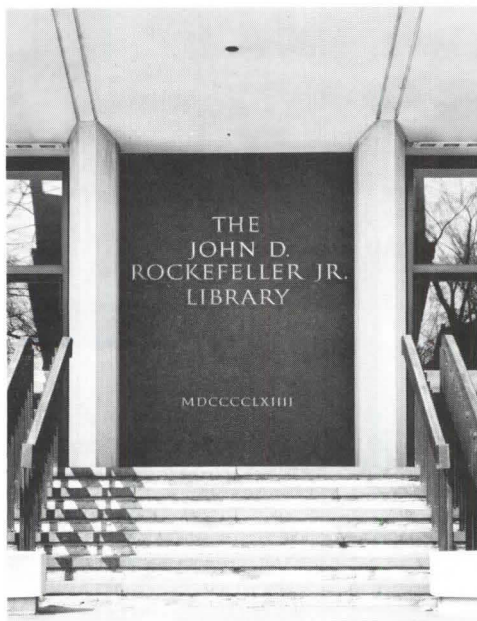
Among the minimalist and conceptualist artists who came into prominence in the early '70s, LeWitt is the first to have had a major one-man retrospective at the Museum of Modern Art in New York City. His work has appeared in exhibits throughout the U.S., Canada and Western Europe. "His art has widened the horizons of the conception of architectural space," said jury member Romaldo Giurgola, FAIA. "Mr. LeWitt is truly one



of the outstanding artists of our time. His explorations into the dimension of space have fundamental implications in architecture."

Benson's stonecutting endeavors began at age 16 when he was an apprentice in his father's studio, the 275-year-old John Stevens Shop, Newport, R.I. (John Benson Sr. was honored by AIA in 1955.) He left two years later to study sculpture at the Rhode Island School of Design and after his graduation returned to the Stevens shop.

Each of Benson's inscriptions is hand-drawn and carved with a mallet and chisel. It takes about one hour to carve about three or four small letters or one large letter. "Letters are like another article of applied design," said Benson. "Their excellence depends, at any time in history, on their fulfillment of a series of requirements within a more or less structured framework. . . . Over the years, the framework has become less and less well-defined. . . . This is the main reason why large-scale lettering of our time is in such a chaotic state. The framework is too wide. It's like opening one's closet and having to pick from a thousand pairs of shoes."



Both the John and Robert Kennedy memorials in Arlington cemetery were inscribed by Benson. His work can also be found, among other places, at the U.S. Court of Claims, Washington, D.C., the Citicorp building, New York City, the National Gallery of Art's east wing, the Boston City Hall, the Smithsonian Institution, Vassar College, New York University, Harvard University and the Boston State House.

"He brings to the architectural profession a unique sensitivity to letter forms and their interrelationships, and a conviction that the handcut inscription has a personality of its own," said Merle T. Westlake, AIA, in his nominating letter.

## '80 Medals: Robert Campbell, Architectural Critic in Boston

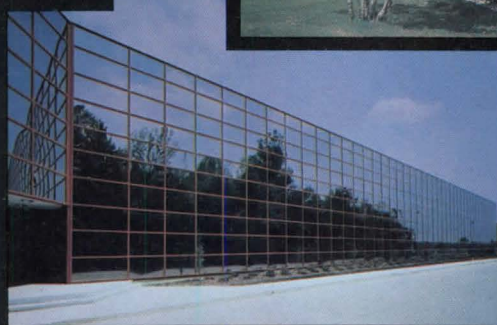
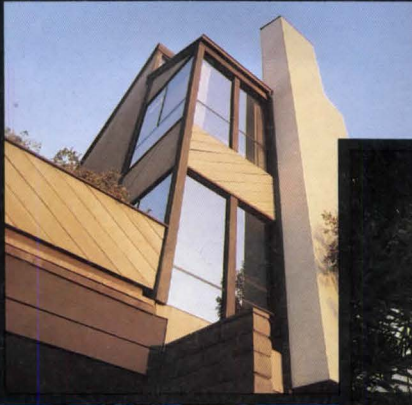
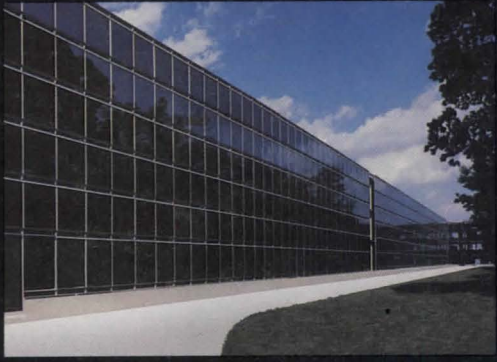
Robert Campbell, architectural critic for the *Boston Globe*, will receive an AIA 1980 medal at the Cincinnati convention for his architectural reportage and commentary. The jury on Institute honors said that Campbell "brought a lively judgment, independent and unprejudicial, to the architectural community via the daily papers. His witty reflections have often been a source of learning for architects. . . . His constant activity in public discussion has proved to be an exceptionally good source of information about quality in architecture for the public."

An architect as well as critic, Campbell was an associate of Sert, Jackson & Associates from 1969 to 1975. A writer for the *Globe* for the past seven years, he has combined writing with consulting, teaching and his own architectural practice since 1975. He received a master of architecture degree from Harvard University's graduate school of design in 1967. In 1975-76, while he was a design fellow under a grant from the National Endowment for the Arts, he developed a course, "Architecture for Non-Architects," which he continues to teach at Harvard; created spots for Boston's public television station, and collaborated with Peter Blake, former chairman of the Boston Architectural Center, in the development of a two-year series of discussions on local architecture called "Built in Boston."

A member of the Boston Architectural Center's board of directors and of the Cambridge, Mass., architect selection committee, Campbell is also a member of the steering committee of the Mid-Cambridge Neighborhood Association. His nomination for the AIA medal noted that he brings an architect's understanding to the complex process "by which the built environment is created and changed, yet he is able to write in a style free from professional jargon. His value judgments

*continued on page 28*

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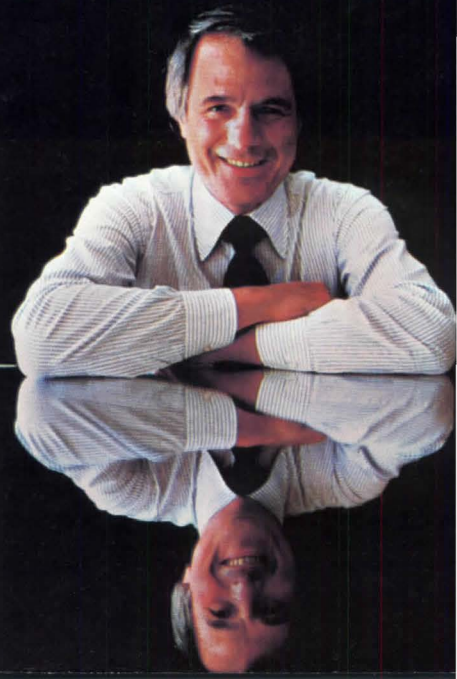
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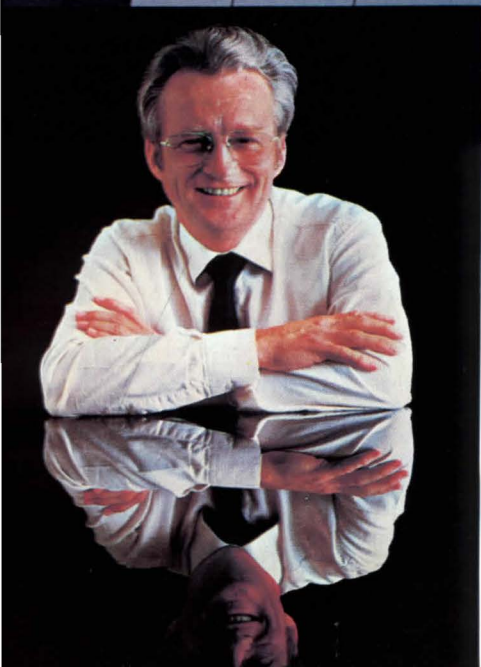
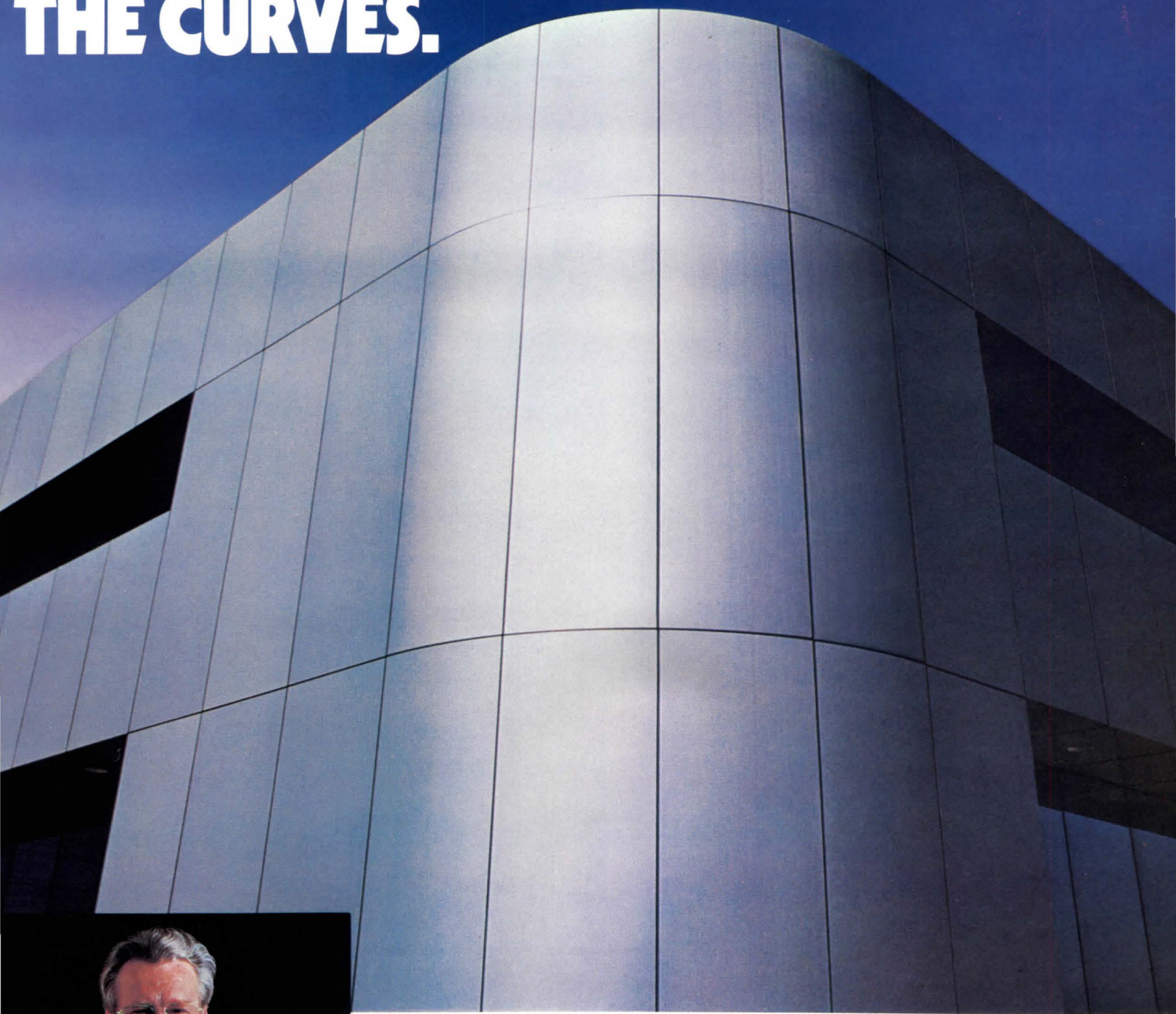
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**The Institute** from page 24 are always thoughtful and never whimsical, although they often reflect healthy skepticism of received values and conventional wisdom and sometimes amusement at posturings on the architectural scene."

## Cincinnati Convention Speakers: Martel, Miller and McCue

The Institute's 1980 convention on June 1-4, will consider the professional challenges, opportunities and responses of architecture during the new decade.

The challenges will be discussed by Leon C. Martel, acting president of the Hudson Institute and coauthor of *The Next 200 Years: A Scenario for America and the World*. As an observer has said, Martel "speaks from a platform of hope" regarding the challenges of the 1980s—the energy crisis, increasing inflation, inhumane cities and other social problems. Concerning energy, he said in his book:

"Except for temporary fluctuations caused by bad luck or poor management, the world need not worry about energy shortages or costs in the future. . . . Energy abundance is probably the world's best insurance that the entire population (even 15-20 billion) can be well cared for . . . during many centuries to come. . . ."

Those who hear Martel speak on June 2 will find out whether he has changed his mind regarding energy since the book was published in 1976. His long look at the decade before us will set the stage for the convention theme of "Professionalism in the '80s."

On the following day, after the challenges have been presented, the second convention theme will be considered: the opportunities. J. Irwin Miller, Hon. AIA, who established the Cummins Engine Foundation in 1955 in his hometown of Columbus, Ind. (for more on Columbus, see p. 62), has said that "we cannot ignore the world of our time. We had better understand it." Considered by many as an architect's "ideal" client, Miller is expected to address what the client of the 1980s will be demanding of the architect, in view of the community and society as a whole.

On June 4, the third theme of response will be addressed by Gerald M. McCue, FAIA, who will become dean of Harvard University's graduate school of design on July 1. Chairman of an AIA committee on the future of the profession, he was one of the authors of the committee's report published in 1970 with the title of *Creating the Human Environment* (see June '70, p. 108).

Professional development seminars, to

run concurrently throughout the convention, will focus on three general areas: design trends, energy, and production systems and applications.

Also, there will be special programs provided for associate members, intern-architects, members of the Association of Student Chapters/AIA and AIA component personnel.

## California Leads in Membership

There are more AIA members residing in California than in any other state. A survey made by the Institute's component services department (Nov. 30, 1979), shows that California has a total of 4,913 corporate, associate and emeriti members, according to a count in mailing addresses. California is followed by Texas (3,026), New York (2,087), Illinois (1,457) and Florida (1,440) in the top five in member count.

On a regional basis, where the count was made by chapter assignment, the figures vary slightly, but California still leads with 4,851 members, and is followed by Texas with 3,041. The other three regions in the top five are the Northwest (2,544), Central States (2,373) and New York (2,314).

At the end of November 1979, the *continued on page 35*

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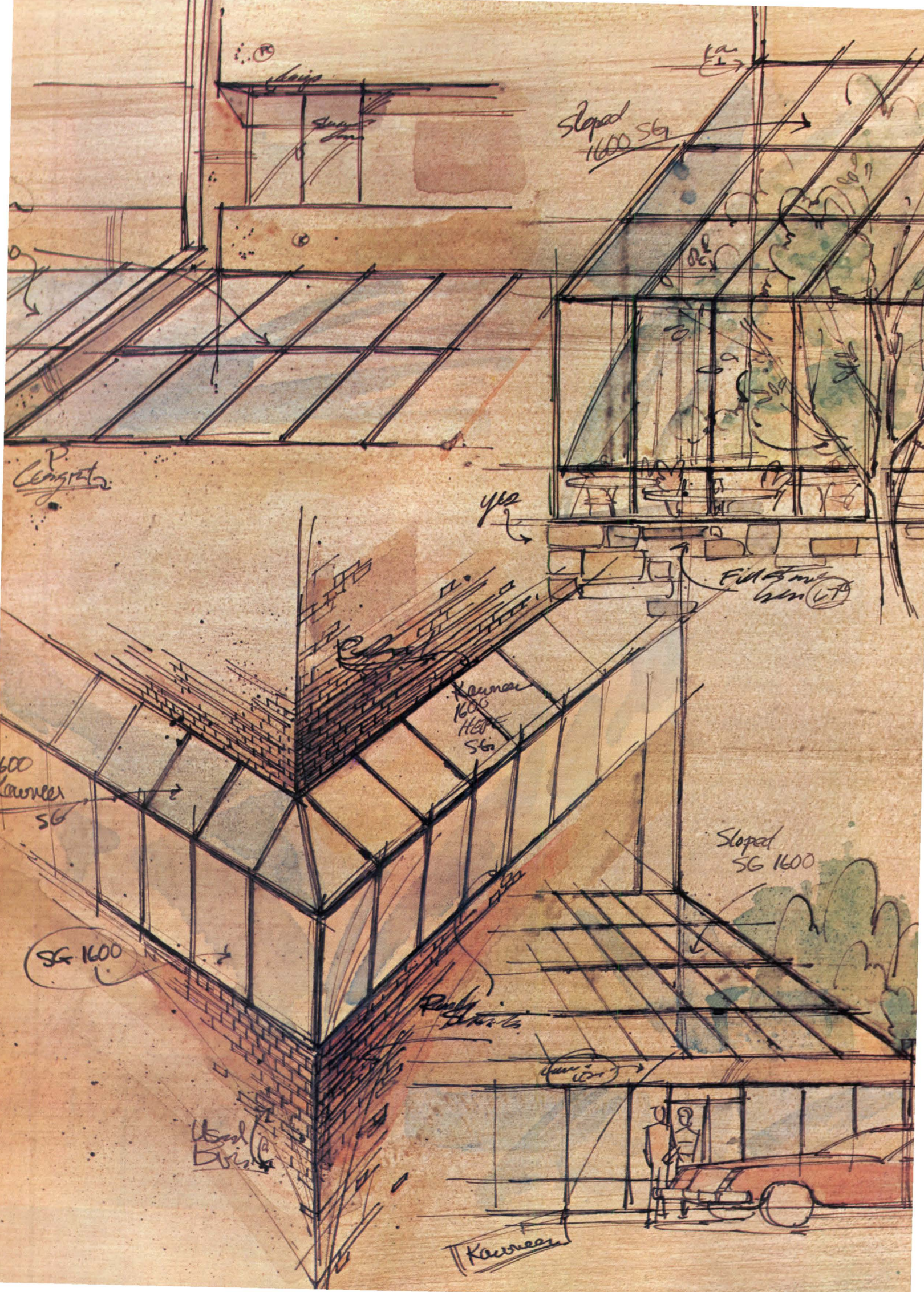
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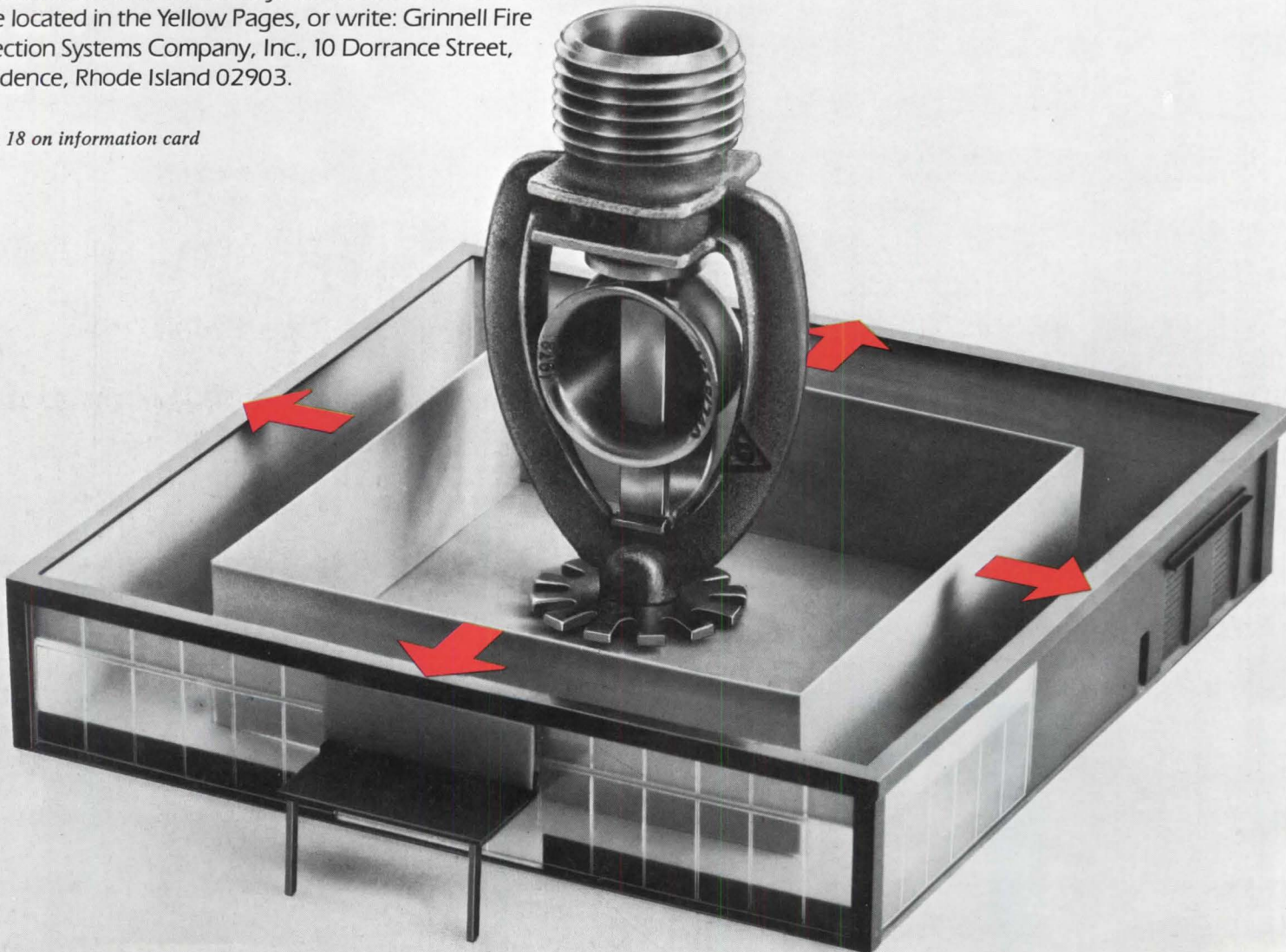
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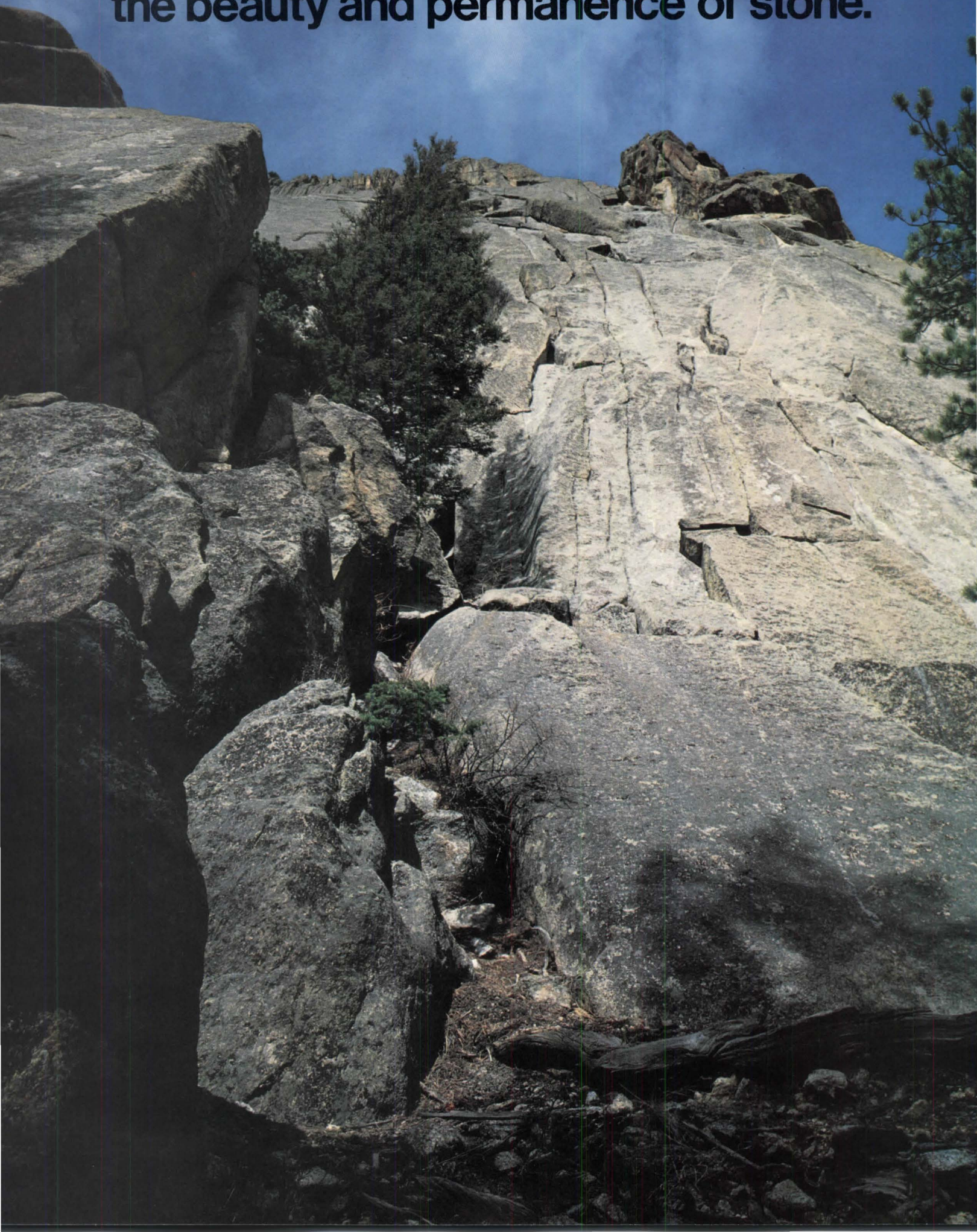
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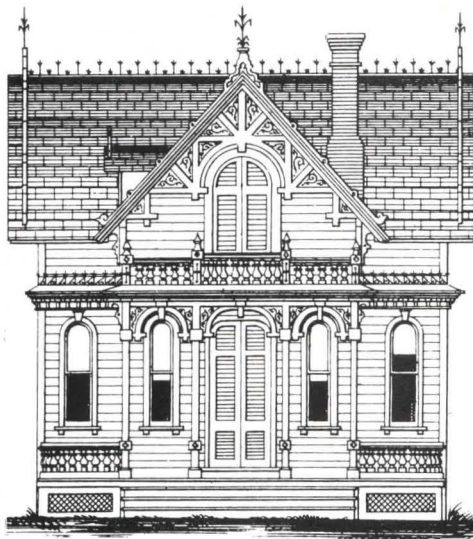
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### The Institute from page 28

total AIA membership was 33,839, a net increase of 8.10 percent over the previous year. Of this total, 26,848 are corporate members, 2,666 members emeriti and 4,325 associate members. In 1979, associate membership increased by 35.4 percent.



### Victorian Architecture Cards Accompany Smithsonian Show

The Smithsonian Institution Traveling Exhibition Service (SITES) has created a set of architectural activity cards, "Carpenter's Lace," intended for children, teachers, museum instructors, parents and fans of the Victorian era. The cards will accompany the SITES exhibit "Gift to the Street: A Patternbook of Victorian Architecture," which will travel to 16 cities.

The cards are enclosed in a container that folds into a Victorian house with floor plans, exterior elements and interior settings. Inside the container a set of 12 cards illustrates different aspects of Victorian architecture—styles, colors, comforts, decoration.

The exhibition, organized by the AIA Foundation and SITES, illustrates the ornamental and structural variety of Victorian houses. It details architectural elements commonly used in the U.S. in the last quarter of the 19th century—doorways, decorative embellishments, ironwork, stained glass, towers, bays, newel

posts, columns, windows and gables—through 95 photographs by Carol Olwell and original archival materials from the AIA Foundation. Also included are a large number of 19th century Bliss dolls' houses, on loan from Eleanor Labin, AIA. Copies may be purchased by mail for \$3 a set plus 10 percent handling charges, payable to Smithsonian Institution, and sent to Carpenter's Lace, SITES, A&I 2170 Smithsonian Institution, Washington, D.C. 20560.

### Pennsylvania Student Wins Tile House Design Competition

Eight architectural students recently were selected as winners of the "House of Tiles" design competition, sponsored by the Tile Council of America, Inc., and the Association of Student Chapters/AIA.

First prize was awarded to James Bradberry, University of Pennsylvania. Bradberry designed a "country house" (drawing below) with tile as a decorative floor element, living room ceiling and fireplace. Tile is also found on the vault enclosing the living room (mosaic tiles in an ornamental pattern) and the terrace (geometric patterns of quarry tile).

Second prize winners were Mark Robbins and Jeff Malter, Syracuse University, and Brian McGrath, Princeton University, for the design of a tile house within a house. Ceramic tile is used to decorate the interior and exterior of the outer house and covers all surfaces of the core house. Kevin Dwight Gordon of Miami University was the third prize winner for a round structure of concrete and tile with tile in selected interior spaces.

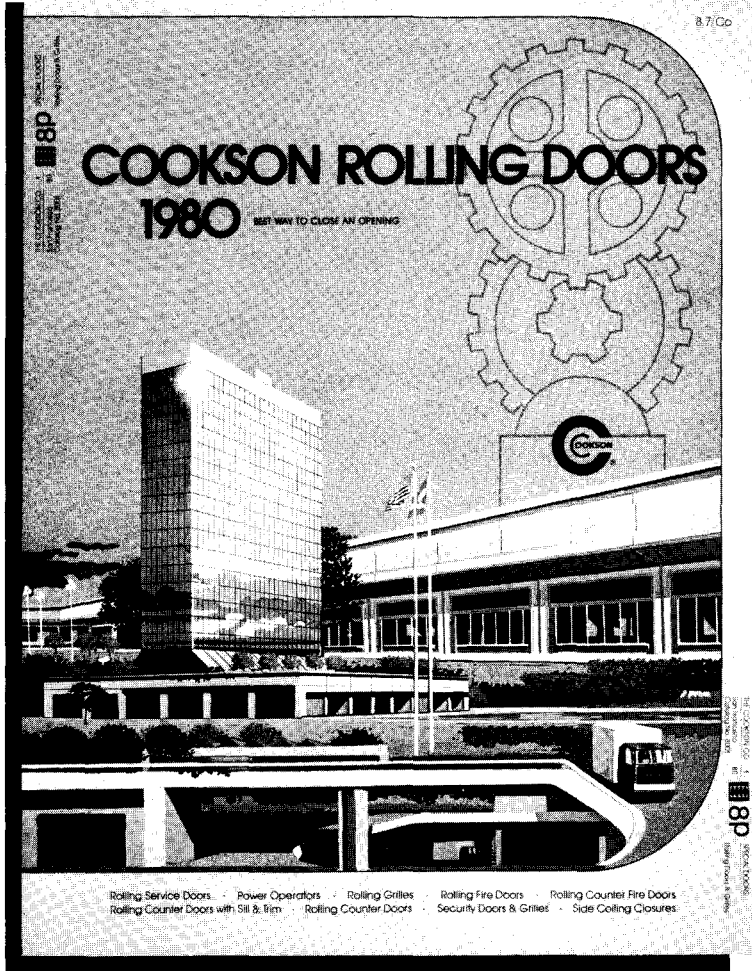
Honorable mentions went to Alejandro Firpi and Raouf Assefi, Syracuse University; Bernard Wharton, University of Pennsylvania; Armando Montero, University of Miami; John Horton, University of North Carolina at Charlotte, and Thomas L. Braht, Kansas State University.

Jury members included William Turnbull Jr., FAIA, Robert A.M. Stern, AIA, Susanna Torre, Susan Lewin and architectural student Gary Paul. Awards were given at the recent ASC/AIA national student forum in Houston.

*The Institute continued on page 38*



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## California Architects Group Works for Political Candidates

With the strong backing of the California Council/AIA, the Architects Political Action Committee of California (ArcPAC) has been established to work for political candidates at the state level who have strong commitments to the built environment. The newly formed committee, which held its first meeting during the recent CC/AIA convention, has selected Stan Smith, AIA, of Los Angeles as its chairman.

The committee will serve not only

CC/AIA members, but all registered architects in the state. It will operate as an independent group legally outside CC/AIA. The committee will solicit funds in the support of state political candidates, having set \$30,000 as its first-year contribution goal. It will lobby for, and financially support, legislation that affects the profession, supporting or opposing issues of importance.

"Our profession as a whole," says Smith, "has suddenly become aware of how important political action is." The importance was realized last year when California architects expended great effort in opposition to Governor Jerry Brown's budget proposal to reduce funds for the state Board of Architectural Examiners

(see April '79, p. 26). Brown had proposed in his 1979 budget message to phase out 15 professional licensing boards, including BAC. As a result of the architectural profession's concerted opposition, the state legislature reinstated BAC in the budget signed by the governor.

Meanwhile, CC/AIA's steering committee on registration issues, chaired by Ward Deems, FAIA, of San Diego, has decided to make a study of BAC to evaluate its administration of registration examinations and its enforcement of standards.

## Issues of 'Greatest Concern'

At the AIA grassroots meetings recently, component leaders were asked in an informal survey to indicate their priorities on government affairs issues that are of "greatest concern" to the architect. In response to the survey, 184 component leaders said that the major issues facing the profession in the coming year are: A/E selection, energy and liability.

The architects were also asked to comment on the economic market with the question: "What is the strength of job commissions?" Overall response indicates that the climate is healthy for the present, but some of comments are mildly pessimistic about economic conditions by the end of the year.

A few of the comments: "Firms busy—very little backlog" (New York state); "strong except for residential" (Texas); "still strong but market beginning to thin out" (Nevada); "good for six to eight months" (Colorado); "slowing down" (Michigan); "demand ebbing" (North Carolina); "jobs here, but getting harder to get your share" (Iowa); "same as 1979; existing commissions will last six months" (Tennessee), and "variable—future unpredictable" (Connecticut).

## 'Basic Building Code' Revisions Get Strong Support at Institute

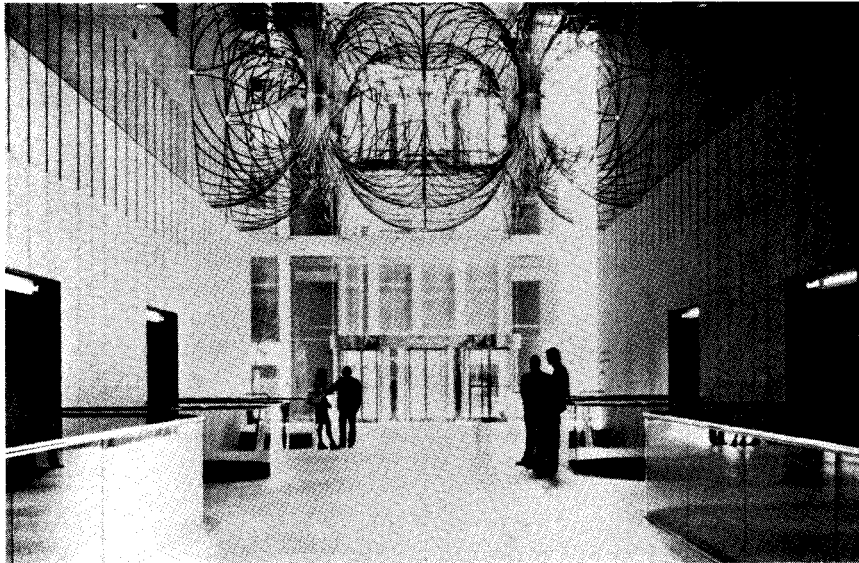
Culminating eight years of effort by AIA, a "major victory for architects" has been achieved regarding proposed major revisions in section 127 of the Building Officials/Code Administrators' *Basic Building Code*, says James R. Dowling, head of AIA's codes and standards division. BOCA's code changes committee has agreed to accept the recommendations of AIA's codes and standards committee (chaired by John Stevenson, AIA, of San Diego) for the removal of "objectionable parts" of the section of the code.

The next step will occur in June when BOCA's full membership meets in an annual convention.

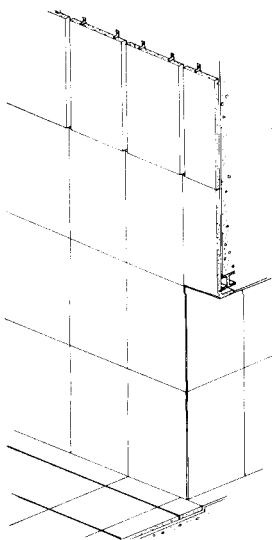
In the mid-1960s, provisions were writ-  
*continued on page 42*

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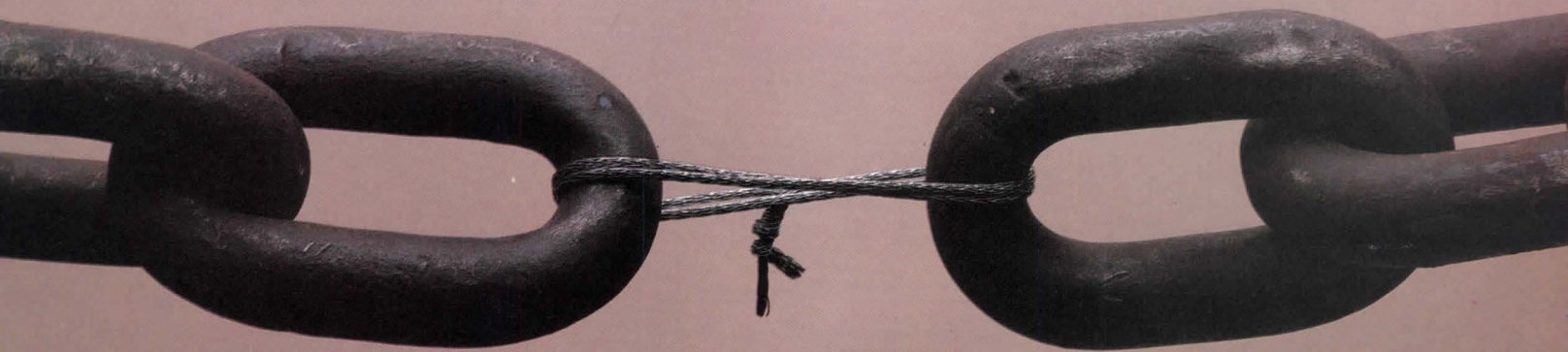
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**The Institute** from page 38  
ten into BOCA's *Basic Building Code* that required the architect to "certify" that a building had been erected according to plans and specifications. Although the section was partially revised in the 1970s to eliminate the certification requirements, Dowling explains, other provisions remained or were substituted that imposed added construction phase responsibilities upon the architect that "were clearly the responsibility of the builder," Dowling says.

The 1975 edition of the code said, for example, that "before the issuance of the certificate of use and occupancy for . . . a structure, the licensed professional engineer or architect who prepared and filed the original plans and who supervised the erection of the structure shall file a verified report that the structure has been erected in accordance with the approved plans; and as erected, the structure complies in all respects with this code and all other laws governing building construction. . . ." The code states further

that "all fees and costs related to the performance of special services shall be paid by the applicant." As Dowling explains, the applicant might be an architect or engineer, with the result that the design professional could be required to pay for his own work.

In the recommendations for changes in the code, requirements of the architect or engineer are reduced. Part of the proposed new section on architectural and engineering services says that "unusual designs or magnitude of construction" may require "special architectural or engineering inspections," with the building official requiring "full-time project representation by an architect or engineer." If required by the building official, such a representative would keep daily records and submit reports. Fees and costs for these added construction management responsibilities would be borne by the owner rather than the applicant. Also, special professional service requirements would be determined prior to the issuance of a building permit.

would specify six-tenths air exchange per hour, an adequate level, says DOE.

Another concern is the potential liability to A/E's for the energy performance of buildings. DOE's general counsel Richard Kessler has said, "We have no answer to it." Both NSPE and ACEC are developing acceptable A/E compliance certificates. Biegel has suggested that perhaps responsibility should be shifted away from the designer to the owner. If designers are responsible, he added, they will need a separate insurance policy.

AIA quickly endorsed BEPS as a major step toward achieving the nation's goal of energy self-sufficiency and has a newly formed BEPS task force further analyzing its specific provisions. (Members are John Weidt, AIA, chairman; Huber Buehrer, AIA, and Charles Eley, AIA.)

The task force has been marshalling its arguments in favor of performance-oriented standards. A sampling follows.

One great advantage to BEPS' performance approach is that it will allow for more flexibility in design, which in turn will encourage design creativity and innovation. Unlike component-oriented standards, BEPS has no prescribed solution for a particular problem; energy-conscious design will apply to the whole building rather than to each part, thus new design forms will emerge. Regionalism will be a major benefit as designers respond to unique microclimate and site conditions.

BEPS contains no built-in preference for certain building materials or technology. Besides promoting design flexibility, this could encourage manufacturers and product suppliers to develop new energy efficient products.

Architects and engineers will be encouraged to think more in terms of energy efficiency early in the project, as there will have to be early collaboration among all parties involved. Natural design elements—daylighting, solar heat gain, trees, landscaping—will begin to have greater significance.

BEPS will give a boost to life cycle cost benefit analysis because the design energy budgets that will have to be developed have been difficult figures to come up with in the past. These figures will also provide an overall efficiency rating for the consumer's building.

And BEPS can interface with other federal programs such as tax credits for conservation and solar energy use, which require calculations of how much energy will be consumed.

The Department of Energy issued the proposed BEPS in November, setting public hearings for January and February and then delaying them for 60 days. The development of BEPS was mandated by

*continued on page 104*

## Energy

# Battle Lines Form over DOE's Building Performance Standards

Hearings begin this month on the Department of Energy's sweeping building energy performance standards (BEPS) after a two-month delay. Organizations of building professionals have used the time to develop positions on BEPS and on such basic issues as performance vs. prescriptive or component standards.

The performance approach is supported by the American Consulting Engineers Council (ACEC) and the National Society of Professional Engineers (NSPE), among others. ACEC energy director Steve Biegel, AIA, said that while its members are more familiar with the American Society of Heating, Refrigerating and Air-Conditioning Engineers approach, they see the value of the performance approach especially in that it encourages early collaboration between architects and engineers.

While ASHRAE and the National Conference of States on Building Codes and Standards (NCSBCS) have offered support for BEPS, they favor the component-oriented approach. They support bringing ASHRAE standard 90-75R and other such standards up to BEPS energy levels and offering the designer a choice. DOE has suggested that the implementation process be flexible to allow for either approach. A NCSBCS spokesman points out that it has set up a model code for

energy conservation that is similar to ASHRAE 90-75 and is used by many states. And, he says, designers are familiar with this approach, so why change it?

The 1976 law calling for the development of BEPS requires that they be put into effect a year after they are promulgated. Enforcement is to be handled by the state or local governmental agency that grants building permits. AIA supports implementation of BEPS "in a responsible manner but with as little delay as possible." ACEC, NSPE, ASHRAE, NCSBCS and the National League of Cities would like implementation delayed. "We suspect that it will be impossible to implement BEPS in one year," said Biegel. "It may take five years." ACEC suggests that BEPS first be voluntary.

Concern has been raised that indoor air quality may suffer in buildings too tightly constructed or insulated with materials that give off trace amounts of harmful substances. The Environmental Protection Agency warns that the more a structure is sealed, the more radon gas will build up. EPA estimated that radon gas, a product of radium, which is found in many building projects, may cause 10 to 15 percent of the lung cancer in this country. The Consumer Product Safety Commission is worried about fumes from urea formaldehyde insulation. BEPS



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The \$33-million building has two interconnected towers with 45-degree angled roofs. The roofs—a striking design feature—offer prime office space with spectacular views. A minimum of interior columns helps maximize use of the 531,000 sq. ft. of floor space, including the 3-level garage.

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The new building was erected on a narrow site—just half-a-block—and over 2,650 tons of A-36 and A-572 grade 50 steels were supplied by U.S. Steel. The fabricated steel was trucked from Portland at night and erected during the day using a single truck crane having a 280 ft. tower topped by a 170 ft. boom. This eliminated traffic congestion in a busy downtown area with a minimum of storage space. And the structural framing was completed one month ahead of schedule!

This handsome structure, incorporating the latest in building systems technology, is one more example of the design flexibility and practical economy of using structural steel.

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# AIA JOURNAL

As is our custom this time of year, we devote a good portion of this issue to AIA's convention city, which is shown below in the throes of its remarkable early growth. We also take a look at nearby Columbus, Ind., since it will be the focus of several convention tours and since the man who has made it a small-scale architectural capital will be a principal convention speaker. Rounding out the issue are a report on a genuine invention in the area of natural light and a look at Lever House, winner of AIA's 25-year award, partly through the eyes of the man who designed it. *D.C.*



Courtesy of The Cincinnati Historical Society



Allen Freeman

# CINCINNATI

*is a city strongly shaped by its setting. The most powerful shaping element, of course, is the Ohio River, whose early role as an artery of commerce made Cincinnati a city in the first place.*

*It is fitting that Cincinnati's most impressive man-made landmark is a creature of the river, a ruggedly graceful suspension bridge built in 1856-66 to the design of John A. Roebling and thus a precursor to the Brooklyn Bridge. It spans 2,252 feet and stands as a perennial goad and challenge to all who build in Cincinnati.*

*The skyline is set back from the river, and the space in between, once filled with warehouses and other appurtenances of river commerce, is now given over to entertainment and to the automobile. In the very lap of downtown, on a giant platform over acres of parking*



Allen Freeman



Balthazar Korab

*fed by a multilevel grid of streets, are Riverfront Stadium and Coliseum; the former the home of the major league baseball Reds and football Bengals; the latter the locus of concerts, cultural events and indoor sports.*

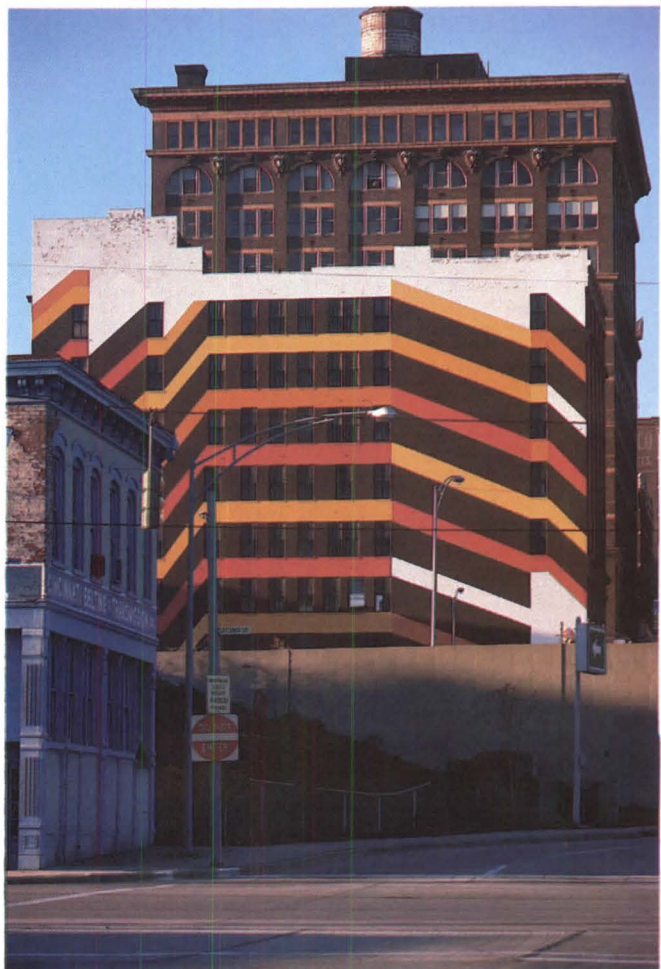
*Beside this complex, at the precise spot where Cincinnati was born, are serpentine steps to the river, much used for sunning in good weather. Behind the steps is a park, playground and pool (designed by Louis Sauer). This is the city's principal access to the river. On the other side, in Kentucky, residential and commercial development extends nearly to the water's edge.*

*The second strong shaping element was topographical. Downtown Cincinnati was built in a natural basin, enclosed by a crescent of hillsides (misnamed mountains) behind which the rest of the city continues on a higher level, as if on a plateau.*

*Thus encircled, downtown developed densely (the grain and overall density of Cincinnati give it, in places, more the feel a city of the Northeast than the Middle West). But it did not sprout much of a skyline.*



Allen Freeman



Balthazar Korab

*The photos at left and below (and on pages 49, top, and 52) were taken from Carew Tower, which was built in the 1930s and at 48 stories is still the tallest building in town. At the center of the photo at left is the new Federated Department Stores building by RTKL Associates Inc., more assertive in form than it is in height. The other building rising above the mainly lowrise downtown are, in the foreground, a postwar hotel by SOM, which was the occasion of some excitement at the time of its construction; and in the background, a testimonial to early faith in the glass and metal curtain wall.*

*As a result of a civic effort about a decade ago, wall murals are to be found all over downtown. The one below left almost seems to have derived inspiration from the Federated building but preceded it by several years.*

*Prominent in the foreground of the photo below are the pin-striped Dubois Tower by Harrison & Abramovitz and SOM's recent Central Trust Tower.*

*In the background, just beyond downtown, rises Mount Adams, best known and most fashionable of the hillside communities that ring the core. D.C.*

Allen Freeman





Photographs by Allen Freeman unless otherwise credited.

# The Shaping of a City's Character

*Cincinnati as 'a well preserved queen mother,' stylish and stodgy by turns. By David Bowes*

Mark Twain didn't look forward to the end of the world, but he had a plan. Upon hearing the last trumpet of doom, Twain intended to rush to Cincinnati and have 10 more years.

Did he really? It matters little. Fact and legend have a vise-like grip on each other here. The tale deserves the benefit of the doubt. As a chronicler of life along America's inland rivers, Twain saw a century ago what visitors still can see: Everything's up to date in Cincinnati—including yesteryear.

More than \$600 million in public and private funds have been spent, appropriated and earmarked since 1965 for downtown development alone. Yet the past lingers in visually striking ways. The urban fabric that Sinclair Lewis fashioned into *Babbitt's Zenith* in 1922 has resisted wear and tear remarkably well. One almost expects to see Superman leaping the Depression era buildings in a single bound.

There is no single handle for grasping a community that is stylish and stodgy by turns. There are, however, five things to keep in mind when surveying Cincinnati from the observation deck atop Carew Tower, downtown's tallest building, or ponder-

ing the clustered skyline from the brows of surrounding hills.

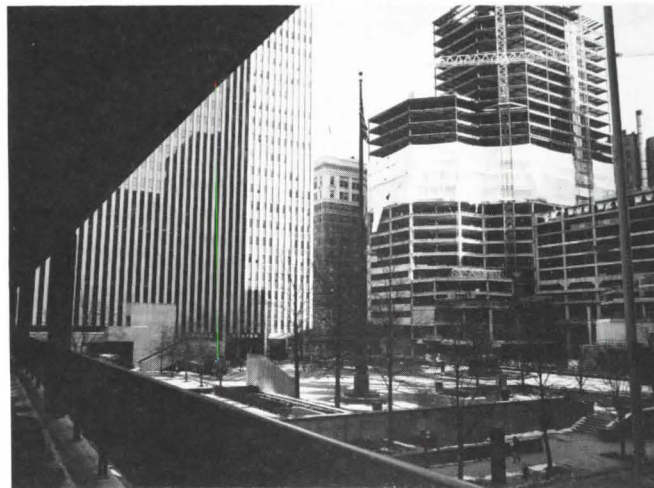
Great age, Southernness and slow growth are the first three clues. Others are process and people. Let's expand on these methodically, since River City wouldn't have it any other way.

Cincinnati is old and seems older somehow than its 190 years. Visitors arriving from the West and South recognize it is one of the industrially "mature" cities of the nation's Northeast quadrant. Easterners, by contrast, seldom are aware that it once boasted the largest population in America after several seaboard cities.

Granted, some local wags say "Thank God for the Alleghenies." Were it not for that mountain range, a number of Cincinnati landmarks could not be billed as the first observatory, or whatever "west of. . ." But it is equally true that Cincinnati was a prosperous sophisticated center of art, education and music when the now-larger Cleveland, Detroit and Chicago were still getting their acts together. In 1850 Cincinnati had 115,000 people to Chicago's 29,000.

The place boomed early. It did a San José in the 1840s, doubling its population as immigrants from Germany—burghers and intellectuals alike—joined the established Yankees in the New World Rhineland that looked like home. Later, when Eastern and Southern Europeans poured into cities bordering

**Mr. Bowes**, who now lives in Washington, D.C., edited *Cincinnati Queen City* magazine and was associate editor of the *Cincinnati Post*.



*Just as the 110-year-old Tyler Davidson Fountain (above) has become a symbol of the city, Fountain Square Plaza, vastly expanded and redesigned by Baltimore's RTKL, has become downtown Cincinnati's all-important gathering place. The plaza (above right, shortly after completion), which incorporates an underground parking garage, has stimulated surrounding development, including Fountain Square South (right), a mixed-use complex by Harrison & Abramovitz.*

the Great Lakes, Cincinnati became essentially a monoculture. (To this day it lacks the ferment of ethnic diversity. But blandness can have a silver lining: Functional consensus is far less elusive here than it is in more diverse cities.)

Cincinnati wasn't called "Porkopolis" for nothing. Strolling along Garfield Place of Dayton Street now, one can imagine the pungent commotion as herds of pigs were driven past the genteel town houses of brewers and packers. Down along the levee, most of which now lies beneath Riverfront Stadium, life was seamy and then some. The sternwheelers that angle-parked there by dozens are venerated in bank lobby murals today.

Inevitably, river and railroad cities nearer the expanding frontier would not be denied. St. Louis's gain was Cincinnati's loss. Though Denver is probably the "queen city of the West" at this point, think of Cincinnati as a well-preserved queen mother looking with vague disapproval (and a poignant trace of envy) on bigger towns whose wealth is no older than the automobile and other latter-day novelties.

Add to Cincinnati's age its Southernness. Not only is Kentucky at the southern end of Suspension Bridge, but that commonwealth owns the Ohio River right to the Ohio shore. The closest thing to a big commuter crush is rush hour in the downtown Dixie Terminal when Kentuckians by thousands

board buses for bedroom communities.

That sort of Southernness is obvious from the map. More subtle, and certainly more important to an understanding of Cincinnati's style and mind-set, are the middle border ambiguities it shares with Baltimore and St. Louis. During the Civil War, the city's merchants sold gunboats to the South as well as to the North—even as other citizens were stalwarts in the underground railroad that helped slaves reach freedom.

Long after it relinquished its role as a window on the West, Cincinnati continued to be a gateway to the South. The city's big radio stations beamed music and merchandise into Appalachia around the clock. Union Terminal brimmed with troop trains during World War II. Even now, Northern freight bound for Chattanooga rolls on a right of way—a remnant of mercantile empire—that the city owns and leases to the Southern Railway.

The city proper reveals a Southern side. By following markers for the Queen City Tour, a 60-minute auto route beginning at Fountain Square downtown, visitors can sample a cross section of Cincinnati's 45 distinct neighborhoods: White and black enclaves coexist in what cities to the south once called salt-and-pepper patterns of settlement. Houses and factories stand cheek by jowl; many citizens walk to work almost as easily as they get to a mom-and-pop bakery.



Balthazar Korab

The skywalk system (left) spreads west from Fountain Square, linking office and hotel buildings with the convention center at its end. Lytle Park (right) was rebuilt over I-71 on the east end of the core. Western Southern Life Insurance Co. closed the highway incision in return for air rights to build the lowrise condominiums at far right in the photo. The venerable little house in the center of the photo is the Literary Club of Cincinnati.



## Slow growth and a cautionary sort of conservatism.

This human scale, coupled with a person-to-person friendliness reminiscent of Atlanta before it grew, extends also into Cincinnati's civic and political realm. Politeness prevails. Some astute observers call it conflict avoidance; a few find it downright Faulknerian. The fact is that patience, modulated tones and a willingness to open the conversation with a little talk of Reds or Bengals can yield benefits worth the cost.

No city so large, it has been said, elects only nine members to city council in at-large elections. And lest the political process become too raucous and Clevelandesque, these nine choose the mayor from their number. At present a coalition between Democrats and a good-government group called the charter committee has divided the two-year mayoral term equally. Their choices for city hall's biggest office suggest a lot about the style of public life in a town whose ancient namesake left his plow to defend Rome.

To succeed charterite Mayor Bobbie Sterne, an affluent activist and former nurse, the charterite members of council chose David S. Mann, a 40-year-old attorney who was graduated *cum laude* from Harvard University and *magna cum laude* from its law school. The Democrats tapped J. Kenneth Blackwell, 32, a black educator who gave up pro football, trimmed his Afro after losing a school board election and wears vested suits of blue and of bankers' gray.

This is not to say that Cincinnati's solid citizenry—a social historian once dubbed it "serene"—has not endured shrill invective from the leader of a police union and militant pronouncements from spokesmen for striking teachers. Winds of

change do rustle the smaller leaves, even if they're seldom brisk enough to bend branches. The future is often tardy but always arrives.

Visitors must decide for themselves whether John F. Kennedy's puckish assessment of Washington, D.C.—"Northern charm and Southern efficiency"—applies also to Cincinnati. Suffice it to say that the place behaves rather like a city state lying immediately south of Ohio.

Having colored Cincinnati old and somewhat Southern, now draw its growth line flat. Census figures chart a decline from 502,000 in 1960 to 412,000 in 1975. The standard metropolitan statistical area, while remaining in the 1,350,000 range, fell in national ranking from 22nd to 25th in the first half of the '70s. "We journeyed into the 20th century with grace," says the sound track of a Chamber of Commerce slide show. Grace, not growth, is the city's lot today.

A diversified economy somehow emphasizes the slow growth feel of Cincinnati even as it brings stability to the community. There's not much boom and not much bust. Forget Seattle, Detroit and other towns with one crop economies. Consistent with the vintage industrial mosaics that distinguish the waiting areas at Greater Cincinnati Airport, the variety of companies that buoy Cincinnati still is notably wide. After Procter & Gamble, which sells cleanliness even during hard times, no single employer really dominates. Local machine tool firms are sensitive to the fortunes of big industries elsewhere, but export markets help to keep them busy.

Though bread lines were shorter here in the bleak '30s—Cincinnati's insist it's a lovely place to spend a depression—and though it cares for its own by consistently exceeding big





*Adding to the flavor of downtown are the Isaac M. Wise Temple (facing page, right), which faces the neo-Roman Saint Peter-in-Chains Cathedral (above), alongside the Romanesque City Hall.*

annual United Appeal goals, there's another side to slow growth/no growth as an involuntary ethic. It helps to explain Cincinnati's storied conservatism—not the documentable political kind but a more subtle, cautionary sort.

If a community is growing economically and in population, that growth offers wider opportunity. People with ideas, access to capital and the assurance of expanding markets need not wait in line for their turn to move up existing ladders of advancement. If they're willing to take the risk, they build their *own* ladders and climb faster, hiring design professionals more often as they climb. Phoenix, San Diego and Houston take this for granted.

Not so in Cincinnati and other inland cities whose boom phase is but a memory. As Daniel Patrick Moynihan once told a convention of advertising executives, a no growth society is most predictably a conservative society. People who occupy the rungs of the available ladders tend to avoid risk, Moynihan explained. Caution is rewarded and innovation thwarted where safety, not growth, is the dominant value.

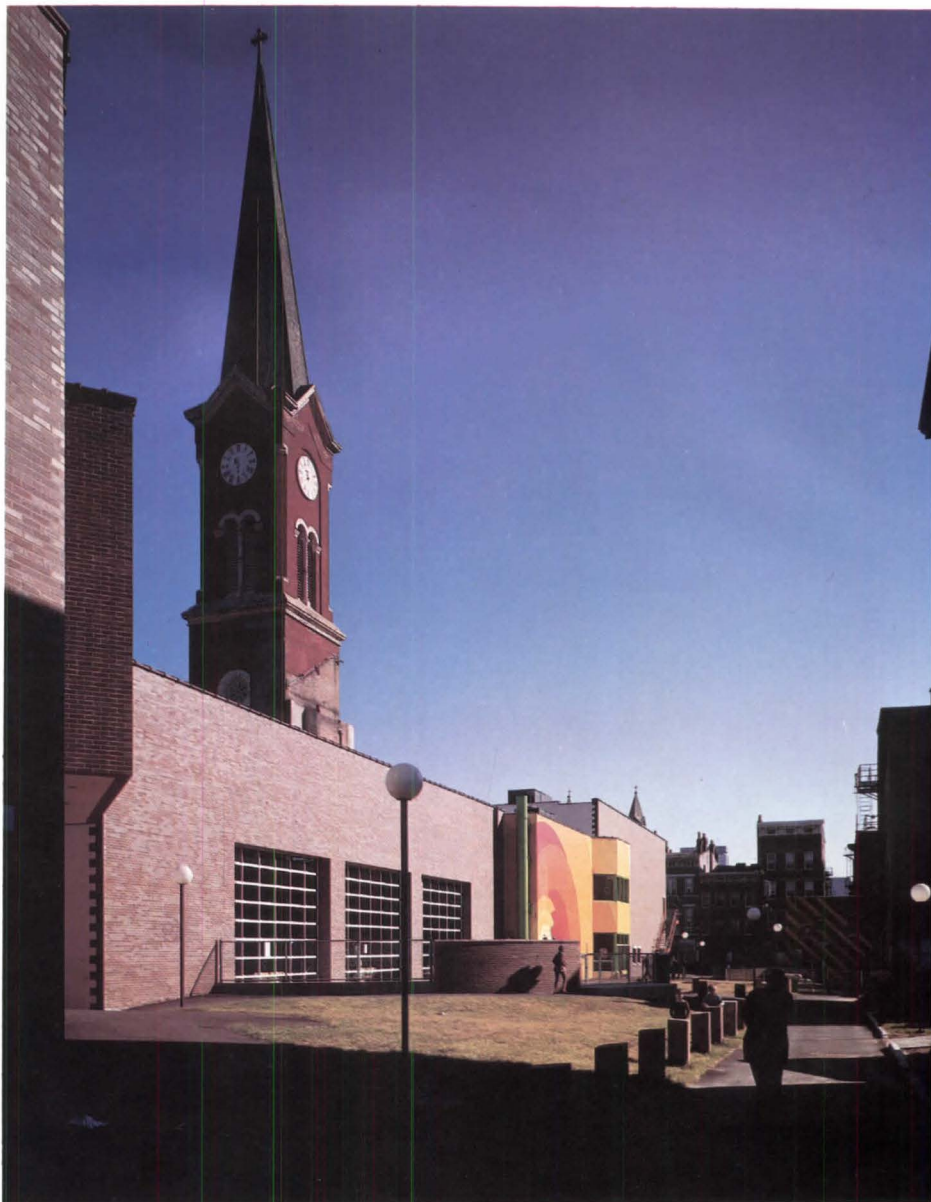
Paradoxically (a word one finds it easy to use often when describing Cincinnati), pervasive caution and restraint have had a lot to do with the Queen City's success on the urban front. For a decade delegations from Buffalo, Knoxville and other cities have asked how such a vigorous downtown and such livable in-town neighborhoods could be found in Cincinnati almost alone among big, old cities. Some answers have been more obvious than others.

For one thing, Cincinnati isn't quite big enough to break into halves or thirds. Residents of the somewhat progressive east side and the nay-saying western hills may regard one another with

*Immediately adjacent to downtown is Over-the-Rhine, originally a working class German neighborhood that is now an integrated community of blacks and whites with ties to Appalachia. Findlay Market (below), built in 1852 and in continuous use since, is Over-the-Rhine's centerpiece and a magnet for shoppers from many parts of the city. The brightly painted community center (right) recycles several older structures and clusters recreational and service facilities in a block adjacent to the market.*



Balthazar Korab



## A German-American heritage of civic pragmatism.

polite suspicion, but both share a single downtown that is anchored by a 58,000-seat stadium, an indoor coliseum that seats 18,000 and the region's biggest convention center. Said a former San Franciscan, weighing the Cincinnati telephone directory in his hand, "This city is exactly the right size."

In addition, Cincinnati dominates a sizable hinterland. As the *New York Times* put it in 1972: "Hopelessly 'hicky' to some natives, the Queen City is a beacon of civilization to others in the region." People drive two hours from Columbus to dine in Cincinnati's French restaurants, 90 minutes from Louisville to buy suits at Brooks Brothers and nearly three hours from Indianapolis and West Virginia for major league baseball and football.

True to its ingrained caution, however, Cincinnati has made urban development headlines by *not* taking significant risks. Given a little breathing space by that 10-year lag of which Mark Twain spoke, community leaders intuitively (and by leaning on good consultants) monitored the survival struggle of cities that were falling apart faster, of patients that needed stronger medicine. What flopped in New York City was avoided or canceled early on. What flew in Philadelphia was embraced, adapted and claimed.

Cincinnati, for its size, offers few examples of eye-popping modern architecture. Handsome as they may be, the newer office towers are derivative expressions of structures that design firms headquartered elsewhere first conceived for larger cities. And

farsighted though they are, the second-level walkways that connect these buildings owe much to Minneapolis.

What the Queen City does offer in full measure is a felicitous fusion of old and new architecture, the fruits of painstaking planning and a scale so cosy that one matron from the East, upon first spying downtown from an overlook on Mount Adams, declared she had to buy it for her grandchildren. Which brings us—after age, Southernness and slow growth—to process and people.

If a dozen German-Americans were washed up on a desert island, within a week they would be laying out parks, organizing an orchestra and summer opera, designing an art museum and conservatory and catching animals for a zoo. Whatever their priorities, the founders of the urban *kultur* that still marks Cincinnati were frugal and pragmatic; they rarely took flights of fancy. Though they did not dream, they certainly envisioned—and still do.

Even now a 24-member, all-volunteer "citizens' working review committee" from business, civic and government sectors is systematically charting the evolution of the city's design plan beyond the year 2000. Up to \$250,000 in federal funds will pay for this detailed planning. "Cincinnati has established a solid base in the core," says Charles E. Lamb, FAIA, vice president of Baltimore's RTKL Inc., the consulting firm that helped the first time around. "So the next thing is to deal with the frame area just beyond the 12-block central business district."

If history repeats itself, a city where many questions of public policy are shaped in private by business leaders will again see a

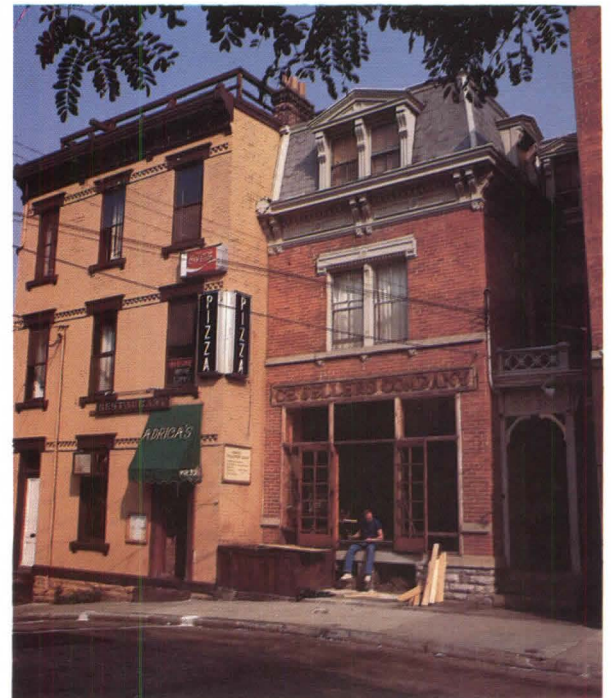


West End is the sprawling consequence of urban renewal, stretching from Union Terminal (left) to the Music Hall (below) on the edge of Over-the-Rhine. Its Queensgate I is dreary blocks of anonymous 1950s housing known locally as 'the project'; the more recent Queensgate II includes private development connected to the Music Hall by second-level walkways (bottom right). The area is graced by rows of surviving 19th century houses, many of them vacant and boarded (bottom left).





*The phenomena of rehabilitation and general upgrading have spread on close-in hillsides for 15 years or so. Apartments by Hardy Holtzman Pfeiffer (above) cling to a bluff overlooking the Ohio River and blend with the varied Victorian housing stock (right and below) in Mount Adams. Mount Auburn's Glencoe Place steps down in rows of 100-year-old houses (left).*



## Two who helped fashion the city's new downtown.

highly public planning process covered by the press. The final (though amendable) plan will contain no surprises for anyone who has been paying attention. City council will fairly promptly adopt it as a legal document because four of nine council members are participating.

The initial plan was initiated in 1964 after earlier efforts were stalemated over issues of parking, street closings—and treatment of the Tyler Davidson fountain, an outburst of Bavarian bronze that is sacred to Cincinnatians.

When Archibald C. Rogers, FAIA, of RTKL appeared before the panel screening architect-planners for the downtown project that became Fountain Square, he gave only brief answers to its questions and declined to set a timetable for a run at the stalemate. Still, no sooner had he returned to the airport than the candidate was paged and informed of his selection. Rogers had not known it at the time, but Cincinnati's business leaders were looking for someone they could trust.

Hailing from a city very much like Cincinnati, the buttoned-down Rogers, with a small boutonniere in his rolled lapel, looked as if he had just stepped from lunch at the Queen City Club. No brushed denim suits. No turquoise beads. His appearance and manner helped to earn instant credibility for his ad-



vanced ideas on urban design, traffic flow and the working review committee concept.

"As we went up the ladder of decisions," Rogers recalled later, "it became clearer and clearer that what was needed was an underground parking garage and a chance to put the old lady (the Genius of Waters atop the fountain) into a new 'room.' It was clear we needed an important symbolic statement, a bulls-eye, if you will, like the Washington Monument." So Cincinnati's fountain became the focus of the focus.

RTKL has had more than one piece of subsequent Cincinnati action. When economic recession slowed the pace of redevelopment, when the city lacked lively prospects for the block where Fountain Square South now rises, courtly Arch Rogers was always in evidence, figuratively holding his complicated client's hand. A marriage made in heaven.

Few citizens are more at home with the client's complexities than Nelson Schwab Jr. Though it's a point of pride with most business leaders here to "take their turn" in civic harness, few if any have Schwab's lifelong awareness of urban planning. He's involved in the current design plan review in part because he participated in the review in 1964. He helped out then in part because his grandfather, Dr. Louis Schwab, was an author of the city's original 1925 master plan.

Schwab's role is more than a handed-down obligation, however. Involving the private sector in planning has proved to be the trump card in the city's winning hand, as Jane Brazes of the *Cincinnati Post* observes. Time and again, the job of keeping the requisite fences mended has fallen to this lawyer and adviser to corporations large and small.

Like Rogers, Schwab is trusted in the business community.

Families whose companies were wooed or threatened with take-overs by outside conglomerates often turned to him for counsel in their hour of decision. This inside rapport—not unlike that gained by doctors and the clergy—helped to propel Schwab to the leadership of the Chamber of Commerce. Even those who consider his steady civic involvement less than altruistic acknowledge that Schwab's name is synonymous with shuttle diplomacy between executive suites and city hall.

"The key to the success of the central city," Schwab says, "is the major corporations having a commitment to the downtown. They believe in this, and they put their money where their mouths are."

The extent to which they continue to do so will depend in significant measure on Schwab's perceptions of the process. At present he chairs the downtown development task force of the Cincinnati business committee.

The committee is the latest manifestation of a recurrent local impulse: Concerned that the citizenry is leaving too much to businessmen, business will pull back for a few years and say it doesn't belong in "politics." Then along will come something business cannot ignore—something like fiscal chaos in the public schools. Suddenly corporate systems analysts are being lent to the schools, and corporation presidents are referring in private to "our" candidate for the board of education.

Schwab may be riding his crosstown shuttle somewhat less of late. New construction is bringing tangible change. Cincinnati, says the morning *Enquirer*, is "back on the march." But if the economy should slow things down again, if divergent opinions on strategy should surface, Nelson Schwab will be searching for common ground.



## Leaders with varying spheres and constituents.

In the governmental vanguard of a city on the march, Nell Surber relishes her role. The first woman to head a municipal department in Cincinnati, Surber has been director of urban development since 1976.

Raised in the mining town of Hazard, Ky., she went from New York City's Barnard College and the University of Cincinnati's law school into insurance. Steeped in the real estate side of that work, she joined the city's urban development staff in 1960 as a land disposition officer—in time to be present at the creation of the downtown area's subsequent renaissance. Now she jets to Faneuil Hall in Boston or wherever else the nation's mayors meet to hear how a handful of truly livable cities found success.

Surber plays a waiting game if necessary to assure quality. "It's a matter of holding out for the best development possible," she has said. "It can drag on for years, sometimes, but in the end it's worth it. We've learned. It's usually when we have compromised and allowed people to cut corners that we have regrets later."

If a carrot will hasten some worthy development, Surber is comfortable with that. Her department backs tax abatements as incentives to compete with suburban office parks. When the school district argues that abatement of property taxes further reduces the take for public education, she replies that city schools don't gain anything if developers invest instead in outlying communities plugged into the Interstate highway system.

Unlike the current occupancy rate of 92 percent for downtown office space, the demand for center city housing is less certain here than in the East. Surber, for her part, has expressed faith in such housing since at least 1974. Patiently she reiterates the point for a new go-round of citizen review: "We've gradually come to the conclusion that the residential program is the only deficient area in our redevelopment."

Not deficient for Surber, however. Preservationists who grumble that she blind-sides them at council hearings also know that the first renovation on Mount Auburn's Liberty Street was Surber's own town house.

"Mount Auburn is *our* neighborhood," says Carl B. Westmoreland, a neighbor of Surber's and the driving force behind the resurgence of the area where President William Howard Taft was born. "We decided that if we're going to live here, then we're going to own it. We've done that and it's given us more political clout, more impact with the police, with everybody.

When we go to city hall to talk about public improvements, we're not going now like beggars. We're going as people who've done something and deserve consideration that goes beyond charity."

Termed "bilingual" by *Smithsonian* magazine because he speaks street talk and drawing room talk, Westmoreland is the lean, bearded black man who led the Mount Auburn Good Housing Foundation from a \$7,000 gift check in 1967 to a \$9 million, nonprofit rehabilitation business today. Early on, when police refused to shut down a warehouse that blighted the then-black neighborhood, "we raised \$186,000 cash and bought it." Now it's a health center. Slum landlords likewise were bought out. Dope pushers were chased.

As executive director of the citywide Neighborhood Housing Services, Inc., Westmoreland has become something of a prophet in his hometown. From Madisonville to Over-the-Rhine—a once German neighborhood now shared by blacks and white Appalachians—old housing stock that still is sturdy and plumb is being rescued from social and economic limbo. Neighborhood betterment groups are on the muscle. When Cincinnati Gas & Electric Co. sought to enforce a ban on new connections for previously abandoned buildings, the utility caught hell from many quarters and reconsidered.

In housing as in downtown development, Cincinnati is the beneficiary of luck and process. When Martin P. Walsh Jr., former deputy city manager, arrived from St. Louis to reorganize the city's housing division, he found housing abandonment here to be "several years behind the problem" when expressed as a percentage of total land area. St. Louis was pulling down nearly 2,000 derelict structures a year, Cincinnati, less than 200.

Historic preservation is the special purview of Cincinnati's Miami Purchase Association. Here again, however, Carl Westmoreland's pragmatic efforts personify the work of many in this uphill battle. (Though Findlay Market and a few other local totems rather easily won a new lease on life, business leaders and their primary voice—the *Cincinnati Enquirer*—have been cool if not downright hostile to the urban conservation task force and to legislation aimed at retarding the disappearance of the city's 19th century ambience.)

Westmoreland characteristically discovers a fusion of interests. In the case of Union Terminal, for example, his detailed proposal for a multiethnic shopping center asserted the black West End's claim on the depot as part of its neighborhood heritage. For the city at large, and for the lending institutions that

*Above, Nell Surber; below, Carl Westmoreland, and across, Pope Coleman in downtown's newly renovated Palace theater.*



Photographs by Melvin Grier

once viewed him with skepticism, Westmoreland equated the terminal's potential with that of the Ghirardelli chocolate factory in San Francisco. Of all the public and private uses advanced in Cincinnati's preservation saga of the '70s, his vision was perhaps closest to what visitors to the terminal now can see. Small wonder that this dude in the tailor-mades is a familiar figure in the WASPish precincts of the National Trust for Historic Preservation. He's on the board of trustees.

Another preservation effort to which Cincinnatians have come late is the cause of nature's own architecture—the hillsides that make up 20 percent of the Queen City's land area. As recently as 1973, the envelope labeled "hillsides" in the *Post's* reference library contained a single clipping. Three years later, thanks to the perception and persistence of E. Pope Coleman, the National Endowment for the Arts had awarded Cincinnati \$40,000 to help establish a hillsides trust and the *Post* had published a related 20-page supplement called "A Topography of the Mind."

Coleman, whose modest Cincinnati Institute exists to "enhance the quality of life in the urban community," looked at green-mantled, fossil-rich bedrock from the Ordovician Age and saw an irreplaceable asset taken dangerously for granted. Until the advent of heavy earth-moving equipment in the early 1960s, the hillsides were safe from abuse. Since then, one whole slope has been carved away for a shopping center that flopped, hill-tops have been flattened for apartments and inflexible codes have been barriers to environmentally sensitive development. Today, cuts and fills are subject to controls that seldom cramp the style of architects who design with nature.

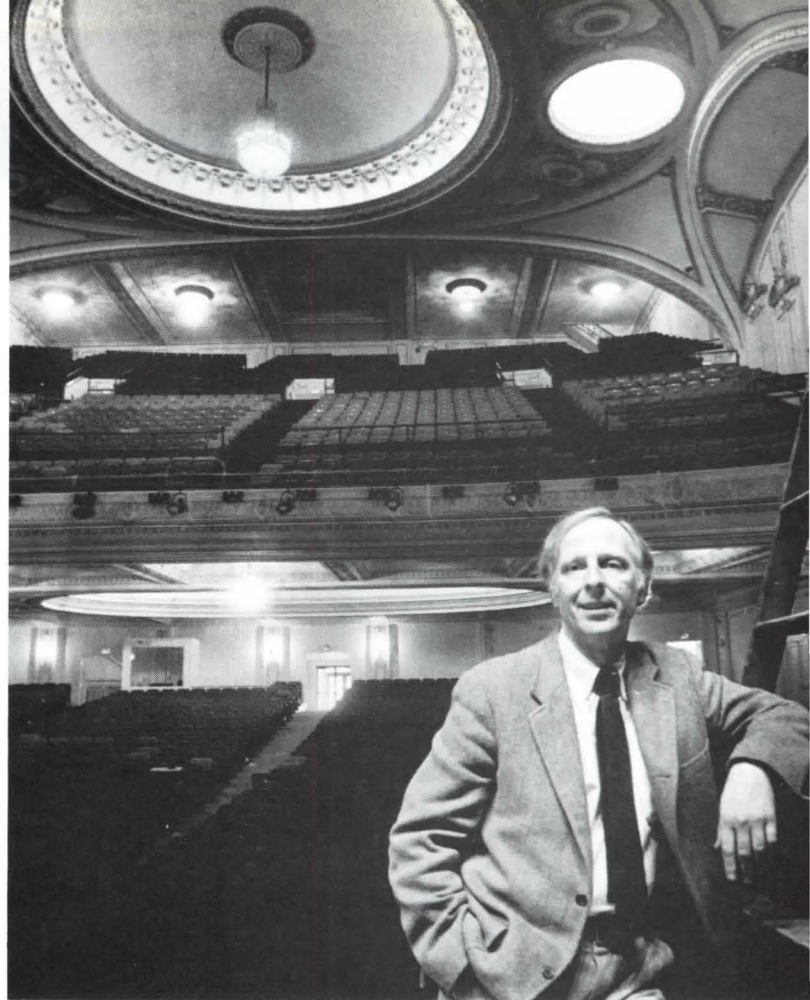
Coleman is a former insurance salesman turned "professional volunteer" and "urban bag man," to quote his own job descriptions. Dedicated to behind-the-scenes persuasion, insistent that recognized community leaders take credit for successes, he works to lift the city's sights when it is about to embrace mediocrity. For example, he snatched the riverfront park design process from the heavy hand of civil engineers by introducing decision makers to landscape architect-planner Robert Zion's projects in other cities.

"Any time we have to appear in public and say 'don't,' I feel we have failed," Coleman explains. "We should work with people, help them see mistakes, and help them find a better way." This is not to say that his *ad hoc* task groups—think of them as M.A.S.H. units for urban design—do not blow their cover if tactful suasion doesn't work in time. More than once, when the town was debating something truly tacky, Coleman had creative notables from both seaboard on stand-by in case their testimony was needed. The quiet money that supports ventures such as this comes in significant measures from old-line reform Jewish families. Their contributions to Cincinnati's culture and maturity are incalculable.

By arranging to interview hundreds of citizens for the newspaper supplement, Coleman confirmed that Cincinnatians' psychological awareness of their hillsides runs deep. Said William Kinzeler, who operates a riverboat on the river that carved them out: "They're not making any more hills. So what we have, we have to use well." Romulus and Remus, whose statue in Eden Park was a gift from the city of Rome, would have approved.

They're not making any more hills. They're not making any more Charlie Tafts, either. Having retired from city council at age 80, Charles Phelps Taft surveys his community from a Mount Adams apartment overlooking downtown and the basin. Surrounded by photographs of famous family and famous friends, this Taft who focused on Cincinnati still reveals a concern for the place that is tantamount to a kind of civic religion. "I think I can go fishing now," he once confided to a visitor. "We have a new city manager at city hall and a new rector at Christ (Episcopal) Church downtown."

Charlie, as he is known to friend and foe alike, seldom wets a line. To this day, however, a canoe rides atop his tan Maverick.



Once a one-of-a-kind political billboard, it now announces from outside sundry clubs and public buildings that this man who spent childhood years in the White House is authenticating another occasion simply by being there.

Of course Charlie is not content to simply "be" anywhere. He's never at a loss for words. A generation of listeners was addicted to his daily radio commentary about whatever popped up in voracious reading. From his seat in council (where he'd peel oranges and listen to baseball broadcasts), Charlie would tell a bemused Queen City that the juxtaposition of Yale's Woolsey hall and Beinecke rare book library says it all about architectural incompatibility around Fountain Square. When recent bitter winters peeled paving tile from the fountain plaza, his elephantine memory produced the names of council members who had voted against more substantial stuff more than a decade earlier.

This living national landmark and his nonpartisan charter committee epitomize what is best and therefore, somehow, most frustrating about a city that remains one of America's better-kept secrets. The quality of governance is so high that the most hardened cynic would have to give it praise. Yet even *enlightened* paternalism can stunt the growth of an electorate and produce, when policy is translated into physical reality, a cityscape that reveals bland conformity as well as unusual beauty.

Mark Twain was right; the place is an enigma. Though its business leadership can be demonstrably cool to outsiders who challenge the established order, Cincinnati brims with hospitality for newcomers content to enjoy the place as it is. County Prosecutor Simon Leis' antipornography crusades have wide popular backing, yet one married politician nudged from office after sexual indiscretions is back winning re-election handily. What Savannah is to Georgia and San Antonio is to Texas, Cincinnati is to Ohio.

"Our goal," Charlie Taft told the late Edward R. Murrow, "is the accomplishment of God's broad purpose in friendly souls working without haste and without rest." Charlie's credo explains why travelers who discover Cincinnati return home saying they have seen the past—and it works. □



*The slender bell tower of Eliel Saarinen's 1942 First Christian Church and the Victorian clock tower of Isaac Hodgson's 1874 courthouse are downtown's principal landmarks. Right, Henry Moore's 'Large Arch' during an outdoor concert in the plaza bordered by the Saarinen church.*







Photographs by J. Bruce Baumann

Nancy Lickerman Halik is an articulate young architect in Harry Weese's Chicago office. A graduate of the University of Illinois and of Michigan, she is also, in a way, a graduate of her hometown, Columbus, Ind. Of the 40 or so buildings in and around Columbus by some of the best U.S. architectural talent, she says: "When I am designing, I've got the forms and concepts of those structures already in my vocabulary."

Dan Rawlins, Nancy Halik's classmate in high school and at Illinois and now working for James Associates, architects in Indianapolis, spent his 1974 summer vacation assembling and cataloging design work and documentation of Columbus buildings. He now appreciates having grown up "in a few square miles where you'll find more pounds of good architecture than probably any place else in the country."

The proportion of young people who choose architecture as a career is high in Columbus, people there will tell you. This is one aspect of a goal in Columbus, the "rubbing off" of excellence. Life in Columbus has aspects of inhabiting a museum. Sanctioned and volunteer tour guides abound to point out the early Fletchers, the recent Kennons, the Girard restorations. But the town's museum-like collection brings to mind the harder question of integrating architectural jewels into the larger realities of urban planning and design.

Columbus is an unexpected setting for a concentration of good architecture. Situated on flat farmland 45 miles south of Indianapolis—not a prairie village, as journalists from the East have called it—the 160-year-old seat of Bartholomew County has become a manufacturing center in recent years with a population now approaching 40,000. Columbus has several medium-sized plants, including Arvin Industries, maker of automotive parts and employer of 1,800, and Cosco, manufacturer of housewares, with another 900. But by far the dominant presence in the community is Cummins Engine Co., largest independent U.S. producer of diesel engines, the ones in the big trucks made by Mack, White, GMC and others. Cummins, which employs more than 11,000 locally, has drawn talented people to Columbus and kept them there by paying good wages and, significantly, by making Columbus a more desirable place to live. The county is church-going (heavily Protestant), white (98 percent), affluent (almost 90 percent of its families earn more than \$12,000), politically conservative (slightly more Democratic than Republican) and supportive of public schools.

## Living in an Architectural Museum

*The local impact of the nationally famous buildings of Columbus, Ind. By Allen Freeman*

How the head of Cummins, J. Irwin Miller, Hon. AIA, set off the metamorphosis of Columbus is well known. Now 70, Miller is well-read, accessible, Republican, liberal by southern Indiana standards and a national leader in the Church of Christ. He recruited black executives for the engine company in a town with a miniscule minority population, and he pushed for an open housing ordinance there. His banking family, the Irwins, provided several generations of community leaders. After school at Yale and Oxford, he returned in the early '30s to his hometown and became vice president and general manager of Cummins. The engine company was small then, and Columbus was just another southern Indiana country town.



Allen Freeman

*Above, the long shadow of Eliel Saarinen's Christian Church tower meets I.M. Pei's 1969 Cleo Rogers Memorial Library. Next to it stands an Irwin family house. Left, Lincoln Elementary School of 1967 by Gunnar Birkerts is encircled by linden trees which enclose a sunken play area. Below, the 'commons' of Mitchell-Giurgola's Columbus East Senior High School of 1972. Fire Station No. 4 (across page) by Venturi & Rauch faces a Columbus subdivision on the east side of town.*



Orlando R. Cabanban



Rollin La France



## The Cummins program began with the schools.

In the '40s, great architecture arrived in town propitiously when Miller's uncle, W. G. Irwin, underwrote Eliel Saarinen's fee for the design of the downtown First Christian Church, completed in 1942. Eleven years later and two blocks away, Eero Saarinen's bank office for the Irwins opened on Washington Street, and in 1954 Miller, as head of the Cummins Foundation, started the architectural program which has made the community blossom.

The foundation agreed to pay architectural fees for new schools built by the city-county school system, an offer later expanded to include any local public buildings. Ground rules state that the designer must be selected from a list of six (or more if needed) first-rank architects submitted by a disinterested panel of distinguished architects. A new or revised list is submitted for each building. Architects must be given responsibility for designing the total building, including siting and color selection, and the right to recommend or approve landscaping and furnishings. At least 12 months must be allotted to plan, design and propose working drawings, and additions must be designed by the original architect.

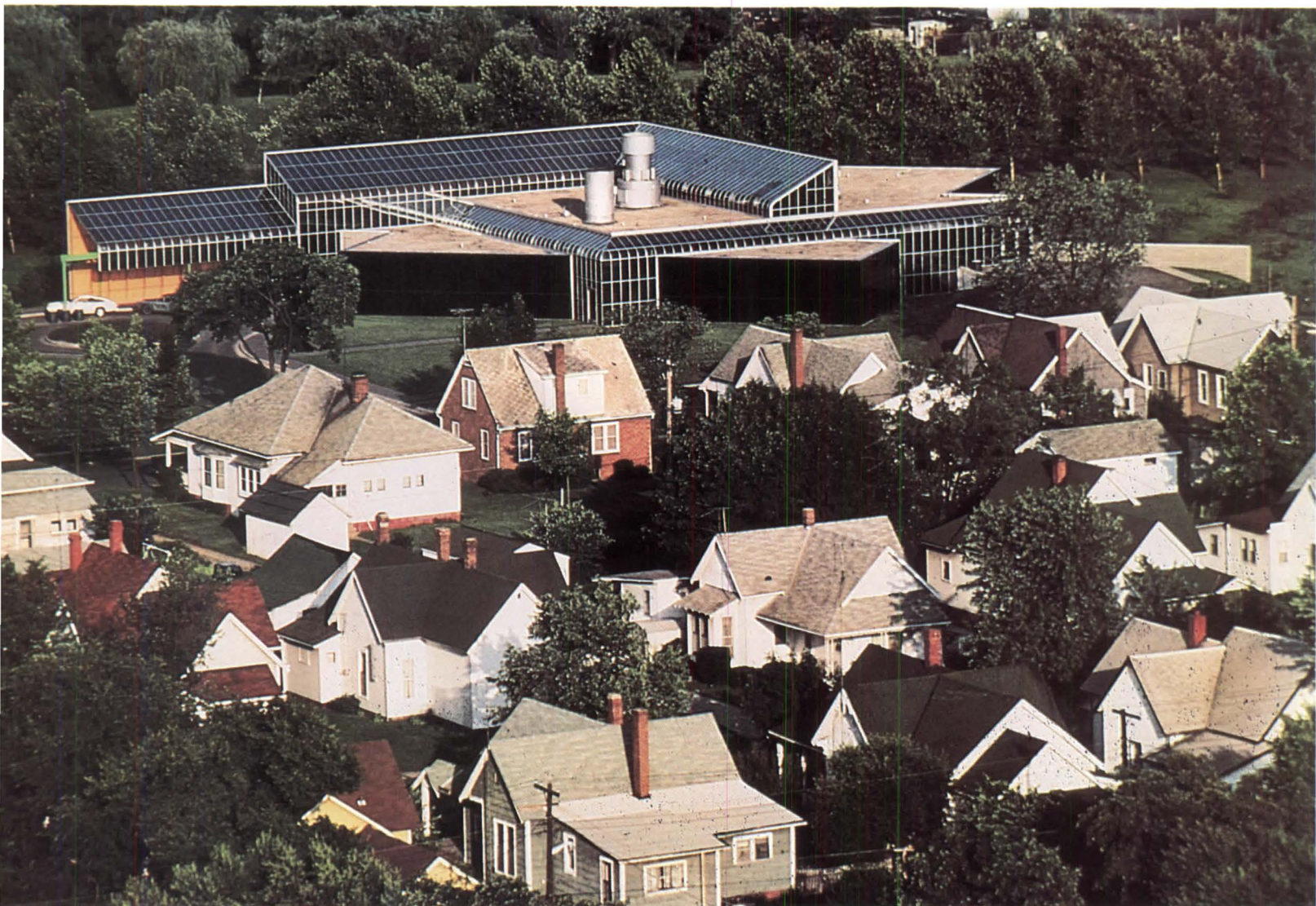
The results include schools by Weese, Birkerts, The Architects Collaborative, Barnes, Johansen, Caudill Rowlett Scott, Mitchell-Giurgola, Warnecke, Noyes and Hardy Holzman Pfeiffer; a library by Pei; a fire station by Venturi & Rauch, and, soon to be completed, a city hall by Skidmore, Owings & Merrill. Built outside the program, there are churches by the younger Saarinen and Weese; a post office, Cummins factory and Irwin bank addition by Roche & Dinkeloo, a newspaper building by SOM and the list goes on. It is this independent commissioning of good architects that is the most visible "rubbing off" aspect of the Cummins program.

The two most recent buildings associated with the Cummins program are the city hall on the south end of downtown, and a

school in final design stages for a site just outside city limits. The city council seems to have been impressed with the inherent prominence and symbolism of the planned civic building. Carolyn Lickerman, a second term council member and 20-year resident of Columbus, easily remembers by name the six architects interviewed: Edward Barnes, Richard Meier, Kevin Roche, Philip Johnson, Paul Kennon of CRS and Charles Bassett of SOM. Bassett got the job, "partly because of his Midwestern background. He is from Michigan, and this building had to express the feeling of the community," she says, relating her image of Columbus to "his good, clean design and open landscape office space." Max Andress, who was then mayor, says, "We felt that Chuck was one of us. He seemed willing to work with us." That quality became vital when bids on the \$4.5 million project came in way over estimates: They pulled costs into line with the help of a retired Cummins executive who came in as project manager.

Susan Trautman is a school board member and a law student with a family. She can't easily remember the names of all six architects on the Cummins list for the new school, possibly because the board interviewed regional architects also. There is precedent for foregoing Cummins money. For the most recent previous school in the county, the board chose a large Indianapolis firm that has built many schools statewide. At that time, the board was controlled by a faction that believed the Cummins program produced buildings that are too expensive to build and maintain. That thinking is not dominant on the current board.

For the new school, says Susan Trautman, the board visited buildings designed by each of the Cummins architects and sent questionnaires to former clients on the architects' abilities to meet budgets, stay on time lines and produce buildings that are energy efficient and functional. One criterion was someone with school designing experience. Several on the Cummins list had designed more schools than Richard Meier, but he got the job for his "fresh perspective." So far in this, her first experience as



## Critics use roof leaks to discredit the program.

an architectural client, Trautman has learned the frustrations of trying to meet a budget during heavy inflation, and the importance of frequent communication with the designer.

Roof leaks have been a problem with local schools, and this has become a rallying point for local critics of the Cummins program architects. As a matter of fact, the school designed by the Indianapolis firm also had a leaky roof. "But the architect corrected it—certainly a plus as far as we are concerned," says Trautman. As far as the next school is concerned, "I'll try to keep an open mind," she says. "But I favor the program. Perhaps some really outstanding architect would beat out anybody that the foundation had on the list. But if it is anything like last time, I really can't imagine that."

Among the recent smaller structures built without the foundation's money, there are solid examples of clients' taste being elevated by the good buildings in town. An architect was brought in to design a downtown tire store by an owner who didn't want the standard prefab job offered by the franchiser. And Lynn Barkhimer, the president and manager of the town's smaller savings and loan association, says "It is quite possible that we would have settled for less" in another town. The home office structure of Barkhimer's large competitor is not highly regarded in the community (with justification), and Barkhimer of Citizens Savings and Loan, a conservative, observant and thoughtful Hoosier native, didn't want to make any mistakes. Once he obtained a prime Washington Street corner diagonally across from

Saارين's bank and directly across from competitor Home Federal, Barkhimer hired a St. Louis consulting firm which listened to his space requirements and assigned an in-house architect. Meanwhile, Barkhimer and his board had decided what was important to them. They wanted a solid appearing structure (in contrast to Saarinen's glass bank). They liked the brick of Pei's library. And Barkheimer particularly admired the seamless corners on the brick facade of Birkerts' Lincoln Elementary School. After rejecting several designs, they got what they wanted: a pleasant, low-keyed building, properly scaled and respectful of its neighbors.

Of course, Columbus has disappointing exceptions. A Holiday Inn is a tribute to elaborate bad taste, and its two competitors are typical dreary examples of the highway genre. The point is, in Columbus, Ind., you would expect better.

You also might expect an aggressive planning effort to knit together the pieces of this unique town. But this is the Middle West, not California, and there is little pressure for extensive planning. As William Folkert, a member of the city planning commission, puts it: "The average property owner is less concerned with encroachment of undesirable neighbors and more with protecting his own rights to do as he pleases on his land."

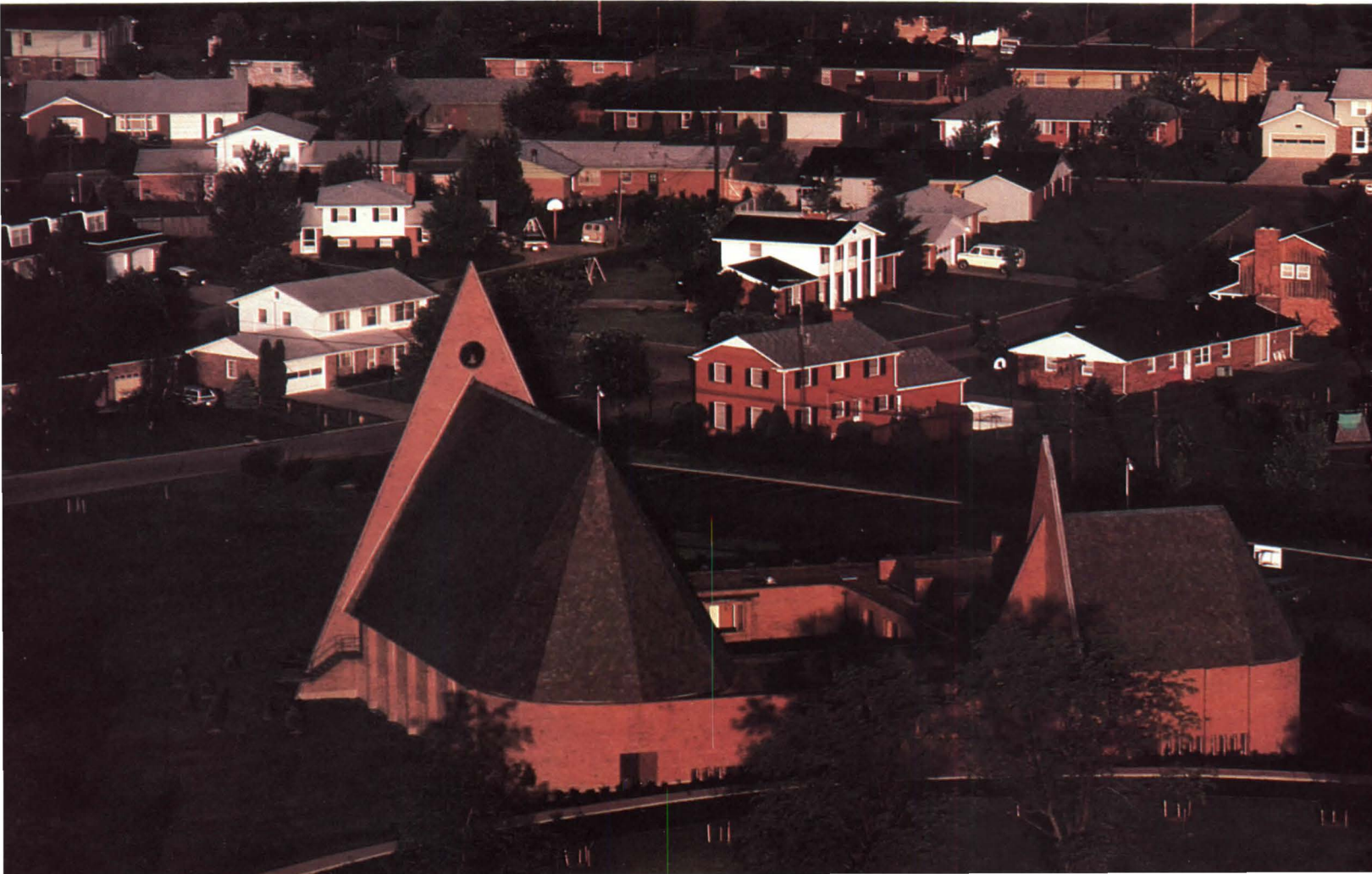
A professional planning staff of six answers to independent city and county commissions, an arrangement that politically insulates the planning process but produces recommendations rather than policy. The city commission focuses on land use and growth patterns. "About the closest we come to esthetics is screening, density and, in rare cases, compatibility," says



Allen Freeman

*Routine dwelling places, exceptional gathering spaces: facing page, the 1973 Columbus Occupational Health Association by Hardy Holtzman Pfeiffer; above, Eero Saarinen's North Christian Church of 1964, and below, the First Baptist Church of 1964, and below, the First Baptist Church by Harry Weese, completed in 1965.*

Bruce Baumann





## Preservationists vs. merchants over a mall.

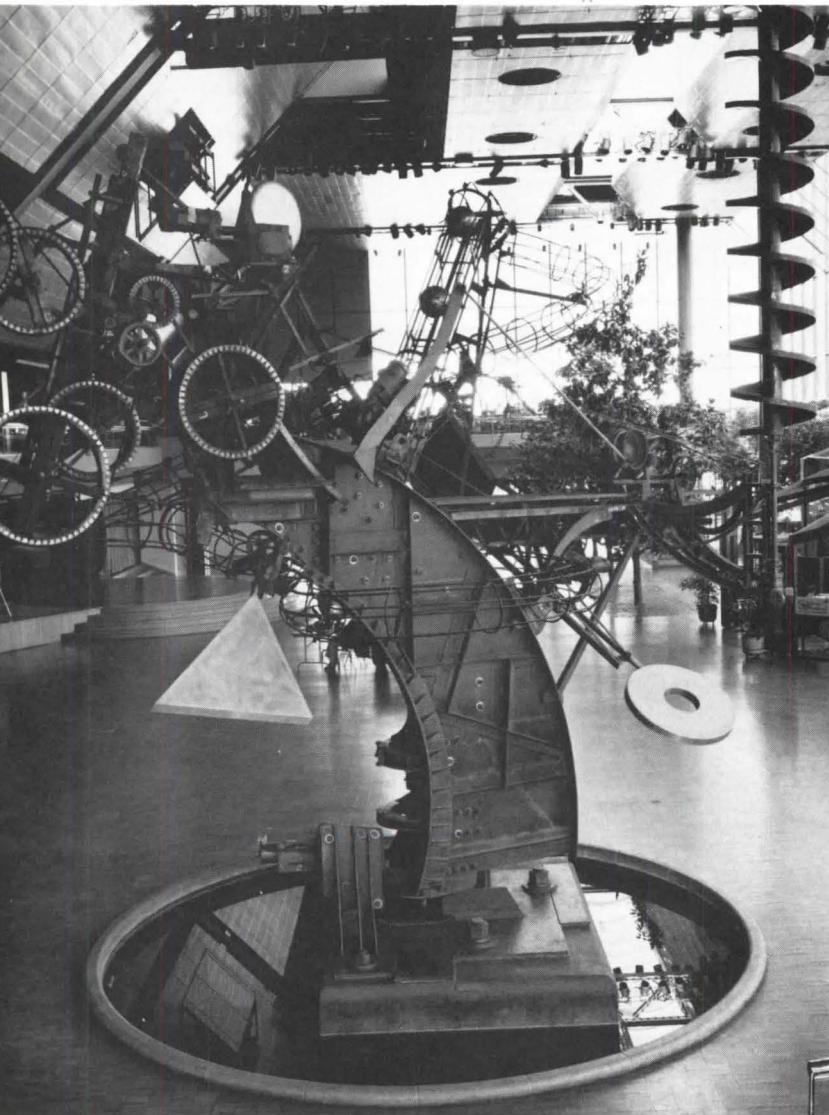
Folkert, who is also a Cummins executive.

If good architecture alone could make downtowns busy, Columbus would still be the center-oriented town it was 50 years ago. But the motels west of town toward the Interstate highway have replaced downtown hotels, and strip shopping centers near suburban housing east of town are stiff competition for downtown merchants.

SOM did a plan for downtown 10 or so years ago, and much of it is in place today, including an enclosed shopping mall, additional city and county office space and rehabilitated downtown housing. A subsequently commissioned plan proposed turning three blocks of Washington Street into an enclosed mall, but this became embroiled in a related proposal, supported by merchants, to tear down the 1895 city hall for a parking garage. The town became divided between preservationists and parking

*Century-old storefronts on Washington Street (right) are interrupted by Eliel Saarinen's 1954 low, multi-domed Irwin Union Bank & Trust Co. and by Roche, Dinkeloo & Associates' 1973 striped glass addition (their junction point is at left.) Below, Jean Tinguely's 'Chaos I' turns and whirs as a focal point of the 1973 Commons-Courthouse Center by Gruen Associates (Cesar Pelli).*

Allen Freeman



Allen Freeman

proponents, and the result is a standoff on both the Washington Street mall and city hall. Now the city, which wanted to sell the old building to help finance the new one, has been assured by Cummins that it will purchase the Romanesque structure if a good buyer and fair price don't turn up. The type of reuse remains a question.

The city hall preservation movement is an echo of a battle a generation ago against a plan to tear down the 1874 courthouse and build a new one. Instead, that building was saved. As it was gradually renovated, it became the center of a redevelopment effort. Many of its offices have been moved to a former downtown hotel and the courts are taking over most of the old building.

Across Washington Street, Alexander Girard was commissioned to redesign an 1881 bank building as headquarters for Miller interests, and two blocks north, Girard refurbished a strip of Victorian storefronts, mainly with paint and improved signs,

in an exemplary effort of inexpensive restoration. Adjacent to the courthouse is a large brown glass-enclosed multiuse structure covering an entire block. It was designed by Cesar Pelli (Gruen Associates) for Irwin Management Co., the Miller family real estate firm. Completed in 1973, it contains a small shopping mall called Courthouse Center anchored by a Sears store on the back side and by an enclosed civic plaza called The Commons fronting on Washington Street. The Commons was a gift of the Miller family to the city, which uses the big, flexible space for performances, art shows, bake sales and other functions calling for an indoor setting. A huge kinetic sculpture by Swiss artist Jean Tinguely graces the space. While the scale and compatibility of the monolithic building are questionable on essentially Victorian Washington Street (one young wit calls it a flashlight—a long, dark tube with one bright end), there is no doubt that it has brought life to the downtown.

On the opposite side of the courthouse from The Commons-



## Planning a new town and a new Cummins complex.

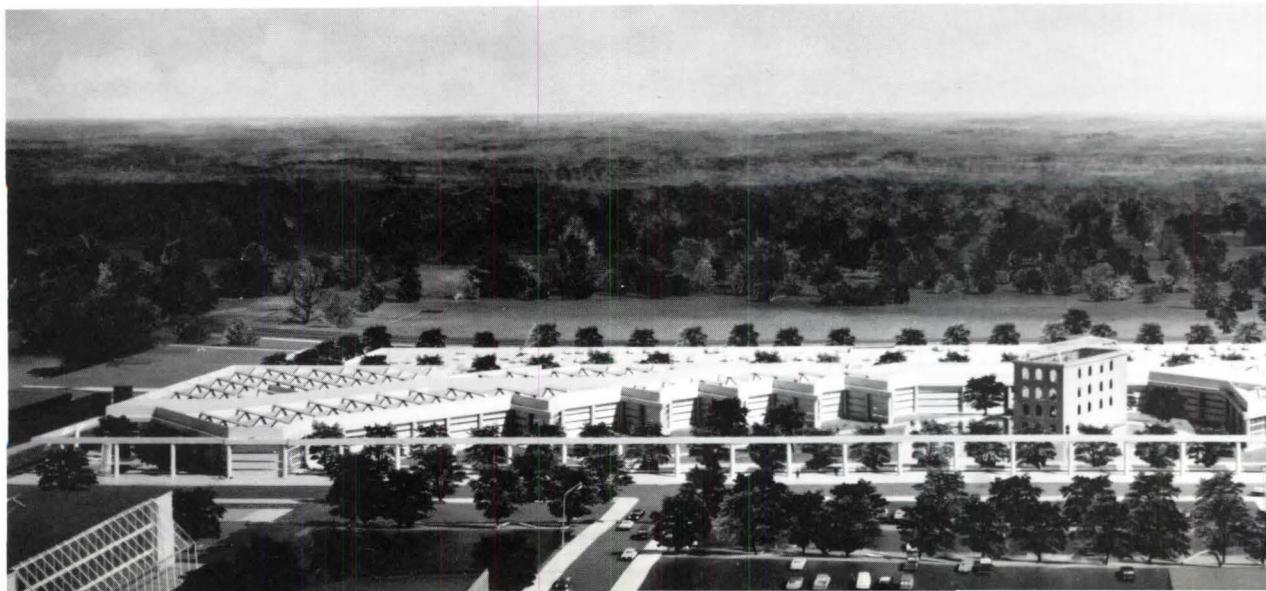
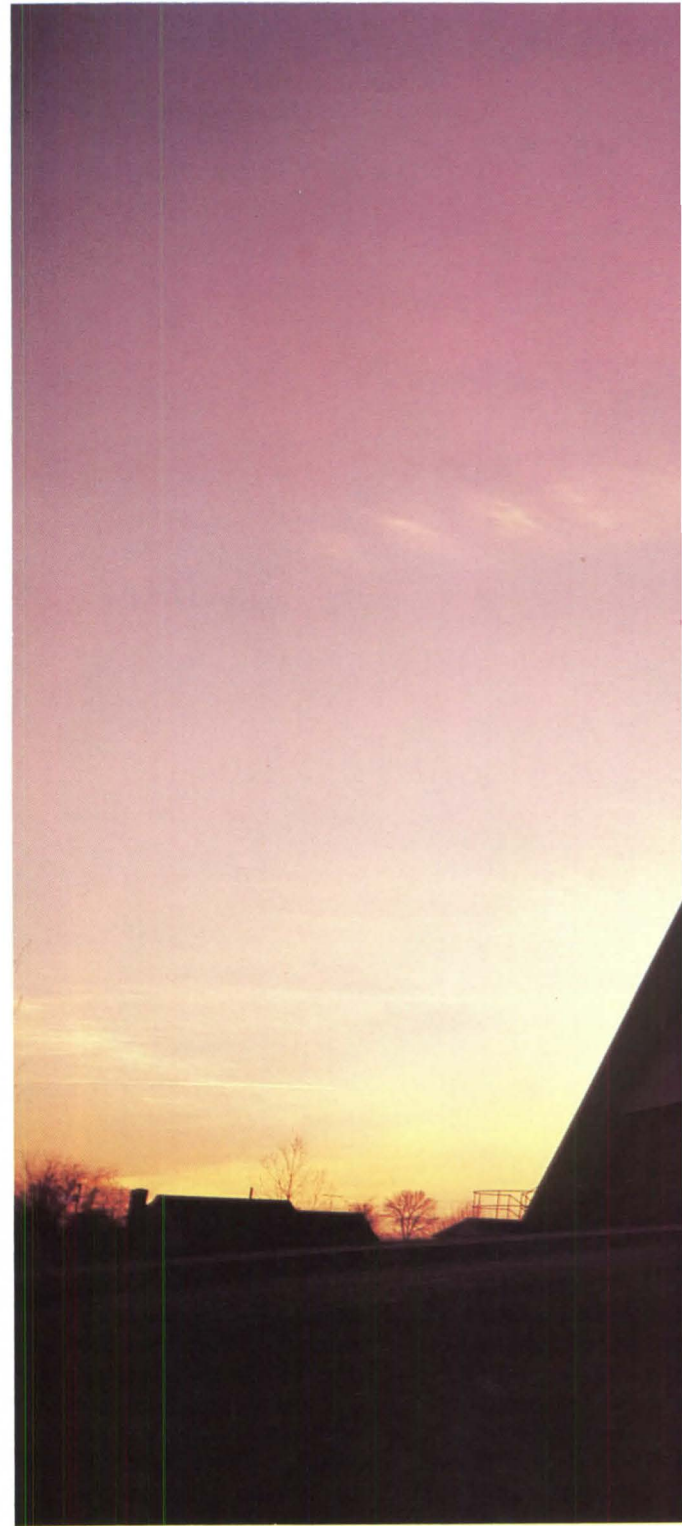
Courthouse Square is a less intrusive glass box, the daily *Republic* newspaper office and plant designed by Myron Goldsmith of SOM, Chicago. City Editor Harry McCawley, a believer in the good effects of good architecture, explains, "I am involved in the hiring of new reporters, and it is the best recruiting tool we've got. People compare it with where they are working now and where they are looking elsewhere. It often makes a difference as to whether we get a reporter we want." He adds facetiously that the building is "probably worth \$10 a week in salary" when hiring, and seriously that his young crew dresses better than average for newspaper people, "to go with the building."

Away from downtown, where the density is suburban, there are some signs of planning forethought, such as underground utility lines in recent housing development. But the streets and houses are generally routine.

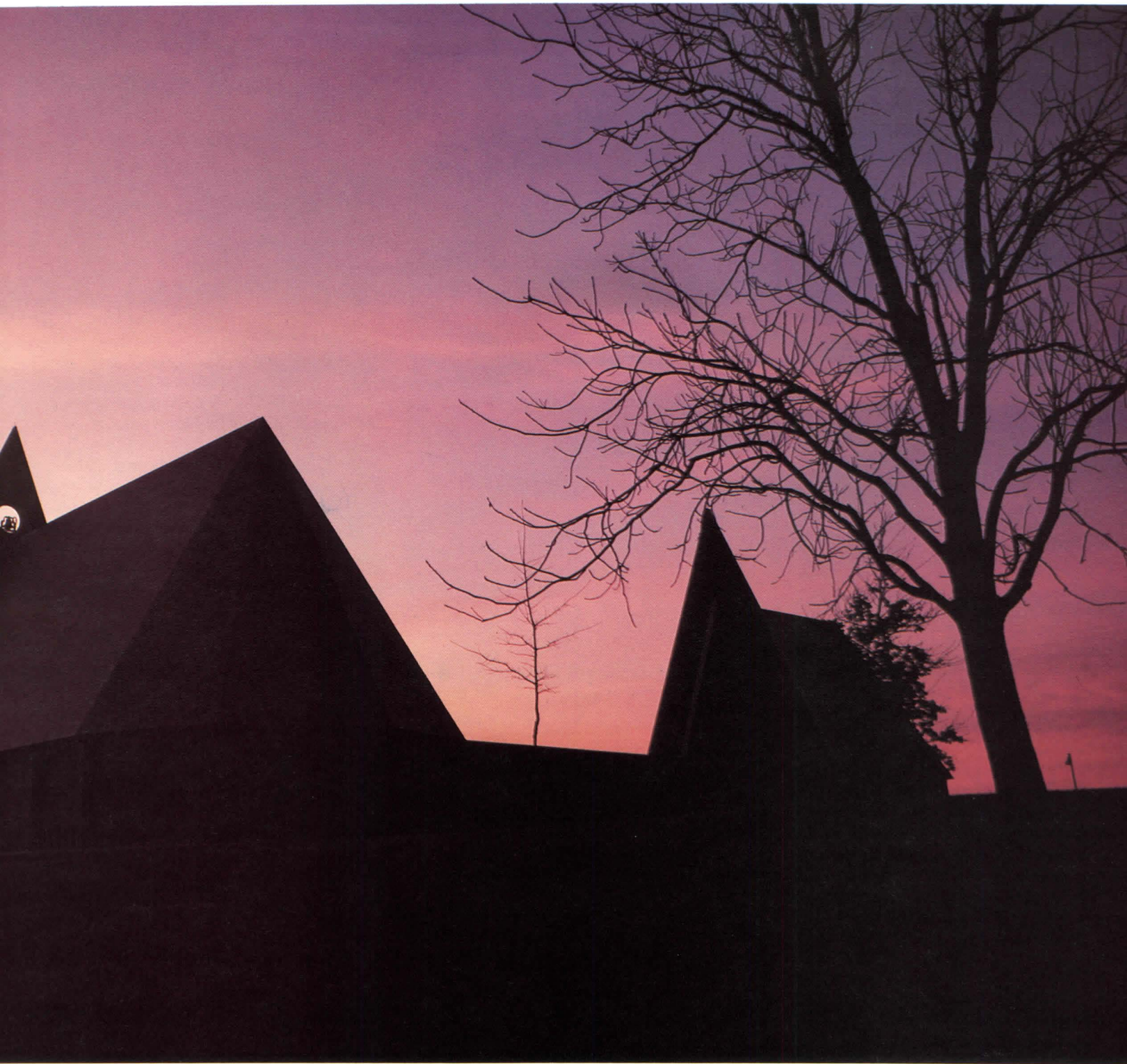
Meanwhile, Irwin Management is planning a community on 1,200 acres southwest of town. The concept was put together in the early '70s with a new town plan of 10,000 to 12,000 population, was shelved when the mid-'70s recession hit and was dusted off a couple of years ago. David A. Crane & Partners planned the community, which is to be built over a 20-year span.

Today, the shining example of a compelling public space is the plaza a block off Washington Street bordered by the library, First Christian Church, an 1860s house renovated as a city visitors center and a turn-of-the-century Irwin house. Pei's low-slung library is a respectful foil for Eliel Saarinen's landmark free-standing church tower, while the older houses contribute stylistic diversity and enclose the plaza. A large Henry Moore sculpture is the focus.

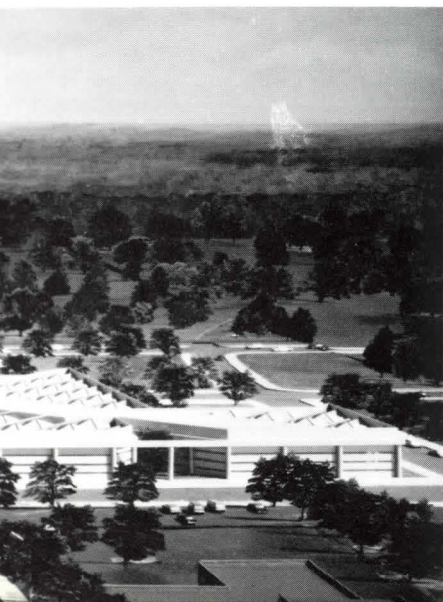
Perhaps it is the independent Hoosier mentality, or maybe it is just human nature, but there are people in Columbus who grouse to each other about the fancy new buildings. At the same time, as you will hear repeatedly around town, those same people will give a grand tour of the architecture when friends and relatives visit from out of town. And that may be the most important benefit of the Cummins architecture program: It has given the community a sense of identity and pride. □







Allen Freeman



*Above, Weese's First Baptist Church at twilight. Left, a model of Roche, Dinkeloo's proposed corporate headquarters for Cummins Engine Co., to cover three downtown blocks. The low building will form a jagged semicircle around an old mill building—a remnant of the complex that housed Cummins' first factory and offices from 1919 until 1926—which is to be renovated in a park setting.*

# Solar Optics: Projecting Light into Buildings

*A new technique gets a limited demonstration. By David Bennett, AIA, and David A. Eijadi*

The time has come to bring controlled natural light—integrated with artificial lighting—into general use, not only at the perimeter of buildings, not only for earth sheltered structures and not only for special effects or architectural drama, but as the primary lighting source throughout buildings during daylight hours. To control natural light would provide a marked enhancement in the quality of our interior environments and would contribute to a necessary transition from a technology based on the rapid consumption of energy resources to one based on its conservation. A fundamentally new approach to the sun as a light source may well represent the future of energy conservation in architecture.

To do so, we must address several fundamental design problems:

- Arresting the sun's motion, either partially or fully to maximize its usability;
- passing the light through the thermal envelope using no greater an aperture than is necessary;
- maintaining the intensity of the light;
- designing for the controlled propagation of light throughout the building without having to build large access corridors;
- maintaining a uniform light level;
- developing an architecture that responds to this new capability.

It is possible to get a firmer grip on the sun as a light source than the one we now have. It is also possible to improve the passive acceptance of light at the thermal envelope and use the rhythms of the sun to better suit our needs.

We are currently attempting to meet these objectives through the initial use in an actual building of a daylighting technique that we call solar optics. The technique had its inception with the work of Michael Duguay, a research scientist now with Bell Laboratories in Holmdel, N.J. In 1977 he published an article, "Lighting with Sunlight Using Sun Tracking Concentrators," in which he described a system for capturing sunlight and projecting it into interior spaces. Through experimentation, he had demonstrated that sunlight could be systematically directed to a remote location and in a precisely controlled manner to produce an interior light source.

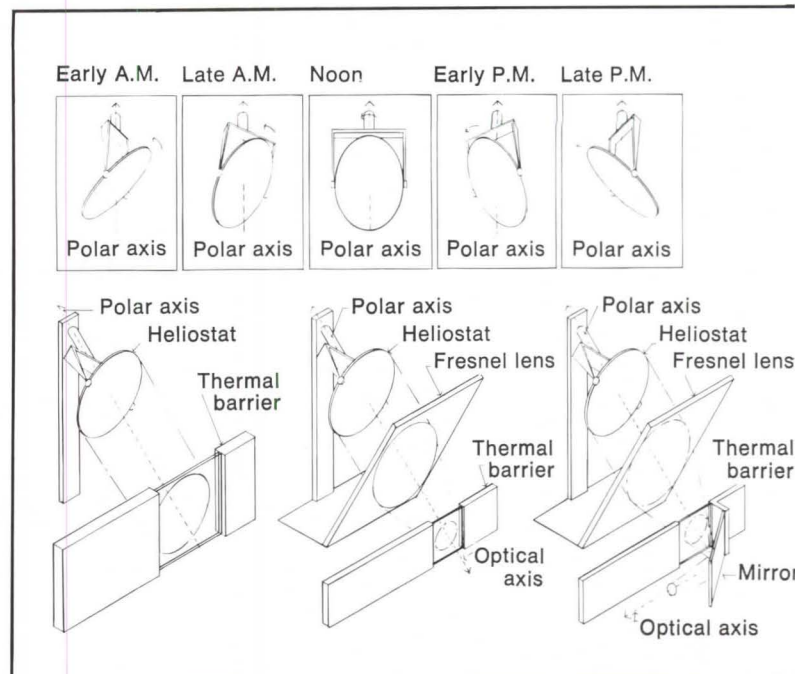
The solar optics technique tracks the sun and projects an image of the sun into the building through a small aperture in the thermal envelope. Converging to form the image and emerging from the image is the full spectrum of energy from the sun. In short, we take the entire sun and literally project it through the building interior for delivery to target spaces. When the light arrives, we scatter, diffuse or focus it as we need to.

The components of the solar optics system include a sun-tracker or heliostat, a simple instrument of antique invention currently available on the marketplace, and a system of lenses and mirrors in an arrangement through which light may be projected. As with many of the ideas associated with energy con-

servation, the technology is already in place and the components readily available; they only wait upon the imagination to put them to use.

A relatively large amount of light can be guided in a narrow corridor. In most buildings, spaces in the form of pipe chases, stair towers and similar conditions already provide the opportunities for vertical transmission. Horizontally, the minimum two feet or so between the top of our heads and the ceiling provide a more than adequate passage. With these two, little if any additional interior space must be created to accommodate the system.

Introducing a high efficiency central lighting source into a light guide system parallel to the solar light guide system and



linking its availability to the availability of natural light by using sensors and rheostats would provide the opportunity for lighting day and night from a single integrated system.

Projecting light through the solar optics system not only provides light of the most desirable color qualities, but can also provide physically cool light. It is possible through the use of cold mirrors to separate the infrared part of the spectrum from the visible. If we divert the infrared to make electricity or heat (previously not cost effective), we will be dealing with a light source that will produce four times less heat than a fluorescent fixture providing the same light. When integrated with a remote light source that generates its heat away from human activity, the overall system will have a greatly reduced impact on conventional cooling demands.

It is at the building envelope that the solar optics concept may have its most immediate impact on architectural design. Preindustrial buildings, in all but the most temperate of climates, were characterized by small openings, allowing little heat

**Mr. Bennett** is a principal in the Minneapolis firm of Myers & Bennett/BRW. **Mr. Eijadi**, currently employed by the firm, is in charge of the solar optics project for the civil/mineral engineering building at the University of Minnesota.

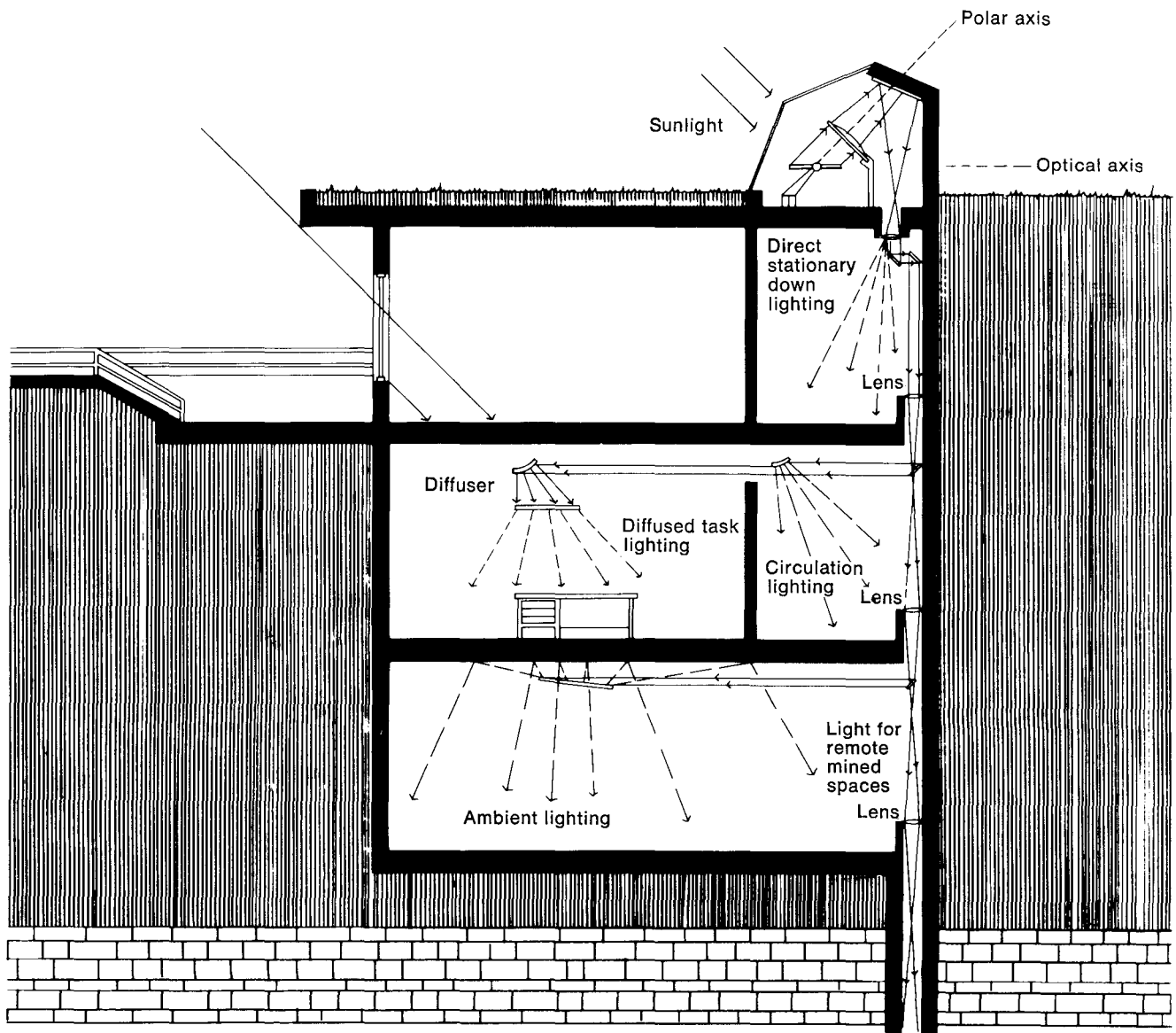
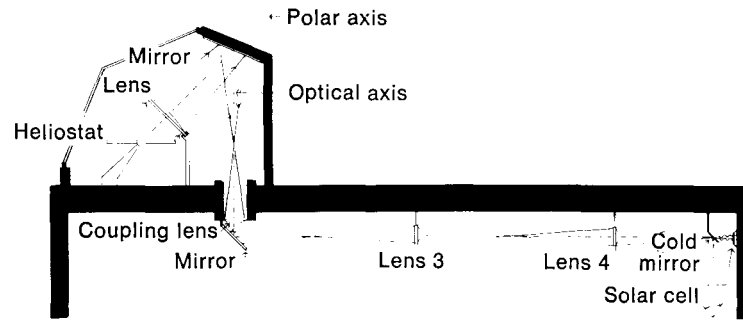
to pass either out or in, and dark interiors. With the industrial era came buildings with walls of transparent glass—brilliantly lit, but kept warm and cool with the expenditure of enormous amounts of energy. Solar optics can offer a bright, sunny interior lit through small apertures in an energy conservative envelope.

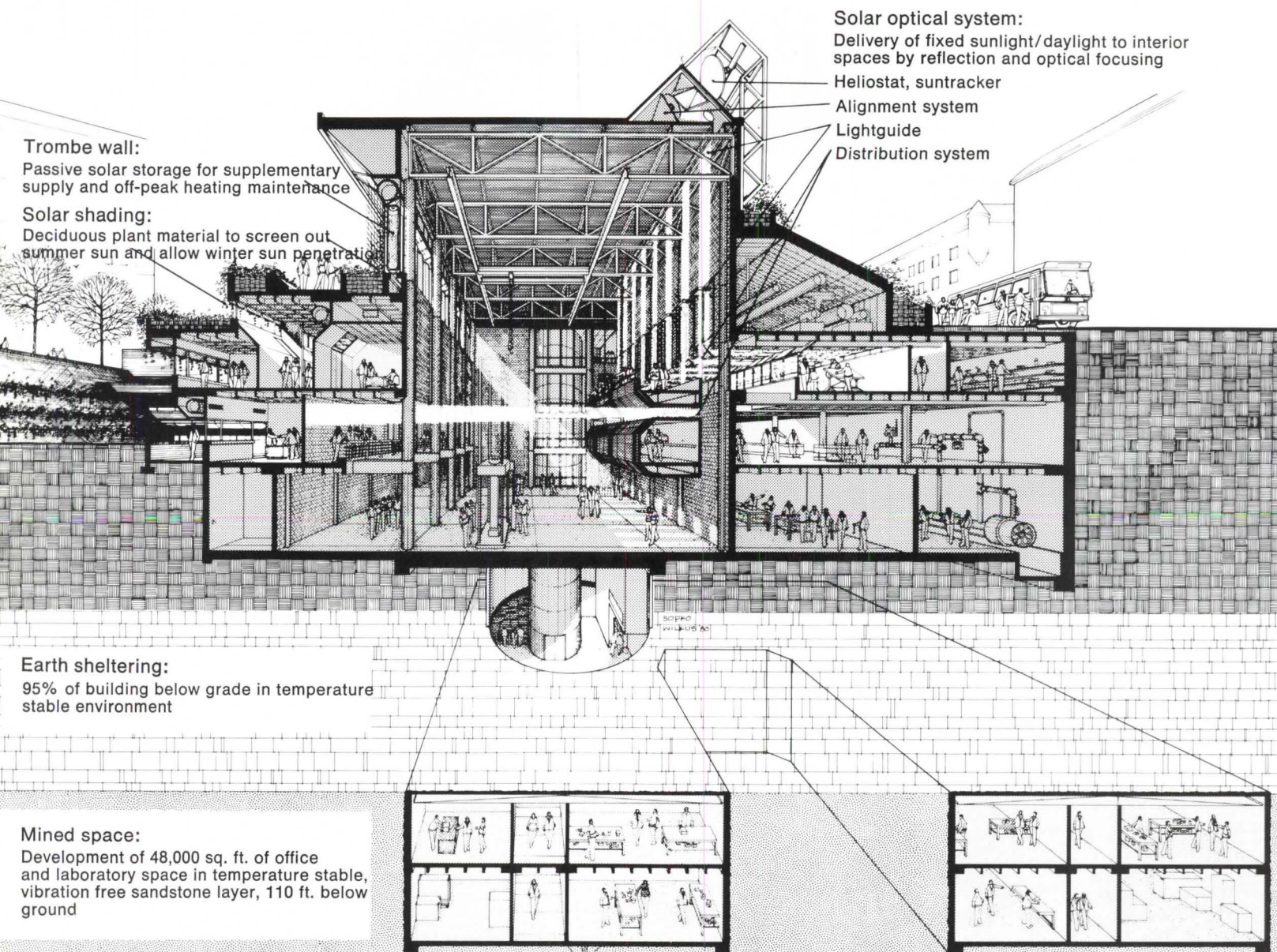
A design application of this approach is currently being developed in Minnesota. The civil mineral engineering (C/ME) building at the University of Minnesota is conceived as a comprehensive demonstration project—95 percent below ground, including 30,000 square feet of its 145,000 square feet in mined space, 100 feet below the surface. Many of the known strategies for energy conservation and for active and passive solar energy projection have been included; several new ones have been added. Among these is the application of solar optics as a

demonstration of the potential for bringing natural light deep into the interior of buildings.

Working with Duguay, the C/ME design team learned the principles of the lens guide system he was using to transmit remote images to interior spaces. In our application the remote image will be the sun and Duguay's lens guide will become our light guide. The lens/light guide is an arrangement of lenses in which each individual lens transmits an image of the preceding lens to the one following. Because of the two-way nature of optics, one can consider the function of each lens element as either being acted upon or acting upon its companion elements. The first lens is lit uniformly by the sun and transmits an enlarged image of the sun onto the second lens. The second lens projects an image of the uniformly lit first lens onto the third

*Left, heliostat sends light through lens allowing reduction in window size. Right, solar optics applied horizontally to a single-story building and below, vertically to a multi-story building.*





lens. Each even numbered lens has an enlarged image of the sun on it and each odd numbered lens has an image of the first uniformly lit lens on it. The lens guide system is made of converging lenses and is considered as the fulcrum of the solar optics system.

Since the amount of habitable area we are able to light is proportional to the amount of light we are able to pour into the system, the size of the heliostat, our floodgate of light, determines the effectiveness of our system. Tracking the sun's diurnal motion is accomplished by the heliostat through the use of a simple clock motor. Correcting for the seasonal change in altitude is a separate operation and is accomplished through manual remote control, or by microcomputer. The heliostat can only feed our lens guide by reflecting the sun down an axis that has an angle parallel to that of the polar axis. To achieve this end, the heliostat must be installed at an angle equal to the latitude of its location. This means that the optical axis of our lens guide must be parallel to the polar axis at first and then may be adjusted to suit our needs.

The heliostat will be run continuously. Because a clock is a chronometer, the heliostat will meet the sun as it breaks the horizon, follow it until sunset and face it as it passes behind the earth. Once each day, the mirror of the heliostat will have its inclination altered by a fraction of one degree to compensate for seasonal changes. This angular change is small, in part

because it is a response to an annual change and in part because the mirror multiplies the magnitude by angular changes.

Ten heliostats will be mounted in two glass penthouses on the roof of the C/ME building. Each heliostat will have a solar reflecting area which may be visualized as an ellipse of approximately 16.5 square feet. The light from this reflecting area will be continuously funneled into our light stream which has a maximum cross section perpendicular to the optical axis (flow) of four square feet. Each square foot of mirror will be continuously transmitting approximately 85 percent of the sun striking it. During a bright period on a clear day, the 16.5 square feet of each heliostat will be lighted to approximately 165,000 lumens. After assuming very conservatively a total transmission loss of 75 percent, each heliostat will still be able to light 412 square feet to nearly 100 foot-candles. This works out to 25 square feet lighted by each square foot of heliostat reflector to a brightness 20 percent more than contemporary office standards.

Tapping the stream to produce usable light in programmed spaces is simply accomplished through the use of supplemental mirrors and lenses. The variety of delivery methods and effects exceeds those conventionally available with ordinary light fixtures. It is possible for the light source in a room to be a fixed image of the sun on a wall, be uniformly distributed over an entire floor area or be a band of uniform light along the center

of the ceiling. It is even possible to split the light into its spectral colors and project them on a wall; a person in that room would see only white light on his work surface because sunlight recombines naturally.

The decade to come will be that of the microcomputer. Companies dealing with architectural environmental systems including lighting will soon introduce microcomputer controlled systems. A single microcomputer will be able to regulate all the mechanical functions of a building. There are lighting manufacturers who already offer self-dimming, self-regulating conventional lighting systems that monitor the amount of light available in a space and provide only the supplement needed to maintain the desired level. A microcomputer applied to a solar lighting system could control its backup system of artificial lighting. We anticipate such a system in the C/ME building.

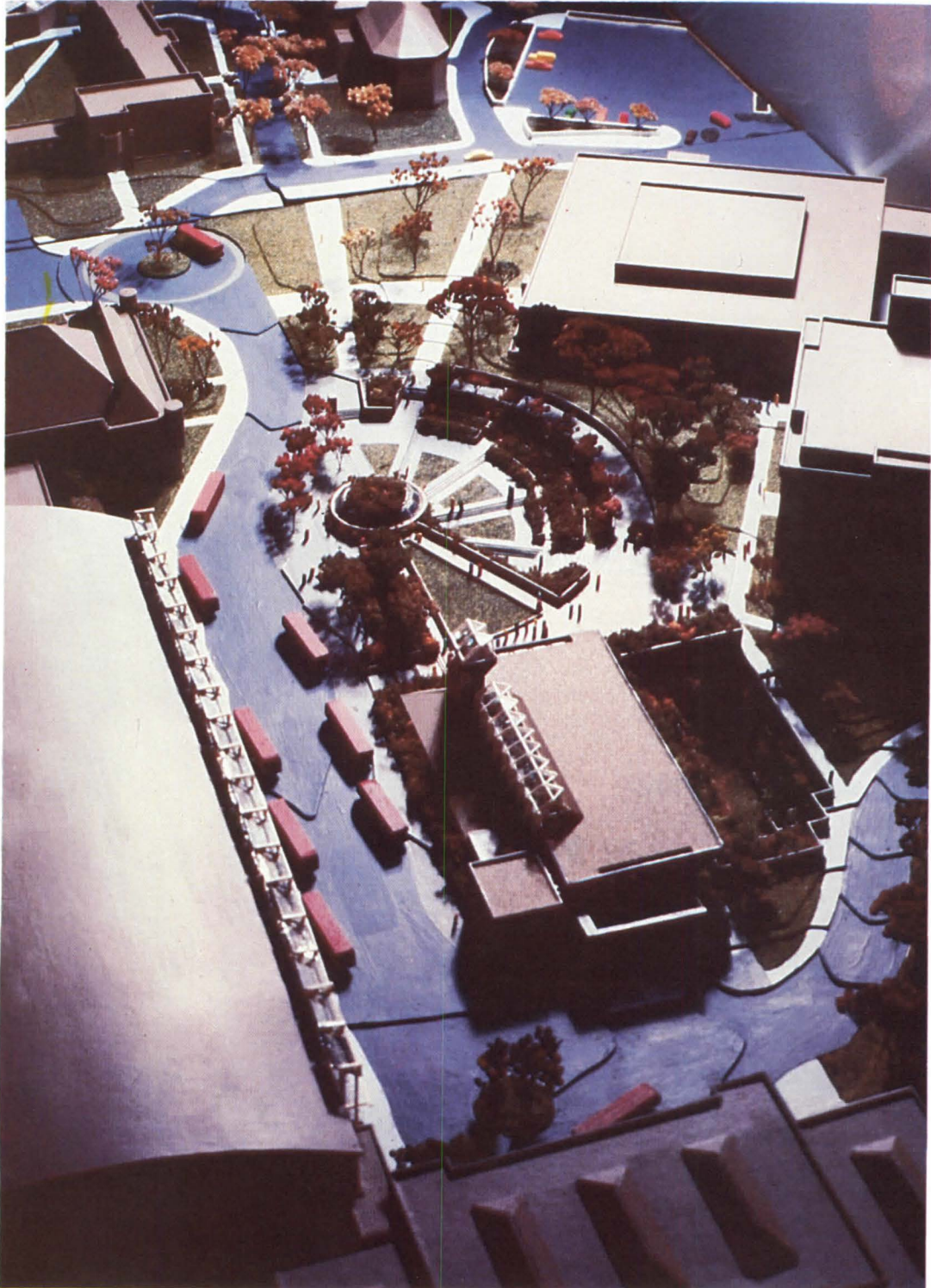
The building's solar optics program has been conceived as a limited demonstration. Its objective is to illustrate the potential of solar lighting, its technology and its impact on architectural form. It will not include an integrated central source artificial

lighting system, so it will not demonstrate the application of natural light to a task lighting condition. These efforts will have to wait for future projects.

Properly developed and imaginatively applied, the potential for solar optics is promising, indeed, as a component in a new technology of energy conservation, as a source of bright natural light into the darker recesses of our interior environments and as an anvil upon which to hammer out new architectural forms. Its most obvious and simple application, immediately available and requiring no more technical development than imaginative design, is for the lighting of public gathering and circulation spaces—corridors, lobbies, reception areas, waiting rooms and perhaps even dining areas—where variable natural light is acceptable and even desirable. Later, with refinement and the development of more sophisticated equipment, some forms of task lighting may also be viable.

Solar optics may represent a small component in a growing compendium of new ideas we must now invent. We are quickly running out of wealth, material and time. □

*The civil/mineral engineering building at University of Minnesota, at left in section, at right in a model photo.*





# 25-Year Award Goes to Lever House

*Gordon Bunshaft recalls the evolution of its design. By Stanley Abercrombie, AIA*

AIA's 25-year award "in recognition of architectural design of enduring significance" goes this year to Lever House, designed by Skidmore Owings & Merrill and completed in 1952. (The award—only one a year—is given for a building between 25 and 35 years old.) Surrounded now by its own progeny, just one relatively small, relatively elegant, and relatively well-composed glass slab among dozens, it is difficult to remember what an act of daring its design had been. Writing in the *New Yorker* at the time, Lewis Mumford called it "the first office building in which modern materials, modern construction, modern functions have been combined with a modern plan."

The designer, of course, was SOM's Gordon Bunshaft, recently retired, and his administrative counterpart in the firm, as Bunshaft emphasizes, was William Brown. "Designing a building is easy," Bunshaft says. "The hard thing is getting it built as designed." Brown and Bunshaft had just been made partners of the firm when the commission came along in 1949. "We both knew very little about building an office building," Bunshaft recalls, and adds, "There must have been a damned good job captain somewhere." In any case, the job had first come into the firm's Chicago office, where Nat Owings was in charge, because Owings was a friend of a business management consultant hired by Charles Luckman, then president of Lever Brothers. The first design, in fact, prepared by Owings in the form of a block model, was for a Chicago site opposite the Drake Hotel. The site was soon changed to New York City, and Bunshaft was asked to accompany Owings and Louis Skidmore, head of the New York office, to a meeting in Luckman's Waldorf Towers suite. Luckman had three demands, Bunshaft remembers. The interiors were to be done by Raymond Loewy, the design work was to be kept secret from most employees of the Lever Brothers company, then in Cambridge, Mass., and the fee SOM requested was to be cut. "He knew we were hungry," Bunshaft says.

It was the first office building that SOM had done anywhere and one of the first sealed glass towners that *anyone* had done. The choice of glass types then available was limited to clear glass and the green-tinted "heat-reducing" glass that was chosen for Lever House, and no manufacturer then produced any material meant specifically for the opaque spandrels between rows of windows. (An air space was left beyond the typical tinted glass to avoid heat buildup, and the solid wall surface a few inches away was painted black.) Also restricting were the severe zoning regulations of the time, requiring a setback from

side streets and limiting tower size to 25 percent of the site.

Within this zoning envelope, and keeping in mind the client's rather vague request for "one or two" very large floors for computer equipment, Bunshaft devised the well-known *parti* of a slender slab over a roughly square base, the lowest floor of the slab recessed a bay so that it appeared to "float," the base punctured with a central courtyard, and the whole composition (except for a lobby and a slender wing containing an assembly room and a test kitchen) lifted a whole floor above street level.

Some other schemes were tried as well, Bunshaft recalls, including a slab rising straight up from the Park Avenue property line, its other side facing an open garden, but the present scheme was obviously preferable and was the only one presented to the client. Luckman, who had studied architecture but gone into other work when his graduation coincided with the Depression, liked it. As the design developed, however, Skidmore began to fear that, when the scheme was presented in greater detail, Luckman would object to the extravagant gesture of leaving so much of the street level vacant. At Skidmore's insistence, Bunshaft prepared a version filling in much of the street level with retail space, but, at its presentation, Luckman objected. "You've lost the best thing about it," he said.

An early feature that actually was lost, because of the complications it gave the structural engineer (Weiskopf & Pickworth), was a top-floor balcony cantilevered from the south face of the slab, but this was not a major loss—perhaps, even, a blessing. In general, things progressed beautifully until, three days after Luckman's enthusiastic approval of the final design, the startling news came that Luckman had been fired. Not, according to Bunshaft, because of his support for the Lever House design, but simply because the once-profitable company had begun to lose money under Luckman's leadership; nevertheless, it seemed likely that the promising design would never be built.

A call from the Lever administrators requested that someone from SOM visit them. Skidmore, afraid that Bunshaft would say the wrong thing ("He was probably right," Bunshaft says), went without him. Contrary to expectations, Luckman's successors liked the design and gave their approval. The working drawings were begun.

When the building was finished, it had cost \$7 million, not an inconsiderable amount in 1952. But a few years later, when SOM began work on a new corporate headquarters for Chase Manhattan Bank, the Chase executives wondered about the public relations value of such a building; SOM referred them to

## The building hasn't changed but the neighbors have.

Lever Brothers; and Tom Carrol, then Lever president, said that the building had been a great bargain. In four years, he said, Lever House had produced for the firm the equivalent of \$4 million worth of free advertising. Indeed, there is something about the building's design that, intentionally or not, seems right for the home of a soap manufacturer. The sparkling slab of continuous glass, narrow enough to flood the interior with sunlight, the transparency of the street floor lobby (where clear glass is used), and the once-novel window cleaners' platform suspended from the roof and dispensing (presumably) streams of Lever Brothers detergent—all these are perfectly appropriate. And, despite rumors a few years ago that the building would be torn down and replaced with a more profitable structure of greater floor area, the Lever Brothers management seems to realize it has a good thing and intends to keep it.

In 1952 Lever House was a glittering anomaly among sedate masonry apartment blocks. Today not a single apartment block remains. The building's current neighbor to the north is a nondescript curtain wall office building (three floors of which are occupied by SOM's own office); to the south is rising a huge new office tower designed by SOM and sheathed in dark glass; farther north is SOM's elegant Pepsi-Cola building, now occupied by Olivetti; farther south, SOM's Union Carbide tower; and, of course, prominently straddling Park Avenue 10 blocks away, the great bulk of the Pan Am building.

But it is the building diagonally across Park Avenue with which Lever House is inevitably compared: Mies van der Rohe and Philip Johnson's Seagram Building. Seagram was built a few years after Lever House, but the Miesian influence on Bunshaft's design is obvious, and the two men in later years became good friends. Mies was "a marvelous human being," Bunshaft says, "especially after a few drinks." And he also considers Seagram "marvelous, the very essence of what Mies was working toward." Whereas, when pressed, he characterizes Lever House as "fresher" and "more human in its size and character," he greatly admires Seagram as a powerful monument. One particular design problem the two buildings share is that, in different ways, they both open up the typical block of building mass. When you do this, Bunshaft points out, you have to deal with the exposure of the party walls of other buildings on the block. Mies dealt with this problem in a way Bunshaft admires, by putting a low building element behind the Seagram tower and against these party walls. Beyond Lever House, on the other hand, the sides of an older masonry building is much in evidence (a once-blank wall that in 1970 was partly covered with a bright Robert Wiegand mural called "Leverage").

Whatever their differences and similarities, both buildings are extraordinary accomplishments, and Lever House, with its sunny floors, its gardens, its long views up and down Park Avenue, offers amenities that, a quarter century later, are still unique. Lewis Mumford's 1952 judgment still rings true: "Lever House is a building of outstanding qualities, mechanical, esthetic, human, and it breaks with traditional office buildings in two remarkable respects—it has been designed not for maximum rentability but for maximum efficiency in the dispatch of business, and it has used to the full all the means now available for making a building *comfortable, gracious and handsome.*" □



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# Strings Tightened on Federal Sewer Aid

*EPA decides that it is 'not in the business of subsidizing growth.'* By Jane A. Silverman

In a controversial decision last year, the U.S. Environmental Protection Agency abruptly closed the door on federal funds for expansion or construction of sewage treatment plants in the Washington, D.C., metropolitan area. "The federal government is not in the business of subsidizing growth," Greene A. Jones, director of the water division of EPA's Philadelphia regional headquarters, told a group of Washington area local government officials.

The counties surrounding Washington are among the fastest growing in the nation. Much of that growth has in fact been paid for by the federal government—in the form of sewage treatment grants, highway funds and other infrastructure investments. Now, at least in the case of most water and sewer funds, the purse strings are going to be drawn shut. Says Jones: "When there is pure and simple growth, the local communities will be expected to pay for it themselves."

At issue are billions of dollars of EPA grants for sewage treatment construction and expansion. On the one hand, sewers are clearly growth shapers and they have in many instances contributed to suburban sprawl and exacerbated as many environmental problems as they have solved. Furthermore, EPA has a massive water cleanup job and only limited funds to complete the assignment. On the other hand, there is the legitimate need of communities to accommodate population growth and to provide sites for a wide range of land uses. Limiting developable sites can have deep social and economic repercussions for communities.

Few professionals are so caught in the middle of this debate as architects. Sewers, in large part, determine where growth will occur and where architects will draft their projects. Architects have long been a reasoned and responsible voice for environmental protection and rational growth patterns.

EPA's municipal construction grant program was established by the 1972 Federal Water Pollution Control Act amendments and was designed to help communities finance the backlog of municipal treatment facilities needed to achieve the law's water quality goals. Under the program, EPA provides a 75 percent matching grant to state and local government to fund sewage treatment improvement and expansion. The \$18 billion program expired in 1977. That year Congress passed a new law—the 1977 Clean Water Act—which reauthorized the program at \$4.5 billion for fiscal 1978 and \$5 billion annually for fiscals 1979-1982. Congress also extended the deadline for required municipal achievement of secondary wastewater treatment on a case-by-case basis from 1977 to 1983. Even with the extension, less than half the municipal sewage treatment systems in the country have secondary treatment. Thus while the billion dollar figure may seem huge, in the words of one federal official, "there simply are not enough federal dollars to do all the cleanup."

Many Congressional members expressed their frustration over the situation at the time the 1977 law was passed. The report of the Senate environment and public works committee on the Clean Water Act of 1977 said: "Many of the nation's largest

cities such as Philadelphia, New York, Saint Louis and San Francisco still discharge raw or inadequately treated sewage into rivers, lakes, bays and oceans. At the same time, oversized interceptors and new collectors are constructed in suburban areas in anticipation of development, and treatment plants are sized to accommodate that growth."

EPA adopted new regulations for its sewage treatment grant program in 1978. The rules tighten up the use of EPA's limited funds. Under the new regulations, grant applicants must first demonstrate that the area to be served has a current point source or direct discharge pollution problem. These problems might include inadequate secondary treatment or failing septic systems. The proposed facility is then ranked according to need on the state "priority list." Once a facility is considered eligible for funding on a state priority list, a jurisdiction is allowed to apply for funding for additional capacity to handle the population growth expected to occur over a 20-year period, or the operational life of the facility. But the population projections on which reserve capacity is to be calculated are carefully prescribed. EPA's regulations require an analysis of reserve capacity based on planning periods, population projections, wastewater flow estimates, water conservation measures and the cost effectiveness of the additional capacity.

EPA officials note that this policy is not a new one but "has been our policy since the act was passed in 1972. . . . Our policy is to fund a reasonable amount of reserve capacity to serve future needs during the planning period. . . . Our approach leads to a rational distribution of scarce federal monies for water pollution abatement. It avoids costly excess capacity that sits idly for years. The policy also promotes national water conservation goals. It helps reduce urban sprawl. . . ."

The policy also does not prohibit local municipalities from building treatment plants with extra capacity to accommodate future growth. But EPA won't pay for it. John T. Rhett, EPA's deputy assistant administrator for water programs, says, "If a community wants to build for growth, we say fine, 'Build it yourself.' We're not in the development business."

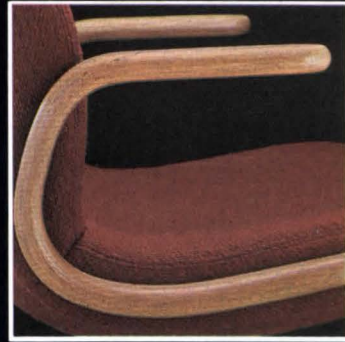
"Our first goal has got to be to encourage cleanup, not encourage growth," says Jones. But beyond that, many federal environmental officials feel strongly that excess sewage treatment capacity has caused as many environmental problems as it has corrected. Jones observes that poorly thought out sewage treatment plans have the "potential for enormous secondary impacts—growth in unplanned, insensitive areas, air quality degradation and burdensome operation and maintenance costs." While recognizing "community growth as a legitimate social goal," Conservation Foundation President William Reilly warns that sewers and treatment facilities "often are helping localities develop prime farmland" that might be preserved otherwise. Planning for growth, he observes, "should not be through the back door."

The problem is complicated at the federal level by the diverse players in the water and sewer game and by their conflicting missions. While their share is much smaller than EPA's, at least three other federal agencies also give out grants for water and sewer facilities. The Farmers Home Administration administers a \$4.2 billion water and waste disposal loan and grant program that provides water and sewer services for residential and small commercial users, many for the first time. The Economic Development Administration (EDA) in the Department of Commerce operates a \$1.9 billion program that provides loans and grants, especially in economically depressed areas. In addition, about \$12 million is spent annually under HUD's community development block grant program for water and sewer grants.

Often a local water and sewer program is funded from several of these sources. The Council on Environmental Quality, which advises the President on environmental matters, has tried for some time to have the various funding agencies bring their pro-

*continued on page 102*

Mrs. Silverman is a free lance writer in Princeton, N.J.



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# BOOKS

## From 'Porkopolis' to a 'Great Provincial City'

**Fascinating, Spirited Cincinnati.** Photographed and designed by Lawrence Zink; text by Dick Perry. (Cincinnati Chapter/AIA.)

When your plane lands in Greater Cincinnati Airport, there you are—in Kentucky. Not Pennsylvucky, as they say one state farther east, but in a river city that is holding its own nicely, thank you, and even moving steadily ahead. Still marked by the gemütlich life style (like Baltimore, Indianapolis, St. Louis or Milwaukee) created by its early 19th century German settlers, the many-faceted cultural inheritance is still expressed in a rich musical tradition, robust social institutions—and beer.

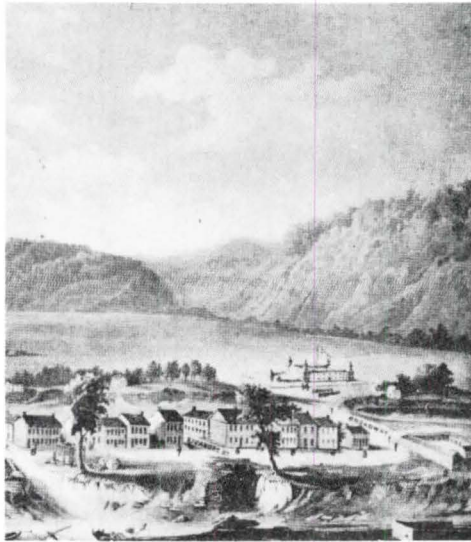
Cincinnati's initial prosperity from pork shipped to downstream plantations grew into the more sophisticated fatty form of soap, expressed in Proctor & Gamble, a legend of industrial management, and on to the computers and plastics of today. The Porkopolis of Mrs. Frances Trollope has become this great provincial city, distinguished for topping its domestic achievements with an impressive and healthy public cultural environment.

Cincinnati has one of everything, and everything good of its kind, a surprising amount of it dating from about a hundred years ago. This means Music Hall (1875), the Krohn Conservatory (1870), a great zoo and rediscovered institutions like the "old world, last-of-its-tribe" Findlay Market. It has residential neighborhoods like Mount Adams offering spectacular panoramas of downtown, eminently livable Hyde Park and, of course, Ivorydale.

One discovers great and surprisingly cultural resources like the authentically American paintings of Frank Duveneck, extravagantly admired by Henry James in 1875 for the Velazquez-like qualities of his portraits, or the modern sculpture collections of the Cincinnati Art Museum. In all this one sees the hand of an elite well endowed with material resources and a cosmopolitan cultural orientation as well as an impressive continuity of civic interest capable of such original ideas as the removal of the Art Deco mosaics descriptive of Cincinnati's industries, first conceived to emblazon the walls of the Union Terminal, to an equally appropriate home in the new airport. The Cincin-

nati heritage of public service and good government reflected in the long generations of the Taft family, the revered names of Murray Seasongood or more specialized talents like Alfred Bettman and Ladislav Segoe, is recalled in the model suburb of Mariemont or the New Deal landmark community of Greenhills.

This is the setting for an architectural history that deserves more detailed treatment, but the Cincinnati Chapter/AIA and its publications committee, headed by David S. Collins, AIA, have here wisely settled for a more descriptive account. It offers the visitors a pictorial essay built around the dramatically illuminated photos by Lawrence Zink and a brightly



*Cincinnati in 1802.*

minimal text. It is not hard to imagine that this book will be doing the city good service for many years to come.

While it does not propose to address the architecture of Cincinnati directly, this book is an architecturally informed guide, and on every page the reader will be learning things of architectural interest. Regrettably, what he will not learn from this exceedingly modest account are the names of the Cincinnati architects who designed the buildings illustrated.

From the 1804 log cabin, the city's oldest building, the Dixie Terminal Arcade or Roland Wank's Union Terminal to such representative modern designs as the Formica Building, the Stadium, the Federated Building or the University of Cincinnati library, the river city comes on (in the words of Michelin) as worth a trip, not simply a detour. *Frederick Gutheim, Hon. AIA, Washington, D.C.*

**Le Corbusier: Elements of a Synthesis.** Stanislaus von Moos. (MIT Press, \$30.)

As a subject, Le Corbusier looms so large that one wonders how to get a handle on him. He has greatly influenced design vocabulary, construction technology, housing, urban design, the interpretation of the machine—indeed, just about every aspect of architecture. His direct influence is still felt today; in fact, it is growing as his design vocabulary is becoming the basis of a new academic architecture.

While Le Corbusier's influence is wide, it is also contradictory, complicating our attempts at understanding. He was a romantic and a classicist. He played the role of confident man of power. He glorified the machine and built technologically primitive buildings.

It seems that a study of Le Corbusier might take one of three possible approaches. The first would be a systematic review and summary of his own presentation of his buildings and the theories in his books and writings. The second would be a fresh analysis of his architecture through a detailed study of the working drawings and built buildings. The third would be an analysis of his place in modern culture.

This book fits the first of these three approaches. It systematically reviews Le Corbusier's buildings and writings, and should easily become the standard reference of its kind—the ideal companion to the multivolume set of Le Corbusier's complete works. It surveys his development from his early education through the various stages of his career. The book is a thorough piece of scholarship, each of its chapters a major essay, but it holds no real surprises for someone generally familiar with Le Corbusier's work.

The final chapter titled "Elements of a Synthesis" is disappointing. Rather than an evaluation of Le Corbusier's work as a whole, it merely picks up some loose ends: painting, the open hand, color, the modular.

The second possible approach, a fresh analysis of how Corbu's buildings are actually put together, is not attempted in this study, nor in any other that I know of. With some exceptions, books and magazines are annoyingly inadequate on this subject. But there is another problem, which is that Le Corbusier's buildings, for the most part, were not built with the kind of attention to materials, construction and detail that we see in the work of Wright,

*continued on page 86*



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### Books from page 84

Mies or Kahn, for example. Von Moos points out that Le Corbusier often did not mind seeing a project translated from one material to another, and that he also did not seem to mind that the concrete at Chandigarh was deteriorating before the buildings were even occupied. The buildings seemed to be more abstractions than material things for him. Von Moos suggests that for Corbu his accomplishment was not the buildings but the volumes of the complete works.

I was disappointed in von Moos' lack of interpretation and evaluation of Le Corbusier's work. Some readers may feel that interpretation and evaluation are necessarily subjective and of questionable place in scholarship, and that "objective" description stands on firmer ground. But we are always interpreting and evaluating. The very fact that von Moos chose to write a book on Le Corbusier means that he believes his subject is important. On what basis does he believe this? Von Moos also makes judgments about what to include and exclude. For example, following the modern tendency toward formalism, he discusses Corbu's paintings in terms of abstract form rather than in terms of content, thereby excluding mention of Le Corbusier's commitment to alchemy as the underlying theme in his later work. (His interest in alchemy as the underlying theme was pointed out to me by Ann Kee, a student at Pratt Institute, and is described in a catalog titled *Le Corbusier, Myth and Meta Architecture: The Late Period, 1947-1965*, by Richard Moore, for an exhibition at Georgia State University in 1977.)

For evaluation and interpretation, we can turn to Vincent Scully's *Modern Architecture*, in which Le Corbusier is placed in the Hellenic tradition of the separation of human being from nature and the emergence of the individual from society, or to Charles Jencks' *Le Corbusier and the Tragic View of Architecture*, where Le Corbusier is seen in terms of Nietzsche's "Superman" struggling among men and the necessity that he destroy conventional wisdom before he can realize his revolutionary ideas."

Scully finds a harmony between Le Corbusier's work and contemporary culture which just isn't there. He may have been innovative, profound and powerful, but his work is also awkward and bombastic. Any satisfactory understanding of him has to take this awkwardness and bombast into account. They are characteristic of the romantic notions of progress and originality which still dominate our view of art.

Le Corbusier was a Cartesian, convinced of the separateness of mind and nature, and the superiority of the mind. From this position flowed his powers and

his limitations. On the positive side, he could draw on the limitless intellectual energies his manic personality provided and press ahead while all around him seemed dead matter. He was not tied down by the historical and social limitations of the real world. But this freedom from constraint was also his limitation. Nature, materials and people's established patterns of life are not important in Cartesian thought, nor were they important in Le Corbusier's architecture.

In *Space, Time and Architecture*, Giedion said that the final evaluation of the 19th century will depend upon the outcome of the 20th. Le Corbusier is so much a part of the "modernism" of the 20th century that I suspect he too will also have to wait for the outcome. It is impossible, of course, to guess what the long-range verdict will be, but I suspect much of it will be quite harsh. We have done some horrible things to our landscape, our cities and ourselves in the name of modernism; and when we draw together the whole story, Le Corbusier, a towering 20th century figure, will have to bear responsibility for some of our failures along with our successes. *John Lobell, Associate Professor of Architecture, Pratt Institute*

### Recreating the Historic House Interior.

William Seale. (American Association for State and Local History, \$22.)

Following a recent tour of a Louisiana plantation home, I was left with a vague sense of disappointment. As a whole, the building itself was reasonably well restored, but the interiors served only to showcase an eclectic collection of recently acquired antiques. The house neither told of the families who built it and lived there nor did it project a sense of historic integrity.

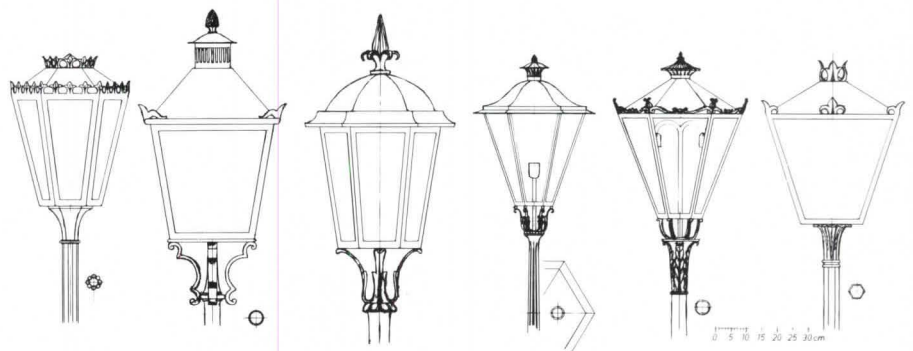
In spite of good intentions, civic associations and some private institutions traditionally associated with managing historic properties often lack the proper expertise to interpret accurately the historic house. Unfortunately, even professional preservationists are content to restore the fabric of a building, but give only secondary consideration to the treatment of the interior. The resulting product more often expresses the tastes and whims of the restorers than those of its builders.

It is to this problem that historian William Seale addresses himself in this book. He is quick to point out in the introduction that the interior can be, except in rare cases, only an approximation—a combination of fact and supposition. Thus, rather than trying to "restore" an interior to a specific time, the objective is to try to recreate those sensibilities present at the desired period.

The first chapters address general problems encountered in preservation. To what period(s) should the house be restored? Should all additions be removed and the house returned to its original form? Or should the additions remain and the house reveal its historic evolution? Although such questions may be of second nature to professional historians and preservationists, these initial chapters will be an invaluable aid to the novice individual or group with a historic project on their hands. Also of help to those unfamiliar with researching historic houses will be the chapter on documenting the house and its occupants. In addition, pointed discussions are presented on conflicting preservationist ideologies concerning the installation of such modern "necessities" as airconditioning and heating units, burglar alarms and dehumidifiers.

While analysis of the building's fabric

*continued on page 90*



**The Art of Wrought Metalwork for House and Garden.** Otto Schmirler. (Architectural Book Publishing Co., \$57.50.) Schmirler, who devoted his life to the craftsmanship of wrought iron, says that his guiding principle has been to "pass on what has been learned and proven." He assumes that the user of this book possesses a basic knowledge of the craft, but he hopes also that it will help someone who is just beginning to learn the art. But the book has far wider appeal. Anyone who loves beautiful objects will delight in the design of gates and doors, lanterns, window grilles, screens and all the rest. Depicted above are some of Schmirler's designs for garden lanterns. The drawings and photographs reveal how this "unyielding material" can impart a great variety of forms that are works of beauty—and esthetic delight.





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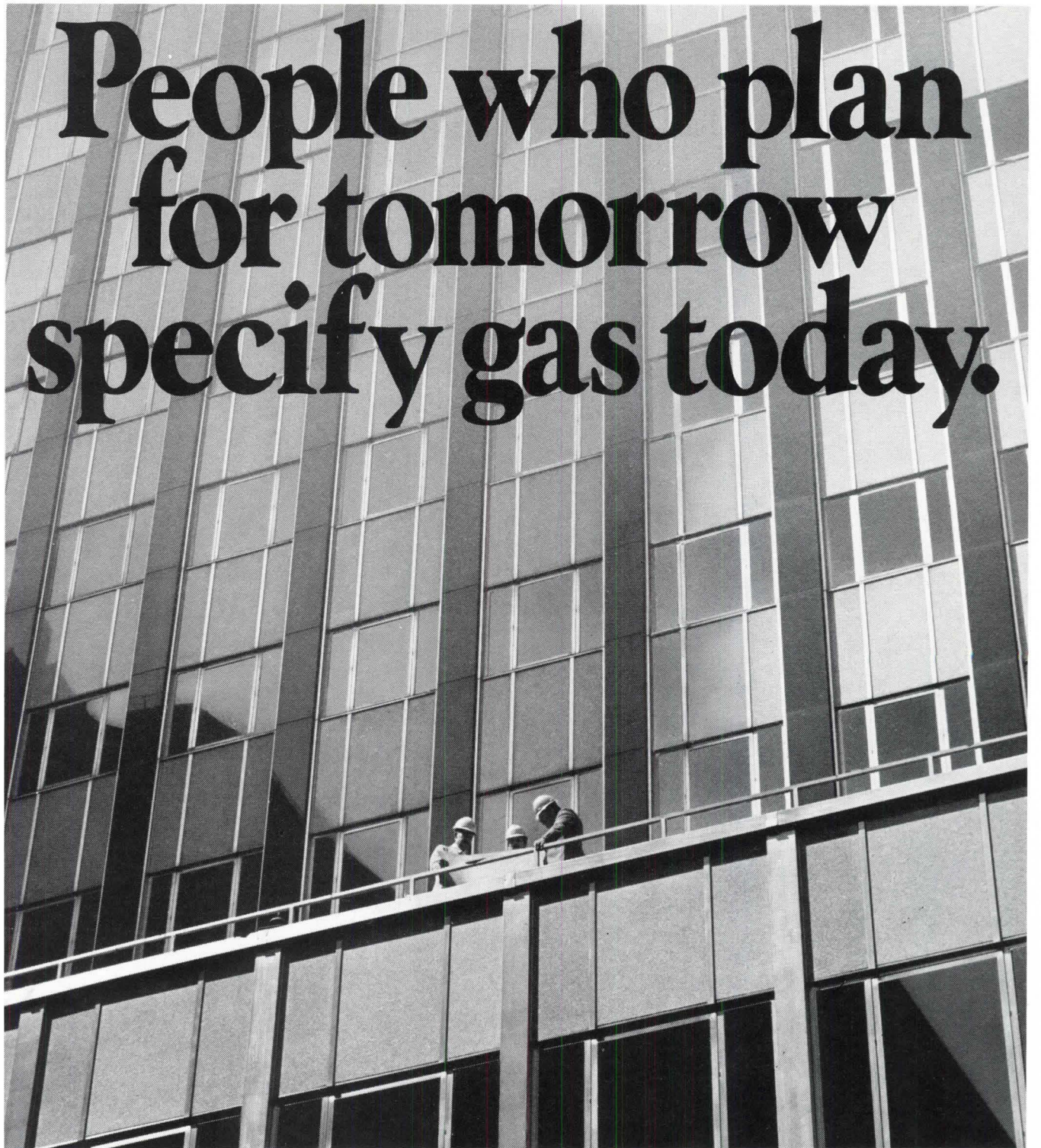
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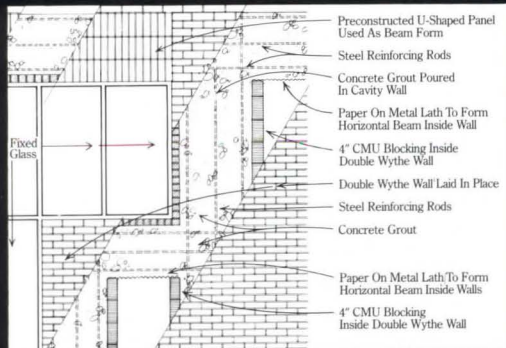
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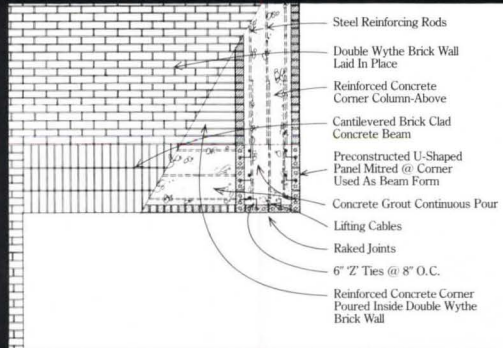
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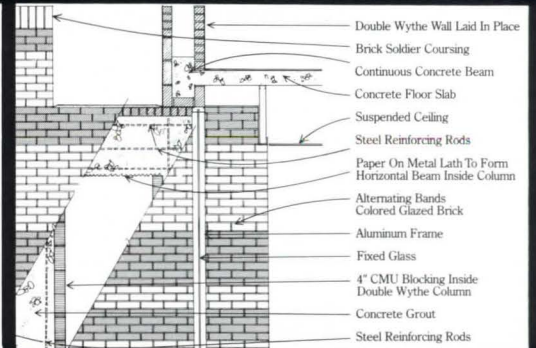
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### Books from page 86

will reveal information about alterations and/or additions, documenting the contents of a house and their arrangement presents a more formidable task. Seale's academic approach repeatedly emphasizes the role of research in the successful restoration project, thus attempting to counter the trend exemplified by the Louisiana house mentioned above. Research occasionally may yield a partial inventory of objects known to have been associated with a specific house. Seale notes, however, that research more often serves as a guide for selecting objects not documented as part of a house inventory, but representative of items one could expect to find in a house of that period and geographic location.

The latter half of the text is devoted to a comprehensive discussion of the evolution of the American house interior. Seale investigates furniture arrangement, floor and wall coverings, lighting devices and transitional objects of use and of decoration, placing them in their historical context. Of special interest in this section are his observations on changes in domestic interiors resulting from technological advances in lighting, heating and furniture production during the 19th century.

The 12 color and 64 black and white plates at the rear of the text are an illuminating collection of period and recent sketches, watercolors, paintings and photographs of historic house interiors. Accompanying each plate is a brief but comprehensive analysis. Chronologically, these plates illustrate a wide range of American house interiors from the early 18th to the early 20th century. Geographically, however, Seale limits himself, with rare exception, to buildings east of the Mississippi (thus indirectly contributing to the myth that the West either lacks old buildings or lacks old buildings worthy of preservation). It is regrettable that no attempt was made to tie the plates to the text. The book will be a welcomed addition to any preservationist's library. *Barry N. Zarkov, Virginia Historic Landmarks Commission, Richmond*

**Handbook of Building Security: Planning and Design.** Peter S. Hopf, AIA, editor. McGraw-Hill, \$34.50.)

Historically, Hopf says, security hasn't been on an architect's list of priorities. Some designers consider security "as anathema," he says, because it can limit freedom of design. Nonetheless, making buildings secure is one of design's functional elements and cannot be ignored if the client is to be assured of professional competence. When Hopf started research for this book, he says, he found a "dearth" of design-oriented security information. The book, then, fills a definite need in a time when crime is one of

society's most pressing problems.

The authors of the chapters in the book are representatives of a broad segment of persons concerned with security—law enforcement engineers, security consultants, agencies and architects and engineers.

Authors in the first section consider design, discussing the need for security of property and person, security in the neighborhood, building security codes and the selection of a security consultant.

Part 2, on security in natural disasters, gives attention to earthquakes, extreme winds and floods. Writers of articles in part 3 discuss security components—electronic security systems, door and windows, lighting, locks and keying, safes and vaults, sprinkler systems, fire alarms. The final section is devoted to solving security problems in building types: banks, cargo storage, computer power security, educational and health facilities, highrise offices, industrial plants, libraries, public buildings, multiple housing and single-family homes.

Also, there are directories of security products and of security consultants. In brief, the book will be of inestimable assistance to the architect.

### Splendid Survivors: San Francisco's Downtown Architectural Heritage.

Michael R. Corbett. (California Living Books, Suite 223, Hearst Building, Third and Market Sts., San Francisco, Calif. 94103, \$32.50 hardbound; \$19.95 paperback.)

Prepared by Charles Hall Page & Associates, Inc., for San Francisco's Architectural Heritage, this book is called a "landmark in urban literature" by Allan Temko,



architectural editor of the *San Francisco Chronicle*. "The book's unprecedented importance," says Temko, "is that it goes beyond individual buildings and teaches us how to build cities."

The book's purpose is not only to inventory more than 800 buildings in downtown San Francisco, but also to serve as a planning document. "The goal is not preservation; the goal is the city. The means is preservation," says the book's editor. The intent of evaluating the structures according to their architectural, historical,

environmental and cultural merits is not to put on a "wholesale campaign" to have the buildings so recognized, but "to point out those features and qualities which deserve recognition so that intelligent planning and decisions can be made about building projects in the future."

Each building is photographed, described, researched and evaluated. The inventory is keyed to the various levels of available official recognition, such as the National Register of Historic Places and San Francisco's city landmarks program. All the buildings given an A rating are of highest priority for landmark status.

Depicted below is one of the buildings inventoried: The Bank of California at 400 California St. Designed by Bliss & Faville (1907), it is described as "one of the most imposing edifices in the U.S. devoted to banking purposes." Surely, in any planning, the structure would deserve respect.

**Public Relations for the Design Professional.** Gerre Jones. (McGraw-Hill, \$18.50.)

When Weld Coxe's *Marketing Architectural and Engineering Services* came out in 1971, it marked the coming of age of marketing as an activity for architects and engineers. Until that time, many, if not most, design professionals looked at marketing as something you had to do, but it wasn't talked about in polite society.

The years since have spawned armies of books, articles, seminars and workshops that dug into every aspect of marketing—direct marketing and "selling," marketing communications, brochure development, audiovisual presentations, proposal writing and more.

Many of these offerings touched in one way or another on public relations, but not until now have we had the benefit of a work given over entirely to that topic.

What's more, author Jones brings to the work a long record of experience—as public relations director for such architects as Stone and Kling and as a consultant, seminar leader and author.

The book covers a great deal of ground. It takes up the tools and techniques of printed as well as broadcast media, and zeroes in closely on the development of press releases and audiovisuals, photography, in-house and external firm publications and, happily, the still too-neglected art of writing simply and forcefully.


The book also takes a crack at that ornery issue—how do you know if your PR is working—and presents such approaches as measuring volume of clippings and doing opinion research using the mails and the telephone.

The book also has some useful things to say about the legal considerations that surround any active publicity program,

*continued on page 94*



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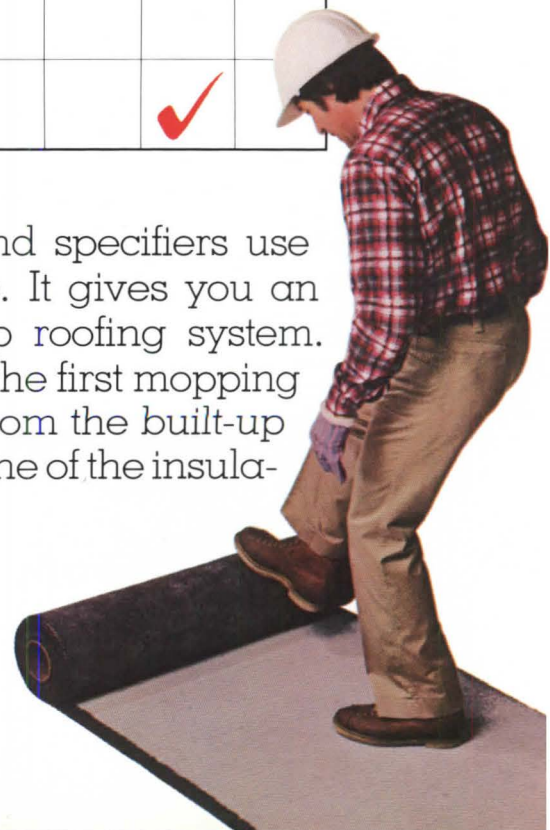
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### Books from page 90

and it pursues the tortuous ins and outs of lobbying and hiring a Washington representative.

If one were to point to any blemishes in this otherwise very helpful work, one would have to pick on an overemphasis on public relations *technique* at the expense of *objectives*. For example, a reader should expect more than the 1.7 percent of the text to be devoted to the crucial topic "who are your publics?" (i.e., target audiences). And too many of the examples and allusions are taken from fields unrelated to architecture and engineering.

In all, however, these are quibbles in this much needed book, which is written in a lively style and is full of good PR things for the practitioner to do. *Stephen A. Kliment, FAIA*

### Architectural Handbook: Environmental Analysis, Architectural Programming, Design and Technology and Construction.

Alfred M. Kemper. (Wiley, \$34.95.)

A would-be entrant to the architectural profession has found this book to be invaluable in preparation for the National Council of Architectural Registration Boards' examination. He recommends it highly to those who are about to encounter the examination experience. It follows the examination outline and discusses each of the architectural profession's many facets in today's world.

But the book is not for the student alone, for the practitioner with years of experience will find it useful as a reference in its up-to-date coverage of a multitude of factors, ranging from geology and soil to energy design guidelines. George J. Hasslein, FAIA, says in the foreword that the book's "range of topics is awesome and intimidating, which will be further compounded by changing values and technology. This is a handbook for architects in their ever-continuing education."

There are four major sections in the book, as the subtitle indicates, incorporating just about everything involved in the building process. The reader will find information on climate and architecture, legal and political constraints, sociological influences, effects of density, space determination, HVAC systems, solar energy, construction management, the metric system and so on. In a few sections, author Alfred M. Kemper, AIA, employed specialists, "as does an architect in actual practice," he says.

### Building: The Fight Against Gravity.

Mario Salvadori. (Atheneum, 122 E. 42nd St., New York, N.Y. 10017, \$10.95.)

Erudite Mario Salvadori, professor emeritus at Columbia University, partner in the New York City engineering consulting firm of Weidinger Associates and newly elected honorary AIA member, is

the author of technical books and articles, but he has the rare ability to put complex things into simple terms so that even a child can understand them—and without any condescension. As this magazine reported in September 1979 (p. 116), he has been singularly successful in opening up the minds of so-called underprivileged young people to such heady subjects as structural architecture.

This delightful and informative book (dedicated to his "young friends who keep asking me why buildings stand up") explains the basic principles involved in the "fight against gravity." Salvadori tells how to build a model of a steel frame out of paper, what's involved in the parts of a building one cannot see, what an earthquake can do to a structure, how tension and compression members can be combined.

Pencil drawings lavishly supplied by Saralinda Hooker and Christopher Ragus help Salvadori succeed in his purpose of telling the reader why buildings don't fall down. If you're looking for a book to give a young friend or a school library, you won't go wrong in selecting this one.

### A Choice over Our Heads: A Guide to Architecture and Design since 1830.

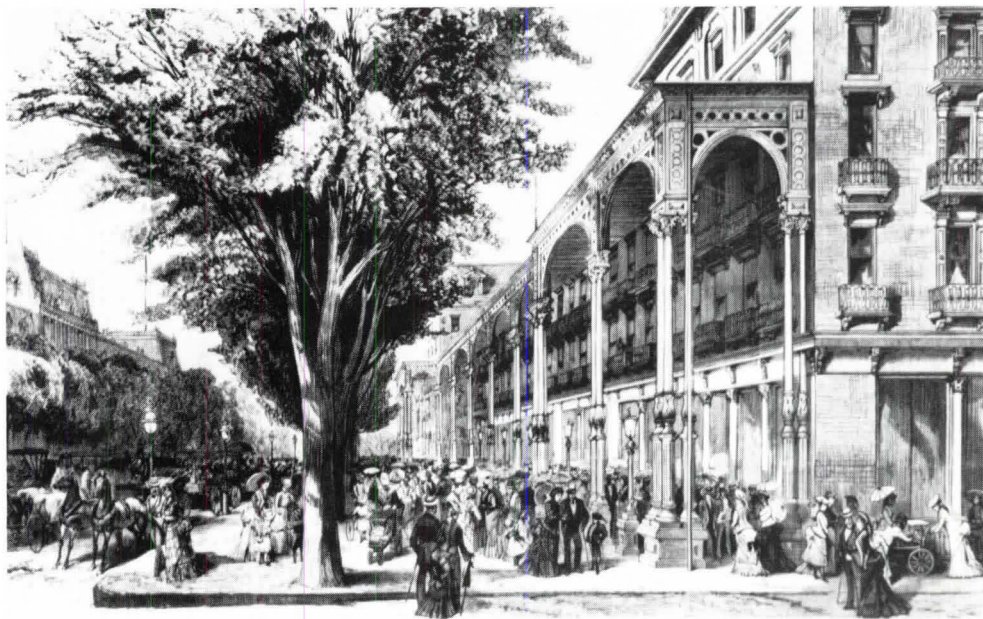
Lawrence Burton. (Eastview Editions, distributed by ISBS, Inc., P.O. Box 555,

Forest Grove, Ore. 97116, \$15 hard-bound, \$9.95 paperbound.)

"In spite of the strong institutional position of architects and designers, it does seem possible that they are not going to get away indefinitely with the kind of control over our lives that they have been claiming during the last century," says the author of this book, who is a senior lecturer at the Central School of Art and Design in London—and has some decided opinions about architecture. For example, he believes that there should be a "rule" that would require buildings to be only two stories high and built with local materials and local labor. Buildings, he says, "would be cheaper, friendlier and less intrusive if on a smaller scale." Bigness, he contends, is intended to make the viewer gasp, but there are so many high-rises now that the "gasps have turned to yawns."

Burton, in the midst of all his banter about what he likes and what he dislikes, presents brief outlines of architecture, design and town planning since 1830, supplying historical charts. He includes as well guides to movements and ideas, to individual architects and designers, to showcase places and museums and to further reading. Poorly designed and printed, the book is difficult to read.

*Books continued on page 96*




**America's Grand Resort Hotels.** Jeffrey Limerick, Nancy Ferguson and Richard Oliver. (Random House, \$20.) This most readable book uses America's resort hotels as a mirror to reflect social, cultural and architectural developments. The book sweeps through the nation's history, revealing the nation's economic ups and downs made visible in the resort hotels. It goes from one of the most popular spas of the 19th century—Saratoga Springs, N.Y. (the Grand Union Hotel, above)—on to White Sulphur Springs in Virginia, used as a barracks and hospital in the Civil War and down to Glitter Gulch, which some people call Las Vegas, and then to contemporary fantasies exemplified in Disney World. And on and on into the future, the authors say, the resort hotel genre will continue, with trend-setting hotels showing new architectural and social ideas, and in turn inspiring "numerous spin-offs and variations in subsequent hotels, until yet another trend-setter appears." Always revealing our social customs.





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Books from page 94

**The Energy-Efficient Church: How to Save Energy (and Money) in Your Church.**

Total Environmental Action, Inc., Douglas R. Hoffman, editor. (Pilgrim Press, \$4.95 prepaid.)

The United Methodist Church is to be commended for this book which tells how to cut fuel bills, how to stop wasting heat, how to institute an energy conservation program. What are the savings? What are the costs? Can it be done by church volunteers? These questions are asked and answered for an array of suggestions to enable church officials to make wise decisions about energy conservation. Although the book addresses the energy problems of churches, it contains information that is relevant for commercial structures or homes. Appendices explain life cycle costing and give a chart for monitoring energy use. Also, there is a bibliography.

Proceeds from the sale of the book will be used to finance the publication of a companion volume on solar energy.

To order, make checks payable to "Architecture: The Energy-Efficient Church," and send to Office of Architecture, Room 307, 475 Riverside Drive, New York, N.Y. 10027.

**Architectural Illustration: The Value Delineation Process.**

Paul Stevenson Oles, AIA. (Van Nostrand Reinhold, \$34.50.)

The author of this book, a principal in the firm of Interface Architects, has won awards for his designs and drawings. In a foreword, I. M. Pei, FAIA, says that the book "demonstrates with finality the importance of architectural drawing in the conceptual design process." Drawings, Pei says, are the "most effective way of exploring the elusive questions of light and scale of a complex interior space."

The value delineation process described by Oles is a means whereby the architect can show realistically how a proposed structure will appear when constructed and in use. The drawing system is presented from the viewpoint of the architect, not from that of the professional illustrator. The principle is that we perceive the drawing of an object in much the same way as we see the object itself. We see it in terms of tone, or value, rather than line.

Oles begins with an explanation of design communication, discussing the participants, the modes, the drawing categories and the drawing media. This is followed by what he calls the book's "key-stone"—the principles of value delineation and how to apply them in the planning and organization of a drawing. The third section explains how to execute the plan and gives guidelines for rendering materials and textures in black and white and in color. The final part is on applica-

tion, with helpful technical devices described.

The book is lavishly illustrated with examples of the drawing system. It will be a tool to which the architect will want to refer again and again.

**Leonis Baptiste Alberti.** Guest editor: Joseph Rykwert. (Rizzoli, \$7.50.)

This book is No. 21 in the excellent series of profiles prepared by the British magazine *Architectural Design*. Editor Rykwert says in the introductory essay that Alberti "has more claim than anyone to be considered the father of the architectural profession, a profession whose status no longer depends on custom or theoretical speculation." He believes that a look back to Alberti is timely, "if only to clear some misunderstandings which have arisen about his own view of his task; misunderstandings which allow some to invoke his name with squalid cynicism to justify the use of the word 'ornament' to describe the patterns of holes they cut through their inert and 'ultimate' skyscrapers, or for the obsolete mouldings with which they bedizen them."

Cecil Grayson supplies an essay on "Alberti, Architect," presenting the master's architectural theory and practice, as well as a brief look at "other characteristics of his education, thought and achievement."

Essays follow on "The Column and the Wall" by Hubert Damisch; "Alberti and Vitruvius," by Françoise Choay; "Discordant Harmony: Alberti to Zuccari," by Manfredo Tafuri; "A Drawing by L. B. Alberti," by Howard Burns; "Reconstruction Drawings for S. Sebastiano," by Robert Tavernor, and "Church of S. Sebastiano in Mantua: A Tentative Restoration," by the guest editor and Robert Tavernor. In the middle of the essays is a section on some of Alberti's buildings, among them Florence's Palazzo Rucellai and Santa Maria Novella. As with other profiles in the series, this one is profusely illustrated. And highly recommended.

**Site Planning for Solar Access: A Guidebook for Residential Developers and Site Planners.** Duncan Erley and Martin Jaffe. (U.S. Government Printing Office.)

Prepared by the American Planning Association under a HUD contract, in cooperation with the Department of Energy, this report suggests that site planning for solar access need not be complicated nor expensive. "Almost any development can be designed to protect solar energy use."

Among the things to be considered in site planning are atmospheric conditions, shading by natural and man-made objects, topography and building orientation. "Solar developments also can be designed to fit the constraints of most

conventional land use controls, ordinances and regulations," the authors say.

The guidebook emphasizes the need for communication between the architect and site planner, saying that the site planner "should be a part of the total design team from the beginning, influencing architectural decisions that affect solar energy use and recommending development layout and landscaping. . . . Similarly, the architect, when designing buildings which use solar energy for space heating, water heating or space cooling, should be responsive to the site's limitations."

Discussed are specific design strategies to protect solar access, such as street orientation, the use of street width as solar access buffers, lot layout on north/south streets, siting strategies for lowrise multifamily housing and for highrise housing.

There are helpful diagrams, charts and checklists throughout the book.

It is available from the U.S. Government Printing Office, Washington, D.C. 20402 (report no. 630-916/2704).

**Heritage Houses: The American Tradition in Connecticut, 1660-1900.** Sara Emerson Rolleston. (Viking, \$15.95.)

A remarkable number of Connecticut's beautiful early houses are still standing. This book describes many of the historic dwellings, including homes of wealthy shipowners, political and military figures, professional people and illustrious personages such as Noah Webster, Mark Twain and Harriet Beecher Stowe. There are more than 200 photographs in black and white that offer a sampling of house exteriors and interiors, including many details of furnishing and decorating.

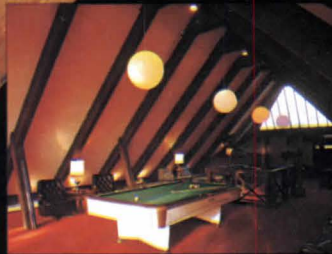
**Living with Design.** David Hicks, in collaboration with Nicholas Jenkins. (William Morrow & Co., \$29.95.)

David Hicks is a British interior designer who has a firm in London and associate companies in France, Belgium, Switzerland, Japan, Norway, Germany and Australia. His clients live and work in all parts of the world. This book is autobiographical to a degree in that he writes about the influences that have shaped his work. But he also discusses many design principles, giving examples from his own work. He tells how the interior designer should deal with such matters as color, ceilings, windows, wall treatments, paintings, doors, flowers and plants. There are also suggestions on specific rooms—dining rooms, drawing rooms, kitchens, bathrooms. He discusses also the interior design of restaurants, shops, office. Interspersed are case histories of projects in many places, such as a castle in Ireland, a holiday house in the Bahamas, a London flat. With its 335

*continued on page 102*

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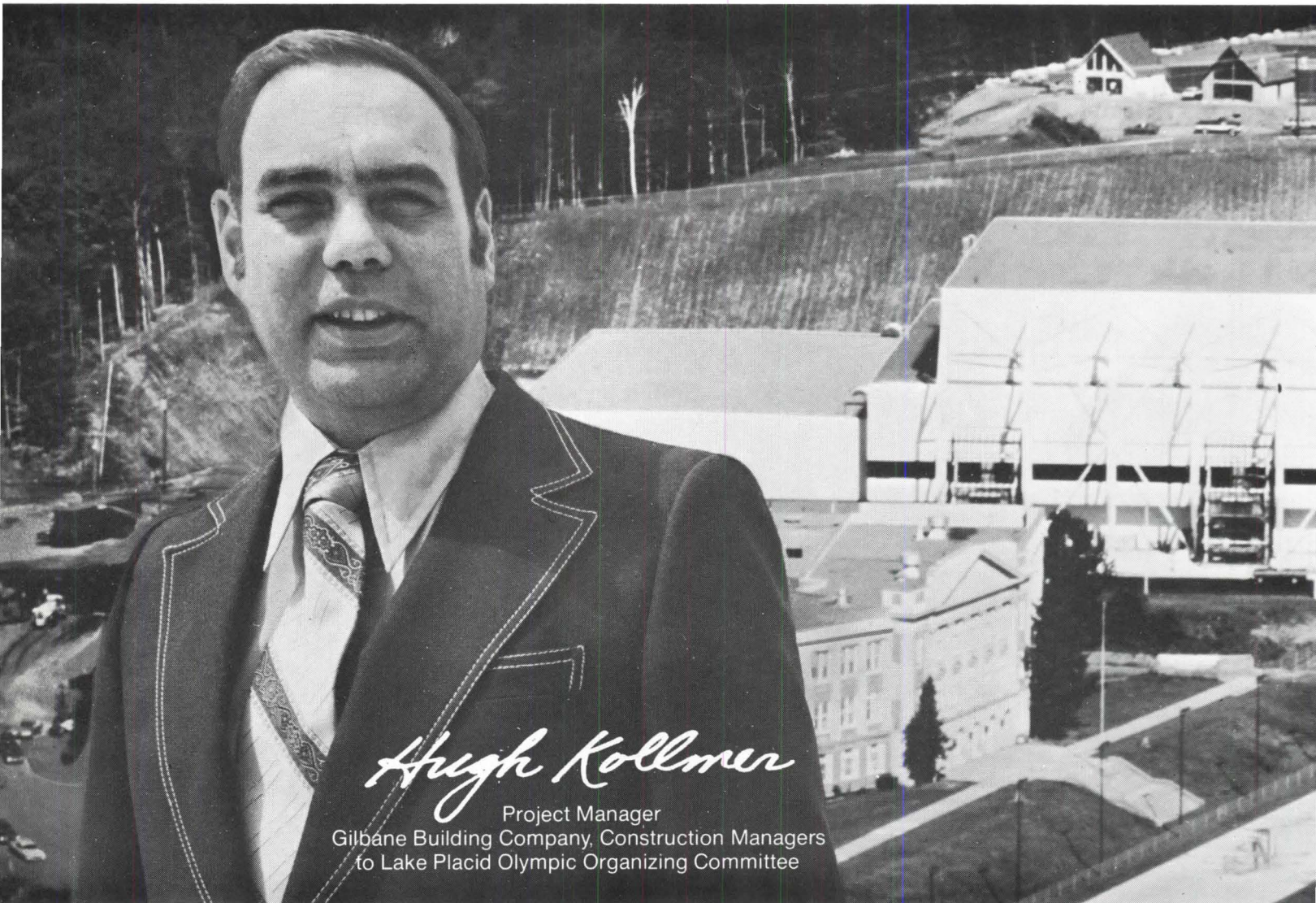


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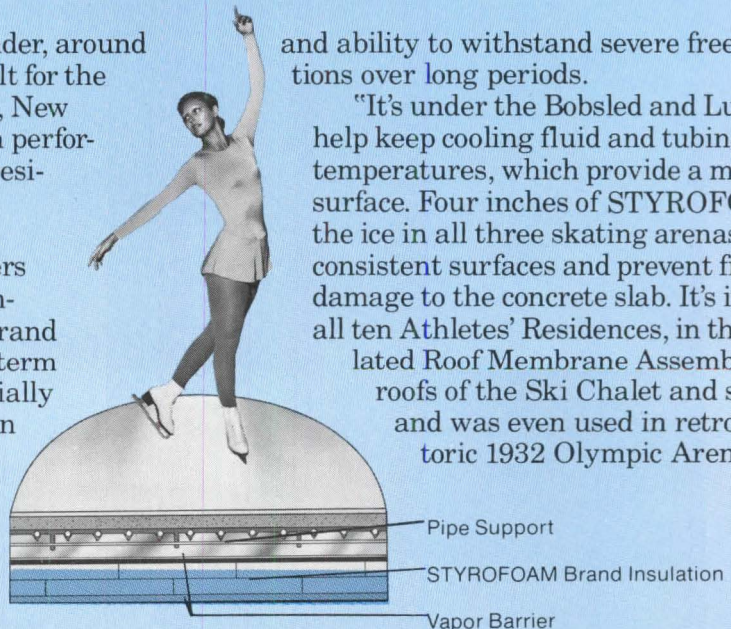
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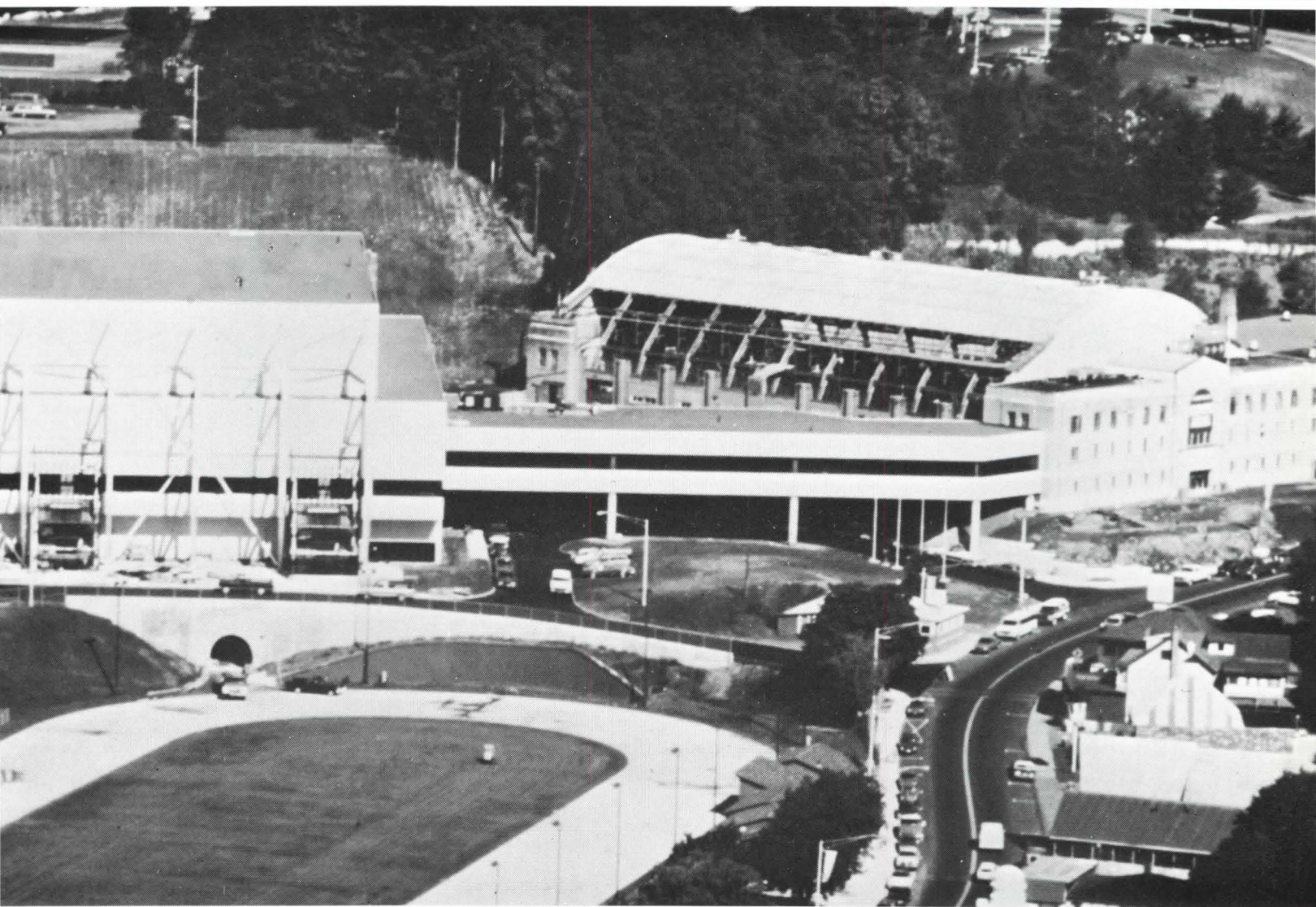
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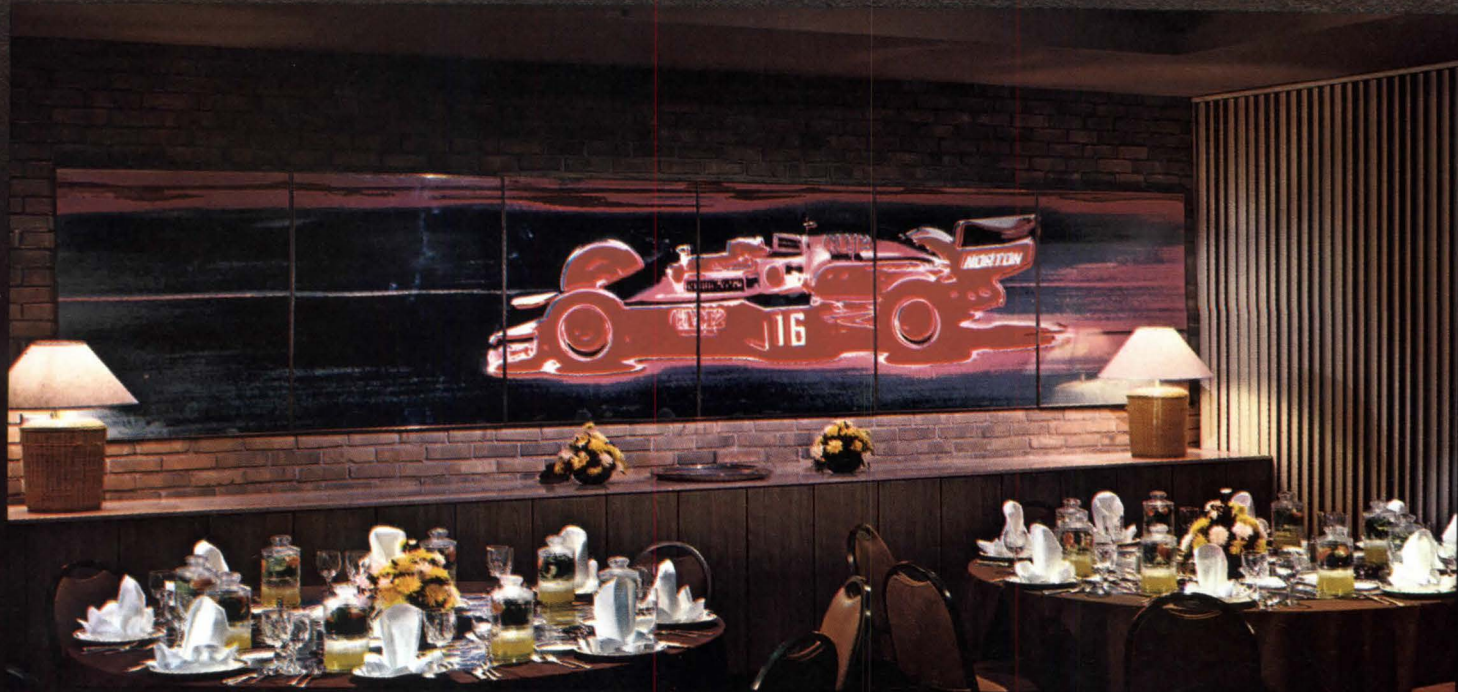
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### Books from page 96

illustrations in color and 220 in black and white, the book is a visual catalog of Hicks' projects.

**Moving Historic Buildings.** John Obed Curtis. (Department of Interior, Heritage Conservation Service, \$2.50.) **Housemoving: Old Houses Make Good Neighbors.** Rosaria F. Hodgdon and S. Gregory Lip-ton. Edited by Paul Osborn. (Oregon Department of Housing and Community Conservation, Room 106, 777 Pearl St., Eugene, Ore. 97401, \$3.50.)

*Moving Historic Buildings* is intended as a guide in the delicate operation of moving such structures. It should not be undertaken, says the author, unless all other means of saving the structure from demolition have been investigated and ruled out. Precautions must be taken to ensure that the building's historic significance is not endangered.

Sound advice is given on the selection of a moving contractor, specifications and licenses, procedures of the move, planning the route to take, documentation, interim protection prior to the move, selection and preparation of the new site and preparation of the structure for the move. The book concludes with a case study for the relocation of the Gruber Wagon Works in

Berks County, Pa.

*Housemoving: Old Houses Make Good Neighbors* is also filled with practical advice. Its authors contend that housemoving is not a way to "stop time" through the enshrinement of "pieces of history in museum-like enclaves," but is a "sensible way" to take the past and place it in inner city neighborhoods. The book discusses what can be moved safely and how to match old houses with neighborhoods. There is information on preparing the house for the move, siting it, modifying the structure, financing the move and estimating costs.

Case studies detail various moving projects across the country. Recommendations are given for housemoving, and the appendix contains useful information on such topics as recording history, survey analysis, codes and permits.

Both volumes are liberally illustrated and should be valuable to the architect who is concerned about building relocation.

**Facility Programming: Methods and Applications.** Edited by Wolfgang F. E. Preiser. (Dowden, Hutchinson & Ross.)

Facility programming focuses on the increased habitability of environmental settings from the user's point of view. It is

a process by which communication is established among occupants, clients and managers of facilities. Such communication, says Preiser, is particularly important for "large organizations and government agencies with highly complex and substantial construction programs, frequently consisting of repetitive building types, such as offices, schools and housing."

In addition to Preiser, 28 individuals have contributed to the volume to give an overview of current user-oriented programming methods. There are four major parts to the book: essays on facility programming (for example, Gerald Davis contributes an article on a process for adapting existing buildings for new office uses); essays on programming for architecture and design (in this section, Herbert McLaughlin, AIA, writes about user needs in the Martin Luther King Square in San Francisco); essays on research for facility programming (among them, an article by Sandra C. Howell on postconstruction evaluation and guidelines for housing for the elderly), and an essay on the prospects for facility programming by John P. Eberhard, FAIA. These essays are introduced by Preiser, who writes on responding to the changing context of environmental design. □

### Sewers from page 82

cedures, requirements and standards into some sort of common pattern. A recent set of interagency agreements has gone a long way toward moving toward a single environmental review process, according to CEQ.

But no matter how closely the processes are brought together, there is a vast difference between the missions of EPA on the one hand, and of Farmers Home, EDA and HUD on the other. EPA's business is environmental protection; the other agencies' business is economic and community development. "There's a difference in philosophy," one CEQ official observes. "EPA wants to stop growth; EDA, HUD and Farmers Home want to go out and cause growth."

CEQ has prodded water and sewer granting agencies to prepare environmental impact statements for projects they fund as a means of ensuring that environmental objectives are considered. An EIS must be filed for major federal actions under the terms of the National Environmental Policy Act. While the EIS only sets up the process for ensuring that alternatives are considered and in no way can stop a project, it does give an opportunity for the affected parties to air their criticisms of an action and to exert moral suasion on the agency making the grant. The only problem is that very few EISs have been filed for either Farmers Home or EDA projects. EPA filed 103 final environmental impact statements for about \$12 billion of sewage treatment grants, according to Michael Kane of the Council on Environmental Quality.

In contrast, EDA filed 15 for \$1.9 billion and Farmers Home filed only three for \$4.2 billion worth of projects. "EPA's program is the most environmentally benign," observes another CEQ official. "The others have no planning process. They just pump money out the door."

Much of EPA's present strict allotment of sewage treatment grants is designed to ensure that funds are used to curb pollution and not to create more environmental problems through induced

growth. The policy is also meant to husband as carefully as possible EPA's limited fiscal resources. But for many, EPA's tough stance is a good example of throwing the baby out with the bathwater. And it is facile to say, as EPA officials do, that "we are not in the land use business."

The fact that EPA does not give municipalities in the Washington area money for sewage treatment expansion hardly means that growth will not occur. It will just go somewhere else, perhaps somewhere less desirable. Furthermore, many communities have shown that, while infrastructure may induce growth, it can also channel it where it should most appropriately occur. This is precisely what Montgomery County, Md., one of the jurisdictions affected by the EPA action, has been trying to do in its growth management plan. AIA's 1972 program for urban growth takes a similar stance. It proposes "that the federal and state governments plan and construct networks of utility corridors, including transit, water, sewage and electricity. These would constitute the skeleton of utilities on which growth units could be fastened."

There's also the messy question of secondary impacts—in this case, social impacts. A recent HUD report on housing costs asserts that the government's unwillingness to fund sewage treatment capacity beyond existing needs could inhibit land supply and further drive up housing costs.

This point is not lost on EPA officials. Deputy Assistant Administrator Rhett hopes that the agency's new grant policy can be implemented "without increasing or raising the costs of housing unnecessarily."

The problem is that in this, as in so many other areas of public policy, there is right on both sides. It would be in the best interests of everyone—environmentalists and developers—to reconcile environmental economic and social objectives. But, unfortunately for all of us, the means of doing so remain illusory. That means that planning for or against growth will continue to be through the back door. □



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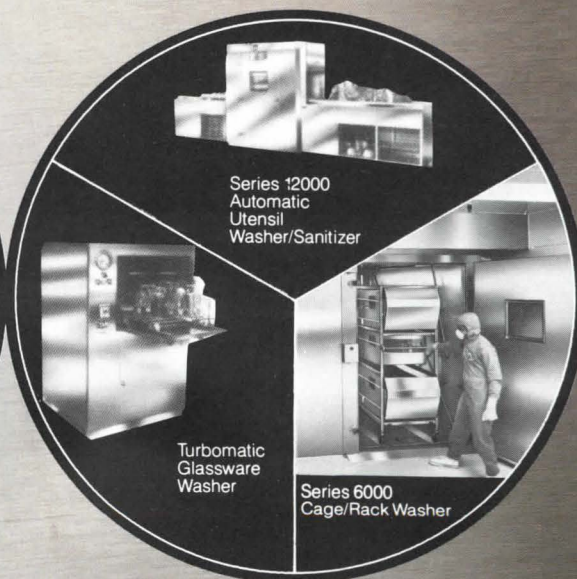
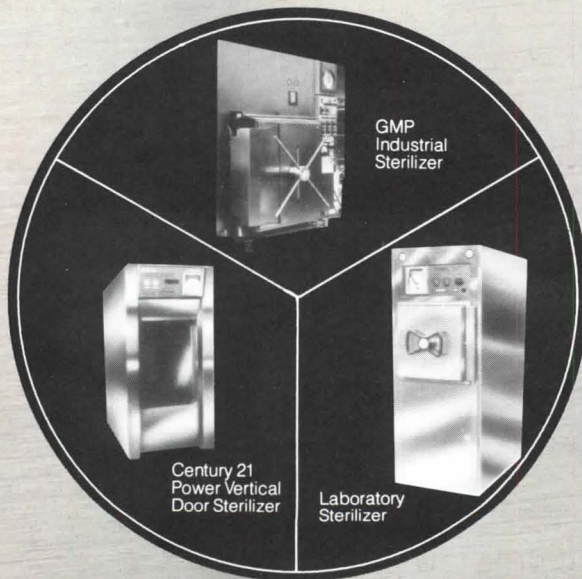
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## Energy from page 42

the Energy Conservation and Production Act of 1976. The standards would limit the amount of energy a building could consume, expressed in Btus per square foot per year (see Jan., p. 22). A building would be tested at the design stage rather than by actual performance (thus the term design energy budgets). Energy codes now in use apply to the thermal characteristics of individual parts of the building. BEPS would apply to the building as a whole. DOE estimates that national compliance with the standards could reduce energy consumption by 22 to 50 percent in residential buildings and 17 to 22 percent in commercial buildings.

These and other concerns will be raised at the public hearings. The new dates are March 24-26, Washington, D.C.; April 14-16, Atlanta and Kansas City; April 21-23, Los Angeles and Boston.

## Italians Join Americans to Plan Energy Research, Development

Government officials of Italy and the U.S. have signed an agreement to jointly explore three areas of energy research and development: the use of coal, electric power transmission and solar energy. Emphasis will be placed on the advancement of the state of solar energy technology in the three-year, \$4.5 million jointly funded effort whose major purpose is to reduce each country's dependence upon imported oil. The Department of Energy has assigned the management of all U.S. activities in the program to the Solar Energy Research Institute.

The program calls for seven solar energy projects involving research and development, design and construction and information exchange in a broad spectrum of active and passive solar technologies.

Three different solar-powered systems will be installed in neighboring sites near Catania, Sicily, where many rural people currently are without any central source

of electricity. Each system will use a different technical approach for the same electric power uses such as domestic lighting. For example, one system will use parabolic troughs that concentrate the sun's energy to drive a turbine and electric generator.

Also, passive solar buildings will be jointly designed, tested, constructed and monitored for performance in using the sun to heat and cool interior spaces. "This project will pool talent in our two countries to jointly design, test and instrument residential and commercial buildings with a whole range of passive solar systems and devices," says J. Matthew Sandor of SERI. "These buildings are already a part of public housing programs in each country, and construction costs will be covered independently of our solar effort—a tremendous advantage for the cooperation."

Sandor believes that benefits will go beyond technical advancements. "Social, economic and cultural impacts will be felt as a result of the active and passive installations of this program," he says.

## Energy from the Dead Sea?

Israel hopes to turn the Dead Sea into a "Sea of Life," using the sea and the sun shining on it to produce most of the nation's electricity needs. By the end of the century, an expanded system of "solar ponds" in the Dead Sea region could result in a huge decrease in oil imports upon which Israel is now almost totally dependent.

Yitzhak Modai, Israel's minister of energy, recently inaugurated what is claimed to be the world's largest solar electric power station, adjacent to the Dead Sea, the lowest point on earth. He said that the two-acre solar pond and its 150-kilowatt power plant nearby "demonstrates the commercial viability of solar power." (Photo below of a solar pond at the pilot solar energy station in Yavne, Israel, showing light bulbs powered by

*continued on page 108*



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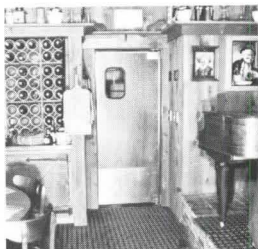
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◀ SCP 5: A Solid Core Door 3/4" thick. Illustrated door has Anodized Aluminum, Top Panels, 18 gauge steel center panels (SS front, Galv. rear), 14 gauge high carbon steel kick plates. Write for options and other Solid Core Door models. Applications same as "LWP 3", a heavier door but same easy action.

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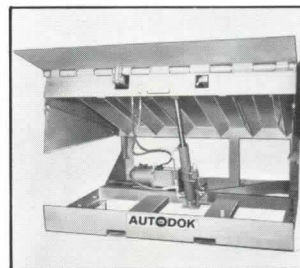
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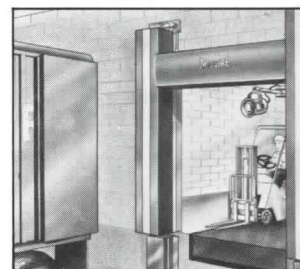
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Circle 46 on information card

**Energy** from page 104  
electricity from the pond.)

The solar pond is lined with special black material and is made up of layers of water differing in salinity. The very hot water that accumulates in the pond's bottom is passed through heat exchangers to produce energy which powers the specially designed turbines to produce electricity.

In a nonsolar pond, there is a constant motion between cooler and warmer waters that prevents the buildup of the water's heat, but in a solar pond the opposite is true. When the shallow pond is layered with salt water on the bottom and fresh water on top, the heavier salt water is trapped below and becomes hotter and hotter. Once the pond is heated up, the hot water, which can reach temperatures near the boiling point, can be pumped year round even without the sun shining.

Shmuel Ofry, coordinator of energy research and development in the ministry of finance, says that the built-in storage is "one of the biggest breakthroughs of the solar pond system." When it is cloudy, he explains, some other solar devices are not very useful and have to be used mainly with auxiliary energy sources.

Also, he says, the solar ponds are inexpensive. The technical problems of solar energy have been solved, he says, but the use of it to produce electricity ends up costing between 25 and 30 times more than fossil fuels. "With improved technology, the solar pond could become competitive with oil—you don't need the glass, the metal frames of standard solar collectors—just the cost of digging and lining the pond."

Officials of Ormat Turbines and Solmat Ltd., the companies to develop and build the solar electric power station near the Dead Sea, say that within two to three years a five-megawatt power station, based on a one-square-kilometer solar pond, will be built in the Dead Sea region. This large project will serve as a model for the 20-25 megawatt plants planned

for construction by 1985, which will have the capacity of producing 2,000 megawatts of electricity. The cost, the officials predict, will be about \$2,000 per kilowatt, a price "similar to that of expensive hydroelectric energy."

Israel has long been a leader in the development of solar energy. Currently, almost a third of the people use solar energy to heat water, the highest percentage in the world.

## Solar Advocates' Values Probed, Contrasted with Policy Makers

Government policy makers within the Department of Energy and in scattered government agencies who design, implement and evaluate solar energy policies tend to judge solar energy on economic criteria, recognizing the need for the nation to achieve two goals: reduction in the growth of oil imports and the development of a new energy source. Conversely, solar energy advocates—those outside the government who are often drawn from environmental and other social movements—tend to treat solar energy issues on broad social and ethical grounds. The different policy orientations of these two groups in solar energy policy making result from the values they hold (a value being defined as an "enduring belief that determines general standards of conduct") and the weights they assign to different types of values, i.e., economic, social, environmental, security and ethical. This diversity of views is important to recognize in the ongoing national energy dilemma.

These conclusions are made in a report entitled "Social Values and Solar Energy Policy: The Policy Maker and the Advocate," prepared for DOE by Avraham Shama and Ken Jacobs of the Solar Energy Research Institute. The researchers analyzed the public pronouncements by policy makers and by advocates, identifying, clustering and rank-ordering the

values that each group associates with solar energy policy.

The findings show that government policy makers give greater weight to economic values, which account for 52 percent of all their value mentions. They view the economic values not only as ends in themselves, but also as a means to achieve all other values. Policy makers generally define environmental values as pertaining to pollution reduction and to health and safety enhancement, the report says. "Social values may refer to solar energy as a means to either avoid or enhance social change." They rarely discuss ethical values, and "appear to be comfortable with placing all values in an economically quantitative form."

Solar energy advocates, on the other hand, "define economic value with reference to efficiency," and unlike the policy makers, the advocates "do not necessarily value economic growth." The advocates give nearly equal weight to social and economic values. Such solar energy advocates as Hazel Henderson, Barry Commoner and Herman Daly, the report says, "tend to conceptualize the energy crisis and the need for an aggressive solar energy policy as part of the need for broader social reform."

This reform "is based on environmental conditions and constraints and on humanistic-ethical criteria. Only on this ethical basis should a social, productive and economic system be designed," the advocates contend.

Thus, the report sheds light on two options regarding solar energy policy, revealing a significantly different hierarchy of values held by governmental policy makers and the solar energy advocates. The researchers believe that the differences in values "is a very plausible reason for the differences in policy orientation exhibited by the two groups." The report calls for further investigation of the relative homogeneity or heterogeneity within the two key groups. The researchers say

*continued on page 110*

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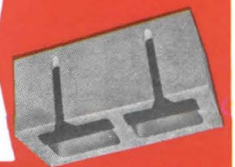
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**Energy from page 108**

that the findings of the study may help the solar energy policy makers to "clarify the social values that their policies may help to bring about or reinforce." Also, they say, the findings may expose the policy makers "to an alternative value hierarchy—that of the advocates."

The report is available for \$5.25 from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161. Its number is SERI/RR-51-329.

## DEATHS

- M. R. Baker**, Reistertown, Md.  
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**F. H. Cervetti**, Marshalltown, Iowa  
**Josiah Childs**, Longboat Key, Fla.  
**Graydon Clark Jr.**, Lexington, Ky.  
**M. B. Cleveland**, Waterloo, Iowa  
**Rodger Leon Comfort Jr.**, Jackson, Miss.  
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**John W. Franklin**, Morton, Conn.  
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**Victor Gruen, FAIA:** Founder of Gruen Associates, headquartered in Los Angeles, Mr. Gruen designed the first regional shopping center and was recognized as an urban revitalization expert.

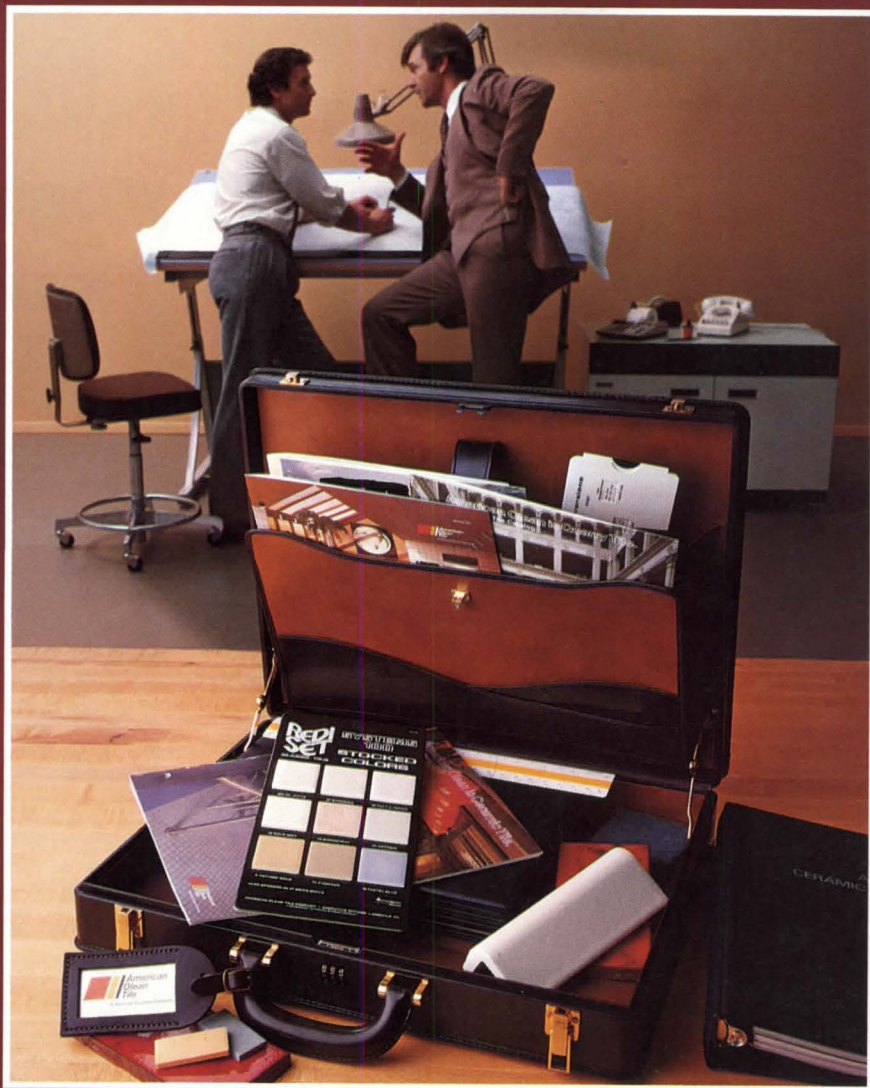
Born in Vienna, Austria, and educated at the State University School for Architecture, the Vienna Academy of Art, Mr. Gruen, who died on Feb. 14 in Vienna at the age of 76, came to the U.S. in 1938 when Hitler's troops invaded Austria. He founded Victor Gruen Associates in 1949.

In 1952, Mr. Gruen designed the prototypical regional shopping center, Northland, in Detroit. He later also designed the first airconditioned enclosed mall, Southdale shopping center, in Minneapolis. His original shopping center pro-

*continued on page 114*



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factory. Sometimes, however, the NSF man may select a product at random from the production line, mark it with an NSF identification, and have it shipped to Ann Arbor for evaluation or re-testing in the NSF testing laboratory.

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Circle 52 on information card

**News from page 110**

positional included medical offices, rooms for club activities, circulating libraries and post offices in addition to shops. Later spinoffs on his original shopping center led him to disavow his "fatherhood."

In 1956, he developed a master plan for the core area of Fort Worth. The plan was never adopted by city officials, but it established several goals that influenced architects and planners. His plan to revitalize midtown plaza in Rochester, N.Y., was one of the first major revitalization projects of a downtown commercial area. He also developed the 1967 plan for the 245-acre central core of Boston, known as Government Center.

Mr. Gruen was a frequent lecturer at architectural schools and his articles have appeared in many professional magazines. His books include *Shopping Centers U.S.A.* (coauthored by economist Larry Smith) and *The Heart of Our Cities; The Urban Crisis: Diagnosis and Cure*. His work has been exhibited at museums throughout the world.

**Paul R. Williams, FAIA:** The first black ever to become a member of AIA (in 1926), Mr. Williams was the recipient of five honorary degrees and the Spingarn medal for "distinguished achievement" of the National Association for the Ad-

vancement of Colored People. Mr. Williams died on Jan. 23 at the age of 85.

Among his many design projects were the Saks Fifth Avenue store in Beverly Hills, Calif.; the Los Angeles Courthouse hall of administration; a hotel, office building complex and housing in Medellin, Colombia, and nearly 3,000 houses, including mansions for such movie stars as Tyrone Power, Frank Sinatra and Cary Grant. He was also associate architect for Los Angeles International Airport, and was associated on many other projects with the late A. Quincy Jones, dean of the University of Southern California school of architecture. His works won many awards.

Born in Los Angeles, Mr. Williams attended the University of Southern California, supporting himself by cutting the letters "USC" from brass and selling them as watch fobs. By 1929 he had become known as a residential architecture specialist, and was commissioned by E.L. Cord, the automobile magnate, to design a mansion on Cord's 10-acre estate in Beverly Hills. The house featured an 18-car garage. Mr. Williams designed not only large houses in the traditional and elegant manner, but also smaller, more contemporary houses.

He is described by Mrs. A. Quincy Jones as being a person of the "highest

integrity," and the *Los Angeles Times* described him as "gentle and courtly," and a "perfectionist."

**Frederick A. Muhlenberg, FAIA:** A member of Congress (Berks County, Pa., 1946-48)—the seventh member of his family to have been elected to the House of Representatives—as well as an active civic leader in his community and the designer of award-winning buildings, Mr. Muhlenberg died on Jan. 19 at the age of 92. He was a direct descendant of Henry Melchior Muhlenberg, founder of the Lutheran Church of America.

The founder of several architectural firms in Pennsylvania, including Muhlenberg-Greene, from which he retired in 1978, he participated in the design of such buildings as the Berks County Geriatric Hospital in Reading, Pa., for which he received a special commendation from the American Hospital Association; the Kutztown State College science building; the Muhlenberg Township Western Electric Co. plant; the CNA office building and the American Bank office building, both in Reading.

He was a Reading councilman from 1934 to 1938 and a Wernersville Borough councilman from 1957 to 1960. He served as chairman of the Berks County Plan-

*continued on page 116*



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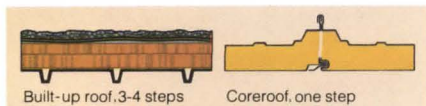
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\*The Manual of Built-Up Roof Systems  
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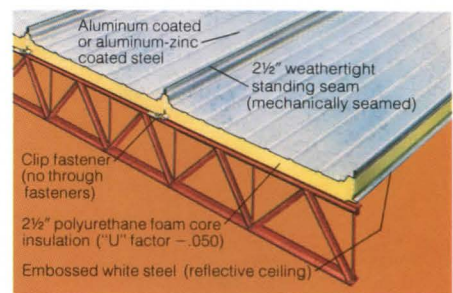
together along a 2½" standing seam. Saves many, many expensive man-hours.

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News from page 114

ning Commission from 1950 to 1972 and was a former chairman of the Pennsylvania State Art Commission.

Among his services to the architectural profession were his directorship of the Pennsylvania Chapter/AIA (1920-22), vice presidency of the Pennsylvania Society of Architects/AIA (1932-34) and membership on many national Institute committees. In World War I, he served in the infantry, returning to active service during World War II as a colonel in the Army Corps of Engineers. He received the Distinguished Service Cross, Legion of Merit, Legion d'Honneur, Croix de Guerre, Verdun Medal and the Purple Heart with Palm.

He studied at Gettysburg College and at the University of Pennsylvania's School of architecture. At the time of his death, he resided in Wernersville, Pa.

**Charles G. Hilgenhurst, FAIA:** For nine years, Mr. Hilgenhurst held top design posts with the Boston Redevelopment Authority, resigning in 1971 to establish the architectural firm of Charles G. Hilgenhurst & Associates in Boston. He is credited by the *Boston Globe* as setting a "new tone by instituting an architectural design review process within BRA, with professional architects as staff. He also

set up a jury of highly regarded local architects to criticize and suggest changes of plans."

The newspaper in eulogizing Mr. Hilgenhurst, who died on Jan. 21 at the age of 50 of a heart attack while on a business trip to Nassau, quoted Edward J. Logue, Hon. AIA, former BRA director, as saying that he believed Mr. Hilgenhurst to be "the person who more than any other single individual added the extra dimension of quality to the design work in Government Center and the downtown Faneuil Hall-Quincy Market and waterfront area." Mr. Logue said that Boston's "world reputation for the quality of its urban design" is due to Mr. Hilgenhurst's personal performance.

His firm was selected to receive the Boston Harleston Parker medal for its renovation of the East Cambridge Savings Bank. The firm, the planner of the proposed blue line of the MBTA extension, also recently completed plans for the restoration of Fort Independence on Castle Island and was a development consultant for the Southwest Corridor planning project.

Mr. Hilgenhurst, who studied architecture at Princeton University and mechanical engineering at Cornell, was associated with The Architects Collaborative from 1959 to 1962. He was a former

member of the board of directors for the Boston Architectural Center and the Boston Society of Architects/AIA. He also served on several AIA committees and was active in civic affairs.

## BRIEFS

**Two energy-related architectural student competitions** are in progress. The Association of Student Chapters/AIA and New England Techbuilt are cosponsors of a design competition for the "Energy House of the '80s." Declaration of intent to submit entries must be sent to ASC/AIA at Institute headquarters by April 11. The other competition, cosponsored by the Association of Collegiate Schools of Architecture, with the Department of Energy and the Brick Institute of America, is entitled "Design + Energy." Submissions are due by May 2. Write ACSA, 1735 New York Ave. N.W., Washington, D.C. 20006.

**Gasohol is now being used** by the federal interagency motor pool in Des Moines, Iowa, operated by GSA. This is GSA's first step in its goal of reaching usage of 10 percent gasohol by the end of 1980 in the 88,000 vehicles it operates. If the goal is reached, the annualized savings could *continued on page 118*

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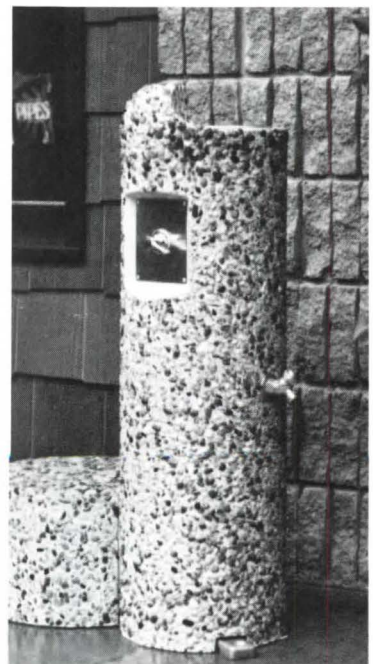
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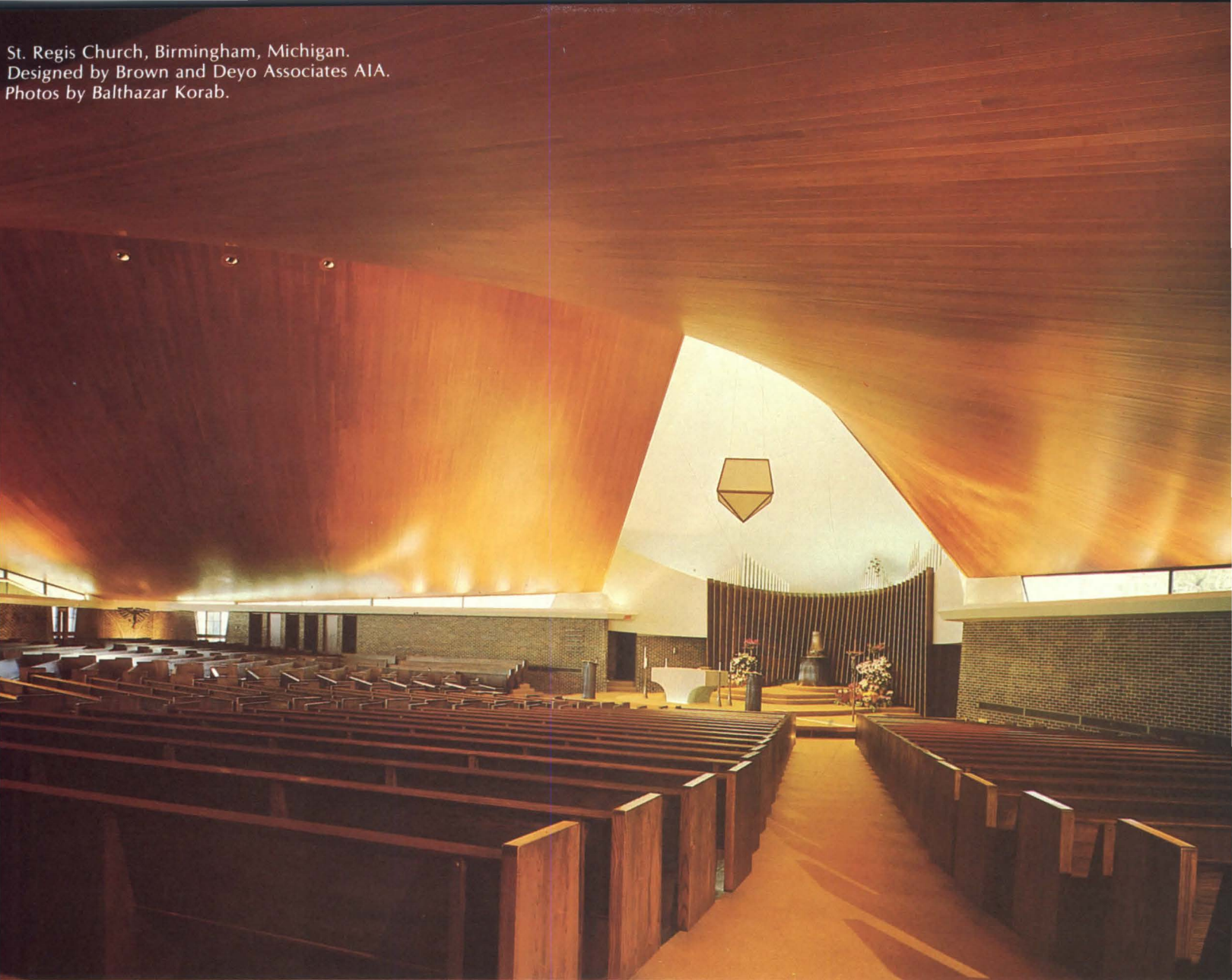
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### Briefs from page 116

be as much as 725,000 gallons of gasoline. The motor pool in Des Moines dispenses an average of 1,200 gallons a month to GSA vehicles and those of other agencies.

**The recently formed American Association of Engineering Societies** has elected Irvan F. Mendenhall, president-elect of the American Society of Civil Engineers, as chairman of its public affairs council.

**The Association of Student Chapters/AIA** has elected Alex Barberena as president. He is a student at the University of Houston.

**The plaza fountain of Citicorp Center,** New York City, is the recipient of the Concrete Industry Board's "urban amenities award." It was designed by landscape architects Sasaki Associates. The building (architect: Hugh Stubbins & Associates, Cambridge, Mass.) received an AIA honor award in 1979.

**"Proceedings of the ACSA 67th Annual Meeting,"** the first published proceedings of an annual meeting of the Association of Collegiate Schools of Architecture, is now available. Edited by Michael J. Bednar, AIA, the volume surveys eight critical

areas, among them postmodernism, adaptive use and behavioral evaluation of buildings. Order from: Carrollton Press, Inc., 1911 Fort Myer Drive, Arlington, Va. 22209 (cloth binding, \$25 plus postage; paper binding, \$17.50 plus postage).

**Donald Canty,** AIA JOURNAL editor, is the recipient of the California Council/AIA's 1979 distinguished service citation. Among the previous recipients were A. Quincy Jones, FAIA, and Charles and Ray Eames.

**Note to golfers:** AIA will challenge the Royal Institute of British Architects in a third golf tournament on July 6-10 in Surrey, England. Contact: Robert N. Eddy, AIA, 5405 Stockdale Highway, Bakersfield, Calif. 93309.

**The American Society of Mechanical Engineers,** headquartered in New York City, is celebrating its centennial this year. ASME consists of nearly 100,000 practicing engineers and other professionals.

**The American Society of Interior Designers** has elected Wallace R. Jonason, president of Wallace Jonason Environment Design, San Francisco, as its 1980 president.

**Eleventh-grade students are invited to** participate in the "Summer Academy in Architecture," July 13-Aug. 22, sponsored by the University of Texas at Austin's school of architecture. Contact: Larry A. Doll, School of Architecture, University of Texas, Austin, Tex. 78712.

**The International Association of Lighting Designers** has elected Jeffrey A. Milham as its president for a two-year term. He is president of Design Decisions Inc., a division of Syska & Hennessy Inc., with offices in Los Angeles, San Francisco, New York City and Washington, D.C.

**The National Council of Acoustical Consultants** has published its annual membership directory, a comprehensive guide to the acoustical consulting profession. Copies may be obtained at a prepaid cost of \$2.50 each to cover handling and postage from: NCAC, 66 Morris Ave., Springfield, N.J. 07081.

**The position of dean of the school of architecture and planning** at the University of New Mexico is open, and applicants are invited to submit résumés by April 1. Contact: Joel Jones, 226 C, Sholes Hall, University of New Mexico, Albuquerque, N.M. 87131. *Products on page 120*

## DEAN

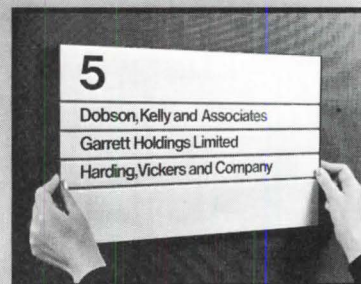
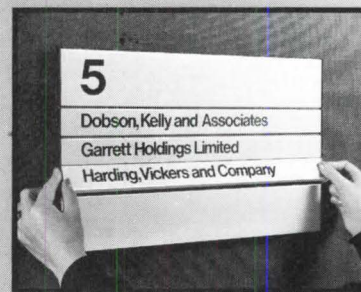
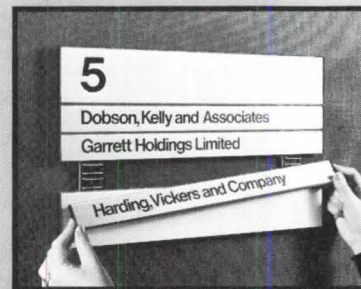
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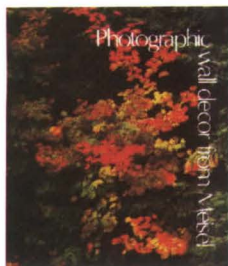
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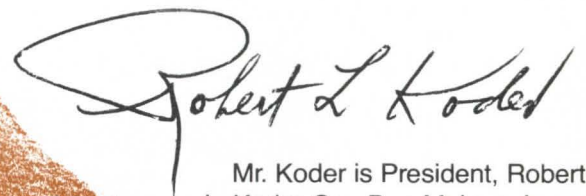
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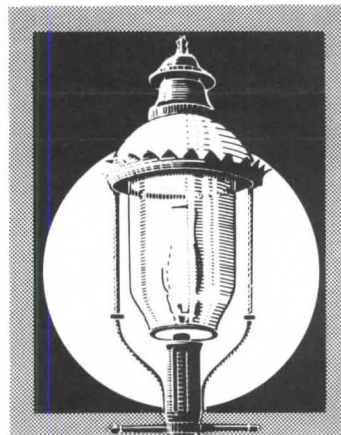
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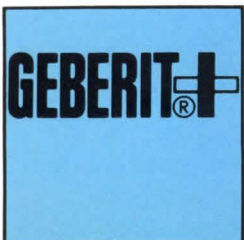
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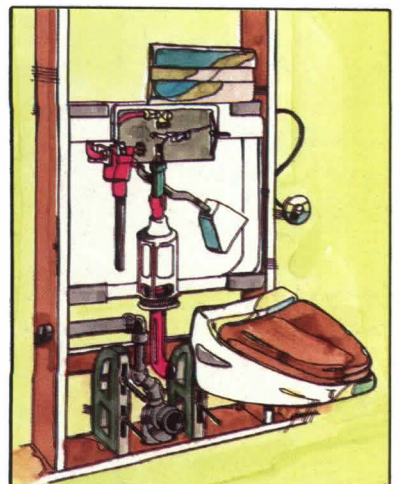
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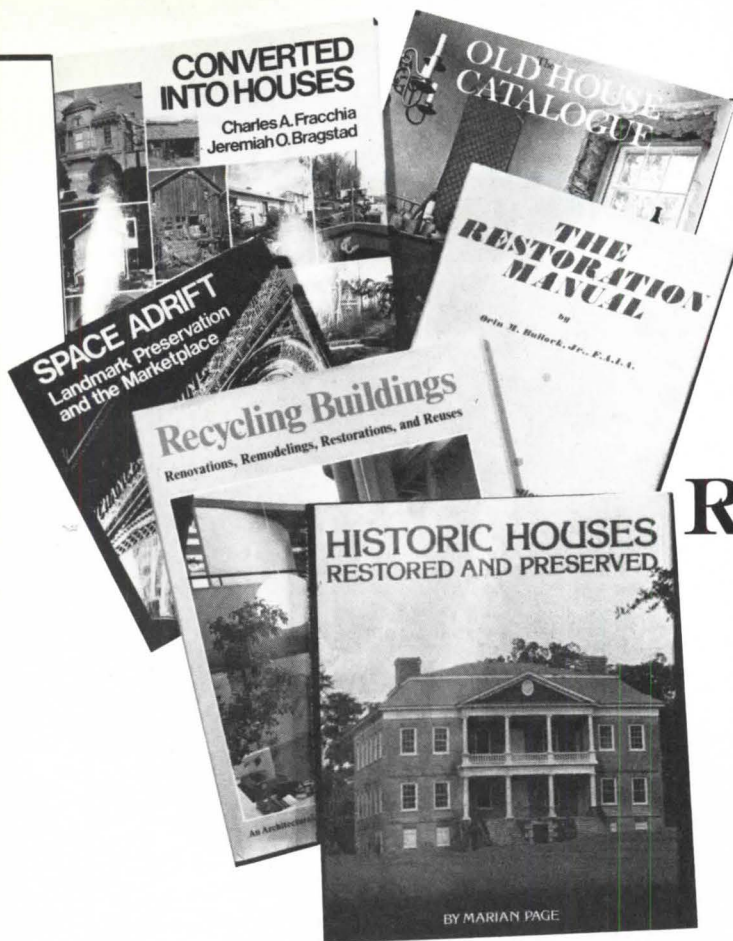
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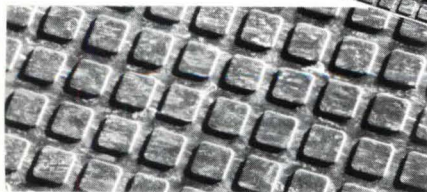
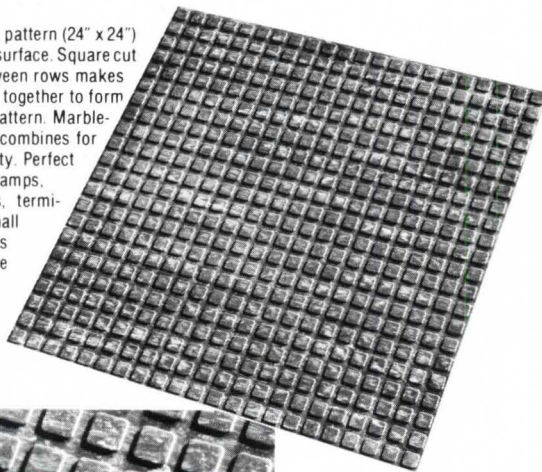
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### Letters from page 9

practitioner. One misunderstanding is due to a misquotation in the condensed version of my original article. I realize that it is difficult to present all the facts in true context when space permits only a few paragraphs about a much longer article.

The problem originated with the deletion of two words. The JOURNAL article said: "Worldwide gypsum deposits will be used up before the end of this century." In my article, I said: "... would anyone imagine that all of the *currently identified* worldwide gypsum deposits will be used up before the end of the century?"

The distinction between "identified resources" and "reserve" is explained in the following paragraphs from my article:

*Identified resources* are specific bodies of mineral-bearing material whose location, quality and quantity are known from geologic evidence supported by engineering measurements with respect to the demonstrated category and *include reserves and subeconomic resources*.

The *reserve* is that portion of the identified resources from which a usable mineral or energy commodity can be economically and legally extracted at the time of determination.

Charts in my article illustrated that my conclusions were based on the identified reserve. The following condensed listing

of values is from the minerals yearbook (1975 edition):

World Identified Reserves (p. 32)	2,050,000,000 ST.
Cumulative Total World Demand 1974-2000 (p. 28 & 29)	2,540,000,000 ST.
Ratio of Recoverable Reserves to Cumulative Demand 1974-2000	0.8
U.S. Identified Mineral Reserves 1974 (p. 32)	350,000,000 ST.

The difference between "reserve" and "identified resources" is well understood. However, I do believe that at this time it is proper to consider only that part of a resource which is currently known, as opposed to saying we have plenty, but we don't know where it is or what it is. The Bureau of Mines shows no figures for identified resources of gypsum.

Furthermore, in the overall context of my article, the intent was to notify our profession of the impending changes in supply of various materials—not just gypsum—as we know them to exist today.

The cost/availability of gypsum, and other materials that are based on non-renewable mineral resources, will be affected by accessibility, purity, location, local political structure and other factors.

Not the least of such influences will come from the cost and availability of energy resources for extraction, transport and processing of such materials.

A parallel can be drawn with the current petroleum difficulties. We have not yet used our last gallon of crude oil, but we have experienced shortages and significant cost escalation. Both shortage of supply and increased cost make a given material "unavailable" in markets and applications that are most sensitive to such pressures. As far as these applications of gypsum products are concerned, their available reserves will cease to exist with the next substantial increase in consumer price. Whether such increase is due to farther transport route, more costly energy source or depletion of easily accessible mineral matter makes no difference to the consumer.

In light of such approaching changes, we should formulate a strategy that would allow the construction industry to utilize any of the nonrenewable resource materials in the most effective manner.

Zigurds Grigalis, AIA  
Lexington, Ky.

The AIA JOURNAL welcomes concise comments from its readers on matters pertaining to its published articles, as well as to other issues of importance to the architectural profession. □

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Acme Brick Company ..... 89

*Phillip Poole Associates*

Alcan Building Products ..... 107

*The Marschalk Co.*

Alma Desk Company ..... 91

*Long, Haymes & Carr*

American Air Filter ..... 22

*Doe-Anderson Advertising Agency*

American Gas Association ..... 88

*J. Walter Thompson Company*

American Olean Tile ..... 111

*Lewis & Gilman*

Andersen Windowalls ..... 80-81

*Campbell-Mithun*

Armstrong Cork Company . Cov. 2, pg. 1

*Marsteller, Inc.*

Atlas Door Corporation ..... 19

*American Ad Group*

Ball State University ..... 127

Ben Gurion Univ. of the Negev .... 120

Brodhead-Garrett Company ..... 116

*Brodhead-Garrett Advertising*

Bruning (AM) ..... 113

*100R Advertising*

Built Better/Vernitron ..... 103

*Alden Advertising Agency*

Cabot, Samuel, Inc. .... 29

*Donald W. Gardner*

Carpenter, L. E. .... 95

*The Siesel Company*

Ceco Corporation ..... 37

*Fensholt, Inc.*

Celotex Corporation ..... 20-21

*Mike Sloan*

Cold Spring Granite Co. .... 38

*Kerker & Associates*

Columbia Lighting ..... 8

Consolidated Aluminum ..... 26-27-28

*Weitzman & Associates*

Cookson Company, The ..... 36

*George E. Church Advertising*

Dover Corp., Elevator Div. .... 6-7

*Calwell, Bartlett, Wood*

Dow Chemical Company ..... 98-99

*Campbell-Mithun, Inc.*

Eastman-Kodak ..... 101

*Rurmill-Hoyt, Inc.*

Eliason Corp., Easy Swing Door Div. 106

*C. E. Advertising-Marketing Agency*

Epic Metals Corporation ..... 114

Forms & Surfaces ..... 5

*Sherrill Broudy Associates*

Geberit ..... 123

*Michaeljay Communications, Inc.*

Georgia Marble ..... 14

*Corporate Communications &*

*Marketing*

Granco (National Steel) ..... 115

*Rives, Smith, Baldwin & Carlberg*

Grefco, Inc. (Permalite) ..... 121

*Boylhart, Lovett & Dean*

Grinnell Sprinkler Systems ..... 32

*Hutchins/Y&R*

Haws Drinking Faucet Company ... 87

*Mandabach & Simms/Pacific, Inc.*

Herman Miller, Inc. .... 39

*The Cox Company*

Homasote Company ..... 97

*Gillespie & Pavelec*

Inryco, Inc. .... 109

*Melrose Advertising Associates*

Johns-Manville Bldg. Systems Div. 34-35

*Broyles, Allebaugh & Davis*

Johns-Manville Holophane Div. .... 13

*Broyles, Allebaugh & Davis*

Kawneer Architectural Products .. 30-31

*Garrison, Jasper, Rose & Co.*

Kimball Office Furniture Company .. 83

*Keller-Crescent Co.*

King Fiasal University ..... 126

Levolor Lorentzen ..... Cov. 4

*Muller, Jordan, Weiss*

Marathon Manufacturing (Bali) .... 85

*Glenn, Bozell & Jacobs*

McGuire Co., W. B. .... 106

*R. T. Blass*

Meisel Photochrome Corp. .... 119

*Hoffman Agency*

Musson Rubber Co. .... 126

*Fred Bock Advertising*

National Fire Protection Assoc. ... 110

*NFPA Advertising*

National Sanitation Foundation ... 112

*The Connelly Company*

New Jersey School of Architecture . 118

*Lewis Advertising Agency*

Nucor (Vulcraft) ..... 10-11

*Faller, Klenk & Quinlan*

Olympic Stain ..... 120

*Kraft Smith*

Osmore Wood Preserving ..... 117

*Lloyd Mansfield Co.*

Owens-Corning Fiberglas Corp.

(Interiors) ..... 43

*Ogilvy & Mather*

Owens-Corning Fiberglas Corp.

(The Race) ..... 2

*Ogilvy & Mather*

Owens-Corning Fiberglas Corp.

(Roofing) ..... 92-93

*Ogilvy & Mather*

Pen Ply ..... 41

*Soderberg, Thompson, MacEwan*

PPG Industries (Glass) ..... 16-17

*Ketchum, MacLeod & Grove*

Proudfoot Company, Inc. .... 108

*Harrison House*

Red Cedar Shingle & Handsplit

Shake Bureau ..... 114

*Cedarcraft Advertising*

Rixson-Firemark ..... 125

*Motivation Dynamics*

Rolf Jensen ..... 127

*Sebstad & Lutrey*

Shand, Morahan Company ..... 40

*Hakanson & Associates*

Shaw-Walker ..... 105

*Williams Marketing Service*

Schinnerer, Victor O. & Co. .... 46

*Govatos/Dunn, Inc.*

Solar Pathfinder ..... 122

*Solar Pathways, Inc.*

Spandex ..... 118

Steelcraft Company ..... Cov. 3

*Fahlgren & Ferriss, Inc.*

Stern-Williams Co. .... 116

*Ad Mar Co.*

Unistrut-GTE-Sylvania ..... 33

*Doyle, Dane, Bernbach, Inc.*

United States Steel Co. .... 44-45

*Compton Advertising*

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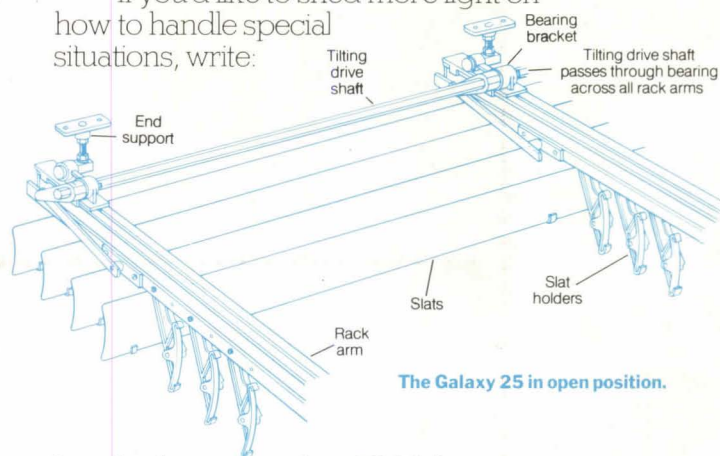
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