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New Look at Old Bases

I was very taken with your magazine's challenge to create a reuse plan for the Alameda Naval Air Station [RECORD, October 1993, pages 96-107]. I have sent your magazine to the Director of the East Bay Reuse and Reinvestment Commission, which, more than any other East Bay entity, is charged with shepherding the local reuse plan through each phase of the reuse process.

*Barbara Boxer
U. S. Senator from California
Washington, D. C.*

Re the excellent article on base closings, my good friend Herbert McLaughlin, AIA, urges that more federal money be made available for base-conversion planning and says further that, if this requires lobbying Congress, "Isn't that what we pay our AIA dues for?"

Yes, it is the sort of thing that AIA members pay dues for. That is why AIA staff have been meeting with officials in the White House and the Pentagon to advocate funding for comprehensive, community-based planning for bases scheduled to close. This past summer, the AIA worked with members of Congress on legislation that would provide such planning assistance and testified about planning needs at a hearing on base closures in the U. S. House of Representatives. Prospects look good when legislation is considered next year.

*James P. Cramer, Hon. AIA
Executive Vice President/CEO
American Institute of Architects
Washington, D. C.*

The national AIA staff, most particularly Bob Peck, has been doing a superb job of promoting the need for planning, and funding for it, in the halls of Congress. It might be possible to interpret

a sentence in my observations to be critical of these efforts. My intent was to focus attention on the state and local levels. An intense push is needed by everyone interested in the future of our cities—in the jurisdictions in which the planning will occur.

*Herbert McLaughlin
Kaplan/McLaughlin/Diaz
San Francisco*

Armageddon Denied

After having lived in the U. S. for 15 plus years, I am sick and tired at the selective snippets U. S. media take from Mexico to portray squalor and decay. Your editorial ["New Delhi Armageddon," RECORD, September 1993, page 9] adds to this baggage.

While I agree that there is plenty of urban plight [sic] and that, as citizens, we need to pressure and help our government for the betterment of conditions, Mexico City is nowhere close to your vision of New Delhi. It has the following percentages of population covered by the various services listed:

Water	95%
Drainage and sewer system	93%
Electricity	99%
Street lighting	96%
Paving	88%

Also, there are 72 people per acre, compared to 567 per acre for New York City, according to the World Health Organization.
*Eduardo Bistrain, Architect
Arquitectos Picciotto
Lomas de Chapultepec
Mexico*

The editors assure architect Bistrain that no slur was intended in mentioning Mexico City as one of many large cities facing serious problems of infrastructure. But the issue is critical, and must be addressed.—Ed.

Through January 9

"Soleri's Cities" exhibition with drawings and models of Paolo Soleri's visionary ideas for earth and space architecture. Scottsdale Center for the Arts, Arizona. 602/994-2787.

Through January 29

"The Architecture of Remembrance" exhibition on the Holocaust Museum. The Chicago Athenaeum. 312/280-0130.

April 14-July 10

"The Grand American Avenue: 1850-1920" exhibition documenting the evolution of six landmark thoroughfares. The Octagon, Washington, D. C. 202/838-3221.

Competitions

- Entries for The Building Stone Institute's Tucker Architectural Award for Excellence with the use of natural stone must be in January 31. Write BSI, 85 Yerkes Road, Purdys, N. Y. 10578.
- Drywall Construction competition offers cash awards for innovative uses of gypsum board and project-wide quality drywall construction. Entry deadline: January 31. Gypsum Association, 202/289-5440; fax 202/289-3707.
- Winners of competition for Columbus, Ohio, infill housing will receive cash awards. Registration closes February 2; entries due March 23. Columbus Neighborhood Design Association 614/274-4141.
- Architectural drawing competition in two categories: informal sketches and formal presentation drawings. Submissions must be 35mm slides of original work that represents proposed architecture. Entry deadline: February 15. American Society of Architectural Perspectivists, 617/846-4766 or 312/580-1995.
- The Atlanta design-competition submissions deadline [RECORD, November 1993, page 4] has been extended to April 22. ■



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Executive, Editorial, Circulation and Advertising Offices: 1221 Avenue of the Americas, New York, NY 10020.

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Subscription rates are as follows: U. S. Possessions \$54.00, Canada \$65.00 (payment in U. S. currency, GST included); all other Foreign (including Air): \$160.00, add \$60.00 annually for air freight delivery. Single copy price \$7.00; For Foreign: \$10.00. For Subscriber Services: 609/426-7070.

Change of Address: Forward changes of address or service letters to Fulfillment Manager, ARCHITECTURAL RECORD, P. O. 566, Hightstown, NJ 08520. Provide both old and new address; include zip code; if possible attach issue address label.

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ARCHITECTURAL RECORD (ISSN0003-858X) published monthly by McGraw-Hill, Inc. Second class postage paid at New York NY and additional mailing offices. Postage paid at Montreal, Quebec, Canada. Canada Post International Publications Mail Product Sales Agreement No. 246565. Registered for GST as McGraw-Hill, Inc. GST Number R123075673

Postmaster: Please send address changes to: ARCHITECTURAL RECORD, Attn: Fulfillment Manager, P. O. Box 566, Hightstown, NJ 08520. This issue is published in national and separate editions.



James Ingo Freed (above), of Pei Cobb Freed & Partners, in the soaring daylight glass and steel South Lobby of the expanded Los Angeles Convention Center. Page 56.

Next month:

Building Types Study 713 Renovation/Adaptive Reuse
Features cover array of conversions of differing building types and sizes. Included are projects in Oakland, New York City, London, San Francisco, Raleigh, Boston, and Cleveland.

Also in February:

- Seismic challenges in building preservation
- Heritage corridors
- Healthcare update
- RECORD LIGHTING Supplement
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Cover:
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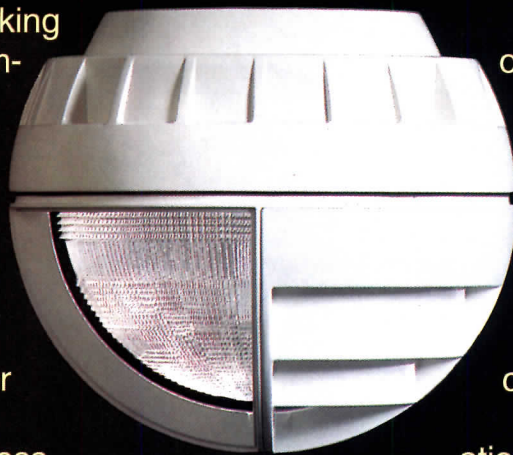
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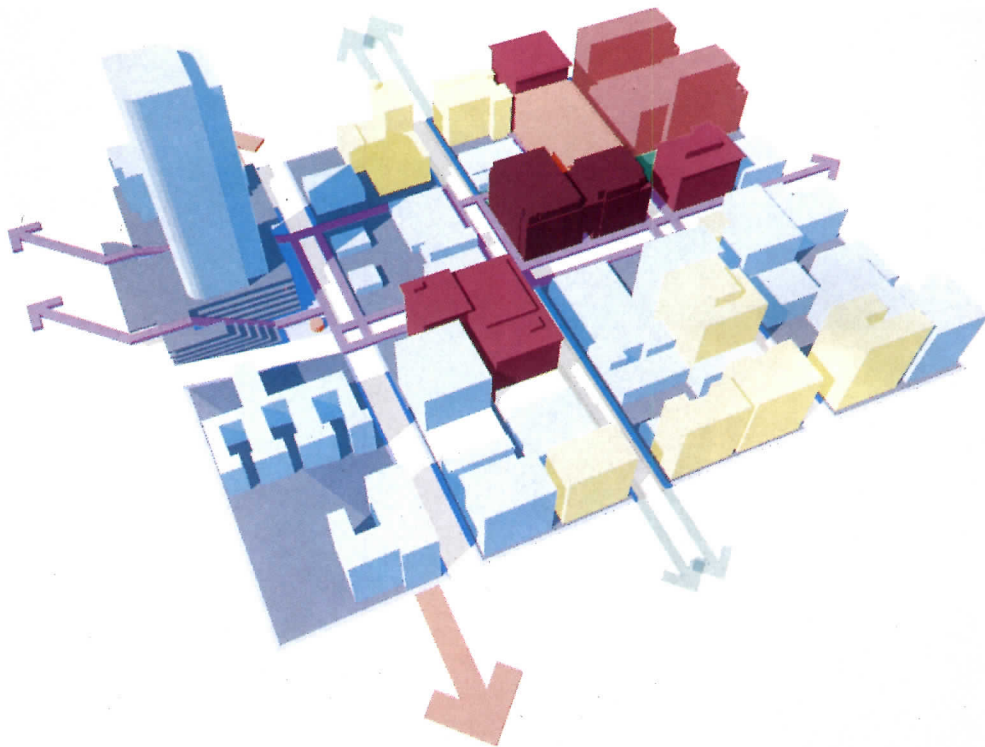
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California

\$1.6 Billion for State Office Consolidations



Governor Pete Wilson has announced a \$1.6 billion 10-year design-build plan to consolidate scattered state offices into new construction and renovations. Los Angeles, Sacramento, the Bay Area, and Riverside/San Bernardino are initial targets, with San Diego, San Jose, Orange County, and the Central Valley to follow. Localities will submit sites and proposals geared to their own land-use goals, finance the work through local bonds, and lease the buildings to the state. Two-step bidding involves RFQs followed by RFPs to short-listed teams. "You can bankrupt the architectural industry with competitions," says Dan Rosenfeld, General Services deputy director, who adds the state is "prepared to go international" in its design quest. (For information, call Project Development and Management; 916/445-0781.)

An Albert C. Martin Associates master plan (above) gathers 72 leases scattered around Los Angeles County into the city's Downtown Historic Core, using 800,000 sq ft of renovation in the 1912 Washington and Banco

Popular Buildings and the 1913 Luby Building and 400,000 sq ft of new construction, plus another 600,000 sq ft two blocks north of the study area. The plan focuses on the Red Line subway, and plots routes (see arrows) to Little Tokyo, Historic Spring Street (once the Wall St. of the West), the new Bunker Hill financial district, the Museum of Contemporary Art, and Broadway shopping. Construction should begin by mid-1995. Community-service mergers may follow in East Los Angeles, South Central, Long Beach, the San Fernando Valley, and Westside.

Sacramento, which hopes to make consolidation pay off in capital-worthy grandeur, could award eight projects totaling 4 million sq ft—half new construction—by yearend; another seven consolidations should follow. Another scheme calls for a four-building Department of Education with landscaping and a traffic circle on Capitol Park. Local business has called on the city to ease permitting, zoning, and finance to aid in the upgrading of buildings vacated by the state. ■

Texas

Charles Moore Dead At 68

Charles Willard Moore, a humanist architect who across a career of over 30 years developed an understated style of great authority, died in Austin, Tex., December 16 of a heart attack. Moore, despite his AIA 1991 Gold Medal and four AIA honor awards, was less known to the public than more outgoing practitioners such as Philip Johnson, Robert Stern, and Michael Graves. His influence on other practitioners and, throughout a long teaching career, on students, was immense. His architecture, in Vincent Scully's words, was "not of individual invention but of humane community, and of context rather than style, of healing rather than spectacular oppression." He spawned several firms, the best known being Moore Lyndon Turnbull Whitaker (MLTW), Centerbrook, and Moore Ruble Yudell, and upon each he left his strong imprint. (A source at MRY says the other two equal partners would continue the firm with no changes foreseen.) Moore ate well and exercised little, and the combination taxed his heart and in the end cut off a career that had a long way to go. *S. A. K.*



Photo courtesy of the office of Charles W. Moore, Austin

Winning NOMA Projects Express Diversity of Black Diaspora



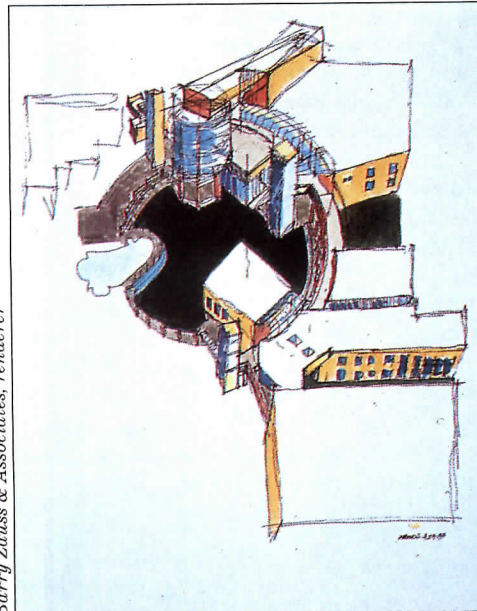
Richard Mandelkorn photo

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Mark Ballogg, Sternkamp/Ballogg photo

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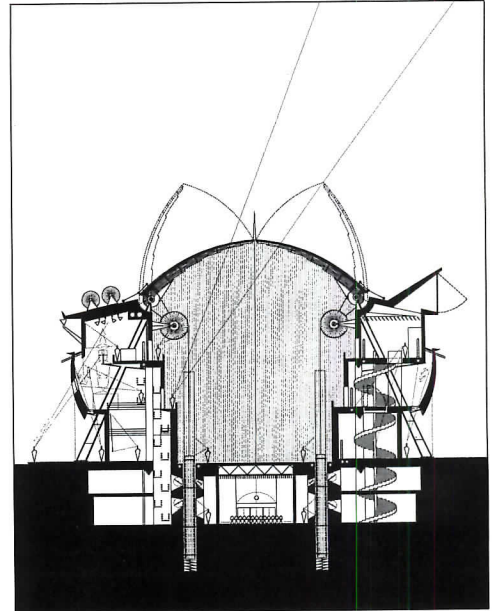
Barry Zouss & Associates, renderer

3



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4



5

The impact of African origins on African-Americans' work as architects was the theme of last fall's convention of the National Organization of Minority Architects in New York. Entitled *Spanning the Diaspora: the African Spirit in Architecture*, the conference attracted minority architects from around the world and took up topics such as translating multi-cultural experiences into architecture, community models that respond to the urban crisis, the education of future generations of architects, and everyday subjects such as marketing and management. A highlight of the conference was the controversial speech by Nigerian architect and UIA president Olufemi Majekodunmi, who challenged African-

American architects not to overstress Afrocentric concerns in their work, but to focus on America's needs. "You don't need Afrocentricity in your architecture to prove your origins," he said (for the text of Mr. Majekodunmi's speech, see *Observations*, page 16.)

Winning NOMA 1993 design projects were: Brown and Kaplan Townhomes, Dorchester, Massachusetts, by Chisholm Washington Architects, Inc. (1); Cargo Facility for Lufthansa German Airlines at O'Hare International Airport, Chicago, by William E. Brazley & Associates, Ltd., architects (2); the Cecil L. Murray Education Center, Los Angeles, by KDG Architecture & Planning

(3); Carl A. Kroch Library, Cornell University, by Shepley Bulfinch Richardson and Abbott, architects (Ralph T. Jackson, design principal) (4); competition submittal for the African-American Memorial Museum, New York City, by Frank Denner Architect. Shown is The Main Place, a spiritual gathering place for survivors of the Middle Passage (5). Not shown are the Ti Sales Office addition and renovation, Sudbury, Mass., and Tai Pan Restaurant and Lounge, Cambridge, Mass., both by Lawrence Man, architect. The jury comprised Wendell Campbell, Max Bond, Michaela Pride-Wells, *Architecture* magazine editor Deborah Dietsch, and RECORD editor Stephen Kliment. S. A. K.

Briefs



Awards

• The AIA has awarded its 1994 Gold Medal to Sir Norman Foster (above), citing his development of a high-technology design "sympathetic and hospitable to people."

Among Foster's most famous projects are the Hong Kong and Shanghai Banking Corporation Headquarters in Hong Kong, the serpentine glass Willis Faber Dumas Country Head Office in Ipswich, England, the Sainsbury Centre for the Visual Arts in Norwich, England, and the Sackler Galleries at the Royal Academy of Arts in London [RECORD, October 1991, page 88]. Current work includes the redesign of Berlin's Reichstag to house the new parliament of the united Germany [RECORD, September 1993, page 31], and the renovation and extension of Omaha's Joslyn Art Museum, the Yale-educated architect's first U. S. commission [RECORD, July 1993, page 25].

• Harvard's Graduate School of Design has awarded the third Prince of Wales Prize in Urban Design to Fumihiko Maki for Hillside Terrace in Tokyo, and Luigi Snozzi for the master plan and public buildings in Monte Carasso, Switzerland.

• Britain's Royal Society for the Arts has awarded its Benjamin Franklin Medal to Robert Venturi and Denise Scott Brown for the Sainsbury Wing of the National Gallery in London. (Franklin was once chairman of the RSA Trade and Colonies Committee.)

• Britain's Royal Society for the Arts has awarded its Benjamin Franklin Medal to Robert Venturi and Denise Scott Brown for the Sainsbury Wing of the National Gallery in London. (Franklin was once chairman of the RSA Trade and Colonies Committee.)

Changes

• Russell Bevington and Laurence Bain have become partners in Michael Wilford and Partners, the successor firm to James Stirling Michael Wilford and Associates.

• The National Building Museum has appointed Susan Henshaw Jones, former president of the New York Landmarks Conservancy, as its president and director, succeeding Robert W. Duemling, who is retiring.

Who Would Have Thought?

After decades of argument over whether graffiti is free expression or vandalism, and myriads of buckets of chemicals applied to get rid of it, *The New York Times* reports it "may have kept New York City's bridges from falling down." During the city's fiscal crises, the graffitiists were the only ones who bothered painting bridges.

Remembered

- Norman Jaffee died in September at 61.
- Robert B. O'Connor, 97, died in November. ■

Swing Wide, Sweet Street Facade

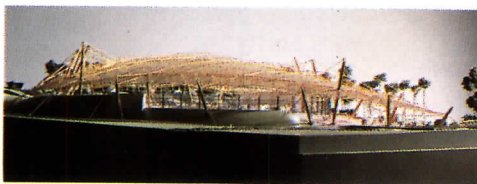
© Paul Warchol photo



Architect Steven Holl and artist Vito Acconci have collaborated on the new Storefront for Art and Architecture facade composed of swiveling sections that enclose the SoHo gallery or leave it wide open to the street. Scheduled as a two-year exhibit in a continuing series of architectural interventions in the Storefront space, the sturdy panels can support mounted exhibits and the weight of people using the portions that pivot into benches and a table. Set in a closed position for the winter, the walls will swing wide again in March. ■

Australia

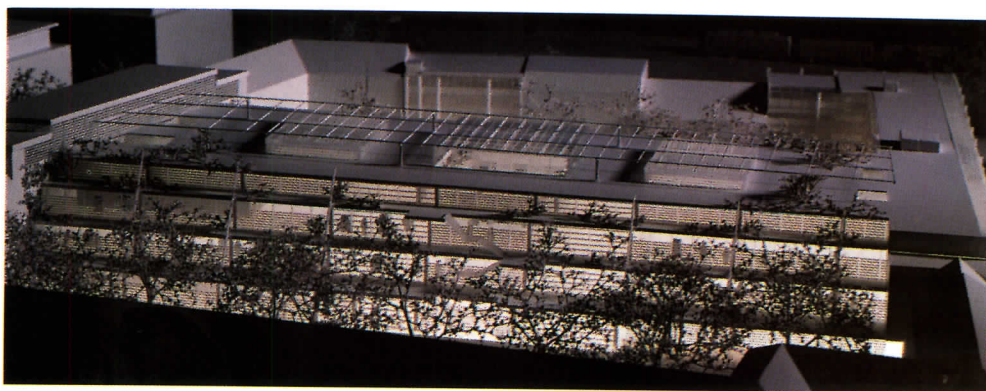
Velodrome With a View



Rejecting the enclosed mega-stadium approach, Ryder Associates, with Ove Arup, won Sydney's Olympic velodrome competition with a transparent steel form resembling an awesome yellow insect resting gently in a park. Glass sides, which permit views straight through the \$16-million stadium, and a roof of teflon-coated PVC prestressed skins, transmit enough natural light to lower energy costs by about 25 percent. ■

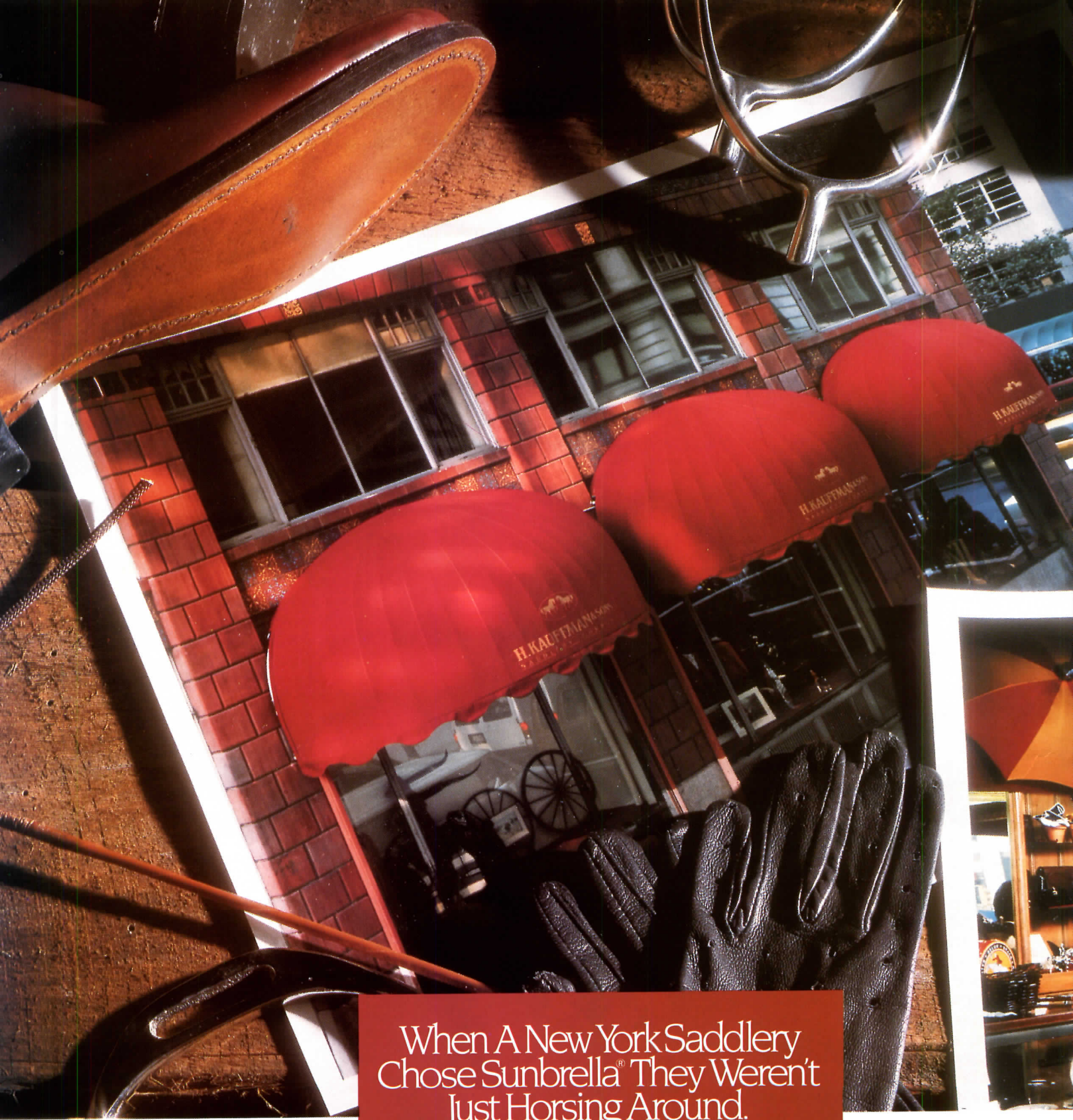
Germany

A Breath of Fresh Air for Shoppers in Berlin Suburb



A new department store planned for Kopenick, an eastern suburb of Berlin, permits extensive daylighting through a glassed-over courtyard and windows positioned above the six-foot level on the sales floors. The competition-winning design by Ingenhoven,

Overdiek, Petzinka and Partner also proposes natural ventilation using very small windows on one end of the building and a flue-like structure on the other to draw fresh air through each floor. The store will bisect a courtyard in a residential/retail block. ■



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Afrocentric Architecture: Myth and Reality

Is an Afrocentric architecture a myth or a reality? Nigerian architect Olufemi Majekodunmi, current president of the International Union of Architects, tackled this touchy topic in his October 7, 1993, luncheon address to the national convention of the National Organization of Minority Architects (NOMA) in New York City. Following are excerpts from his speech:

By Olufemi Majekodunmi

In June of 1992, I was in Boston as a guest at the convention of the American Institute of Architects. I attended the convocation ceremony of the new AIA fellows and, outside the church where the ceremony was being held, I met Robert Traynham Coles [an architect from Buffalo, New York] for the first time and he invited me to a reception in the office of one of the newly inducted AIA fellows, David Lee of Stull and Lee. The reception was great. It was a great opportunity for me to meet many African-American architects. There was good music, plenty to eat and drink.

Then someone began to show slides of his works, and I heard the word "Afrocentricity" used for the first time in a context which I found disturbing. The way it was used denoted a self-conscious attempt to put an "African" stamp on every building designed by an African-American architect, simply as a means of identifying the origins of the designer. I believe this attitude is both unnecessary and unfortunate, as it could restrict the otherwise fertile imagination of African-American architects if they feel always obliged to stamp their roots on their buildings, or that they must always "identify" themselves or, more accurately, their origins, in every building they design.

Three hundred years

Three hundred years of sojourn in this country has evolved Africans who are more unique to the United States of America than to any other country. Their origins may not be here—and this is not unique to the African-American alone—but their present is firmly entrenched in all that this country is and stands for. While I accept it is important that black people recognize and acclaim their roots the same as other ethnic groups have done in the past, and are still doing, I feel

there is no need to make apologies for this in your work as architects, nor to manifest any other identity of yourself in areas other than the obvious one of the color of your skin.

Your origins are African, but you have transcended those origins in the three centuries between your arrival here and the present time. You are now, understandably, a completely different people from your ancestors who first came here from Africa, let alone to those of us you left behind. The most important part of your present-day identity now is the way you think and the way you feel within the context of present-day America. That is not to deny your origins, but to recognize the positiveness of the changes that you have undergone since you came to, or were brought to, this land.

Evolution

The color of your skin, and the Kente cloth on your shoulders, identify your origins for all to see. These are obvious and acceptable manifestations of your origins. However, they do not tell the real story of the evolution of your being from your early days in this country to what you are today. In that time you have evolved physically, mentally, and emotionally from Africans to become African-Americans, a unique race of people who have transcended the dehumanization of slavery and the indignity of racism to establish a unique identity as the product of the 20th century, flourishing in one of the greatest civilizations in history, which you and your ancestors helped to build with your blood, sweat, and tears.

If you need symbols of identity in your architecture, they should be based on those unique manifestations of your unique achievements, and not whether your townhouses have stoops to identify them as African in origin.

I enjoy you to continue to express, with great pride, the hard work and toil of your ancestors in making this country the great nation that it is. I ask you to flaunt their contributions to its cultural milieu in music and in the arts. I beg you to glorify their achievements in sports, and celebrate their successes in the sciences and in the business and politics of this nation. These are the

qualities which we, your brothers and sisters you left behind in Africa, look up to in you and admire, and even envy. You are obviously the most advanced group of black people in the world today, a situation that puts you in a position of greater responsibility, not only to the black race but also to the rest of humanity, than you can imagine. You are now in a unique stage in the evolution of the black race, and the only justification I can see for your need for Afrocentricity in this context, is mainly as a means of evoking the spirit of your origins to continue and enhance the evolutionary process of the present.

You don't need Afrocentricity in your architecture to prove your origins. To do so will result in a self-conscious attempt at being what you are not. Whether you like it or not, and painful as it may be to some of you, you are no longer Africans, at least not in the context of the continent you left behind almost three hundred years ago. Even those of us you left behind are no longer the same Africans of those days. Some of the artifacts of our joint origins at the time your ancestors left the shores of Africa in the slave ships are no longer valid for us in Africa today; how much more is this true for you and others like you in the Diaspora.

Looking African

If the buildings you design today don't look African, I wouldn't worry about it; it does not really matter. In the context of this country, you are not designing for Africans, but for Americans, and you are an inextricable part of that America. It belongs to you; you helped to create it. Your designs of today are for a different people in a different country in a different context. You are not obliged to apologize to anyone for your origins. Be proud of it, be aware of it. Study it, document it, but don't let it hold you back or slow you down in your task of creating great architecture for the peoples of this country and the rest of the world, no matter what their origins.

Help to create through NOMA an atmosphere where an organization such as yours will no longer be of relevance. But do it in such a way that at the end of it all you can truly say, "It matters not how strait the gate, how charged with punishment the scroll, I am the master of my fate, I am the captain of my soul." ■

Learning from Los Angeles?

Los Angeles at 25 mph, by Steve Diskin and Joseph Giovannini. New York: Van Nostrand Reinhold, 1993, 219 pages, \$25 (paper).

Heteropolis: Los Angeles, the Riots and the Strange Beauty of Hetero-Architecture, by Charles Jencks. London: Academy Group Ltd, 1993, 144 pages, \$50, \$35 (paper).

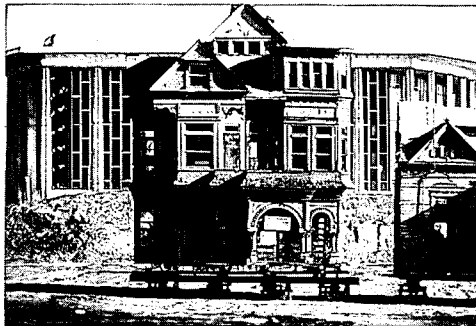
Los Angeles Architecture: The Contemporary Condition, by James Steele. London: Phaidon Press Ltd, 1993, 232 pages, \$50.

Reviewed by Akiko Busch

Los Angeles used to be the city it was hip to hate, a place of superficiality and hype. But sometime in the last 10 years, all that changed. What we once imagined as a psychic wasteland suddenly became imbued with powerful symbolic expression. In the same way Parisian intellectuals find whole realms of meaning in the oeuvre of Mickey Rourke, L. A. has become a metaphor at large for our own cultural disenfranchisement. That may be partly because it's a city that "continually destroys and rebuilds itself," as Diskin and Giovannini observe in their new book *Los Angeles at 25 mph*.

Three recent books examine the nature of this city. One way that L. A. architecture has been made familiar to us is through the bus tours of celebrity homes, so Diskin and Giovannini's vehicular format is familiar, though they have given it a twist. The book sticks to ordinary residential architecture, scrutinizing the bungalows, tract homes, and ranch homes, along with Spanish, Deco, and International Style. As the authors point out, the city has been underdocumented by architectural historians, whose interest tends to lie in more monumental structures. The black-and-white photographs here, all taken by the authors using a handheld 35mm camera, convey a sense of immediacy, an impressionistic quality consistent with the curbside mode. Forget the bus tour.

Akiko Busch is a contributing editor of Metropolis magazine and the author of "The Geography of Home" series appearing in that magazine.



In the Bunker Hill area of L.A., the 1960s Music Center serves as a backdrop as the architecture of the 1880s is carted away.

These images of California without any color convey the grit without the glitz, the average and the ordinary, none of which match, but all of which express the theme of urban dissonance that is L. A.

"Nothing really settled, nothing really blended," say the authors, referring to the city's houses and apartment buildings. As it turns out, this is the theme explored more formally by Charles Jencks in *Heteropolis*. Jencks revels in the ethnic pluralism of the city and its buildings. If Modernism is the canon we're going to reject, then the hetero-architecture of L. A. has all the cultural diversity that might replace it.

Well, maybe. In the end, it may be Jencks's effort to place L. A. architecture in a cultural and societal context that subverts his thesis. The architects covered in this book have recognized the heterogeneity of their city along with the more devastating dissonance of spirit the L. A. riots represented. No question about that. Yet one is left with the impression that they are content to do so only in symbolic terms. Who'd argue with the fact that architects like Eric Owen Moss, Franklin Israel, Frank Gehry, and Morphosis have interpreted the disparate parts and reassembled them in an often highly intellectualized architecture. But the question *does* remain as to whether these architects are addressing the issues in a manner of any real consequence.

In an urban area razed by the anguish of race relations, one must question the relevance of the house designed for actor

Dennis Hopper, which apparently "carries the schizophrenia even further, having a windowless steel wall and white picket fence on the exterior of a warm domestic interior." If anything, this returns us to the bus tour of celebrity homes. It is precisely the aftermath of the L. A. riots that forces us to question the relevance of such a symbolic agenda.

Los Angeles Architecture: The Contemporary Condition by James Steele is a more sedate tour of names and buildings we have come to know. Steele sets off with the premise that L. A. represents an urban typology of the future—which to my mind is a little like drawing national conclusions from the way New Yorkers vote.

That quibble aside, Steele's choice of landmarks—from the Gamble House by the Greene brothers and Julia Morgan's 1915 Los Angeles Examiner Building right up through Pei Cobb Freed & Partners' 1990 First Interstate World Center and Eric Moss's Petal House—is comprehensive. That might be too grand a word. The point is that L. A. hasn't got much of a history, but what it has is included here, and that counts for something. Throughout, Steele makes an effort to trace the continuum of design. This seems a unique approach in the current discourse about L. A. architecture—dissonance and marginality being the more favored themes of writers on the subject.

Indeed, Steele scratches the surface of the L. A. stereotypes, and not only does he find downtown, he finds integration and inclusiveness. Steele argues for a burgeoning sense of community as evidenced by the work of developers Maguire Thomas and architects Moore Ruble Yudell; here is the sense of community, the humanity we've been missing, the notion of architecture as "a faith in shared values." It may be a generous gesture on his part, but that particular urban landscape could use a little generosity. ■

Briefly Noted

The Urban Pattern, by *Simon Eisner, Arthur Gallion, and Stanley Eisner*. New York: Van Nostrand Reinhold, 1993, 642 pages, \$40 (paper).

First published in 1950, this comprehensive text on the physical, environmental, social, legal, and political aspects of urban development has been updated in this sixth edition. Reflecting changes in the planning profession and urban growth, the book now includes expanded analyses of housing availability, growth-management practices, environmental concerns, and the implementation process.

Expanding the American Dream: Building and Rebuilding Levittown, by *Barbara M. Kelly*. Albany: State University of N.Y. Press, 1993, 284 pages, \$50, \$17 (paper).

A carefully researched and clearly written study of the post-war period's most famous suburban development, this book looks beyond the original designs and plans of Levittown to discover how the people who live there have adapted the houses and the community itself to fit their changing needs.

West Coast Wave: New California Houses, by *Dirk Sutro*. New York: Van Nostrand Reinhold, 1993, 184 pages, \$50.

Organized into three parts—on San Francisco, Los Angeles, and San Diego—this book provides an overview of the latest residential design in that great laboratory known as California. Each section includes a brief survey of houses from previous decades of the 20th century, then focuses on individual works by architects such as Daniel Solomon, Fernau and Hartman, Frank Israel, Josh Schweitzer, and Rob Quigley.

Philip Johnson: The Glass House, edited by *David Whitney and Jeffrey Kipnis*. New York: Pantheon, 1993, 208 pages, \$35.

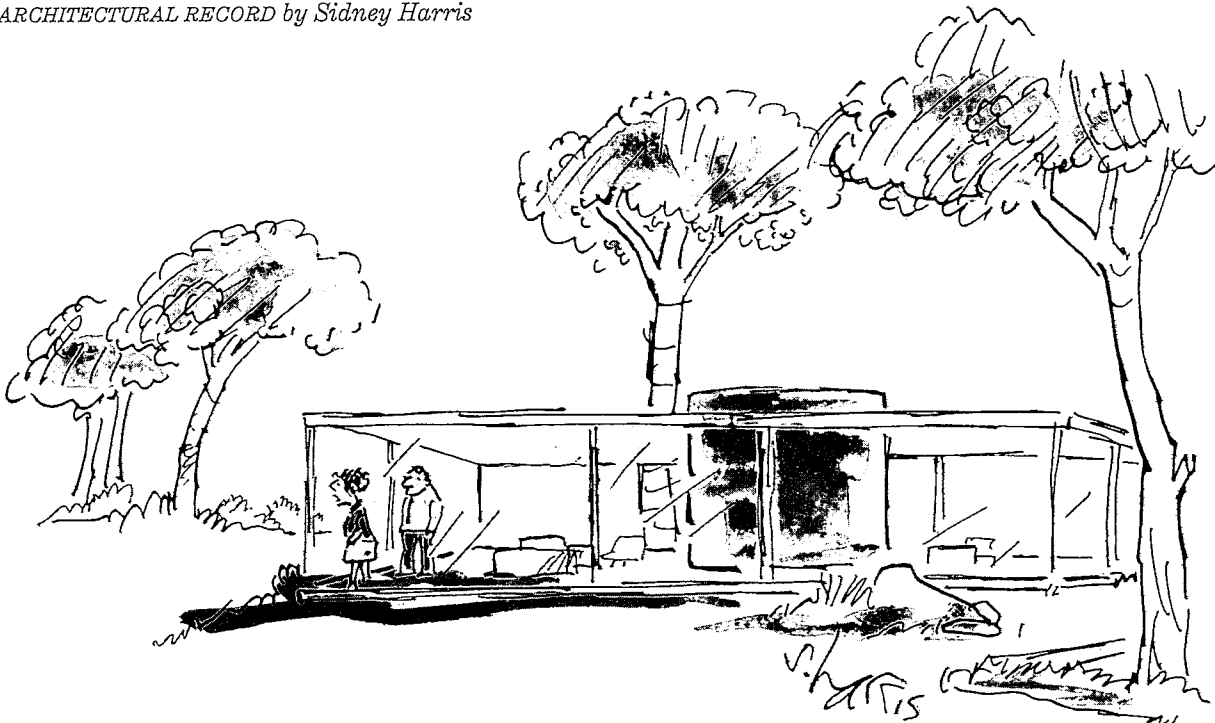
A collection of 19 essays by such luminaries as Kenneth Frampton, Vincent Scully, Robert A. M. Stern, Peter Eisenman, Robert Hughes, and Johnson himself, this volume offers a variety of different takes on this familiar icon. The essays also discuss the seven other buildings and follies at Johnson's Connecticut estate. Too bad the grainy black-and-white photos and dull layout don't provide much graphic punch.

Architecture Without Rules: The Houses of Marcel Breuer and Herbert Beckhard, by *David Masello*. New York: W. W. Norton, 172 pages, \$35.

From the 1950s through the 1970s, Marcel Breuer and Herbert Beckhard collaborated on about 30 houses. Experimenting with structure, form, materials, and siting, the architects created a powerful set of residences that sought timelessness and individuality in Modern design. David Masello's thoughtful introduction explores some of the main themes that link these houses, while his project descriptions underline the individuality of each work.

1994 Calendar on African-American Themes, designed and published by architect Jack Travis, is organized around a singular matrix that compresses the 365 days by month into 12 rows each 9 inches long. Balance of the 11 1/2-in. by 36-in. wall calendar is made up of Afrocentric images consisting of buildings, people, and drawings. \$2 each, less in quantities. Contact: JTA, 227 West 29th Street, New York, N. Y. 10001. Tel.: 212/594-1122.

Drawn for ARCHITECTURAL RECORD by Sidney Harris

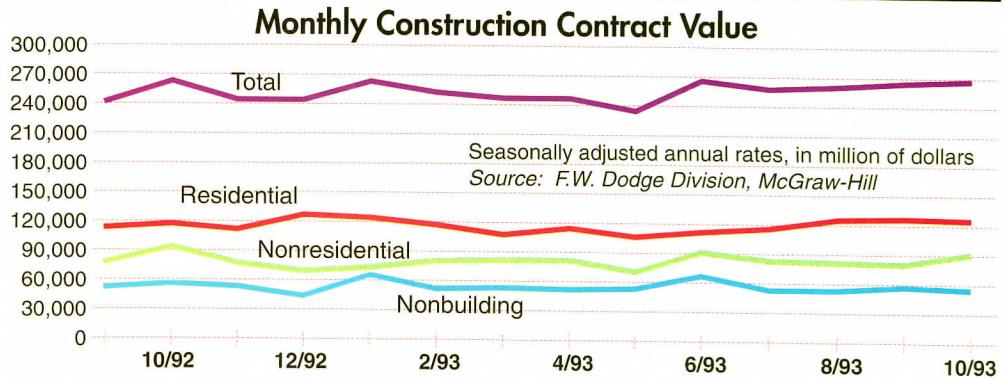


What would it cost to change it into a one-way glass house?

Indicators

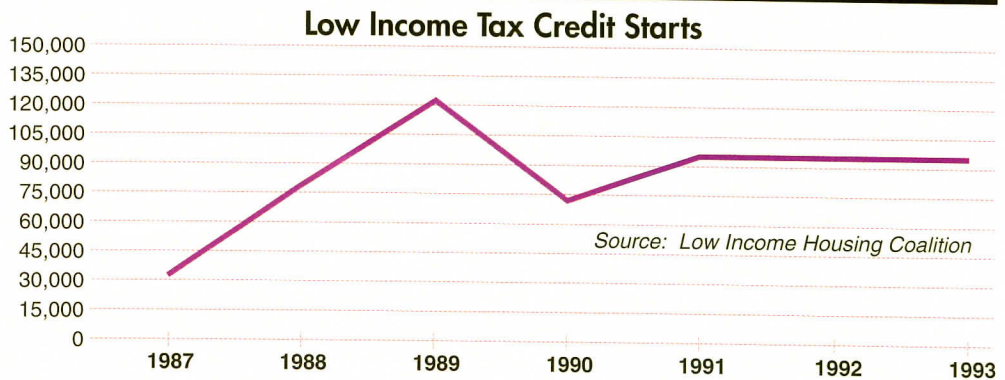
Microscopic improvement in contracts

A one percent rise in October construction contracts, and a consistently higher level of activity since July, suggests that the construction recovery may be solidifying, if still maddeningly slow. Total activity is only 1.5 percent higher than October 1992. Single-family and multi-family starts declined as did institutional construction—all areas of recent strength. Industrial construction moved up. The seasonally adjusted Dodge Index rose to 103 (1987 equals 100). It was in the low 90s in the second quarter.



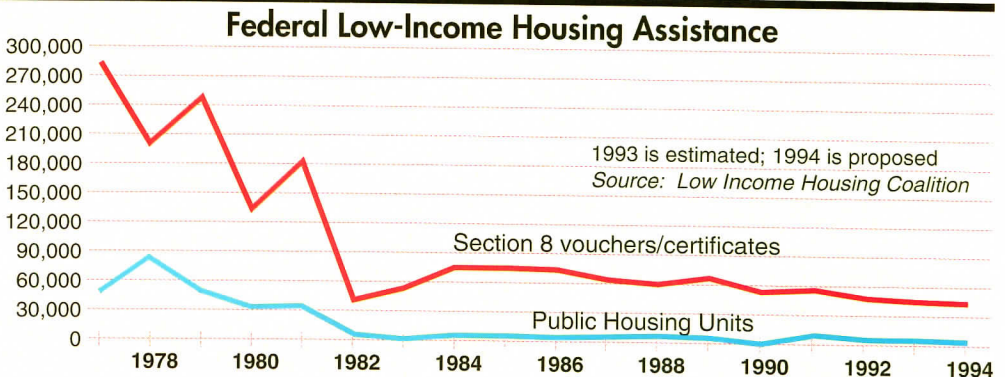
Boosting low-income housing

As direct government assistance for housing has declined, funds generated by the low-income housing tax credit were supposed to fill the gap (see story beginning page 26). Indeed, the number of units financed by the credit moved dramatically upward after enactment in 1987, which coincided with tax revisions that sharply devalued other real-estate tax credits. The complexities of financing these projects—and the recession—have limited its use to about 100,000 annual units, even with strong unmet demand.



Housing assistance down, almost out

Public-housing units approved for construction plunged during the past 12 years, as did Section 8 vouchers and certificates. The latter have become increasingly important in bringing projects funded under the low-income housing tax credit within reach of those below 60 percent of median income. Things aren't looking up: according to the Low-Income Housing Coalition, the number of units proposed for FY 1994 is lower than all but two of the last 12 years.



The Profession This Month

- **The Place of "Public" in Housing:** Is there room for consensus on government's role in assisted housing? Can architects contribute? This is first of our Agenda series. *Page 26*
- **Irreconcilable Differences?** A panel of experts views the challenges in managing construction in today's price-conscious market. *Page 30*

- **Exposed to the Elements:** Deceptively simple, parking structures offer unique design and detailing challenges. *Page 34*
- **A Macintosh Modeler:** Software reviews of one of the top products, as well as a "slick" cost-estimator, and a utility that prints CAD plotter files on desktop printers. *Page 36*
- **Stone Survey:** A roundup of stone that's thick and thin, real and artificial, from Italy's premier stone fair. *Page 38*

Health Plan's Practice Essentials

By Barbara A. Nadel

Though the final form of health-care reform may ultimately differ substantially from the package President Clinton called on Congress to enact, it remains for now the benchmark for considering its effect on architectural practices.

Under the President's plan, all employers would be required to offer medical insurance and cover 80 percent of the costs. This would most affect the 36 percent of firms (according to AIA's 1991 survey) that don't now offer insurance. Many firms offering insurance pay 100 percent of costs. Under Clinton's plan, costs assumed by an employer in excess of 80 percent would be treated as taxable income.

The Clinton plan caps the amount small business (up to 75 people, the vast majority of architectural firms) must pay for employee insurance at 7.9 percent of payroll. A recent AIA trust study found that architecture firms are generally paying at least 9 percent of payroll now.

Tax laws now put non-incorporated sole-proprietors, the self-employed, partnerships, and subchapter S corporations, at a disadvantage, permitting deductibility of only 25 percent of health-insurance costs. Corporations may deduct 100 percent. The Clinton plan allows a 100 percent deduction for all.

The Clinton plan promises to relieve anxiety for those seeking a new job or losing an old one. It assures "portability," meaning that you will be insured regardless of employer, and that pre-existing health conditions won't prevent you from accepting a job because the employer's insurance company may not accept you for coverage. These are important provisions in a field as cyclical as architecture. The universal coverage proposed would mean that even startup firms need not go bare.

Barbara A. Nadel is a New York City architect and writer who specializes in health care and correctional design issues.

GSA Axes Courts; Congress Adds Jails

After a sweeping review of current federal construction projects, the General Services Administration (GSA) announced a first round of recommended cuts, predicted to yield \$462 million in savings. If adopted by Congress, GSA's recommendations would rescind six projects and reduce the construction budget of 13 other proposed buildings. GSA Administrator Roger W. Johnson said that the proposals are part of the Clinton Administration's effort to "make government work better and cost less." Johnson was named to head the agency in July and within two months initiated a "time out and review" of approximately 208 leasing, renovation, and new construction projects.

The GSA's first report analyzed 27 projects and recommended canceling six: a federal building in Lakeland, Fla.; a parking facility in Burlington, Iowa; a federal courthouse in Hammond, Ind.; a major lease and renovation project in Chicago; and a federal courthouse in Charlotte Amalie in the U. S. Virgin Islands.

In five of the projects, GSA determined that the buildings are no longer needed, according to Johnson. The review also recommended cuts in the design and construction budgets of nine proposed buildings around the country, including courthouses in Boston (Pei Cobb Freed & Partners), and Knoxville, Tenn. (Barber & McMurry). A \$206.5-million Internal Revenue Service building in New Carrollton, Md., would be cut by \$30.1 million, and a new \$155-million Secret Service building in Washington D. C. would be reduced by \$23.3 million.

The GSA report also called for changes in the financing or ownership of federal leases. GSA Deputy Administrator Julia Stasch predicted savings of \$221.6 million—nearly 31 percent of the original budget—in a new leasing arrangement for a federal office complex in Atlanta.

Another 181 federal projects are still under review; the comprehensive investigation is scheduled for completion by mid-March. In addition, GSA and the Administrative Office of the Courts formed a partnership to determine ways to reduce the construction cost of new federal courthouses. Some of the cuts,

particularly in the courthouse projects, stemmed from Congressional accusers who said the buildings were too lavish. "People have been comparing these buildings to spec office buildings," says Judge Douglas P. Woodlock, of Boston, who has been involved in setting building standards for courthouses. "This is not a useful comparison." Among differences he identified are "the three separate circulation patterns, including one for those in custody. You have wider bays for courtrooms, especially since we now see trials with as many as 12 or 15 defendants."

Such projects are already subject to periodic budget review and value engineering. Harry Cobb, of Pei Cobb Freed, architect of a federal courthouse in Boston subject to cuts says, "There was always pressure to keep the building modest." Since the project's documents are nearly complete, GSA expects to find \$4.2 million primarily through lower bids. Many of the cuts apparently respond to an underlying imperative: public budget-cutting expectations. Woodlock sees a danger in this: "Public spaces shouldn't be devalued or denatured, lest the public get the idea their business is not important or can be done cut-rate."

Prison construction gets go-ahead

In the meantime, the Senate passed a \$22.3 billion crime bill that adds \$3 billion for corrections construction along with financing for more police and other criminal justice programs. In announcing the legislation's passage, Senate Appropriations Committee Chairman Robert C. Byrd (D-W. Va.) joined by Robert Dole (R-Kan.) and George Mitchell (D-Maine), pledged to see that "spending in this act matches its rhetoric." If accepted by the House, which has not allocated as much money, the construction funds will build and operate new minimum-security regional prisons throughout the country for state and local offenders. The legislation recommends a variety of new types of correctional facilities, including military-type boot camps for non-violent offenders. The legislation also provides \$500 million for secure facilities to house an estimated 60,000 juveniles convicted of violent crime.

Lynn Nesmith

'94 Cheer: Low Rates and Low Inflation

Economic growth spurted above 4 percent in the fourth quarter of 1993. Good news? Not to financial markets worried that inflation will pick up. The market's concern about inflation is understandable, if exaggerated. From the mid '60s to the early '80s, investment managers watched helplessly as inflation destroyed the value of long-term debt instruments (which include those that finance much building). Ever since, any hiccup in prices has automatically boosted inflation fears.

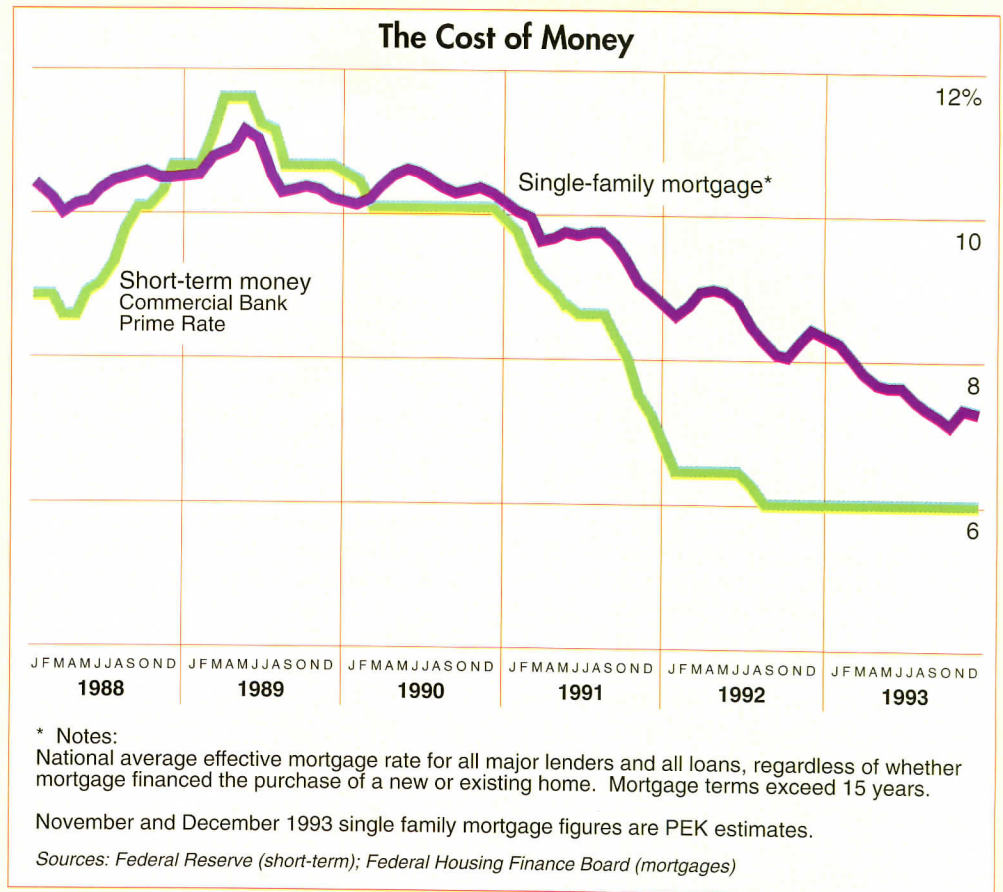
In recent years, inflation has jumped from January to April and then decelerated. This has had more to do with the statistical adjustment procedures than the actual rate of inflation. If that pattern prevails again, long-term single-family mortgage rates could climb another one-half percent early in 1994, to about 7.5 percent, then subside toward seven percent before mid-year.

We have little to fear from inflation because the economy came out of the 1990-91 recession with an excess of capacity, materials, and labor. The uneven advance since then reflects how massive these surpluses have been and how difficult it is to work them down. Today there still is an abundance of materials, particularly energy, and skilled labor. One possible source of inflation concern is plant-utilization rates, which are moving above 82 percent. That usage rate in the past has been a harbinger of potential production bottlenecks. Any shortfall of goods in 1994 will be met by imports, since most of the country's trading partners have overcapacity as well. As capacity constraints loom, though, many manufacturers will pull older factories out of mothballs and spend heavily to modernize them. Others will add to existing plants or build new facilities.

Foreign manufacturers will join them. Worried that the passage of the North American Free Trade Agreement (NAFTA), with its emphasis on domestic content, will eventually freeze them out of the huge North American market, more foreign companies are announcing plans to open factories here.

Stable interest rates

Despite the recent bounce upward, long-term interest rates will remain near their



current levels (the lowest in 20 years) throughout the first half of 1994. Spurred by attractive rates, residential and nonresidential building will increase much more this year than last. Though there may be an apparent early rise in inflation, it will remain at less than 3 percent during 1994.

An uptick in long-term rates will not retard the recent surge in housing. The low rates, coupled with improving job prospects and slow price appreciation, began unleashing a huge pent-up demand for ownership housing in the second half of 1993. That demand is from the younger boomers—under 35 years old—who wanted to buy a home in the '80s but could not afford to. This activity will continue its strong upswing in 1994. The variety of mortgages available means that buyers can offset any temporary rise in rates.

Even multi-family housing will benefit somewhat. At last the economy is adding jobs, especially for younger workers. Many young people who have been living with their parents will move to apartments of their own. This influx will primarily spur im-

provements to existing units, but apartment starts will rise in faster-growing markets.

Investors rediscover real estate

Perhaps the biggest surprise of 1993 was that financial markets rediscovered investment opportunities in commercial property. With interest income slipping to a 20-year low, institutional investors have been looking at instruments that would deliver better returns. Suddenly, Real Estate Investment Trusts (REITs) and mortgage-backed securities (MBSs) became very hot. Since commercial appreciation is nonexistent, today's successful REITs and MBSs pool properties with good cash flow.

Though commercial vacancy rates remain high in most markets, REITs and MBSs will spur construction activity as owners upgrade to attract tenants that can generate an attractive cash flow. As building picks up, jobs will be added to the economy, gradually improving the demand for industrial and commercial space throughout 1994.

Phillip E. Kidd

The Place of "Public" in Housing

In the near future, we can expect only modest improvement in commissions for the building types for which architects' expertise is well established. In this new Agenda series, RECORD will periodically consider services that aren't—or haven't recently been—prominently associated with design. We'll focus on building types for which there is a clear need, for which architects have a contribution to make in finding solutions, but which are inadequately addressed. We'll look at the economic and public policy barriers and design constraints. In enlarging architecture's agenda, the field not only maintains its professional security, it may improve the status of architecture itself. We welcome your comments.

In Washington, a homeless woman died on the doorstep of HUD's headquarters over the holidays, a vivid reminder that housing isn't very high on the nation's agenda these days. Homelessness is more complex than a lack of housing, but it is the human face of the nation's failure to deal with the fundamental question of how to house those not reached by the private market. Nor is homelessness our only—or even our biggest—housing problem. Richard West, Communications Director of the National Low Income Housing Coalition (a nonprofit advocacy group), notes that 5.1 million very low-income families (who earn 50 percent or less of median income) "are in serious poverty, currently qualify for housing assistance, but have no prospects of receiving it." Many more, not well counted, are inadequately housed even above this tier. What would it take to build a consensus to house those in need? And what is the place of architecture in this kind of housing?

Whom Can We Afford to House?

When all is done, America's assisted-housing system is floundering for lack of money. Here's a simplistic sketch of what it might take: housing the 5 million who don't receive assistance at a direct cost of, say, \$75,000 per unit would take an additional \$375 billion. Over 10 years, this adds up to about \$160 per American per year.

Other countries consider housing a right—and they pay for it through higher taxes. In the long term America will have to choose between paying direct housing costs through taxes or the indirect costs of poverty, crime, human misery, and—many have argued—our own loss of self-respect as a people. Since the nation now builds little assisted housing (see Indicators, page 23),

should architects storm government's ramparts, demanding more? Charles Buki, of AIA's Community Assistance Department, says it's more important to begin where it counts the most, getting involved in local issues and "demystifying what architecture can do." Emmanuel Kelly of experienced housing architects Kelly-Maiello, in Philadelphia, says, "You've got to bond with tenant leaders."

Architects, if they choose, have a role as both citizens and professionals in creating a greater commitment to housing. Understanding what the enormously complex landscape of housing programs does and doesn't do is key. "Affordable" housing initiatives (pages 86-95) are typically targeted at those near median household income. (Housing experts typically see median income, city by city, as a more accurate measure of affordability than, say, the poverty level, which does not take into account local cost variations.)

Nonprofits and community-development corporations (CDCs) operate in the next lower tier. Using creative financing, local grants, and land-purchase writedowns, they can house people from 80 percent to the 50 to 60 percent of median targeted by the low income-housing tax credit (just renewed by Congress). Section 8 rent subsidies and Section 202 subsidies (targeted at the elderly and handicapped) can reach lower.

At the lowest income levels there is only public housing. As David Burney, director of design for the New York City Housing Authority (NYCHA), says, "public-housing projects are still the base of low-income rental housing that no one else seems very interested in providing." Once public hous-

ing held a mix of incomes. Today authorities are mandated to take the lowest-income families first, including the homeless. "On average people coming into public housing are 17 percent of median," says Wayne Sherwood, research director for the Council of Large Public Housing Authorities. HUD is approving about 4,000 public-housing units annually. West says "that is just over one unit for each of the country's 3,400 public-housing authorities."

The social-services enigma

Housing advocates have long sought to improve social services for tenants, but these needs have typically been minimally funded at best. Now special-needs populations are being handled in specialized facilities run by a variety of new providers. Many cities now have shelters and transitional housing for the homeless, skill-less, or recovering substance-abuser; group homes for those with HIV, AIDS, and mental-health handicaps; Single-Room-Occupancy housing (SROs) that is supposed to improve upon the urban flophouse hotels lost to '80s gentrification.

Many of these projects are exemplary (see theme issues August 1992 and November 1988), but they number only in the tens of thousands of units. Relative to housing alone, they're expensive to operate (a 100-unit SRO must be staffed by from three to five social workers). People not served, to the extent they receive assistance at all, end up in public housing. "We are absolutely mandated to take the homeless first," says Nancy Yost, senior project architect of the Boston Housing Authority. "Of those we've housed in the last 10 years, 90 percent had been homeless."

Five years ago HUD added the disabled to the list of those prioritized for elderly public housing, but this was defined to include the deinstitutionalized mentally ill and substance abusers. HUD, however, has provided "no money for services, and no money to do physical improvements," says Yost. The result is to pit advocates for the homeless and mentally ill, who want to see clients at least housed, against public-housing authorities that lack the resources to manage such a population's disruptive potential.

Government's role in assisted housing is wide ranging, but the bottom line is that many remain underserved. What would it take to do better?

"Projects"—by design

Public housing authorities are well aware that they run widely despised "projects." They are still living with the legacy of the urban superblocs dotted with slab towers built in the '50s and '60s, though only a handful of authorities ever built them. Most housing authorities do a good job, say advocates, and most projects work. Of the nation's housing authorities, HUD has identified 47 it calls "troubled," but such agencies generally manage a great number of units in large cities. Six percent of the public-housing stock (84,000 units) is considered "distressed." West sees a larger problem: "We have more than one-million units that are poorly built and badly maintained. We built functional, cheap housing, so we shouldn't be surprised that after 40 years it's falling apart."



The Shelter: A bed, a few square feet of floor, a couple of hooks. No one calls it housing, but as many as three percent of New York City's population may have used shelters in the last few years, according to a recent survey. The resort to shelters in many cities is the new face of the nation's failure to house those in need. In New York and elsewhere, officials have concentrated such facilities in neighborhoods where opposition is least. This can mean that even transitional housing ends up being located in exactly those neighborhoods that offer the least support for those who need to build skills and escape the trap of drugs or alcohol.

Indeed, design and construction quality is a major part of public housing's problem. Closet doors were thought a frill in the '50s. Little has improved since. Oscar Newman called attention to the failures of the vast, open, and undifferentiated grounds of housing-development sites 20 years ago. Amazingly, almost nothing has been done on the worst offenders. "HUD has been very Scrooge-like on sitework," says Wayne Sherwood. Dan Wuenschel, the executive director of the Cambridge, Mass., Housing Authority, says that state housing-finance agencies allow more square footage than HUD permits. "Why should public housing be penalized?" he asks. Under current standards, an entire family may not be able to gather around a dining table at once.



© Camilo José Vergara photos

The Symbol: Though relatively few were actually built, slab blocks like these (Newark's Columbia Houses, empty and awaiting demolition in this 1981 photo) have become emblematic of public housing. Oscar Newman—in his seminal book, *Defensible Space*—took Pruitt-Igoe, a public housing project in St. Louis, to task for its design flaws. Later, its lurid imploding, only 20 years after completion, became for critic Charles Jencks an icon of the failure of *Modern Architecture*. Housing authorities have had enormous difficulty remodeling or replacing such structures, because HUD rules require construction of a new unit for each one removed. The funds have simply not been available to accomplish this goal.



The Billboard: A handsome addition to one of New York City's most blighted neighborhoods, the housing for mentally ill, people with AIDS, and homeless in the foreground of the photo above [RECORD, July 1992, pages 86-87] can't do the job it was intended to do, according to photo-journalist Camilo José Vergara, situated in a new ghetto of institutions, and reliant on the decisions of distant policymakers. It shares its neighborhood with three other shelter facilities, a detention center, and (in the background), Marcus Garvey and Prospect Plaza Homes, among the most violent of the city's housing projects, Vergara says. Similar facilities have been located "in the midst of some of New York's most notorious crack supermarkets."

In spite of administration hostility, Congress kept housing programs alive during the Reagan-Bush years, but cut funding some 80 percent. The result was rapid deterioration among existing units, a liability that Congress has just begun to address by pumping almost \$4 billion into rehabilitation (it was \$1.6 billion in 1987).

Reagan and Bush officials thought attractive housing coddled tenants. They interpreted design guidelines as strictly as possible, seeing any architectural grace notes as frills to be removed, even if the

Continued on page 43



1987

Life in the NIMBY neighborhoods:

Photojournalist Camilo José Vergara has encountered a great deal of public housing in a 15-year project documenting America's ghettos. "The way people express some form of individuality is very touching," he says. "In Chicago public housing, there are layers of graffiti. The corridors haven't been painted in 10 or 15 years, so you see a whole history of the buildings, written in little snippets." He finds small epiphanies everywhere: since you can't buy draperies anywhere in Camden, N. J., Vergara sees

1980



1990

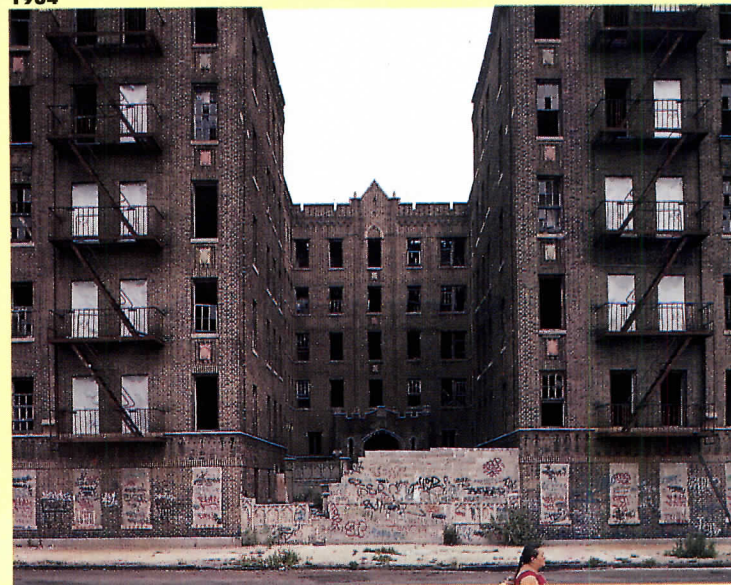
in windows "an extraordinary esthetic of shower curtains, blankets, and sheets."

To the casual visitor, the deterioration in America's poorest neighborhoods looks gradual, immutable. Vergara has documented extraordinary and rapid change. In the Central Ward of Newark, N. J. (above this page and opposite), the 1893 Thirteenth Avenue Presbyterian Church once stood among three-story frame houses and served Newark's oldest black congregation. In 1987, Vergara

found it occupied by five homeless men, who had created a "striking combination of squalor and gentility." By 1992, a fragment of the church remained amidst subsidized townhouses.

In the South Bronx, Vergara shows a 60-unit apartment house still solid in 1980 (below this page and opposite). Arsonists set fires in 1981. Beset by more vandals and scavengers, the building was abandoned by 1983. It was demolished in 1985, and replaced by townhouses as part of New York

1984



In this series of photographs, Camilo José Vergara puts a different face on housing—showing us what’s been lost as well as gained.



1992

City’s \$5.1-billion, 10-year housing plan. Laudably, thousands of units have been added or rehabilitated under this plan, but a cynical adjunct, in Vergara’s view, is the creation of a new social-services ghetto of homeless shelters, drug-treatment centers, mental-health facilities, group homes for juvenile offenders, and jails. These “NIMBY neighborhoods” end up with the facilities that better-organized, more affluent areas can keep out. Instead of a stable community of mixed ages and incomes, these areas are “captive to bureaucratic

1986



1992

rules and a publicly supported economy, with populations marked by the experience of homelessness and addiction.” Vergara is completing The New American Ghetto, (Rutgers University Press) on this subject. In view of the federal withdrawal from housing and related social services, many are hailing New York’s initiatives. (Andrew Cuomo, one of its prime movers, is now at HUD.) Housing authority managers are already living with what happens when the lowest income are segregated. “If you have a development that’s

1993



100 percent families on welfare,” says NYHA’s David Burney, “you have a population that is under enormous social and economic stress.” In spite of having a huge supply of oppressive tower-on-superblock projects, New York City’s public housing is among the best run of big cities. “One of the things that distinguishes us from other authorities,” says Burney, “is that only 29 percent of our families are welfare families. In Philadelphia [among the nation’s most troubled authorities], only 29 percent are not welfare families.” J. S. R.

Irreconcilable Differences?

The New York Chapter/AIA asked experts representing builders, owners, and designers to make sense of today's marketplace. The panel discussion, moderated by RECORD's James S. Russell, yielded these comments by participants Kathi L. Littmann, a senior vice president of commercial business development/interiors for Schal Bovis, Inc., a construction manager; Lawrence A. Oxman, senior vice president, Structure Tone, Inc., a general contractor; Arthur Nussbaum, a prominent construction consultant; Stephen Binder, vice president and director of Real Estate, Space & Occupancy Management, Citibank, N. A.; and Walter Hunt, vice president and managing principal, Gensler & Associates, Architects.

RECORD: We know that jobs are priced much lower. Where are those reductions coming from, and what are the implications?

Kathi Littmann: Obviously, the jobs are being priced much lower. Our competitors, on a \$25-million project, are prepared to guarantee general conditions—meaning overhead and everything—at less than one percent of the total cost of the project. This is extremely aggressive pricing. A wise owner, looking at what individuals are paid and at the materials it takes to get that job done, is going to ask, "What am I *not* getting?" Because there is a bottom line.

The lower fees, I think, are something that's probably more desirable from the owner's point of view. The lower overhead could possibly get him into trouble. You'll find

managers trying to staff jobs with fewer people or with lower-paid people. And one thing that means is that you're going to take hits.

Arthur Nussbaum: The only way a contractor can guarantee the general conditions at one percent is by simply putting it over on the subcontractors. And then the owner who is foolish enough to believe a guy is actually guaranteeing the general conditions for one percent is getting exactly what he deserves.

RECORD: What were the prevailing ranges for these fees before the downturn?

KL: For typical interior consolidation projects of the kinds that are happening all over New York right now, if you were paying more than six percent, then your general conditions were buying a lot of extra services.

The only way to survive at today's prices is for the whole team to work efficiently together, with nobody getting hung by numbers.

Kathi L. Littmann, Schal Bovis, Inc.

RECORD: Are design fees now so low that projects are put at risk?

Walter Hunt: Design fees are depressed, and that requires a new design process and communicating to the client what he or she is going to get—and that's just damn hard to do right now. But in my opinion, it does require re-evaluating the design process. As far as the documents are concerned, I think no architect ever puts out a 100 percent perfect set of drawings, no matter how large the fee is. Getting the construction manager or general contractor on board early offers the chance to coach the drawings along, so they're not overdrawn and not underdrawn but well-coordinated and well-studied before they are formally priced.

RECORD: Is the needed cooperation between a builder and an architect threatened by the current pricing situation?

Larry Oxman: We now bid exactly what's on the plans and specs. If we do some type of value engineering, we don't usually get the credit for it. Whatever we come up with is sent out in an addendum, where other contractors will benefit from what we've brought out.

RECORD: Is this different from the past?

LO: I guess in the so-called good days the subcontractors did not necessarily have to cut their prices to the bare bones. There was maybe a little bit more profit in a job, a little bit more cushion in the unit price. Then you could tell an electrician or a mechanical trade that you needed him or her to cover for an item, and he or she would do it. Today, they say there's no room to do what you're looking for.

KL: We look at a job differently if it's a general-contractor type bid rather than a construction-management bid. A lot of projects come in over budget. Without the ideas from the various subcontractors and the whole value-engineering exercise, the jobs just don't happen because the owners just cancel the project, or they scale it down so far that it's no longer the same project. Value engineering is becoming essential.



Traditional wisdom does not always apply in today's demanding commercial market, according to a panel of experts.



We now bid exactly what's on the plans and specs. If we do value engineering, we don't usually get credit for it.

Lawrence Oxman, Structure Tone, Inc.

RECORD: All too often so-called value engineering becomes mindless cost cutting.

KL: There's a big difference between value engineering and cutting the scope of the work. We're always seen as the bad guys, who just come in and slash the finishes and all your nice millwork. That's not value engineering; that's just reducing the scope of your project. Value engineering is taking the design details and forcing them down to where they're more cost-effective. You've got someone who's drawn up a reception desk with 22 pieces in it that have to be custom-milled. But we can do it with standard pieces that can be run off by our millworker at one-third the cost and still have the same look. That's value engineering.

LO: Today, we have many new subcontractors coming into our plan room wanting to do work for us, giving us great prices, but not necessarily being able to build the scope of the work that's on the documents. Do you take a chance that they can produce an X-dollar job? Yet you might lose a job without them. That's a dilemma that a GC must face today.

WH: On a recent project, we interviewed six contractors, then chose three to submit proposals for a general contract with a fair, fixed fee and a fair, solid estimate of general conditions. Each was required to bid to their

three best subcontractors for every section of the work. This eliminated the problem of having to go to marginal subs, which get us all in trouble and cause a lot of pain when they have to be bailed out. I think there is a way to do partnering—this new term bandied about—effectively, serving the owner and maintaining the right sort of arm's-length transaction. [For more on partnering, see RECORD, March 1993, page 9.]

RECORD: Hunt is sketching a scenario that's not necessarily the lowest-price scenario. Can owners recognize the value of a process based not purely on price?

Steve Binder: When we hire an architect, it is not adversarial. He's an extension of us. Walter says he's cut out the fat, and so have we. We don't need to see the fancy drawings. We're happy to get the lower prices because we don't need to have the extras either. This is a team effort, even though we beat each other up. We don't have in-house architects any longer at Citibank. We expect lower prices, but we will not accept anything lower in terms of quality. If you give us [low quality], it will be your first and last project. That's what life is like. We've skinned down our staff, but we have an in-house expert who understands the business and knows what we're buying. You don't have to take a low bid, but you have to justify why we shouldn't.

AN: Steve doesn't represent the majority of owners. The idea of getting a general contractor involved early is good news and bad news. I've never seen a GC who budgets a job tightly, particularly in an environment where you are going to ask him to guarantee the number.

LO: If the client says, "Give me a budget," he wants an average price within a certain percent range, within a certain scope, within a five- or ten-percent cushion.

AN: The average contractor is not going to put his rear end on the line with a tight number. So the owner has a \$300,000 budget for what in competitive bidding might very well cost them \$220,000. That's what goes on job after job.

KL: The only way a construction manager or general contractor is going to come in and survive at the numbers jobs are being bid at now is if the whole team works efficiently together and nobody gets hung with numbers. It may not eliminate all of those fat numbers that cover risk, but it will take a lot of them down a lot earlier.

AN: Owners are demanding guaranteed maximum prices. I don't believe in them. I find that people budget jobs high. And there are some notorious projects that have been redrawn eight or ten times to bring them under budget. Then, when finally put to bid, they come in significantly under budget. Most owners are stupid to ask for a GMP.

RECORD: How has the construction slump affected the architect's budgeting?

WH: Clients do get the perception that they can buy a project at what we would consider unrealistic prices. There's a certain baseline it takes just to produce the minimal documentation. The level of design investigation, the number of options you consider has become more intense considering the money clients are able to spend on projects. The design exercises and studies that are required now are actually in many cases more lengthy and discussed more often than they were in the '80s.

SB: Architectural firms are downsizing, too,

Project quality is at risk, say panelists, as owners drop in-house staff, contractors consider marginal subs, and architects do more with less.

and three out of every five people you let go open their own firms. Architects are their own worst enemy, because these people are qualified to do architectural work. These individuals have less overhead; they were qualified to do architectural work the day before they left their old firms, and this is why prices have come down. Sure, you don't get the depth of service, but sometimes you don't need it.

RECORD: Are owners less inclined to explore, for example, innovative designs or designs that foster innovative ways of working?

WH: I think that CFOs and COOs are looking at productivity, period. Looking at the workplace means dealing with people working at home. Some of the accounting firms are looking at hoteling. They will need less space. There are all sorts of things that will dramatically affect our end of the business.

RECORD: Are drawings sloppier and less complete now than they were a few years ago?

AN: They are, absolutely. Today, an architect calls a design development drawing what I would have called a schematic. I find that the consultants are holding back even more. It's done to improve cash flow. I looked at a set of specs the other day, all for vinyl-asbestos tiles. Now, doesn't that say it all? More is being left to contractors by the architects, and more architects are being fired. Owners today think nothing of relieving an architect. Architects don't have to

take the contract if it's too low to do the right documents. Don't do it. As an owner, I think I have a right to expect the right documents. I have a right to expect my interior people to investigate four different types of lighting fixtures.

RECORD: Does the partnering concept offer advantages?

WH: We're really talking about understanding the role of each party. The job can't go over budget if the preconstruction services are done properly and there's the right, positive adversarial sort of interaction. We may not agree with all the decisions that are made, because the design may be slightly downgraded due to budget. But neither does it come as a surprise later.

KL: I think we sometimes get caught up in the terms. The bottom line is that it will not be a win-win situation for anyone if the client doesn't come out with the project that he or she can function in, that is the quality required, and meets the budget. Being adversarial in a productive way is absolutely essential to make it happen. It doesn't do me any good to come in and start picking apart a complete set of drawings because the client can't afford it.

RECORD: At one time, architects felt they were the leaders of the process, and now they feel other people are taking over that role. Or has anyone taken it over?

WH: We've seen the emergence of project consultants, especially on large interior

projects, that I think have filled a vacuum. Architects have vacated that role.

KL: We're seeing a lot of these consultants come in. In some cases, they are successful when the client has cut back staff to the point that there is no longer an in-house project manager. The consultant functions just for the duration of that project.

SB: Chase Manhattan, for example, had 18 project managers, none of whom works for Chase Manhattan anymore.

RECORD: Should this person be on the owner's or on the architect's team?

SB: I personally want whoever it is to be an in-house employee. That person really is the financial controller of the project. He or she may be an architect, an engineer, whatever. At the end of the day, there's a dollar sign to everything that's being designed by the architect. There's a dollar sign to everything being built by the contractor, and that's what these persons are held responsible for.

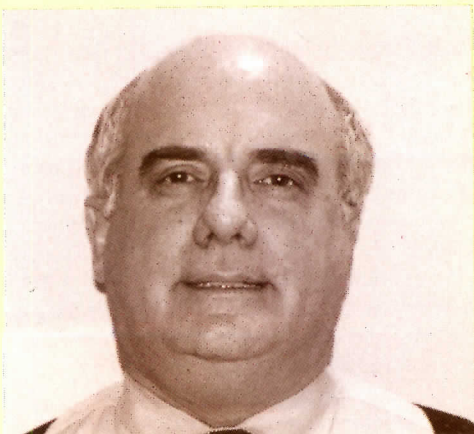
AN: The person doing this had better know what he or she is doing. There aren't that many people around who can sit with the architect and comment, drawing by drawing and line by line.

SB: If you sit back and say, "That's the architect's responsibility; I'm not going to talk to him about it until I get the drawings," you're not going to work for us again. We expect you to be proactive and to spot the mistakes and help us out. That's why this is a team effort.

RECORD: Do owners increasingly prefer either a contract for general construction or a construction-management approach?

KL: We're seeing a lot more of the interior renovations and consolidations go GC for financial reasons. The owners want to take the project to pieces and only commit to certain segments of the design. When they get a set of documents that they feel comfortable with, then they'll go out with the GC.

LO: Although I'm categorized as a general contractor, I do like the scenario of being the



The job really can't go over budget if the preconstruction services are done properly and there's a positive, adversarial sort of interaction.

Walter Hunt, Gensler & Associates

construction manager. RFPs [requests for proposal] come out on a weekly basis asking for either a general contractor providing preconstruction services or CM/GC services. Many people ask what the difference is between a construction manager and a general contractor or an owner's rep.

KL: We've had jobs, performing identical services, in which we've been called construction manager, program manager—a whole variety of phrases. I think the thing we're seeing consistently, however, is that owners want us to fix the cost of managing the project and then share in the negotiations for the trade costs so they're kept as low as possible. We're competing more on the overhead and the general-conditions line, as opposed to a traditional GC, who will price the whole thing up at once.

AN: The way Gerald Hines did it is the best way I have seen. Based on schematics, he picks a CM, who gives him a fixed price for general conditions and fee and develops a budget. Hines's people and the CM together would select the subcontractors they wanted to bid. They summed the best bid numbers, added a small contingency, and that became the general contract. This way, he got the best contractor he could get, had the advantage of this CM-soon-to-be-GC's input during the design.

RECORD: Is the owner concerned about the more complex joint-venture teams and the ever longer lists of consultants architects use?

WH: I think there has been a tendency to have a lot of consultants on the architect's side, from acoustics and food service to lighting and security—beyond the standard A/E services. It's become very traditional that we hold those contracts now without any markup. It has also become very difficult for us to measure the quality of those consultants and their prices.

AN: I think the consultants are absolutely necessary. I don't think you get honesty in design when the consultant is part of the architect's office. I've seen many jobs where the consultants simply don't tell the truth because they are dominated by their



I've never seen a GC brought in early who budgets a job tightly, particularly when you ask him to guarantee a number.

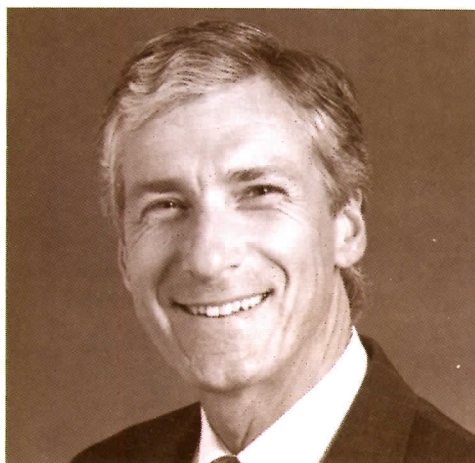
*Arthur Nussbaum,
construction consultant*

employer. I much prefer an outside structural engineer, an outside mechanical engineer, an outside everything.

SB: We like the checks and balances. If architects say we have a hard time funding [a consultant], we'll hire that firm directly.

RECORD: Are owners going more and more to the integrated firms—architect-engineer-contractor, design-builder—that offer all services under one roof?

AN: As far as I'm concerned, it's not desirable. The most difficult times I've had on projects have been when the consultants were either owned or so completely controlled that they no longer told the truth. I want to know what the honest answer is, not what the architect wants said. ■



Architectural firms are downsizing, too, and three out of every five people you let go open their own firms. You architects are your own worst enemy...

Stephen Binder, Citibank

Exposed to the Elements

Architects are increasingly sharing in the design of parking structures—often considered purely an engineering specialty—providing them with scale and appearance to fit sites ranging from a college campus to a historic district [see RECORD, June 1993, pages 126-135]. Designers of such structures, however, must recognize the special nature of this deceptively simple building type.

Parking facilities built up to the mid-'70s are an object lesson. According to Jerome P. O'Conner, principal structural engineer at Construction Technology Laboratory, an independent consulting subsidiary of the Portland Cement Association, "some concrete set accelerators, which speed strip forming, used to be made with chloride-based compounds. But the chlorine ions attacked the reinforcing." Once reinforcing bars rust, they expand, spalling off the concrete cover, exposing a larger area to damaging moisture. Many such structures have required extensive reconstruction.

Though such admixtures aren't supposed to be used anymore, O'Conner says chlorides

are still an issue. Their source now is the salts used to de-ice roofs, ramps, and streets, which may drip from cars even deep within an underground garage. The salt air of coastal communities poses similar risk. "The thickness of the cover controls how quickly that chloride ion penetrates and gets to the reinforcing," says O'Conner.

Concrete versus steel

These concerns affect even a choice as basic as the structural system. While concrete would seem to have obvious advantages in areas where de-icing is used, other factors come into play. In the Northeast, steel can have a substantial price advantage (though real price comparisons depend on the cost of the steel plus fireproofing). Machado & Silvetti found galvanized steel to be less costly for a small project on a tight site (opposite). Short erection time is also in its favor. "You'd have to go in with a high-quality steel coating like an epoxy," says CTL's O'Conner. "[Otherwise,] you can get pretty severe corrosion of joints." Typically, steel framing is used with precast-concrete decks. Analysts don't recommend concrete-over-

metal-deck slabs because of the deck's vulnerability to corrosion.

Concrete offers two options:

- *Cast-in-place, post-tensioned* structures "impart a compressive force on concrete that doesn't allow cracks to open in the concrete—at least in theory," comments O'Conner. (Cracks create a path for corrosive runoff.) Reinforcing strands are tensioned after the concrete is poured. Cast-in-place allows a more flexible plan and longer column-free spans, says Richard Reed, a structural engineer and consultant at Wiss Janney Elstner. The firm has investigated many parking-structure failures. Cast-in-place also allows shallower floor-to-floor heights, according to George Eichner, an engineer with parking-structure designer Greiner Associates.
- *Precast, prestressed* structures offer the quality-control advantages of a factory environment and quick site erection. Prestressing helps reduce cracking in the same way as post-tensioning. A typical precast structure, however, has more joints that need maintenance. The choice of a structural



Richard Mandelkorn



Tom Guidera

Baltimore Arena Parking Garage

Ayers/Saint/Gross architects divided the plan of this 900-space poured-concrete garage into thirds. The outer third is flat so that openings in the brick-cladding are consistent with the late-19th-century loft buildings of downtown Baltimore (left). Parking on the inner two-thirds is on opposed, sloping ramps, an efficient configuration suited to the long site. Most of the ground floor is given over to retail and back-of-the-house arena functions.

Princeton University Parking Structure

Machado & Silvetti Associates reduced the apparent scale of this galvanized, steel-framed structure by wrapping it with bronze mesh (opposite). The upper levels of the 410-space garage step back, too. The masonry base makes reference to an existing garden wall designed by McKim, Mead & White. With a two-way central ramp for access, the parking levels are flat for full-floor visibility, improving the driver's sense of security, and making the structure less "garagelike."

As architects do more parking-structure work, it's important to learn from earlier failures.

system is also influenced by the ramping system, and the choice of ramping system is limited by the shape of the site and whether the structure serves short-term or long-term users. Security of patrons is also important. Open, unencumbered plans offer greater security as do glazed, exterior stair and elevator towers, and open outside walls that permit surveillance.

Reducing water damage

A parking structure's traffic slab is its most vulnerable element. The designer's primary focus should be to reduce moisture penetration. Among recommended strategies:

- *Air entrainment* is essential for concrete in open structures exposed to freezing. Concrete associations offer guidance.
- *Water-cement ratio* in the concrete mix should be below 0.40 says CTL's O'Conner.
- *Admixtures*: Microsilica fume improves concrete density and reduces permeability. Polymer-modified or latex-modified admixtures replace some of the water in the mix, improving durability. Calcium nitrate is a corrosion inhibitor, reducing chloride ions' ability to attack reinforcing.

- *Waterproof membranes* may be placed between a structural slab and a topping slab. It's often expensive, but there may be no alternative when the structure is above occupied spaces. Other membranes can be applied on top of slabs but must be renewed regularly.

- *Reinforcing* should have a minimum 2-in. concrete cover. Some engineers recommend epoxy-coated reinforcing bars, but quality-control has been inconsistent. WJE's Reed, who has reviewed much of the relevant research, concludes: "Epoxy coating does provide a significant benefit if properly applied."

- *Cathodic protection* recognizes that corrosion is an electrolytic process. By placing a sacrificial anodic device on the structure and running a small electric current through the reinforcing, the anode itself corrodes (it can readily be replaced), not the reinforcing steel. It's used in severe environments, says O'Conner, mainly in bridges.

Critical details

Parking structures pose some other problems. Slopes to drains, for example, can't be

ignored. They should be at least $\frac{1}{8}$ in. per foot, says Reed, and take structural deflections into account. Ponding water makes some spaces unusable and increases water penetration. Poorly detailed drains rust or convey water into slabs. Minimal headroom makes drainpipe conflicts more likely.

To the extent that external cladding materials differ from those that make up the garage structure, differential movement must be taken into account. Connections to the structure are particularly vulnerable. Parking ramps are, as Reed notes, "an exterior environment." *James S. Russell*

Further Information

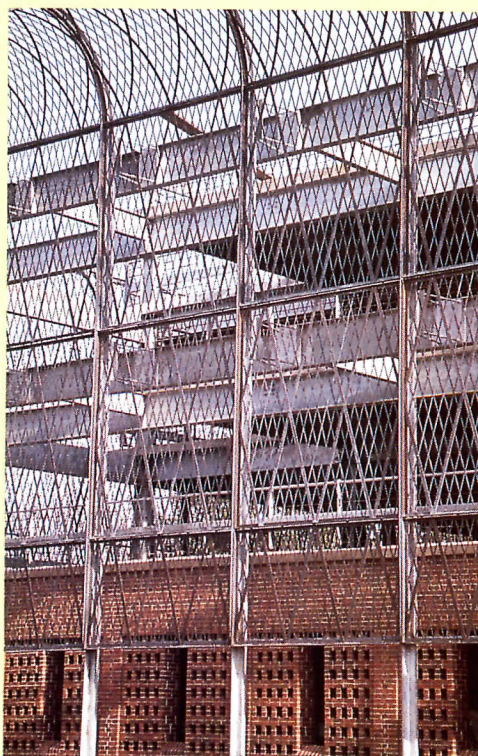
Parking Structures: Recommended Practice for Design & Construction, Precast/Prestressed Concrete Institute, 175 West Jackson Boulevard, Chicago, Ill. 60604 312/786-0300. \$45.

Design of Concrete Parking Structures (\$54.75) and *How to Design, Build and Maintain Concrete Parking Structures* (\$43.50), American Concrete Institute, Box 19150, Detroit, Mich. 48219 313/532-2600.

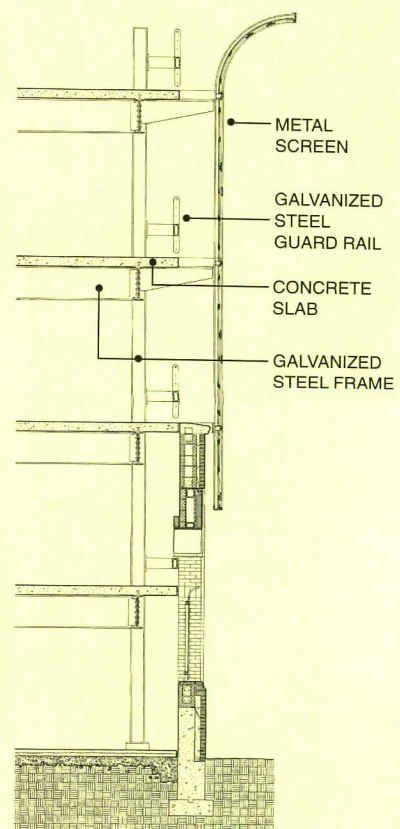
Chuck Choi



Douglas Dolezal



Douglas Dolezal



WALL SECTION

A Modeler That More Than Scratches the Surface

form-Z 2.3

Vendor: autodessys, 2011 Riverside Drive, Columbus, Ohio 43221 (614/488-9777; fax 614/488-0848).

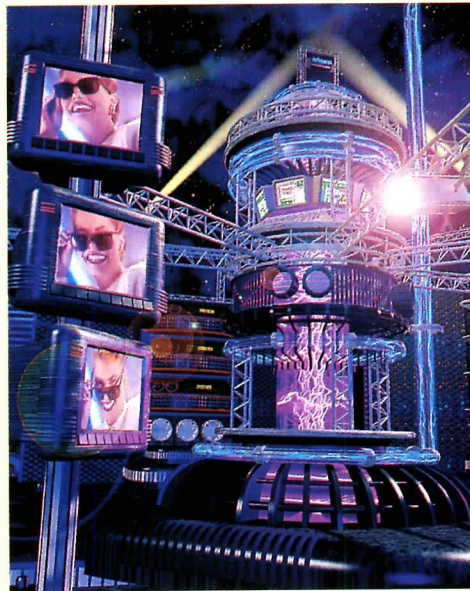
Price: \$1,495, which includes four months of free service and upgrades. Maintenance: \$185 in U. S. and Canada; \$245 elsewhere.

CPU: Apple Macintosh with 68881 or 68882 math coprocessor. With the coprocessor, the application works on SE/30, Macintosh II series, or higher.

System: System 6.04 or later version; 3MB RAM is minimum, we strongly recommend 5MB and 32-bit Quickdraw.

This is one of the most advanced 3D-modeling programs available for the Macintosh—or any other personal computer, for that matter. The application's strong points are its ability to quickly make and assemble complex geometries and its excellent range of 3D tools and surface treatments. Control of light and shadow is impressive.

The application includes two versions, a full-featured "giant," and a faster version with fewer features. There's a "drafting" mode and a "modeling" mode. In general, you model by creating 3D shapes and placing them together; intersections are not just the points where objects join. You can electronically shove one shape into another, hollowing it out; you can subtract shape A from shape B. You can also work in 2D, ei-



Perspective

Ready for PowerPC

Modeling has always been a particular strength for the Macintosh. ArchiCAD, like form-Z, can do complex shapes well, but is also a good drafting program. Modelshop is well-suited to those who prefer to work in elevation. And Architrion is very fast, but is best at models with cubic shapes.

As Windows-based software has gotten better, Macintosh vendors have responded both with better software and with versions for Windows. autodessys, whose latest package is reviewed on this page, is aiming ulti-

mately at the PowerPC market rather than users of Windows.

The PowerPC platform, a joint venture of Motorola, Apple, and IBM, will be able to run Macintosh operating systems and Windows's advanced NT software. Expect these machines to ship in quantity by late 1994. Packages like form-Z, which use Boolean logic to define shapes and their interaction with other model elements, should run especially well on the PowerPC. S. S. R.

ther to provide a plan-view base for your model, to modify a surface you've already created, or to create a surface that, through rotation, can become a solid. You can subtract 2D surfaces from each other, just as you can with 3D.

form-Z, requires the least effort when creating models with what are called filigree surfaces—roofs or overhangs with many penetrations, for example, or surfaces with a great deal of detail, like column flutings. autodessys has improved control of colors and surface meshes in this version. In fact, it is the best we've used.

form-Z is not a particularly strong drafting program—and you certainly would not want to use it for production drafting. Previous versions could import and export PICT and DXF files. Version 2.3 adds Adobe Illustrator import and export, and TIFF export. The application's exchange with drafting packages is only fair, via DXF (though the limitations are DXF's not form-Z's). Most translations work but some will have familiar problems. If you need both modeling and drafting in one package, ArchiCAD has the edge for the Macintosh.

Manuals: There's a tutorial manual, which is devoted mainly to teaching the making of primary shapes, but there's good relevance to architects in the use of examples. The two-volume user manual (one for the introductory material and one for modeling and drafting) is excellent.

Ease-of-use: The program embraces Macintosh conventions, and is fairly easy to learn. It runs slowly for building-size models on a small Mac. Though we were reasonably comfortable on a Centris (now Quadra) 650 with 8MB of RAM, a larger Quadra would help—especially if you use the full-featured version.

Error-trapping: Good. There is an "undo," and it is hard to lose a file. You are warned when operations could produce unfortunate results: You may want to "round" surfaces that are made of numerous flat facets, for example, but not those made from curves. Previously the program was unstable on the Quadra 950. This seems to have been solved. Steven S. Ross

300 on Reader Service Card

Intuitive Estimator

WinEst

Vendor: WinEstimator, Inc., 8209 South 222nd Street, Suite B, Kent, Wash. 98032 (206/395-3631; fax 206/395-3634).

Price: WinEst Commercial (includes general construction or NECA electrical database): \$990; WinEst Residential/Light Commercial (includes 6,000-item database): \$495. Digitizer takeoff software: \$990. Annual support and maintenance: \$300. Unit-cost databases from R. S. Means and MCAA are also available.

Hardware and system: Must run Windows. 2MB RAM is minimum; we recommend 4MB and a digitizer if you take off quantities from drawings.

This is one of the slickest estimating programs around, thanks to an intuitive Windows interface. There are three main views. The Item Takeoff screen allows you to look up items from a database, perform takeoff calculations, assign an item to a location or category, audit the estimate, and so forth. (If you want to enter quantities from

drawings, you'll need the digitizer program.)

The Estimate Sheet allows you to analyze and modify an estimate in five categories: Labor, Materials, Subcontractor, Equipment, and Other. The Totals Page (below) offers an overview and summary.

Estimate items can be arranged and searched by CSI division, and they can be filtered by manufacturer, type, and so forth. WinEst can automatically process CAD bill-of-materials data into a complete estimate. It is, however, a freestanding package, and can't be part of the CAD program itself.

Manual: It's nearly superfluous. Purchasers of the NECA database will need a NECA Manual of Labor Costs.

Ease of use: It's a standard Windows interface with extra icons. There is much moving from view to view, but it's intuitive.

Error-trapping: You can always enter the wrong data, but it is not easy to enter data in inappropriate units. *S. S. R.*

301 on Reader Service Card

"Plot" to a Printer

PrintAPlot

Vendor: Insight Development Corp., 2420 Camino Ramon, Suite 205, San Ramon, Calif. 94583 (510/244-2000; fax 510/244-2020).

Price: \$99.

Equipment required: Almost any DOS-based computer and printer will work.

Instead of sending your CAD files to a plotter, quickly print them on almost all laser, ink-jet, or dot-matrix printers with this easy-to-use utility. We looked at version 3.0; version 3.0.4 may now be available.

This is how it works: Almost all CAD software sends images by commanding the plotter to use certain pens to draw certain elements. Different plotters use different command "languages," but the most commonly used is HP-GL, the Hewlett-Packard Graphics Language. Printers cannot use HP-GL directly, although some have HP-GL translation available. HP Laserjets, for instance, can be equipped with a cartridge that contains HP-GL.

PrintAPlot is a more universal solution. Instead of sending HP-GL commands to a plotter, you send them to a file. If your software can't send images to a file, PrintAPlot includes a utility to fool it into creating one. You can run PrintAPlot as a stand-alone program, or as a utility that pops up on the screen while you are using CAD. You can scale a plot—printing an entire E-size sheet on an 8.5-by-11-inch sheet, for instance—or force a small-page printer to "tile" output, so that you can stitch together a large image.

Printing speed is excellent—it is much faster in most cases to print a raster (dot-by-dot) image than it is to output a full-scale plot. On a Deskjet or 24-pin dot-matrix machine, the resolution is 360 dots per inch. It prints easiest over a Novell network.

Manual: A well-written 167-page reference that may be too complete.

Ease-of-use: Excellent, menu-driven.

Error-trapping: Fine; you cannot destroy your CAD work. We were unable to freeze the system when popping up PrintAPlot within CAD. *S. S. R.*

302 on Reader Service Card

The screenshot shows the WinEst software interface. At the top is a menu bar with options: File, Edit, View, Options, Database, Reports, Help. Below the menu bar are several icons for different functions: Item Takeoff, Estimate Sheet, Totals Page, Print Report, Edit Markups, and Edit Bonds. The main window displays a table with columns for Percent, Dollar Amount, Category, and Hours. The table has five rows, with the fifth row showing 0.0 for Hours under the Equipment category. Below the table is a 'WinEst - Database Item Record' dialog box. It has two sections: 'Item Information' and 'Commands'. The 'Item Information' section contains fields for Item Description (Temporary Electricity), Item Code (10), Takeoff Unit (week), Takeoff Formula (Qty - Weeks), Labor Productivity, Labor Rate, Material Conversion, Material Unit, Material Price, Waste %, Equip Productivity, Equip Rate, Subs Unit Price, and Other Unit Price (40.000). The 'Commands' section contains buttons for Accept, Cancel, New, Delete, Next, and Previous.

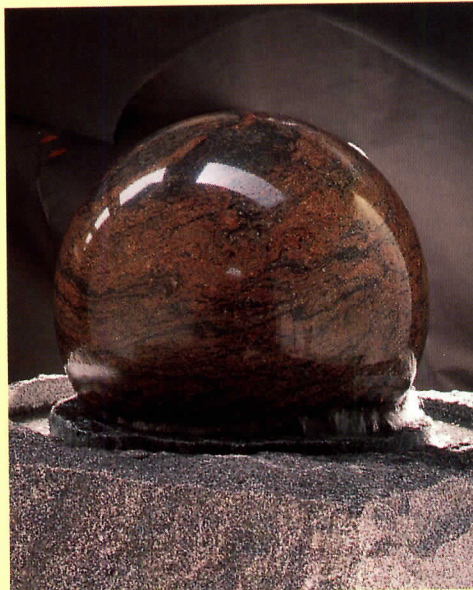
	Percent	Dollar Amount	Category	Hours
1		0	Labor	0.0
2		0	Material	
3		0	Subcontractor	
4		0	Equipment	0.0
5				

Stone Materials

The opening of eastern Europe and the newly independent countries of the former Soviet Union and the development of stone-fabrication industries in Asia and Latin America have made the stone business truly global, though Italian technology and craft expertise still dominate the industry. The 1993 edition of *InterMarmoMach*, the Verona-based stone fair, showcased new stone sources along with cutting, fabricating, and finishing equipment of ever-increasing sophistication, including laser-guided abrasive waterjets and slabbing machines that take stone from solid block to very-thin dimensioned tile and cladding. J. F. B.

303. Must-touch fountain

Giving real meaning to the term “dimensional stone,” the Kugel fountain is a perfect sphere of solid granite slowly rotating on a thin-film cushion of circulating water. Only a 1 1/2-hp pump generating 15 psi from a small amount of water is needed to “float” a 10,500-lb, 5-ft-dia sphere (303a). The secret is in the symmetry of ball and basin, carved simultaneously to identical curvatures. Water flows alternately from two inlets to keep the continuous, slow rotation slightly eccentric: if a map of the world is etched on the globe, the position of New York will always vary, and every part of the sphere will glisten with water. The concept permits a range of design options: a choice of granite colors; etched or inlay decoration; spheres from volleyball size to nearly 10 ft across; different basin exteriors and surrounds. The Kugel invites participation (303b): an open palm halts its spin, and a fingerpush redirects the rotation. A water heater permits outdoor operation year round. Kusser Granitwerke, Red Hogan Enterprises, Inc., Tampa, Fla.



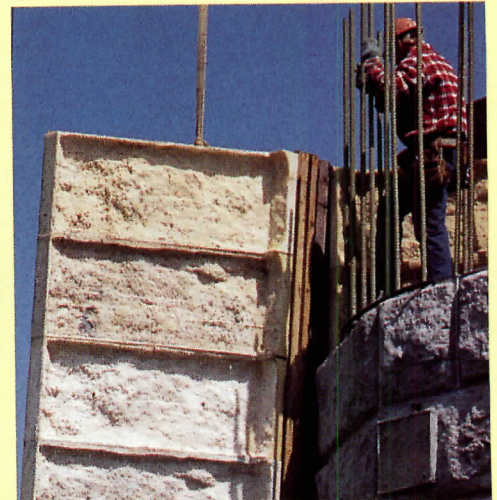
303a



303b



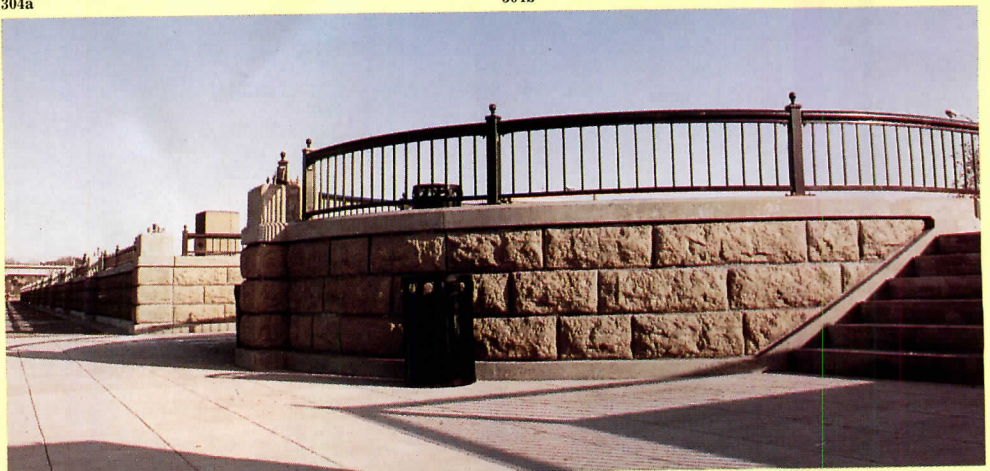
304a



304b

304. Almost the real thing

For large projects where the expense of *hand-cut and mortared* stone would be an impossible dream, a new concrete-form system gives a deep-relief, natural-stone-wall texture to structural, poured-in-place concrete walls (304a). Urethane forms (304b) are molded with the detail and dimensions of natural-stone walls, and used to cast concrete that mimics the original in deep-relief patterns such as dry stack, random field-stone, rustic ashlar, and rectangular cut



304c

New cutting, casting, and finishing technologies exploit the decorative potential of an ancient architectural material.

stone (304c shows a flood wall in 14 3/4-in. coursing). Forms are said to be reusable at least 40 times. A patented pattern and edge treatment disguises the vertical joint between forms; forms alternate top and bottom along the entire run to reproduce a realistic random effect. A month after casting, the concrete surface is stained to match an existing rock type or approved sample; grout is applied to finish the illusion of a mortar-set stone wall. Custom Rock International, St. Paul, Minn.

305. Granite installed in glazing system

Upgrading a '60s brick-faced office building was complicated by the existing structure's strict weight limitations. All cladding work had to be performed from the exterior, since the building was occupied, and the client wanted stone. John Patey, of Diller + Patey Architects, selected a thin-stone veneer manufactured by Technomaeria in Italy, [RECORD, February 1991, page 133] as an overcladding. The panels of red multicolor Indian granite, backed by a stiffening metal grid, are only 5/16-in.-thick, and are installed in the same glazing assembly as the new tinted glass; window returns are also stone. The American distributor of RSgs7 panels describes the epoxy-impregnated natural-stone sheets as having a more ductile behavior, like metal, rather than being brittle like untreated stone. As with any stone application, the density and other characteristics of the specified stone should be appropriate to the anticipated use. The Italian-made granite panels have been tested to ASTM and other standards in American laboratories. Marble Technics, New York City.



305a



305b

306. Ultra-thin marble veneer

Demar marble panels are cut only 6-, 7-, and 8-mm-thick, in three standard sizes up to 24-by 96.45-in. (61- by 244-cm): thin enough to be translucent (306a). A proprietary process developed in Hungary laminates fiberglass roving under heat, providing a flexible reinforcement. Panels can be made to adhere directly to existing walls; an 8-mm-thick 24-in.-sq tile is suggested for flooring use. Black, rose, blue-gray, white, and tan marbles are currently available, at prices ranging from \$13 to \$20 psf; panels can be mirror-cut and numbered for a book-match pattern (306b). Consec Corp., Louisville, Ky. ■



306a



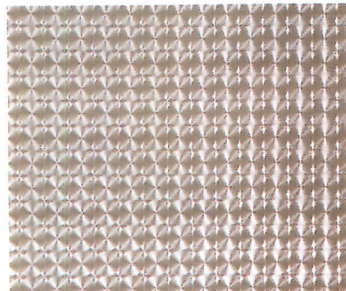
306b



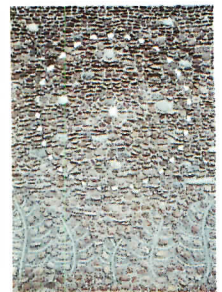
307. Furniture by architects
An Italian firm has set up a U. S. subsidiary to market licensed-reproduction furniture. The collection includes work by mid-century masters such as Le Corbusier (his LC2 sofa was designed with Pierre Jeanneret and Charlotte Perriand), as well as pieces by contemporary architects such as Toshiyuki Kita and Ettore Sottsass. Cassina U. S. A., Huntington, N. Y.



308. Interior floodlight
Called Papillon for its detachable butterfly wing-like barn doors, Reggiani's new interior flood fixture swivels 184 degrees and rotates in almost a full circle. For illumination of large spaces, the fixture can be surface- or track-mounted. Takes 300W linear quartz-halogen or 70W HQI double-ended lamps; comes in white, black, graphite, or pewter. Reggiani USA, New York City.



309. Light-diffracting metal
A light-catching treatment that gives the illusion of a changing surface, engine turning was used on planes and cars in the 1920s and 1930s, (the *Spirit of St. Louis* has it on its cowling), and is now offered in 48- by 96-in. sheets for architectural applications. Directional, nondirectional, and overlay patterns on aluminum, brass, copper, and stainless steel. FPM, Inc., Fairbury, Neb.



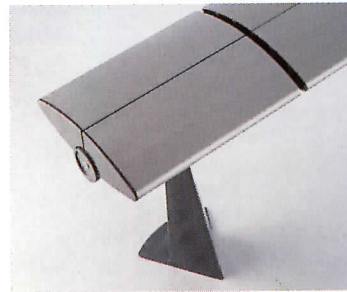
310. Stone art
Working in sizes and materials to suit specific interior and exterior commissions, designer John Liczwinko creates landscape walls, fountains, fireplaces, and trombe walls in Stone Cast. The technique places selected stones, glass, ceramics, and other natural elements in a reinforced-mortar base. Stone mural shown is 84 in. high. Solstice Design, Port Townsend, Wash.



311. Non-staining grout
New Black Onyx grout contains no pigments, and is said not to stain the surface of quarry tiles, pavers, unglazed ceramics, polished porcelains, and rough-texture tiles during the grouting process. The Latapoxy grout resists chemical stains, and is recommended for high-traffic commercial floors. Water clean-up. Laticrete International, Inc., Bethany, Conn.



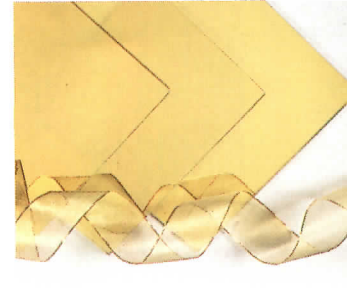
312. Custom-design doors
A new line, Series 1000 doors offer a number of different shape and finish options for each of three components: header, center inserts, and side panels. Elements come in carved Honduran mahogany, Bonded Metal, and patterned glass. Headers may be round, "Gothic," stepped, or triangular; doors are designed for interior or exterior use. Forms+Surfaces, Santa Barbara, Calif.



313. Aerofoil seating
Rodney Kinsman designed this all-aluminum bench specifically for the futuristic environment of architect Nicholas Grimshaw's UK Pavilion at Expo '92 in Seville, but its sturdy, easy-to-install construction also recommends it as short-term seating in airports, bus stops, train stations, and subways. Modular sections are capable of fairly long spans. OMK Design, Ltd., London.



314. Good-looking and green
LFI's classic Petoskey outdoor seating can now be ordered as a bench with seat slats of PolySite, plastic lumber made primarily of recycled polyethylene milk containers. Plastic parts will not rot, splinter, or crack; are integrally colored and need no finishing; and permit easy removal of graffiti. Landscape Forms, Inc., Kalamazoo, Mich.



315. Gold-toned glass
Eclipse pyrolytically coated reflective architectural glass now comes in a warm golden color, as well as blue-green, bronze, gray, and clear colorations. The hard-coat product can be handled—cut, bent, strengthened—just like standard float glass, and controls unwanted solar heat gain without absorbing excessive heat. Libbey-Owens-Ford Co., Toledo, Ohio.

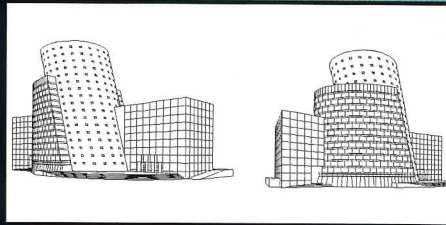


316. Moisture-resist substrate
A particleboard constructed of Western woods, Duraflake MR has been made with increased moisture resistance, and is said to have improved internal bond and bending strength. Suggested as a substrate for interior flooring systems, countertops, and other moisture-exposure applications. Offered in panels up to 12-ft long; thicknesses from 5/8- to 1-in. Willamette Industries, Albany, Ore.

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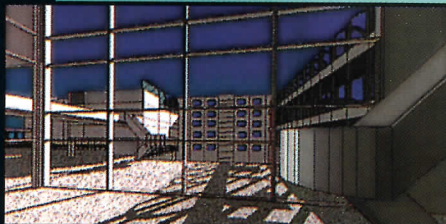
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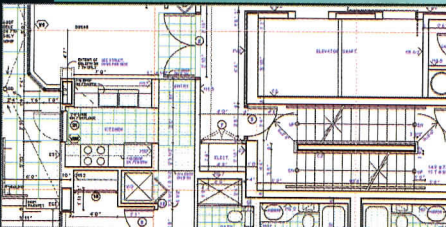
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Base Area		71.4 SF	
Baseboards		62.4	
Perimeters		78.2	
Base of the Space		0	

WALLS				
Number	Length	Side Area	Area of Openings	Net
1	22.8	341.7 SF	61.7 SF	280 SF
2	14.8	184.3 SF	20.8 SF	163.5 SF
3	22.8	253.4 SF	103.4 SF	149.9 SF
4	11.8	101.1 SF	20.8 SF	80.3 SF

OPENINGS				
In Walls	Width	Height	SI	Surface
1	3	6.9	0	20.6 SF
1	3	6.9	0	20.6 SF
2	3	6.9	0	20.6 SF
4	3	6.9	0	20.6 SF

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Manufacturer Sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.

Pages 56-65

Los Angeles Convention Center Expansion
Gruen Associates/Pei Cobb Freed & Partners,
Architects

Tubular trusses: American Bridge. Curtain wall:
Harmon Contract. Blue-green glass: Libbey-Owens-Ford; frit applied by Viracon. Insulated steel panels: H. H. Robertson. Metal roofing: AEP Span. Membrane roofing: Manville. Sand-blasted black granite: Absolute Black. Handrail: Columbia Metals. Stair light: Kim Lighting. Signage: Federal Sign. Acoustic treatment: Performance Contracting. Escalators: Dover Corp.

Pages 66-71

College of the Atlantic
Brooks and Carey Architects
Asphaltic shingles: Bird Mfg. Wood-framed windows: Marvin Window Co. Skylights: Velux-America; Kawneer. Wood doors: Maiman Door Co. Closers and exits: Sargent. Locksets: Schlage. Paints and stains: Benjamin Moore & Co.; Sherwin Williams. Linoleum flooring: Forbo (Linoflex). Carpeting: Stratton. Elevators: Cemcolift.

Pages 72-77

Temple Congregation Sons of Israel
Briarcliff Manor, N. Y.
Conklin Rossant Architect PC
Brick: Belden Brick. Curtain wall, windows: EFCO

Corp. Upward-acting doors: Overhead Door Corp. Elastomeric roofing: Carlisle. Glass: Guardian Industries. Bollards and floodlights: McGraw Edison. Custom entrance: VT Industries. Moveable walls: Modernfold. Acoustic ceiling: Armstrong World Industries (Angled Tegular Cirrus). Paints: Benjamin Moore & Co.; Zolatone. Laminates: Formica Corp. Special wood floor: Klepp Wood Flooring, Inc. Vestibule tile: American Olean. Pews and chairs: New Holland.

Pages 78-85

Law Library, Arizona State University
Scogin Elam and Bray Architects, Inc.
Exterior finish: Dryvit Systems. Fireproofing: W. R. Grace. Galvalume and copper roofing: Elward Co. Curtain walls: Kawneer. Wood trusses: Trus-Joist. Exterior lighting: Crouse-Hinds; Lithonia. Skylights: Bristolite. Hatches: Bilco. Built-up roofing: Manville. Glass: PPG (Solex). Wood doors: Eggers. Paints: Dunn-Edwards. Special coatings: Dryvit (Genesis). Interior lighting: SPI; Lithonia; Prudential.

Corrections

- On pages 54 and 55 of the November Computer software reviews, the captions accompanying the top two photos were mistakenly transposed.
- In the November New Client section, the text and art were transposed. The Lee Skolnick Creative Discovery Museum pictured on page 32 is described on page 33; the Safety Building by Myers Associates Architects shown on page 33 is described on page 35; the Brookline Street Housing project by Goody, Clancy & Associates pictured on

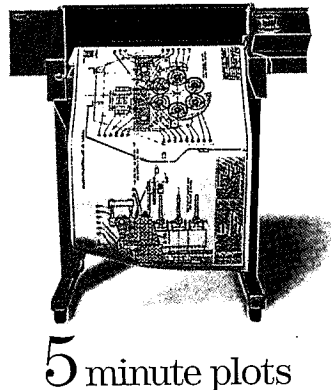
page 35 is described on page 32.

- The photo of an arcade structure in our November client profile of Kaiser Permanente [RECORD, page 44] was misidentified. The project shown was actually the Kaiser Permanente Riverside (Calif.) Medical Center.

Addenda

Becton Dickinson Building 2 [RECORD, November 1993, pages 80-85]. The project team of Kallman McKinnell & Wood consisted of: Gerhard M. Kallman, N. Michael McKinnell, Henry Wood, partners-in-charge; Hans Huber and S. Fiske Crowell, Jr., senior associates; Andrea Adams, Ed Alshut, Alicia Crothers, Beatrice Ammana Bunker, Kenneth Hartfiel, Emily Kuo, Margaret Minor, Hillary Hanarem, Julie Sullivan, Tim Quirk, Susan Shaw, Eric Reinhart, project team.
Jerry Kugler and Associates and Terry Chassman and Associates were lighting consultants. Gensler and Associates were programming/space planning consultants. The Becton Dickinson project team consisted of Donald P. Sposato, Ph.D., director, corporate engineering and facilities planning; Gregory J. Butler, group project manager; Ronald G. Freschi, project manager.
The area of the total site is 132 acres. The engineering laboratories described as having a pilot-line function are in fact used for process debugging. ■

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Public Housing *continued from page 27*
project already met its budget. (Flat roofs were mandated, for example, even if inappropriate to surroundings.) Under Jack Kemp, HUD produced a report that blamed NIMBY sentiment and excessive regulation for reducing affordability. The report, however, never took HUD to task for its own role in contributing to neighborhood resistance by producing housing of unsurpassed bleakness.

The limits of privatization

There were many housing advocates, however, who agreed with the Reagan-Bush efforts to privatize assisted-housing production, and to promote homeownership. Those housing resources that were available in the '80s were increasingly committed to community-based churches and other organizations that had shown the savvy to build housing through CDCs. CDCs combine the motivation of neighborhood activists with the expertise of private-sector developers and consultants.

Many of these projects are successful as housing, but their financing complexities require enormous sophistication—exactly what most needy communities lack. Michael Stegman, now an assistant secretary for pol-

icy development and research at HUD, reviewed 24 tax-credit projects, and found each needed an average of five separate financing sources. One had 15. This need for developers to “fashion a complex structure of multilayered financing is the most serious failure of a low-income housing policy based on creative financing,” wrote Stegman in *Urban Land* (July 1990). According to Wuenschel, a General Accounting Office study showed that building conventional public housing was more cost-effective.

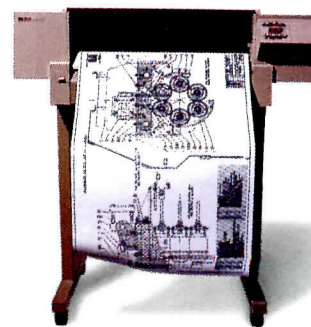
“These are all ways of trying to bribe the private market to do something that isn’t designed to do and doesn’t want to do,” asserts Peter Marcuse, a housing expert who teaches at Columbia University’s School of Architecture, Planning, and Preservation. What’s to be done? To serve those in serious poverty (below 30 percent of median), says Richard West, “we haven’t been able to come up with anything better than public housing.” He says the public housing stock of European countries ranges from 30 to 40 percent of all units; in America, it’s about 1.5 percent. Marcuse adds, “No cities in developed countries have the extremes of slum conditions and homelessness that we do.” There can’t be an increased direct govern-

ment role in housing until the public is convinced government agencies can do a good job. The '80s saw tales of favoritism, acceptance of shoddy construction, and developer failures. HUD secretary Henry Cisneros estimated, according to *The New York Times*, that bailing out the latest bad batch of HUD developments will cost taxpayers \$11.9 billion. “There are public-housing authorities run so well that you can’t tell it’s public housing,” says West. “The perception problem we’re dealing with is that if you see a well-maintained place, you don’t assume it’s public housing.”

A role for architecture

Public-housing authorities recognize that improving building standards is not enough. “We need architects to help us integrate projects into neighborhoods,” says Nancy Yost, of BHA. “We need clearly defined public space, semipublic, and private space.” Burney says, “When you build housing you also have to consider commercial, retail, street-level uses, day-care, community centers, and so on. It has to be more than just housing.” Marcuse says building higher quality, more appealing housing is essential to attracting and keeping the higher-income
Continued on page 45

To the people.



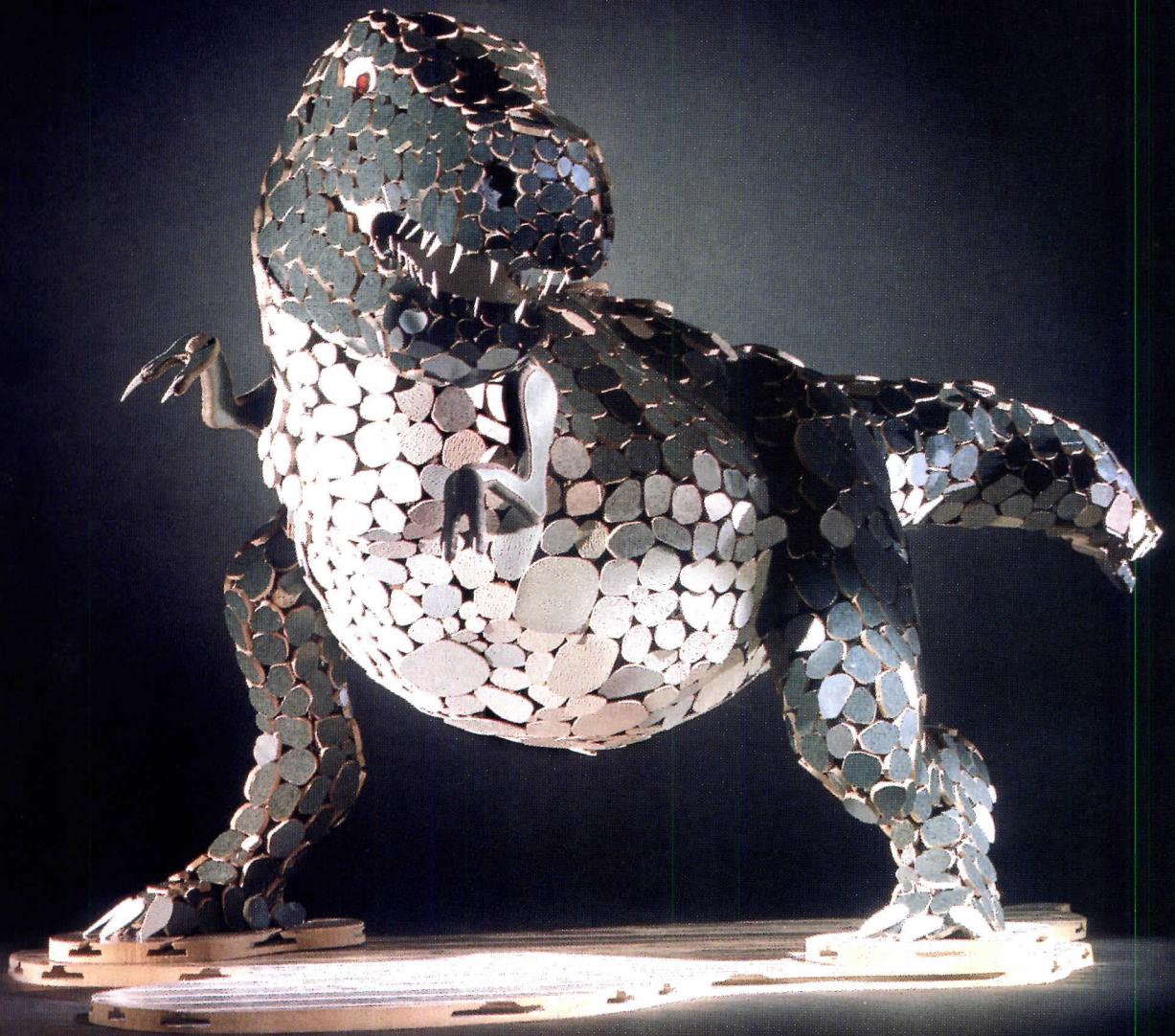
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Public Housing

continued from page 43

tenants that make projects economically and socially viable. Better design is also essential in overcoming anti-public housing sentiment in neighborhoods.

Critics have long implicated high-profile architecture in project failures. "To say that architecture is the cause of social problems [in housing] is not borne out by experience," says New York's David Burney. "The design can be a facilitator and an enabler." Harold Bell, a real-estate development expert at Columbia's architecture school, has long claimed that failures in the notorious Pruitt-Igoe project in St. Louis were not architectural as much as managerial—there was simply not enough money to viably run the complex. "Architects don't play the Corbusian visionary role anymore," cautions Burney. "Architects do have a needed expertise, but you're part of a team, and it is a process that is more and more about finding your way through the labyrinth of issues and community concerns." Architect Emmanuel Kelly says successful architects in this field "know that you need involvement of the local resident leadership to get support."

The Place of Public Housing

Housing authority managers feel that with a new administration leaning more to a public role in housing, they have emerged from the wilderness. In the short term, the focus on federal deficit reduction won't mean big funding increases. HUD will direct funds, Stegman says, "to radically revitalize up to half of the seriously distressed public housing." CDCs will have a continuing role, both separately and in partnership with public-housing authorities. Secretary Cisneros would like to see Section 8 vouchers made available to owners as well as renters. As of yet, Stegman does not see the financing of CDC projects simplified.

Cisneros is promoting expanded vouchers and public-housing production as an economic-stimulus priority, but any increase will not be visible until fiscal year 1995. HUD action plans include streamlining the development process, increasing flexibility in the way rules are interpreted, and linking tenants to social services—all long-promised and undelivered priorities. A HUD task force is at work examining public-housing design guidelines. (A December conference reviewed issues of density, site redevelopment, defensible space, landscape, materials and standards, and onsite services.) Several housing authorities have been selected to try out some of the proposals. *James S. Russell*

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Architectural Record January 1994 45

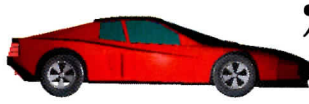
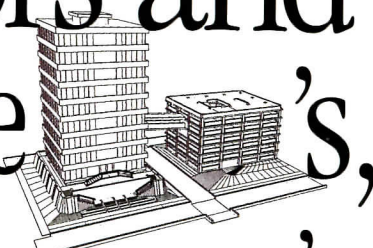
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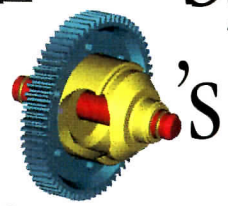
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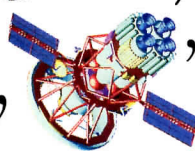
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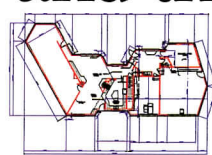
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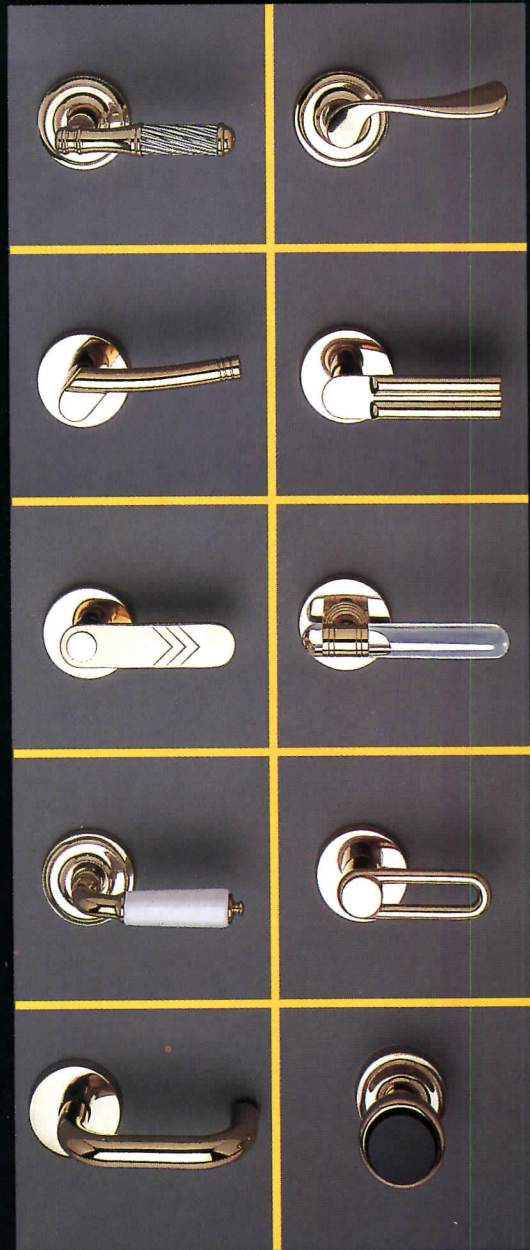
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Omnia hardware is available through leading distributors coast to coast. For the name of your nearest dealer, please contact:
Omnia Industries, Inc., Five Cliffside Drive, Box 330,
Cedar Grove, NJ 07009, (201) 239-7272. \



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The Leader in Elegant Design

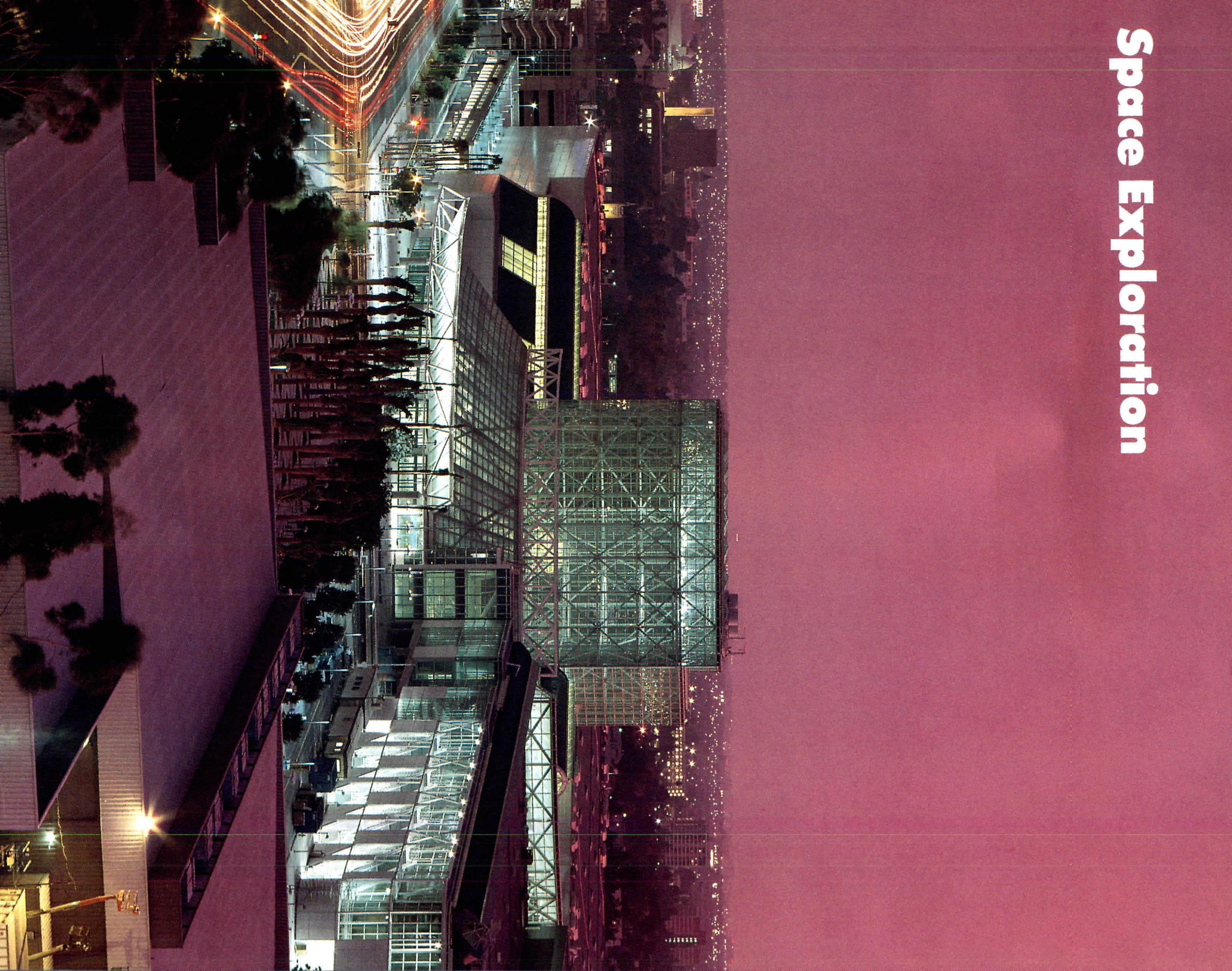
In This Issue

Turner Brooks compares his Gates Community Center at College of the Atlantic in Bar Harbor, Maine (page 66) to a crustacean, calling it “its own peculiar creature, which bends and flexes to insert itself between the existing buildings and other constrictions of the site. It is, in a sense, an organic creature, with its own head, body, and tail.” Scogin Elam and Bray’s John J. Ross-William C. Blakley Law Library at Arizona State University incorporates its own anthropomorphic references (page 78). Unlike Brooks’s “lobster,” the library’s technical-services wing, clad in overlapping panels of steel, looks like the side of an armadillo. Conklin Rossant’s synagogue in Briarcliff Manor, New York (page 72) “bends and flexes” to its own end—walls move to accommodate overflow seating, platforms on the central dais rise to lift younger congregants to eye level. James Ingo Freed’s Los Angeles Convention Center (page 56) also bends and flexes to insert itself between an existing facility and a public plaza, while asserting a grand civic presence with an entirely new complex. Building Types Study 712 (page 86) examines architect-designed entry-level houses clustered on increasingly smaller suburban sites and assesses the impact of their ever-encroaching presence.

Karen D. Stein

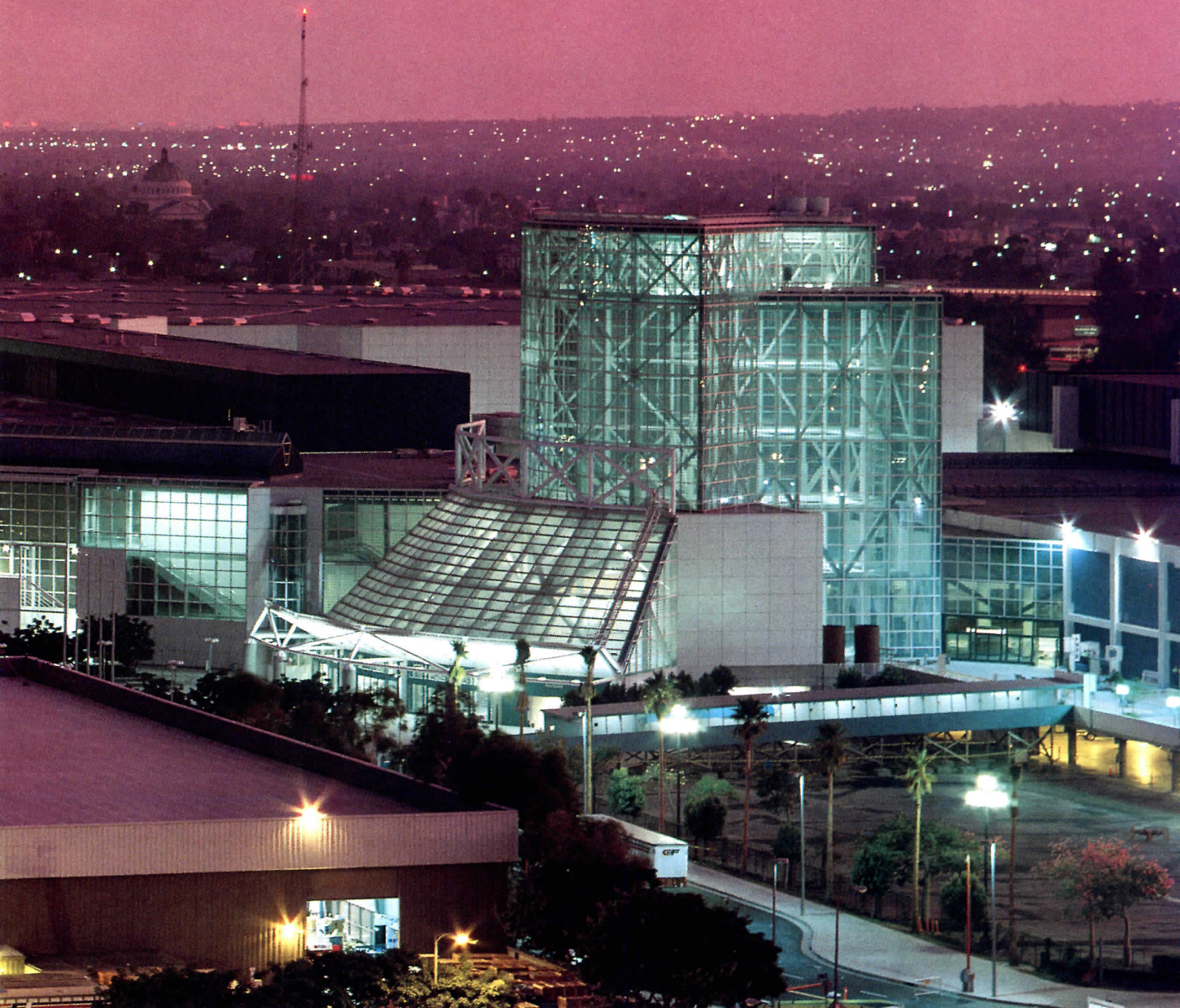
*Manufacturers’ Sources
listed on page 42*

Space Exploration



*Los Angeles greets conventioners
inside a pair of soaring urban rooms
designed by James Ingo Freed.*

*Los Angeles Convention Center
Expansion
Los Angeles, California
Pei Cobb Freed & Partners,
Design Architects
Gruen Associates,
Executive Architects*



In recent years about all the 1971-vintage Los Angeles Convention Center had going for it was its potential for improvement. Competition for business from cities with newer facilities was fierce, and the center was far too small to accommodate the mega-events Los Angeles should have been attracting. The original site—hemmed in on four sides by streets and freeways—was too small to permit any addition to the original building without consuming the public plaza in front, its nicest feature.

Pei Cobb Freed & Partners's expansion, designed by James Ingo Freed, resolved the situation masterfully. The existing main building received an entry pavilion without sacrificing too much of the plaza. An entirely new entry pavilion, exhibition hall, and garage occupy the block to the south, linked to the existing building's new entry pavilion by a bridge. This 615-foot-long structure spans Pico Boulevard, once the convention-center complex's southern boundary, and contains two levels of daylit walkways, a theater, a clear-spanned, 26,500-square-foot hall, and smaller meeting rooms that are accessible to groups meeting in either building.

The new south and west entrance pavilions are a tour de force in glass and steel. Their 155-foot-high, teal-tinted glass towers are supported by an intricate three-dimensional tubular truss system, designed for maximum resistance to seismic forces. Patterns of frit on the glass diffuse daylight on the inside, defining the glass's multiple layers. Along with the truss system, they cast ever-changing shadows on floors and surfaces. At night, the pavilion towers glow, dominating the skyline at this uncrowded end of downtown Los Angeles. The structures are breathtaking in their scale and luminosity.

"Convention centers are too big just to be boxes," says Freed. "Such a building is built with public funds; it's part of the public arena. The public pays for it; they should feel welcome there. What would the public feel welcomed to if there is nothing there? They would feel welcome in a great urban room. I've always felt Los Angeles should have such a room. In New York, people go to Grand Central Terminal even if they aren't taking a train, they just eat at the Oyster Bar, and hang out. It's a great urban room. I think without big urban rooms, the whole situation of urban life is stunted. They should be open to the public, be something to look at, a memorable space.

"The glass here is all working, none of it is opaque," continues Freed. "Where there is glass, you can see out of it. At night, it's like a lantern. Elsewhere, we used metal panels. Where there is glass, you know it's public space; where you have metal, it's a private space. To me, light is the essence of a great public room. A public room that is not light-filled is usually morose—even Grand Central Terminal has huge windows around the sides. To me, if you don't have light, you don't have a great public space."

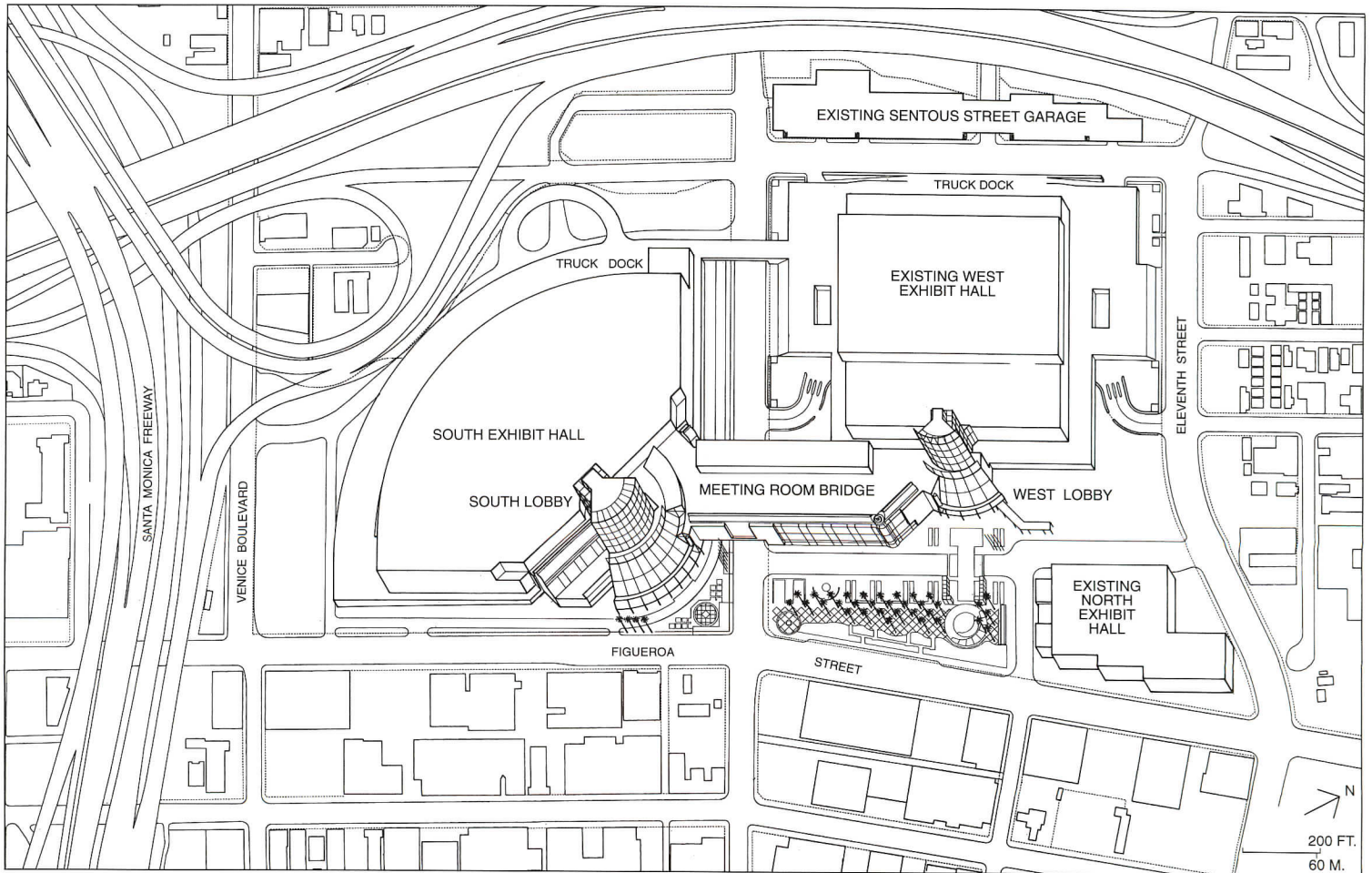
Even though the pavilions make a great impression, in the convention business the money is made in the exhibition halls; therefore, most of the building's budget went into the utilities-intensive construction of the hall. It is vast, containing some 347,000 square feet of floor space that can be subdivided into two or three smaller spaces using soundproof partitions. A 230- by 430-foot column-free space in the center of the hall is available for events that need unobstructed space, like conventions. Floor boxes on a 30-foot grid provide electrical power, compressed air, plumbing, and telephone service. Other utilities are serviced from a grid of catwalks overhead. Beneath the hall is a parking level that can be remodeled into exhibit space when more is needed. *Charles Linn*

Up Close

Two by Freed. Inevitably, comparisons will be made between the Los Angeles Convention Center (LACC) and the Jacob Javits Convention Center in New York City (photo below), completed in 1986, and both designed by James Ingo Freed. "The Los Angeles Convention Center is required to do a lot of things Javits never did. Javits never had to hook onto another building, and it's way back off the street," says Freed. "Los Angeles has an interstate highway at its back, Javits has the Hudson River. Los Angeles is very articulated in its parts, whereas Javits is a perfect, pure exploration of space, a shaping of a space within a center of space frames that act as both walls and ceilings; it's much less required to do gymnastics. In many ways, this [LACC] is a much warmer, more tactile place. The glass at Javits is also very different: at the front it's all vision glass; at the back it's all opaque. It's all dark gray to be read as a singular form. Seen from the Hudson, seen from the air, Javits is a very different thing. It wouldn't fit into a city that's as complex as L.A. And this [LACC] wouldn't work so well in New York City."



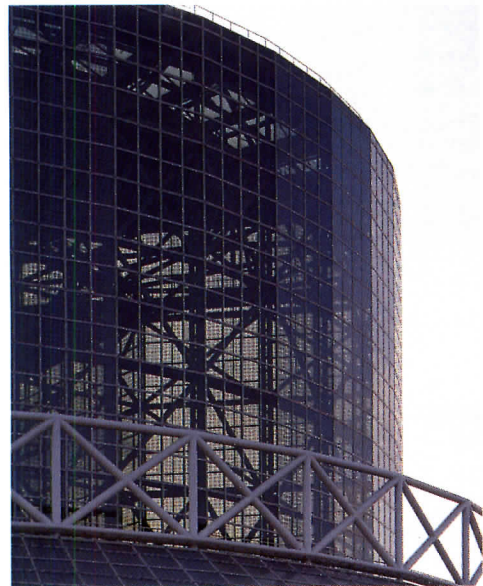
The 2.5-million-square-foot addition to the Los Angeles Convention Center adds a new entry pavilion to the existing convention center (opposite, far right) and is tied to the massive new exhibit hall by a bridge over Pico Boulevard that contains a ballroom, theater, and meeting rooms. The expansion also includes new parking, loading docks, food courts, two new restaurants, banquet and catering facilities, and a five-acre plaza, the largest landscaped public space in downtown Los Angeles. Citizens hope that the convention center will contribute to the economic growth of the downtown area.





The Meeting Room Bridge (top left and opposite) connects the new part of the convention center with the old. "I like circulation and I make all of my architecture out of circulation," says James Freed. "You have to connect two different buildings at two different levels and not have it seem as if they were separated."

The huge number of people accommodated by the Convention Center required the building's exterior to be lined with egress points. On the exterior elevation of the Meeting Room Bridge (left and opposite), Freed used rows of steel running parallel to the exit stair stringers to express the emergency circulation. "We have the necessity of needing to evacuate this building in five minutes, which means we need to have some sort of stairs. That gets to be the meat of architecture to me. If that's what you get, that's what you have to make architecture out of," says Freed.



The transparency of the teal-green glass entry pavilions (lower left) allows the complexity of the multi-layered tubular trusses to be appreciated from the exterior of the building. A pyramid-shaped skylight (lower right), perhaps a nodding reference to another Pei Cobb Freed & Partners' work, tops a circular skylight near the north end of the Meeting Room Bridge.



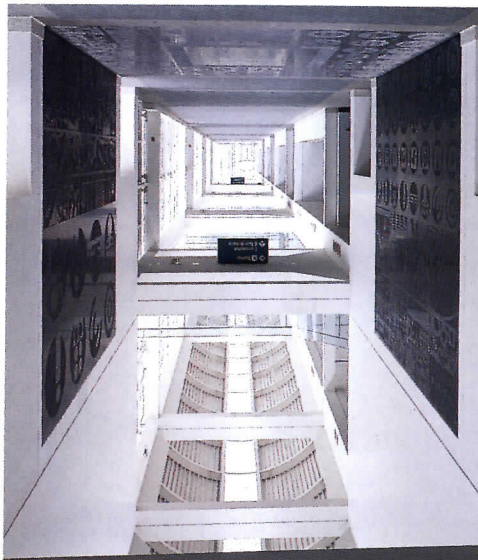
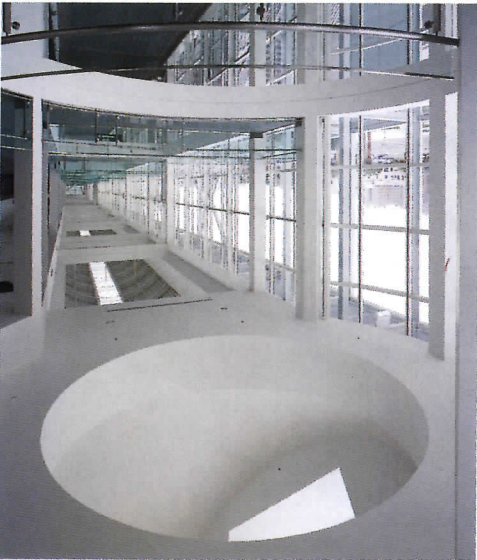
Tow Away Zone



Meeting Rooms
The Terrace
Concourse
West & North Hall

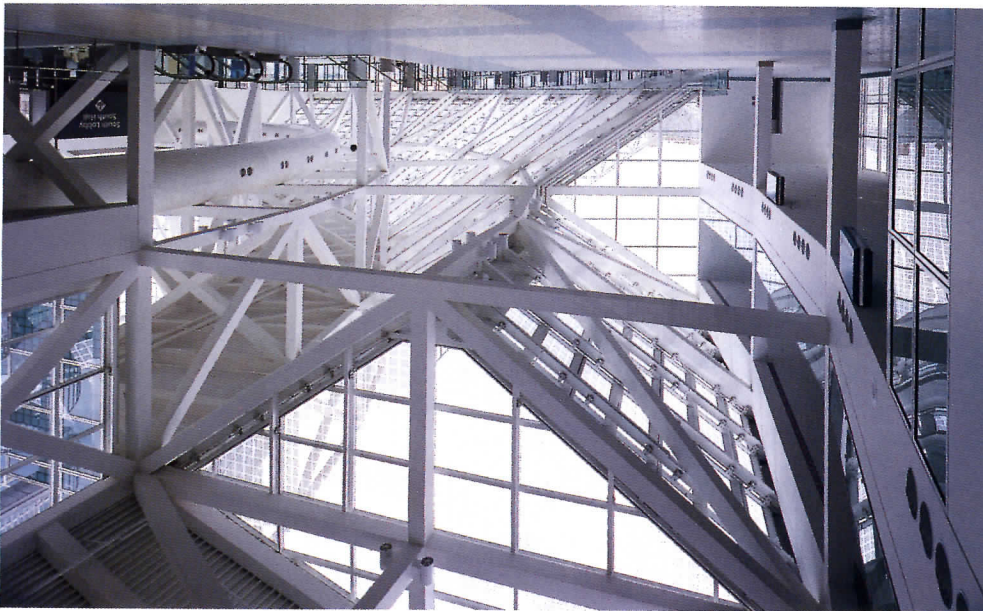


One of the new exhibition hall's most impressive features is its 230-by-430-foot column-free space. With a 40-foot-clear height to the bottom of trusses and 60-foot-clear between trusses, the hall can accommodate extremely large exhibits, and can also be subdivided into two or three smaller spaces. Lighting and other utilities can be accessed from an overhead catwalk grid.



People walking down the skylit Meeting Room Bridge experience artist Matt Mullican's interpretations of the development of Southern California, executed in sandblasted black granite (middle left). The circular skylight (middle right) is topped by a pyramidal skylight (previous pages).

James Freed's concept of providing a pair of great urban rooms for Los Angeles resulted in the west and south entry pavilions (south pavilion opposite and top left). The welded-steel trusswork and fritted, teal-tinted glass, viewed here from the second floor mezzanine of the south lobby, is the pavilions' most spectacular feature. The three-dimensional trusses are designed to resist the movement of the earth below, while minimizing the building's horizontal loading. "The seismic function is the key here," says Freed, "so everything works off those diagonal members. If I wouldn't have those, the building would fall apart with the first seismic shock. Mostly I hate that criss-cross. I never use them; here I had to."



Credits

Los Angeles Convention Center
Los Angeles, California

Client: Los Angeles Convention
& Exhibition Center Authority

Design Architect: Per Cobb
Freed & Partners—James Ingo
Freed, partner-in-charge,
design; Werner Wandelmayer,
partner-in-charge,
management; Michael Flynn,
partner-in-charge, technology

Executive Architect: Gruen
Associates—Ki Suh Park,
partner-in-charge; Michael
Enomoto, project manager;

Lynn Mitchell, project
architect; Chad Dasamjati,
technical manager

Associate Architects: Edward
C. Barker & Associates—Elliot
Barker, partner-in-charge;
Escudero-Fribourg
Architects—Dan Escudero,
partner-in-charge; The
Tanzmann Associates—
Virginia Tanzmann, partner-
in-charge; Ahn & Han
Architects, Inc.—Stuart Ahn,
partner-in-charge

Project Manager: Leo A. Daly/
Robert E. McKee, Inc.

Consultants: John A. Martin &
Associates; Martin & Huang
Associates (structural);
Systka & Hennessy; William
Yang & Associates; Carlos
Rodriguez & Associates (MBP/
fire protection); Sasaki, Inc.
(landscaping); Con-Spec
Consultants (specifications);
Fisher Marantz Kenfro Stone
(lighting); McKay Conant
Brook, Inc. (acoustical-A/V);
Kolf Jensen & Associates (fire
and life safety); Fomas and
Associates (civil); Lee Saylor,
Inc. (cost estimating); Gordon
H. Smith Corp. (curtain wall);
David E. Gaines (roofing)

Artists: Alexis Smith (terrazzo
pavement in West Lobby); Matt
Mulligan (granite panels in
Meeting Room Bridge); Pat
Ward Williams (sculpture in
Gilbert Lindsay Plaza)

General contractor: Hyman/
Mortenson Co., George Hyman/
Mortenson Co., M. A.
Construction Co.,
Mortenson Co.

Artists: Alexis Smith (terrazzo
pavement in West Lobby); Matt
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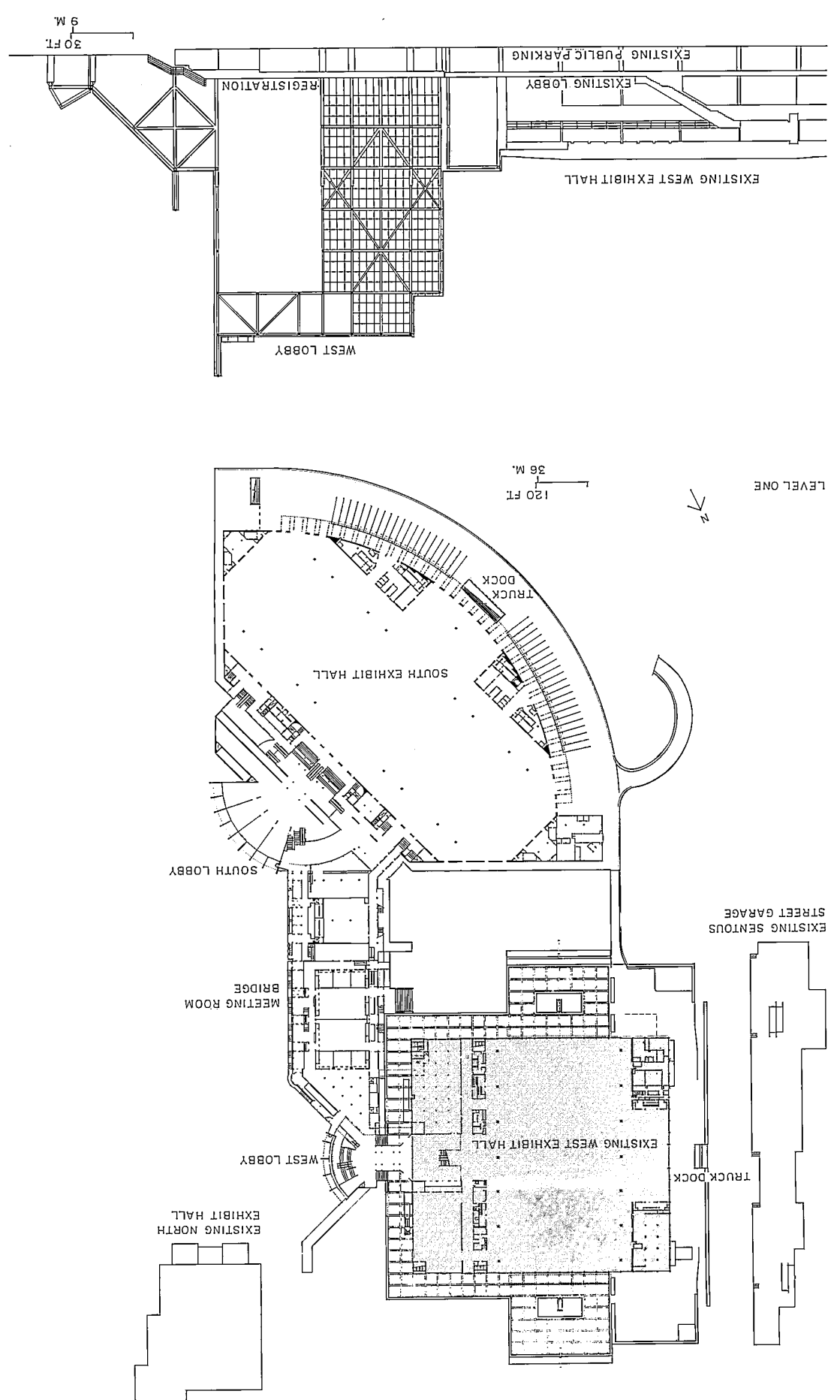
Artists: Alexis Smith (terrazzo
pavement in West Lobby); Matt
Mulligan (granite panels in
Meeting Room Bridge); Pat
Ward Williams (sculpture in
Gilbert Lindsay Plaza)

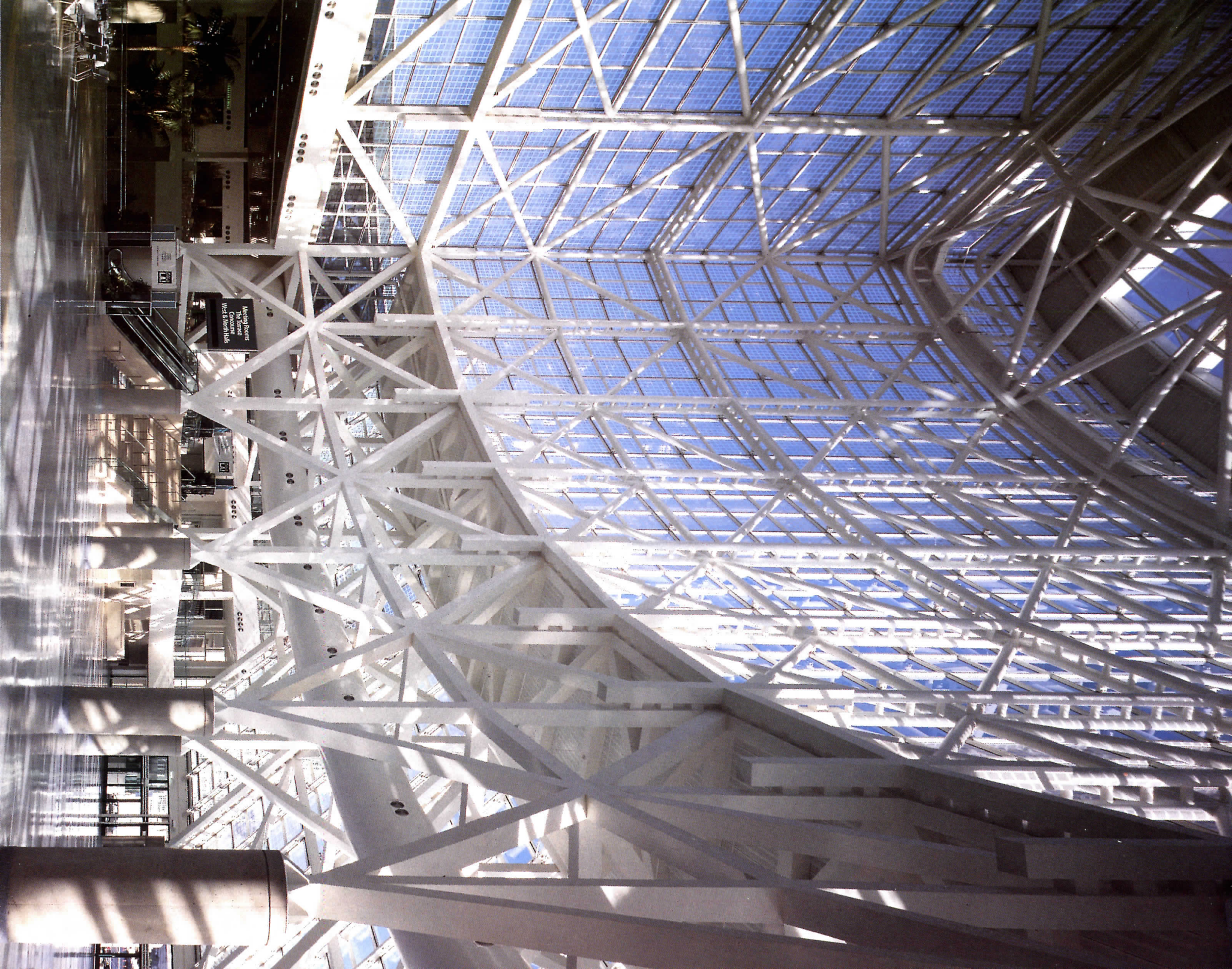
General contractor: Hyman/
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Mortenson Co., M. A.
Construction Co.,
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pavement in West Lobby); Matt
Mulligan (granite panels in
Meeting Room Bridge); Pat
Ward Williams (sculpture in
Gilbert Lindsay Plaza)





When Turner Brooks presented his design for the Gates Community Center to College of the Atlantic, he compared the building to a “lobster-like creature, a crustacean that crawled out of the briny deep and wedged itself into the heart of the campus.” This bold analogy—and the plastic lobsters scattered around the model—provoked what campus planner Millard Dority recalls as “nervous laughter and odd looks.” The project became, in fact, quite controversial. Some thought the building, with its barrel-roofed hall, seemed less like a sea creature than a quonset hut, or maybe a tugboat or a caboose. This was especially disconcerting to those who wanted the new campus center, with its theater/assembly hall, art gallery, lecture room, and various offices, to refer directly to local architectural tradition—to look, for instance, like a New England meeting house. But if some objected to the design’s lack of nostalgia, others championed it for that very quality. Today, six months after its opening, most agree that Gates, the first significant institutional project by an architect best known for his inventive and original houses, fits admirably the spirit of this somewhat unusual school.

COA is a small college whose curriculum emphasizes human ecology and the environment, and whose governing philosophy is based on participatory democracy. Founded only 25 years ago, it has already begun to create a campus with an architectural liveliness that has eluded many larger, richer institutions. Located in Bar Harbor, on the rocky eastern shore of Mount Desert Island, the 26-acre school occupies the sites of several turn-of-the-century summer estates, including a stone extravaganza by Bruce Price that houses administrative offices and a natural-history museum. Throughout the grounds, in various stages of restoration and ruin, are old garden buildings, pergolas, gazebos, and, most notably, a terraced garden designed by Beatrix Farrand. To this distinctive setting, COA has added several of its own buildings. In addition to Brooks’s, recently completed projects include a library/dining hall by New Hampshire architect Daniel V. Scully; currently being planned is new student housing by Bar Harbor architect Roc Caivano. (Brooks, Scully, and Caivano were all members of Yale School of Architecture’s class of 1970, a coincidence not lost on the COA community.)

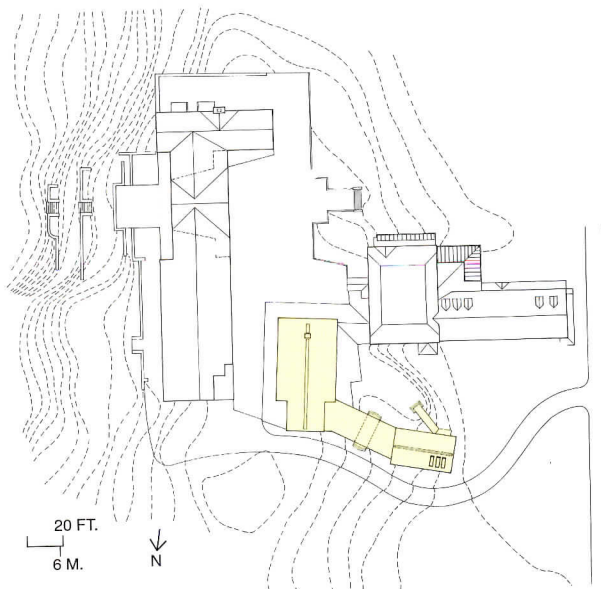
COA’s democratic structure and environmental focus both influenced the design of Gates. At each stage the project was reviewed at all-college meetings; thus the architects’ client comprised not only

administrators, faculty, and trustees, but students as well. It was a second-year student, Tim Case, who urged that the assembly hall be given the technical capacity—lighting, sound, a control booth, etc.—of a theater. (He describes his involvement in the process as “a wonderful element of my education at COA.”) And students, who closely monitored the project’s energy efficiency and environmental correctness, are especially pleased that the building incorporates elements like triple-glazed windows, super-insulated walls, and non-toxic materials; for example, exterior plywood was used for the interior because the glue in interior plywood contains formaldehyde.

Among the more emotional environmental issues was the preservation of mature trees and shrubs on COA’s northwest lawns. So beloved were some pine, spruce, and rhododendrons that they effectively set the assembly hall’s northern limit. (Only one big pine was cut down during construction; the college plans to use it to build benches that Brooks designed for the lobby.)

Siting was a major challenge of the design. The architect had to consider not only the northwest lawns but planned formal gardens to the south (now built), an arts-and-sciences buildings to the west, and, to the east, Daniel Scully’s library/dining hall, which Brooks admires. While acknowledging that the design was shaped and influenced by this tight, demanding site, Brooks emphasizes his efforts to make Gates more self-contained than contextual. “I see this building not as a direct, contextual response to its surroundings,” he says, “but rather as its own peculiar creature, which bends and flexes to insert itself between the existing buildings and other constrictions of the site. It is, in a sense, an organic creature, with its own head, body, and tail.”

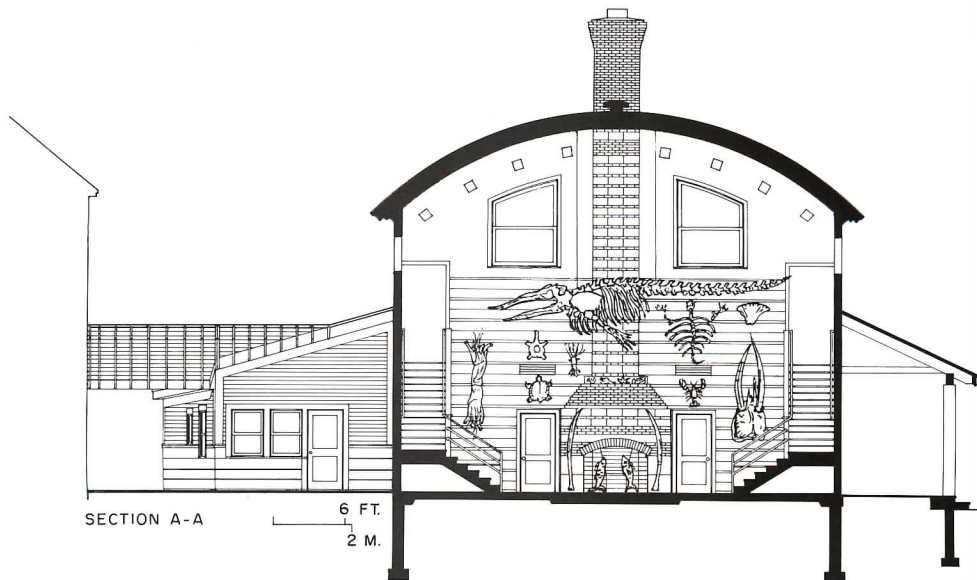
Although inspired by architectural and not programmatic concerns, Brooks’s metaphor is apt, for Gates has become, in the words of COA’s president, Steven Katona, “central to the life of the school.” The hall has been used intensively for various events, including productions of Shakespeare and Euripides, jazz and classical concerts, children’s story-telling, as well as college-wide meetings and lectures. The gallery has presented the works of both college and regional artists. And, deep into the chilly Maine autumn, the generous south-facing porch was providing students and teachers a place to enjoy the splendid landscape, out-of-doors. *Nancy Levinson*



To make the spaces between buildings less predictable, more ambiguous and dynamic, Brooks has slightly skewed Gates’s plan: its north-south axis is neither parallel with those of its neighbors nor centered on the approaching path.



Brian Vanden Brink photos

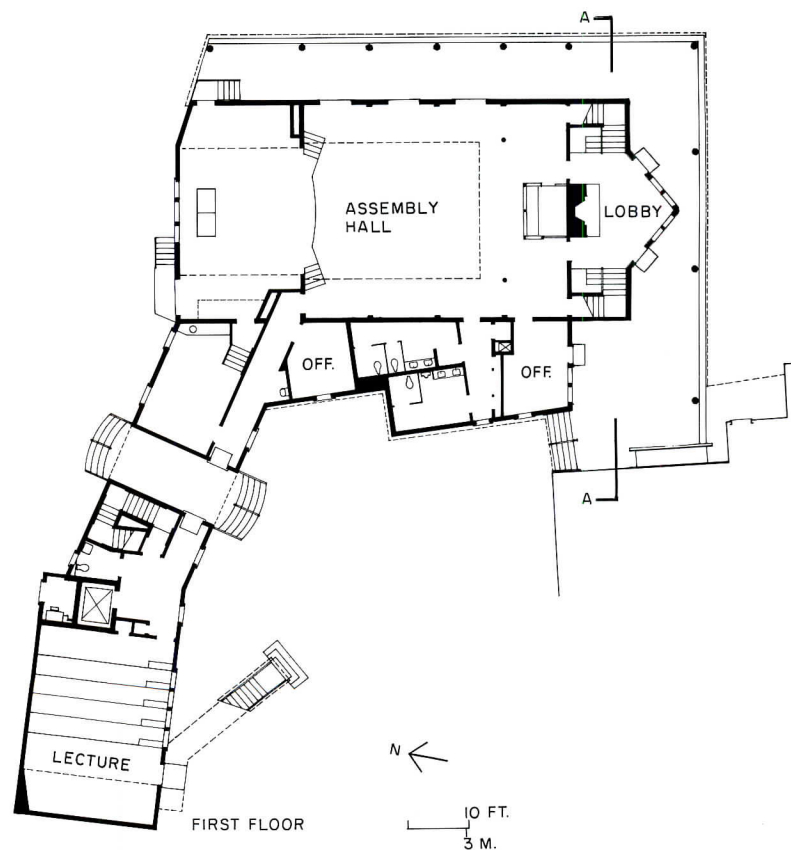
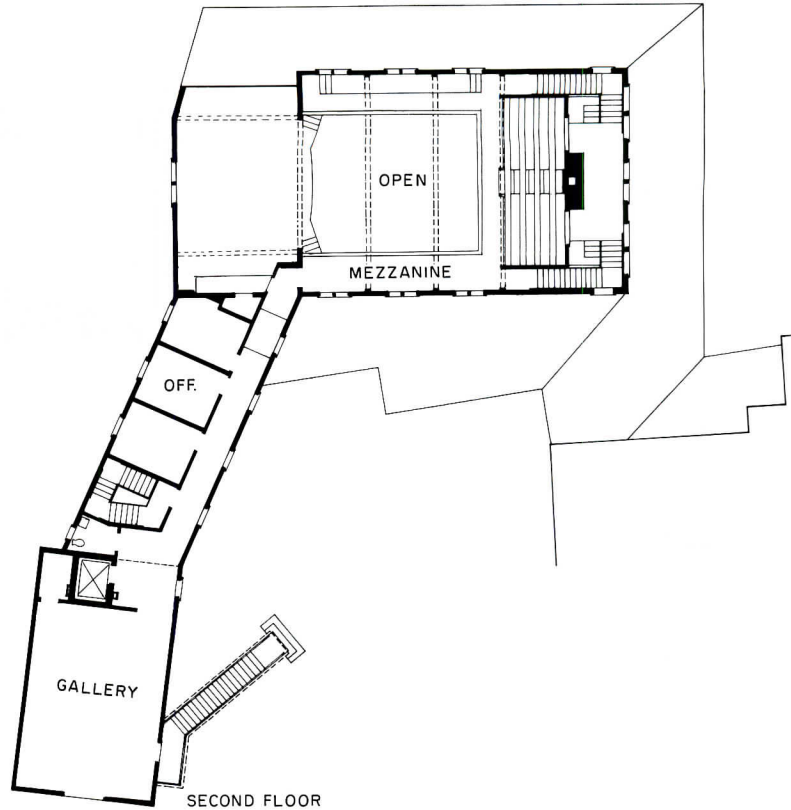


COA felt strongly that the Gates Center should not be, as college librarian Marcia Dvorak put it, "institutional in feel." The building's mix of clapboard and vertical wood siding, punched windows, fireplace, and porch meet the need nicely. (The choice of wood as a building material also corresponded to the project's budget: about \$125 per square foot.) The gabled northwest wing houses a lecture hall below and art gallery above. The double doors facilitate the installation of big works of art, but also, in Brooks's words, "allow this very enclosed room to become part of the landscape."



Exposed fir trusses, painted pine wainscoting, maple floors, and big windows with views of the wooded campus combine to give the 300-seat, 34-foot-high assembly hall dignity and warmth. The fireplace in the lobby is an imposing construction of granite, brick, block, and pale green mortar, with andirons designed by the architect. From the high ceiling of this small, powerful room, the college plans to hang the skeleton of a minke whale. Brooks hopes that the walls, too, will one day be hung with bones and other relics that evoke the school's coastal location and environmental focus.

Credits
Thomas Gates Jr. Community Center
College of the Atlantic
Bar Harbor, Maine
Architect: Brooks and Carey Architects—Turner Brooks, designer; Thomas Carey, partner; N. Thomas Warner, Dennis Wilmot, Peter Herman, project team
Consultants: Arthur Choo Associates (structural); AVENGCO, Ltd. (MEP); Cavanaugh Tocci Associates (acoustical); Theatrix (theater lighting/production); Barbara Sasserman (clerk of the works)
General contractor: Nickerson and O'Day, Inc.





Moving Experience



*Conklin Rossant Architects set a
synagogue's walls in motion to
solve the age-old problem of
fluctuating attendance in houses
of worship.*

*Congregation Sons of Israel
Briarcliff Manor, New York
Conklin Rossant Architects*



In this major expansion of an existing synagogue on a large wooded suburban site, normal Sabbath attendance is slightly over 200. But that number can grow tremendously at weddings and Bar Mitzvahs, and reach 2,000 on High Holy Days. Conklin Rossant partner-in-charge James Rossant took on this characteristic challenge for houses of worship and solved it with a creative and resourceful solution.

When Rossant started to work with the congregation, members were unsure whether the budget should go more to school facilities or to a new sanctuary. The group's leaders thought that a small new sanctuary would be enough. They reasoned that overflow seating could be housed in the central part of the original building (top of isometric). Nearby, there is the original sanctuary and, farther away, the social hall for full capacity. Rossant pointed out that the long distance to the new central Bema would cause those seated in the social hall to feel left out of religious services. This limitation would be more than functional. It would jeopardize a major source of income for the congregation—the hefty admission that irregular attendees pay on High Holy Days. He also explained the fireproofing and egress problems that would arise under current codes from large numbers of people assembled in the existing building.

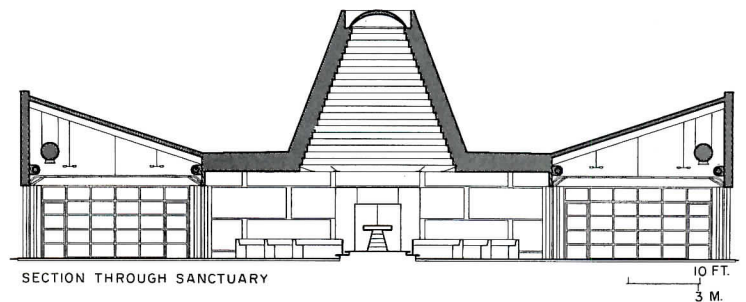
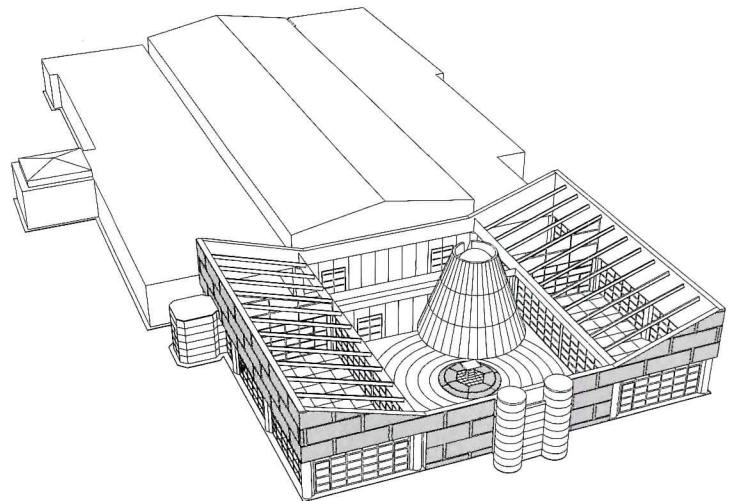
Rossant suggested instead a program within the \$2.2-million budget that would add new classrooms along one wall of the existing building (plan page 77) and provide an expandable new sanctuary with appropriate configurations for both the small regular attendance and much of the periodic large overflow. The result is a space for worship in which the uplift is often literal. Then, the normally secluded central space (top photo, page 76) becomes a very untraditional one for synagogues. For, as the softly glowing side walls rise overhead, it expands into the world outside.

New clear-glazed “porches” add seating on either side of the central 200-seat congregational space. Because they are technically exterior spaces and can be vacated quickly in an emergency, they do not have to meet stringent fireproofing requirements and so are built to a far more affordable level of construction than codes would otherwise require. The savings helped keep costs down to some \$140 per square foot for the entire 15,000-square-foot addition.

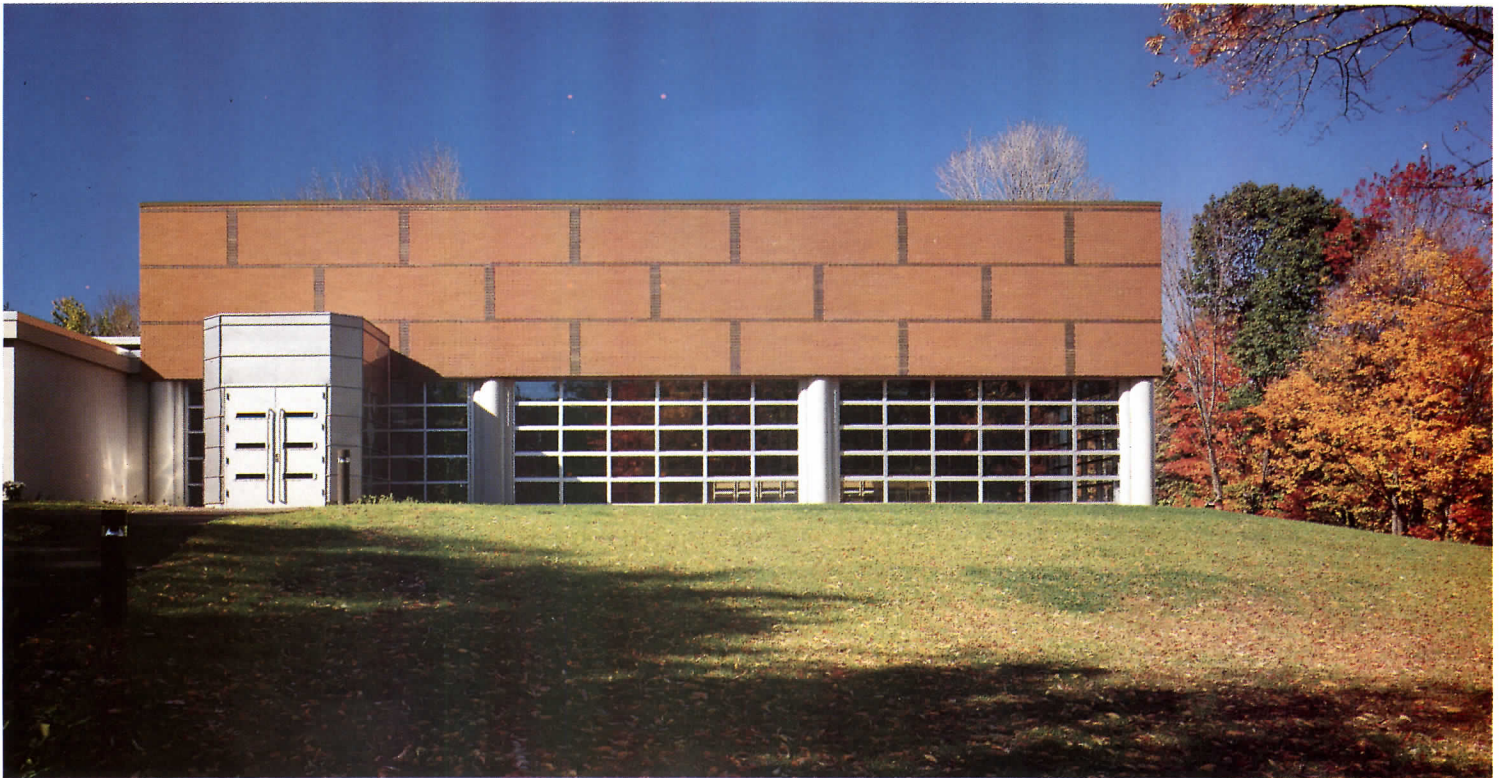
These additional spaces increase seats to 600 indoors, and to many more outdoors when, in good weather, the exterior walls are raised. More seats are gained by sliding aside the fabric-covered panels between the sanctuary and central lobby. To reach full capacity, the far wall of the lobby slides aside to open the old sanctuary.

There are operational savings as well. Most of the interior lighting comes from daylight. When the outside walls are raised, there is no need for mechanical ventilation. When closed, these outside walls are double glazed and fully sealed for heat and cooling efficiency. An unusual feature is full insulation under the floor slab instead of the normal 15-foot-wide perimeter insulation. This prevents cold feet in winter. “I don’t believe that the ground stays a constant 55 degrees under a building,” says Rossant. *Charles K. Hoyt*

Ingenuity marks the way the architects have used traditional Jewish symbols. The stainless-steel wall and cylinders on the front facade represent the scrolls and parchment of the Torah and make the synagogue’s purpose unmistakable. The brick walls around the sanctuary do not enclose it as might be expected, but are raised in the air to expand the space into the outside world. They maintain the symbolism of enclosure and permanence by being patterned



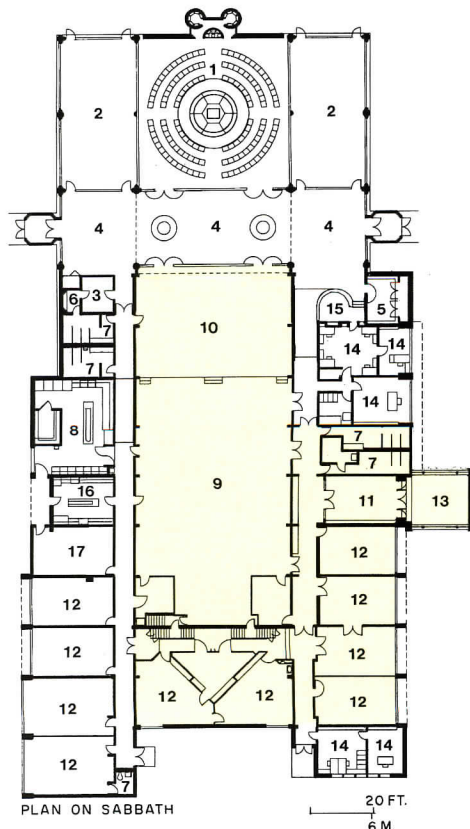
after the huge stones of the historic Holy Temple in Jerusalem. At the same time, the conical light well above the Bema is shaped as a tent, a reflection on the wanderings of Jews over centuries. “These devices are not abstractions, despite their modern expression,” says architect James Rossant, “but clear expressions of meaning.”





Up Close

Kinetic attractions. Were it not for the seriousness of purpose in this sanctuary, architect James Rossant's ingenious solution to providing overflow seating (and to answering other congregant needs) might seem a huge mechanical toy. The potential for movement is everywhere. The top of the central Bema table tilts from side to side as readers of the scrolls placed on it shift positions. Normally concealed, drawer-like platforms emerge from the base to lift the younger congregants to eye level. The walls of the cylindrical forms flanking the Ark swing open to reveal libraries within. The frosted-glass side walls rise almost silently powered by mechanical lifts. In good weather, they are followed upward by the clear-glass outside walls. Both sets are gigantic aluminum-frame industrial overhead doors; their vertical tracks are concealed in the enameled-steel column covers (right). Some congregation leaders resisted the utilitarian character of the overhead tracks and other hardware, which had to remain exposed for maintenance, ease of operation, and economy (bottom). The convincing tradeoff, says Rossant, was affordability, open vistas to the surrounding lush landscape, and the opportunity to enjoy fresh air on good days.



1. Sanctuary
2. Porch
3. Coat room/
bridesmaids
4. Lobby
5. Coat room
6. Bride
7. Toilets
8. Meat kitchen
9. Social hall
10. Old sanctuary/
overflow
11. Library
12. Classrooms
13. Chapel
14. Offices
15. Gift shop
16. Dairy kitchen
17. Boiler room



Credits

*Congregation Sons of Israel
Briarcliff Manor, New York*
Architect: Conklin Rossant
*Architects—James Rossant,
partner-in-charge; Peter
Scaglione, project architect;
Warren Shaw, project
assistant*

Engineers: M. G. McLaren,
*structural; I. P. Group and
Marcy Ramos, (mechanical);
Stephen Wolf, (acoustics);
Eberlin & Eberlin, (civil)*
Consultant: Joel Rubin,
lighting
General Contractor: James A.
Jennings Company, Inc.

Adventure in Form



*A new law library at Arizona
State University exploits the harsh
light of the Southwest.*

*John J. Ross-William C. Blakley Law Library
Arizona State University
Tempe, Arizona
Scogin Elam and Bray Architects, Design Architect
Leo A. Daly Company, Architect of Record*



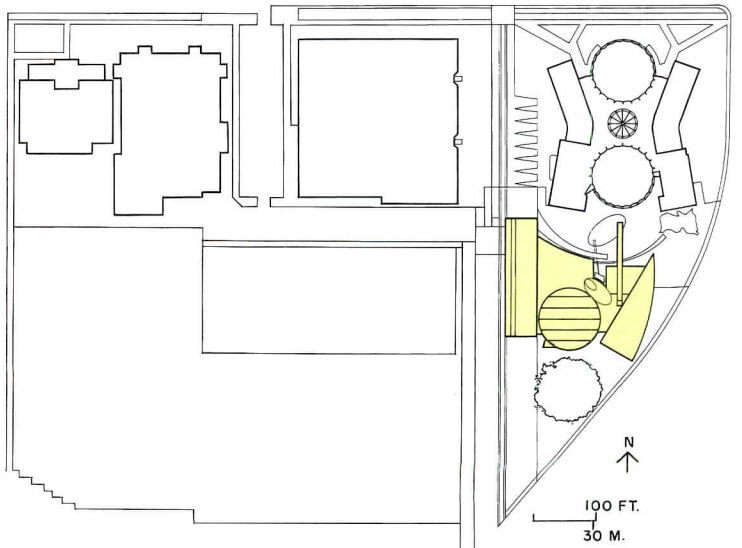
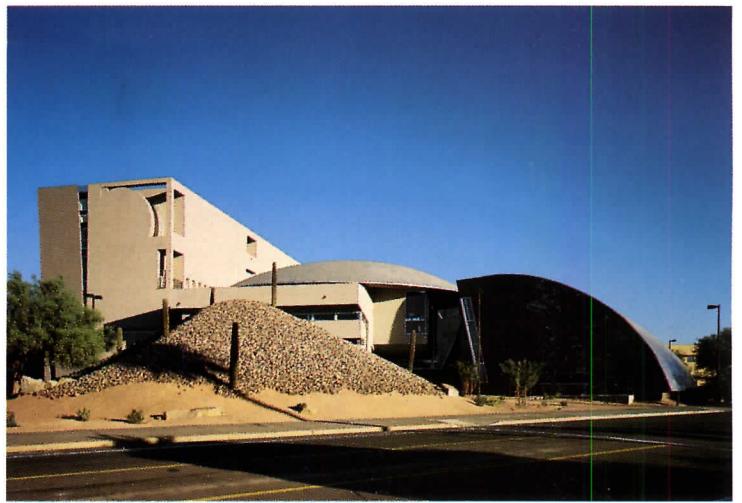
The John J. Ross-William C. Blakley Law Library at Arizona State University is a 68,000-square-foot collision of forms and materials, a startling image for lawyers and librarians. "Yet," insists Jonathan Rose, head of the ASU law school user group, "it's incredibly functional." Then there's the more judicious assessment of Andrew Hurwitz, member of ASU's governing board of regents, who spoke at the building's dedication last November. "We believe in the First Amendment," he said of the unusual design. Referring to criticism in the local press, he added: "And we believe in the right of the press to be wrong, spectacularly wrong," suggesting that support of freedom of expression should extend to this building. In any case, architects Scogin Elam and Bray have produced a building that is an incarnation of the legal profession: debate.

Debate is also a mark of the practice of Scogin Elam and Bray. Says Mack Scogin: "Architecture should raise questions." The Ross-Blakley library, he explains, "looks arbitrary, but it's not. Libraries are extremely precise buildings—they have to be designed from the inside out. We wanted a sense of looseness to counteract the tight [\$110 per square foot] budget."

It was the Atlanta firm's experience in library design [RECORD, May 1992, pages 86-93] that initially attracted the Phoenix firm of Leo A. Daly, architect of record. Together, the team was able to satisfy ASU's requirement for an Arizona-registered architect with library-design experience. "Mack's presentation of his firm's work and the analysis of our site was electrifying. His team was not the safest choice, but we didn't want safe," recalls Rose of the selection process. Library director Rick Brown was reassured by the participation of consultant George Grossman, an expert in law libraries. Says Brown: "Law libraries are different from other libraries. The collection is non-circulating. There is a lot of interaction between students and staff, who aid in research. The facility needs to accommodate study groups, a fundamental aspect of the educational process." In addition, the architects had to house some 310,000 volumes and microfilm equivalents, provide for the increasing use of computer data bases, and ease staff supervision. "For librarians, the perfect library would be on one floor," acknowledges Scogin.

The architects took their cues from the site, located at the east edge of the ASU campus, where the absence of any overall order "gave permission for exuberant form-making," according to Merrill Elam. The architects placed a dominant volume along the west edge of the site adjacent to a wide expanse of playing fields. The three-story rectangular tower topped by a steel barrel vault contains stacks—in essence, it's a book container. In the center is the reading room, with the core collection facing the law school to the north and the more private reserve-reading room oriented to the south. Acting as a shield between the main reading room and a road that outlines the campus is the low-slung technical-services wing, a pie-shaped wedge clad in galvanized steel. Construction methods were conventional to reduce cost—steel frame on concrete foundations covered with different colors of synthetic stucco—and "decoration" is limited to the artistic rendering of functional requirements—a fire-stair is given a sculptural presence in the central courtyard (opposite); fluorescent tubes are suspended like light wands throughout the interior (page 84). According to Hurwitz the library is "where the scholarship of the university meets the action of the profession. Most of the buildings of this profession are jails—acknowledgements of failure." The library, he says, is a symbol of hope.

Karen D. Stein



Named for two Phoenix lawyers killed in an airplane crash, the John J. Ross-William C. Blakley Law Library occupies a former parking lot south of the law school, built in 1967 and expanded in 1988 (site plan

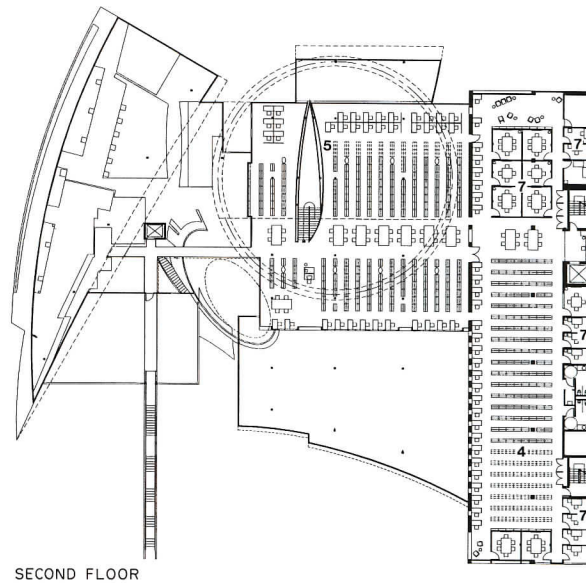
above). Two steel boxes pierce the school's facade, visually linking it to the library (previous pages and top). The library's sculptural fire-stair reinforces the school's main axis (opposite).



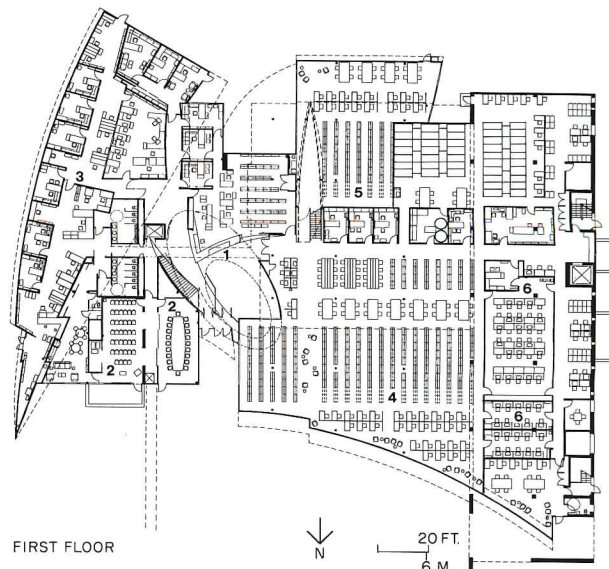


Up Close

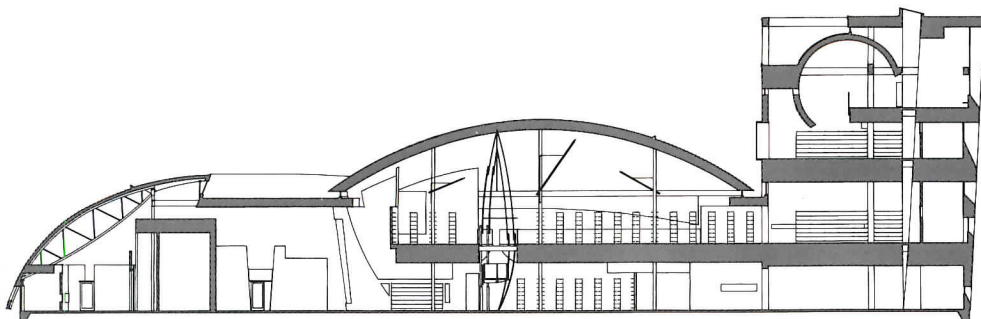
Working under the glare of the Southwest sun. For Atlanta-based Mack Scogin and Merrill Elam, Phoenix provided fresh inspiration. "The Arizona landscape provokes misreadings. Plants look like animals, animals look like rocks, rocks look like animals, plants look like rocks, animals look like plants . . . The sun bursts over the horizon . . . immediately filling an enormous sky with incredible light. Texture and colors vibrate. On the ground plane and along the horizon every form takes on a hyperness," says Elam. Adding to this surreal backdrop, the architects tilted the west facade of the library seven degrees toward adjacent playing fields. The leaning tower softens glare into the building, and appears, at first glance, as a desert mirage (opposite top). Some observers see the tower's profile as an open book. Scogin says that image is unintentional. Small windows admit sun to study rooms, while larger openings indicate circulation zones or balconies. Window "sills" meet an ASU requirement for sloped surfaces to prevent pigeon-nesting, while their depth intensifies shadows, adding texture to the synthetic-stucco facade (opposite bottom left). The south facade overlooks parking lots along the campus edge. To create privacy for the ground-floor reserve-reading room, the architects used dirt excavated during the tower's construction to create a "Magic Mountain" rock garden topped by a giant cactus (opposite bottom right). The tilted and curved storefront-like aluminum curtainwall of the north facade was detailed by computer for accuracy (photos above). Throughout, single-pane green-tinted glass controls glare and heat gain.



1. Circulation desk
2. Conference room
3. Technical services
4. Core collection
5. Reserve room
6. Computer room
7. Study room



Although more apparent in section (next page), the three basic forms of the library are discernible in plan: a fragmented trap-zoidal central reading room sandwiched between a rectangular tower of book stacks and a pie-wedge shape housing technical services (plans right). The core of the library's 310,000-volume collection is in the reading room, with special collections in the tower, which can be expanded with the addition of a third-floor mezzanine. Throughout, custom-designed cherry study carrels are wired for students' laptop computers. Computer labs are on the first floor and study rooms for two to six people are in the tower.



SECTION

Entry (opposite and below), main reading room (top left), and reserve room (bottom left).

Credits

John J. Ross-William C. Blakely Law Library Arizona State University Tempe, Arizona

Design Architect: *Scogin Elam and Bray Architects—Mack Scogin, Merrill Elam, and Lloyd Bray, principals; Jeff Atwood, Carlos Tardio, Susan Desko, Richard Ashworth, Julie Sanford, Denise Dumais, Monica Solana, project team*

Architect of Record: *Leo A. Daly Company—Joe Tyndall, principal; John Williams, Harold Friberg, Thomas Findley, Dean Munkachy, Raymond Madsen, Norman Lin, Rick Reitenbach, Don Weiser, Joe McGee, Shawn Pickerill, Rashne Shroff, and Terri Gervasio, project team*

Engineers: *Robin E. Parke Associates (structural); Leo A. Daly Company (mechanical/electrical); Coe & Vanloo Consulting Engineers (civil)*

Consultants: *George S. Grossman (law library); Newcomb & Boyd Consulting Engineers (lighting)*

Landscape Architect: *The Campbell Collaborative*

Construction Management: *CMX Group*

General Contractor: *Oakland Construction Company*





Beyond Levittown

When architects talk about residential design, all too often they focus exclusively on either custom-built houses or subsidized housing. But most Americans live in houses that lie in the vast hinterland between those extremes. They reside in the ever-expanding suburban developments and planned-unit developments that merchant home builders have been busily creating since William Levitt transformed some Long Island potato fields into the first Levittown in 1948. The first Levitt houses were simple 780-square-foot models placed squarely on 60- by 100-foot lots and they cost \$7,990. In just three years, Levitt built 15,000 of these eminently affordable tract homes.

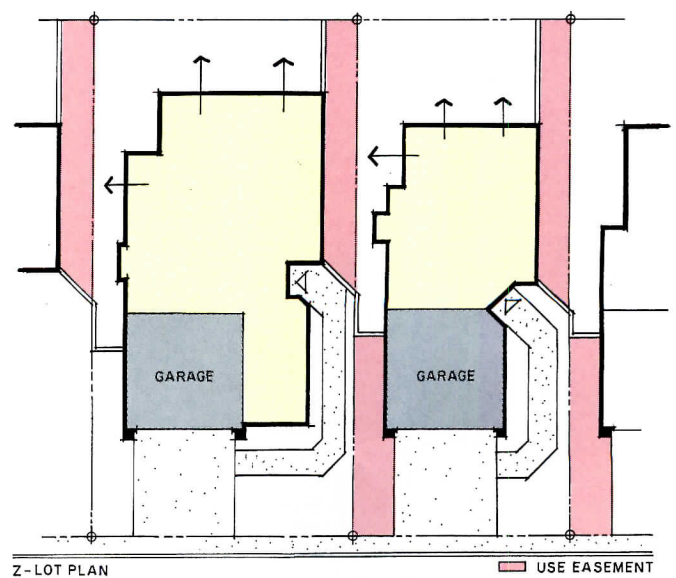
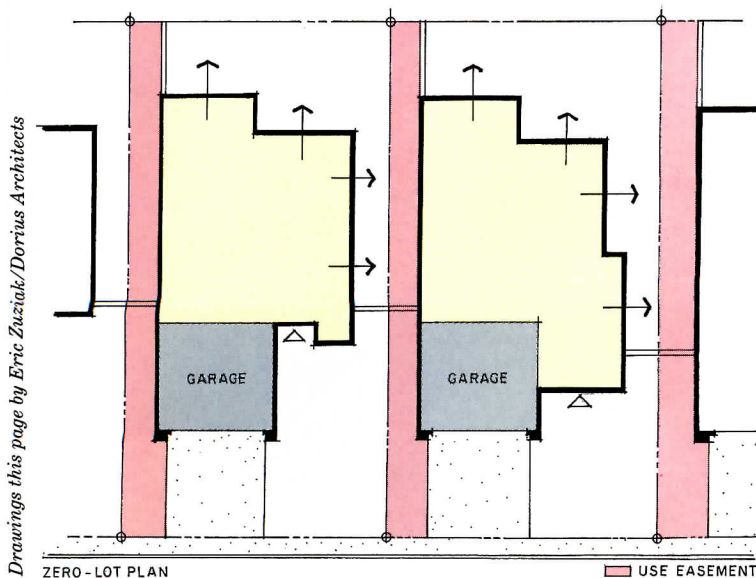
Over the past five decades, merchant builders have kept the spirit of William Levitt alive by adapting and updating the entry-level house to the changing needs of first-time buyers. According to the American Housing Survey conducted by the Bureau of the Census for the Department of Housing and Urban Development, first-time buyers account for about 40 percent of all home sales each year. During recessions this percentage goes up because repeat buyers usually have less flexibility in deciding when to purchase a new house. And with interest rates falling dramatically in recent years, home ownership has become more affordable. As a result, home builders have focused more on inexpensive houses in recent years and less on the middle and high ends of the market. "Once the downturn hit, a lot of builders went into the affordable end of the market," says George Fulton, president of Fulton Research, a market-research firm in Fairfax, Virginia. "There was a lot of pent-up demand for this kind of product," adds Fulton. Single-family housing in general is now experiencing a strong surge and "housing affordability has moved to its best level in over 20 years," states the November 1993 issue of DRI/McGraw-Hill's *U.S. Forecast Summary*. DRI/McGraw-Hill projected that the rate of single-family housing starts would reach 1.15 million units, actually ahead of the 1.10-million level reached during the boom year of 1984.

Getting more house on less land

Because land is one of the biggest factors determining the cost of housing, one of the most direct ways to make houses more affordable is to put them on smaller and smaller lots. In the 1950s, half-acre lots were typical and quarter-acre ones were considered small. Today builders routinely get nine or 10 detached houses to the acre; a project designed by Fisher Friedman Associates now under construction outside Las Vegas gets almost 17 single-family houses to the acre (pages 94-95). Pushing houses closer and closer together, however, creates a series of difficult conditions that architects must overcome through design. For example, maintaining privacy both inside the house and in the backyard and bringing light and air into the whole house are two issues that must be addressed when designing houses squeezed onto small lots.

One of the most common approaches to small-lot planning is the so-called zero-lot scheme (plan below left), in which the house is placed along one edge of the property (the zero-lot line) and is oriented toward the opposite side of the lot. By pushing the house to one side of the property, the architect gives the homeowners one reasonably sized yard instead of two small (and almost unusable) side yards. To make these yards function as even bigger spaces, a use-easement (usually a five-foot-wide strip of land) is granted to the neighboring house on one side and received from the one on the other side. To prevent one house from looking directly onto its neighbor's side yard, fenestration is minimized along its zero-lot-line elevation and windows here are usually restricted to clerestories. But the opposite side of the house can feature large expanses of glass and a direct relationship with outdoor space, since its privacy is ensured by that neighbor's mostly windowless zero-lot-line elevation.

A more complex variation on this theme is the Z-lot plan (plan below right), in which two use-easements are granted for each house: a



Drawings this page by Eric Zuziak/Dorrius Architects

When designing for speculative home builders, architects have to make every square foot work—indoors and out.

strip on one side to create a larger front yard and another strip on the opposite side to create a more spacious back yard. The major advantage of the Z-lot (so-called because of the resulting shape of the property) is that it allows windows on at least portions of both sides of the house. Although the entry is usually on the side (which some people don't like), it creates a diagonal floor plan that can increase the perceived depth of the house.

On the boards: cluster houses

Lately, many housing architects have been exploring the use of cluster plans, in which a handful of houses are grouped around a paved or landscaped court. Barry Berkus, whose firm B3 Architects has developed such a plan for the Hofmann Company in Northern California, says cluster schemes can create more interesting streetscapes because they allow houses to be oriented in different directions. One criticism of zero-lot and Z-lot developments has been the street-deadening effect of lining up so many narrow houses with front elevations dominated by two-car garages. By breaking developments into a series of clusters and rotating houses so some face the main street and others face the court, Berkus's design (below left) ensures that it won't fall into this trap. And by getting 10 units to the acre, the design doesn't sacrifice density for the sake of an attractive streetscape.

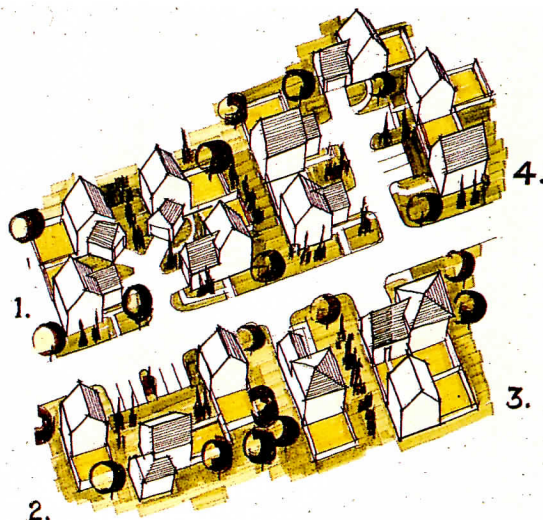
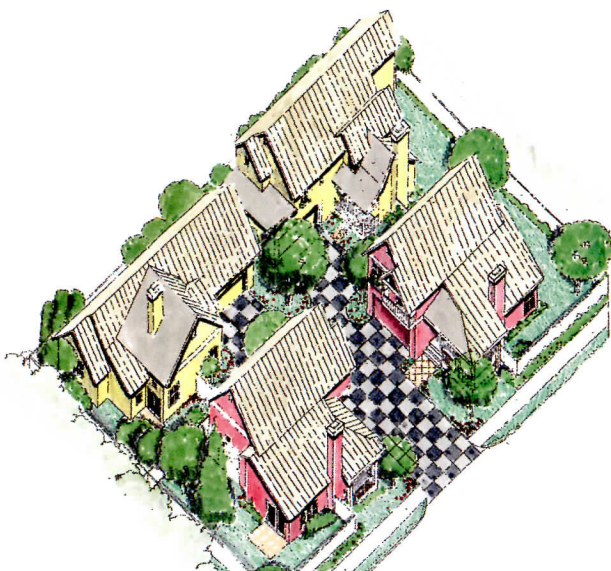
Zane Yost, principal of Bridgeport, Connecticut-based Zane Yost Associates, has pushed the cluster concept one step further by merging it with a condominium form of ownership. Because land is owned in common as a condominium rather than separately as in a subdivision, many of the codes restricting high-density detached housing can be sidestepped. Using what he calls a "not-lot" scheme (below right), Yost can get up to 10 units per acre while also creating a sense of community through a combination of private yards and common outdoor space. In this plan, each not-lot is made of three

24- by 24-foot components: the house itself, a garage or parking area, and a private yard. In addition, the development includes common outdoor areas and walkways in the green areas where the not-lots back up to each other.

Architects can help builders or developers remember they are designing whole neighborhoods, not just individual houses. "It's the larger fabric, the character and pattern of the neighborhood, that is the big challenge," states Berkus. While figuring out how the houses will work together, architects must address the needs of families for privacy and of cars for access and parking. In small houses, it is particularly important to create at least some sense of "volumetrics," says Berkus. "You have to use light and height and visual connections to make these houses seem bigger." Another challenge is designing houses that are flexible enough to accommodate different lifestyles. Changes in the structure of the American family—away from the traditional nuclear unit—have made designing spec houses an exploration of such diverse lifestyles.

"With builders you have to prove you understand construction," advises Carson Looney, partner-in-charge of residential design at Memphis-based Looney Ricks Kiss Architects. (The firm's shotgun houses are shown on page 91.) "The most often-heard complaint from builders," says Looney, "is that architects don't even know how to frame a house." But Looney finds builders are becoming more attuned to design issues as baby-boom homebuyers show they respond to good design. "These people are smart consumers who do their research whether they're buying a coffeemaker or a home." William Rawn (whose Grasse Road houses are shown on the following pages 88-89) is another architect who relishes the challenge of production housing. "With these houses, every square foot counts," says Rawn. "It brings a great discipline to your design."

Clifford A. Pearson



Four different ways of designing small-lot houses: Zero-lot plan (opposite left) pushes each house to one edge of the property and orients it to the other side where use easement has created a larger yard. Z-lot plan (opposite right) adds windows on all sides thanks to two use easements. Cluster plan by B3 Architects (far left) groups houses around courts and offers a more varied streetscape. Not-lot plan (left) by Zane Yost combines private yards with common space.

Grasse Road Housing

*Hanover, New Hampshire
William Rawn Associates, Architect
G. R. Porter & Sons, General Contractor*

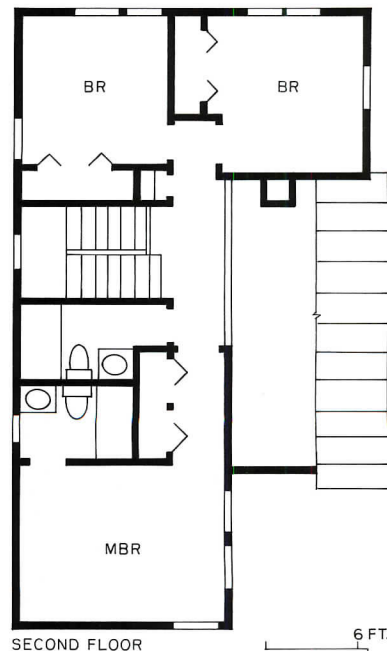
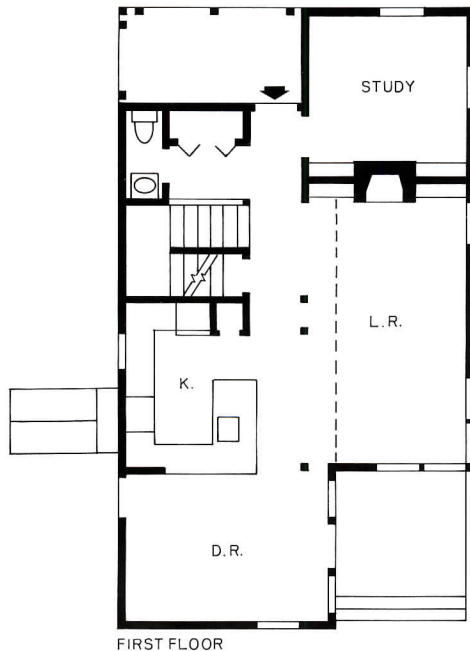
Faced with a shortage of affordable housing its young faculty members could afford, Dartmouth College turned builder and put up 20 single-family houses in its hometown of Hanover, N. H. Architect William Rawn responded to the program by designing three different models, ranging in size from a 1,300-square-foot unit with two bedrooms and a study to a 1,900-

square-foot house with three bedrooms, a study, and a family room. Almost all the houses are perpendicular to the development's main north-south street and are oriented to side yards on the south. This orientation brings warmth and light into all parts of the houses, important factors in the northern climate. Dartmouth professors share the same needs and aspirations as



© Chuck Choi photos

The B model house (photos and plans this page) has 1,550 square feet and a particularly flexible floor plan. (The A model, not shown, has 1,300 square feet and just two bedrooms.) Rawn designed the B model so the area shown here as the living room could also be used as a living/dining room, and the area shown here as the dining room could be used either as a family room or a second study. Like all the houses, the B model's living areas and outdoor deck face south (above right).



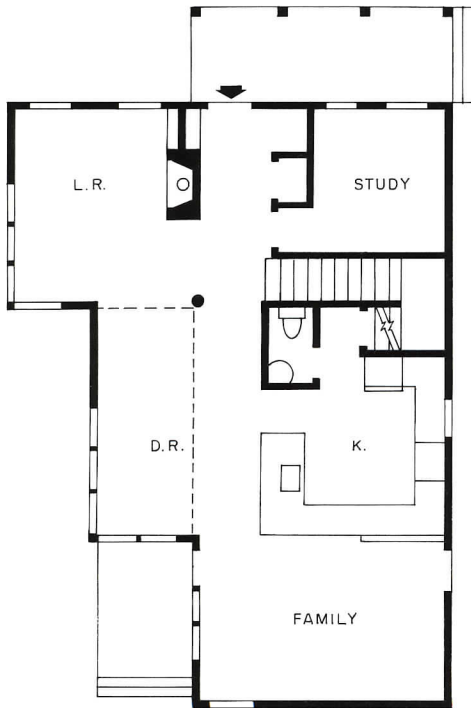
6 FT.
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other middle-class homebuyers. "Flexibility is an important concern for these people," says Rawn, "so I tried to design houses that could adapt to their changing needs." As a result, Rawn devised floor plans that could work in several different ways. By merely rearranging the furniture or putting up an interior partition, a living room can function as a family room, or

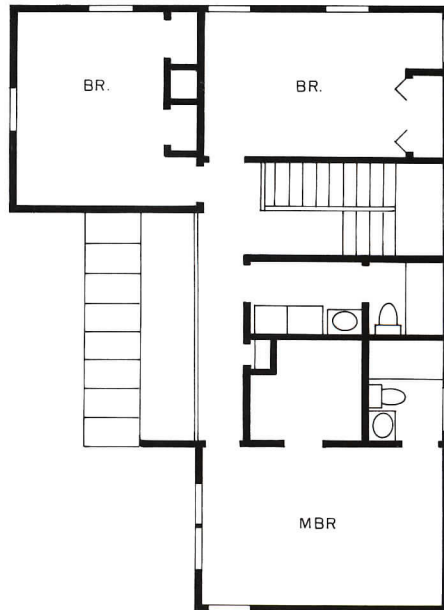
a den can become a study. "With this kind of housing you can only afford to make two or three important gestures," says Rawn. With the Grasse Road houses, Rawn realized he could get the most bang for the buck by highlighting two-story-high spaces and installing bookshelves that rise as high as 15 feet. Although the double-height spaces are not large, they are judiciously placed

at key locations—usually the main dining or living area—to heighten their impact. "I wanted to create a sense of openness in these relatively small houses, but I didn't want to lose that feeling of warmth," explains Rawn. Limiting the amount of double-height space helped maintain this balance, as did the addition of the bookshelves. The bookshelves, which occupy an

entire wall in one model and anchor a stair landing in another house, cost about \$500 to build and have been a big hit with the professors, says Rawn. To create a sense of community, the architect brought the houses as close to the street as permitted and gave each unit a front porch. C. A. P.



FIRST FLOOR



SECOND FLOOR



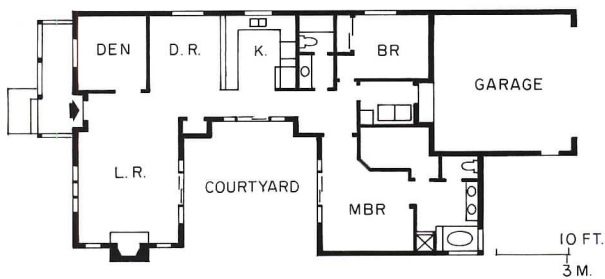
To help create a sense of neighborhood, Rawn designed the houses so their wide gables and porches would face the street. The C model (above far left and plans left) is the largest house with 1,900 square feet. With the help of carefully located double-height areas, the house seems larger than it is (above). Bookshelves in the B model (above middle) rise the full height of the living room and have proved to be an inexpensive way of pleasing homebuyers.

Cameo Place

*Sacramento, California
Dorius Architects
Lexington Homes, Builder*

Located at Laguna West, the development master-planned by Peter Calthorpe, Cameo Place shows how a zero-lot-line plan can be adapted to create a neo-traditional neighborhood. By putting garages behind the houses and accessing them from alleys, this scheme overcomes one of the major flaws of most zero-lot-line projects: street-scapes dominated by garage

doors. As a result, the houses at Cameo Place present more engaging front elevations characterized by porches and chimneys. The trade-off is loss of outdoor space in the back. So, instead of a back-and-side yard, these houses have only side yards. To make the most of these precious outdoor rooms, the houses wrap around them. *C. A. P.*



The one-story model (above) is 1,480 square feet and fits on a lot that is 45 feet by 95 feet, giving it a density of seven units to the acre. By wrapping itself around the side yard, the house brings light and direct outdoor access to most rooms (plan and photo right). As with all zero-

lot-line projects, the privacy of the outdoor space is maintained by keeping the facing wall of the neighboring house essentially windowless.



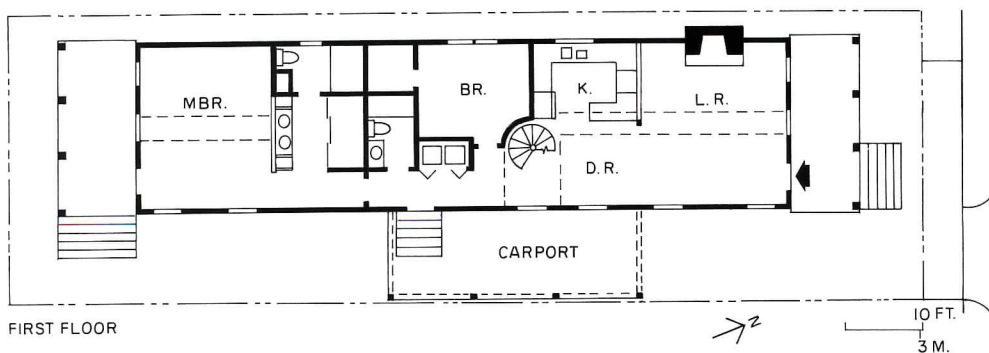
Shotguns at Harbor Town

Memphis, Tennessee
Looney Ricks Kiss Architects
Prestige Development, Builder

While Cameo Place (opposite page) grafts old planning ideas onto a relatively new small-lot scheme, the Shotguns at Harbor Town take aim at the problem of affordable housing from the opposite direction—updating a traditional house plan with a Modern sensibility. Set on lots just 31 feet wide and 97 feet long, these houses shave costs by keeping foundations and the

building envelope as simple as possible. The same efficiency is seen in the floor plan, which wastes no space on hallways. But by skillfully using two-story-high space and letting rooms flow one into another, the architects made the houses feel spacious. Full-width porches on both the front and the back of the houses also extend livable area outdoors. *C. A. P.*

© Jeffrey Jacobs/Mims Studios photos



Simplified forms and wide porches give the houses a strong identity from the street (above). Each house is 1,500 square feet and cost \$67,000 to build—about the same as townhouses in the area. Only three shotguns have been built, but 14 units could fit on an acre. To save money and space a carport replaces the garage.

Benson Glen

*Renton, Washington
Mithun Partners, Architect
Conner Development, Builder*

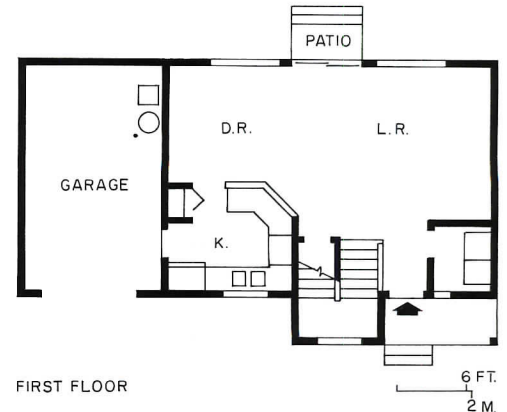
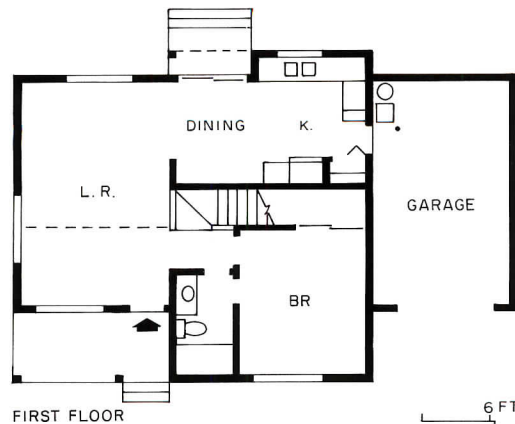
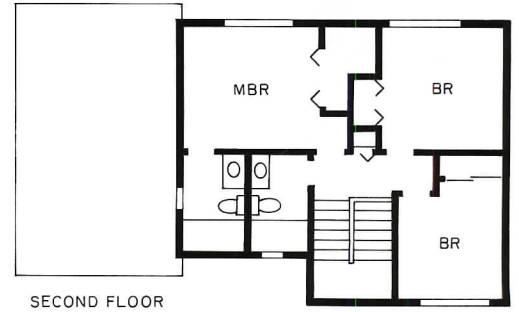
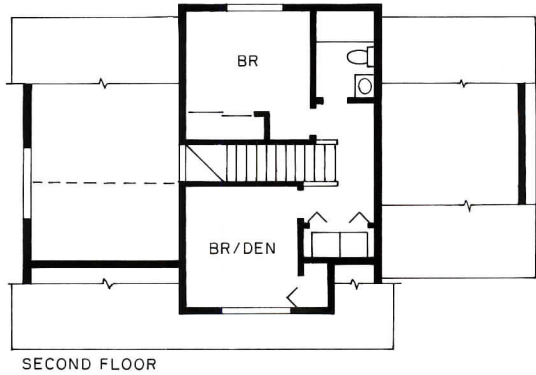
© Richard Springgate photos



Conceived by Threshold Housing, a non-profit developer formed by the King County Housing Partnership, Benson Glen is a community that breaks the rules (or at least shows where the rules *should* be broken). Realizing that redundant, contradictory, outdated, and unnecessary aspects of local building and zoning codes added thousands of dollars to the cost

of every house and that such costs were particularly burdensome to affordable-housing projects, the King County Council ordered its Department of Development and Environmental Services to treat Benson Glen as an experiment in regulatory reduction. Some code requirements were waived by the county, while others were identified as rules that should be

The four models designed by Mithun Partners (shown above with plans right) offer a range of choices for homebuyers. Buyers preferred the larger, more expensive models and shunned the small two-bedroom, one-bath unit—even though only households earning less than 80 percent of the median county income were allowed to purchase houses here.



eliminated in the future. For example, the county reduced the number of parking spaces per house to two (from four), with one car in each garage and one in the driveway. This change resulted in a saving of about \$3,000 in constructing each house and reduced the amount of hardscaping, rainwater runoff, and stormwater drainage. The authorities also allowed the

houses to be placed on 3,600-square-foot lots and reduced front-yard setbacks to 15 feet, saving the developer thousands of dollars on land costs. The builder and developer are now putting together a report, identifying the cost of complying with unnecessary regulations. So far, 11 houses have been built and another 32 are either under construction or planned. Mithun

Partners designed four models, ranging from a 960-square-foot two-bedroom unit to a 1,300-square-foot three-bedroom house. To reduce the impact of the automobile, the architects recessed the garage from the front of the house on some models and tucked it underneath the gable in another, explains William Kreager, vice president of the firm. Mithun Partners also

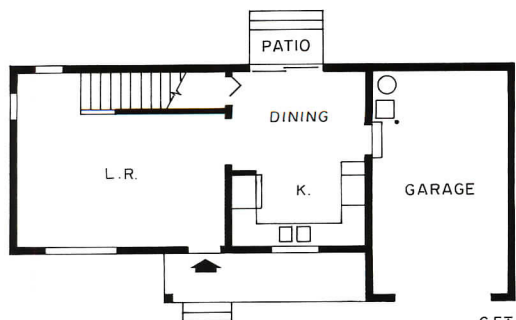
varied the orientation of the houses, so some face the street with their gables forward and others with their gables perpendicular. To enliven streetscapes, the architects worked with porches, gables, and eaves. "The idea was to give this place the feeling of a traditional American neighborhood," says Kreager. *C. A. P.*



SECOND FLOOR

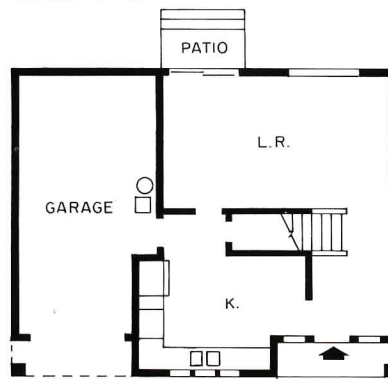


SECOND FLOOR



FIRST FLOOR

6 FT.
2 M.



FIRST FLOOR

6 FT.
2 M.

Located in a suburb of Seattle near a major Boeing factory, Benson Glen is a racially mixed neighborhood with buyers ranging in age from their 20s to their 50s. Framing and exterior treatments were kept "super simple," says architect Kreager, to keep building costs down. One-car garages and no powder rooms were other ways of reducing costs.

Green Valley Pecos

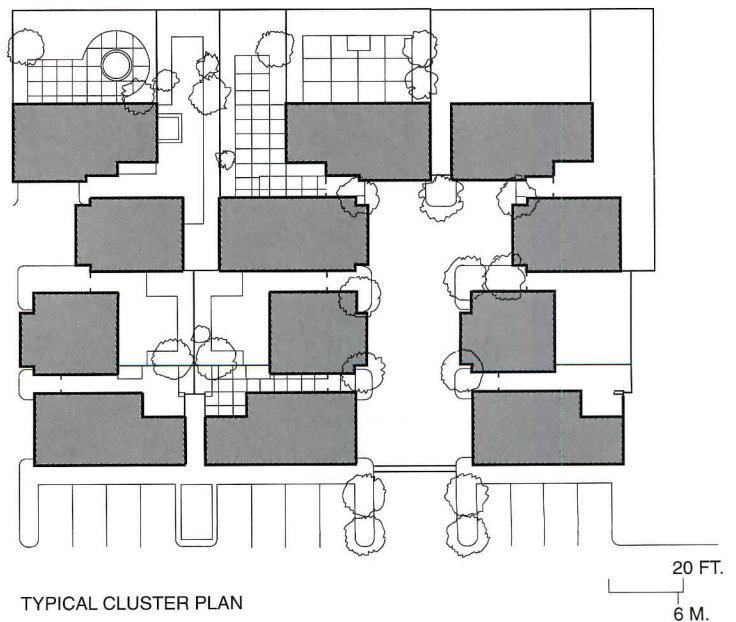
Henderson, Nevada

Fisher Friedman Associates, Architect

Signature Homes, Builder

When Signature Homes approached Fisher Friedman Associates to design a project in Henderson, a rapidly growing bedroom community near Las Vegas, the company planned to build some kind of multi-family housing. After looking at the nine-acre site and working on some new ideas, the architects concluded they could design single-family houses but get the

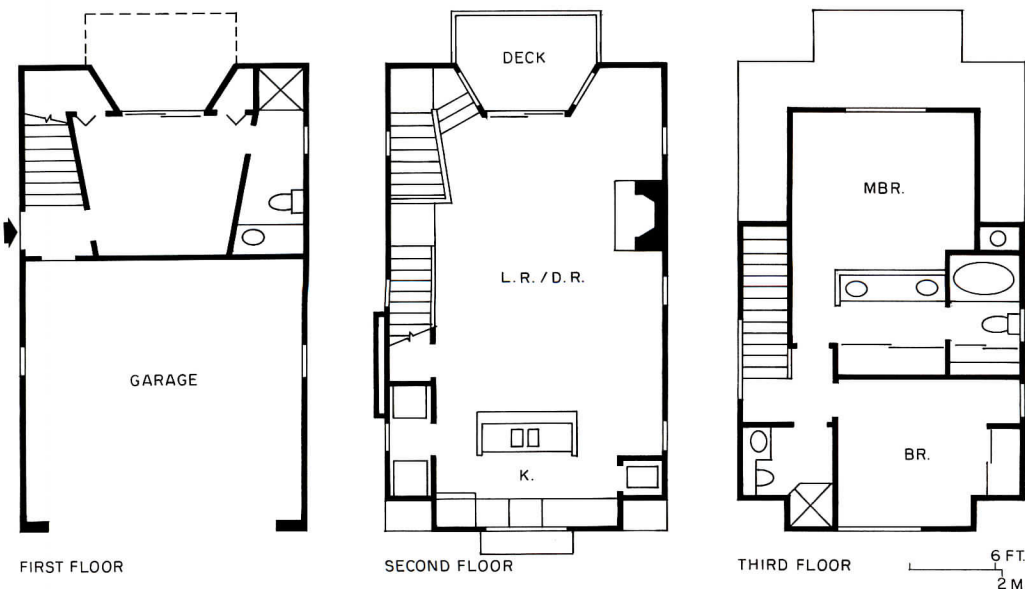
same density as attached housing. The keys to making this scheme work were: a site plan that clusters houses around parking courts and a compact design for three-story "villas." When completed, the project will have 149 fully detached, two- and three-bedroom houses and a density of nearly 17 units to the acre. The project revives the old carriage-house model in which a



dwelling unit sits above a garage. But instead of single-floor apartments sitting above the horse and buggy, these are two-story houses atop dual-car garages. One drawback to this scheme is the predominance of garage doors on the streetscape. But by keeping the clusters small and limiting the number of houses lined up in any one row, the architects have tried to mini-

mize the impact. Entries to the houses are either directly off the parking court or just past a gate on the side of the house. Each house has a small backyard, as well as a balcony or deck off the second-floor living spaces. While most houses are two-bedroom units with both bedrooms on the third floor, some units have a third bedroom tucked behind the garage on the ground floor. The

houses range in size from 1,050 to 1,375 square feet and come in about half a dozen models.
C. A. P.



By clustering houses, Fisher Friedman was able to fit eight units around each parking court and achieve a density of nearly 17 units per acre (site plan opposite). Front elevations (opposite top) are reminiscent of old carriage houses, while rear facades (above) recall urban villas. A typical house (plans left) has a two-car garage and a bedroom on the ground floor. Main living spaces and a deck occupy the second floor; bedrooms are on the third.

Human Bodies

Design and



The 44th International
Design Conference in Aspen
June 12-17, 1994

This is a time of revolutionary changes in what we know about our bodies and what we do with them. "Design and Human Bodies" confronts the design implications of those changes. The program, chaired by Alexander Julian, will feature designers and other professionals in presentations, dialogs, workshops, and seminars on how the design process and the human body affect each other.

Conference fee, \$625. Early registration (before March 1, 1994), \$575. One additional household member, \$350. Full-time student (photocopy of current ID required), \$150.

To participate, send the following information for all registrants to: IDCA, PO Box 664, Aspen, CO 81612. For further information please call 303 925-2257 or fax 303 925-8495.

Make check payable to IDCA. Cancellation requests postmarked before June 1, 1994 will be honored at 80% of fees paid.

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10 a.m.

Window 1, Shade 2; sunscreen reduces glare and increases comfort.



1 p.m.

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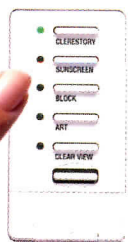
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