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EDITORIAL

An Explicit Memorial

BY ROBERT A. IVY, FAIA

Summer is a time for roaming and a time to visit architecture. Few places offer more three-dimensional fodder for our hungry senses than Washington, D.C., where many of this nation's collective myths and actual history find expression in stone and sweeping lawn. Our early optimism, imperial ambitions, and democratic beliefs in human dignity spill from the city's rational plan to the parkland, where they can be read, like frozen poetics, in statues, buildings, and memorials.

The recently completed memorial to Franklin D. Roosevelt will encourage you, as it did me, to pull on a pair of jeans and spend several hours outdoors, reflecting on the entire notion of what memorial architecture can do. As an important component within a rarefied collection of four presidents honored on the Mall, this newcomer also distills our own moment in history, raising questions about our attitudes toward design and its relation to the public realm.

The 7.5-acre site is marked by a series of spaces delineated by forceful granite walls 12 ft high, not unlike a Mayan ruin made from the structural blocks of the Brooklyn Bridge, open to the sky. The landscape architect Lawrence Halprin devised a pathway that zigs its way through time by tracing Roosevelt's years of public service. The visitor passes from open space to space, cushioned from passing traffic by bermed walls, reading the president's words of courage or comfort incised into granite, while encountering splashing water, ramps and rocks, and representational sculpture illustrating bread lines or a fireside chat.

The project succeeds, for me, at the larger scale. The walls provide strong shelter, a bulwark appropriate to an individual with a belief in a government with strong shoulders. The political arguments that have dominated the press pale before an open-air site where children fiddle with pools of water and older citizens sit and reflect beside the Tidal Basin. More troubling, however, is the immediate scale, particularly the site's reliance on

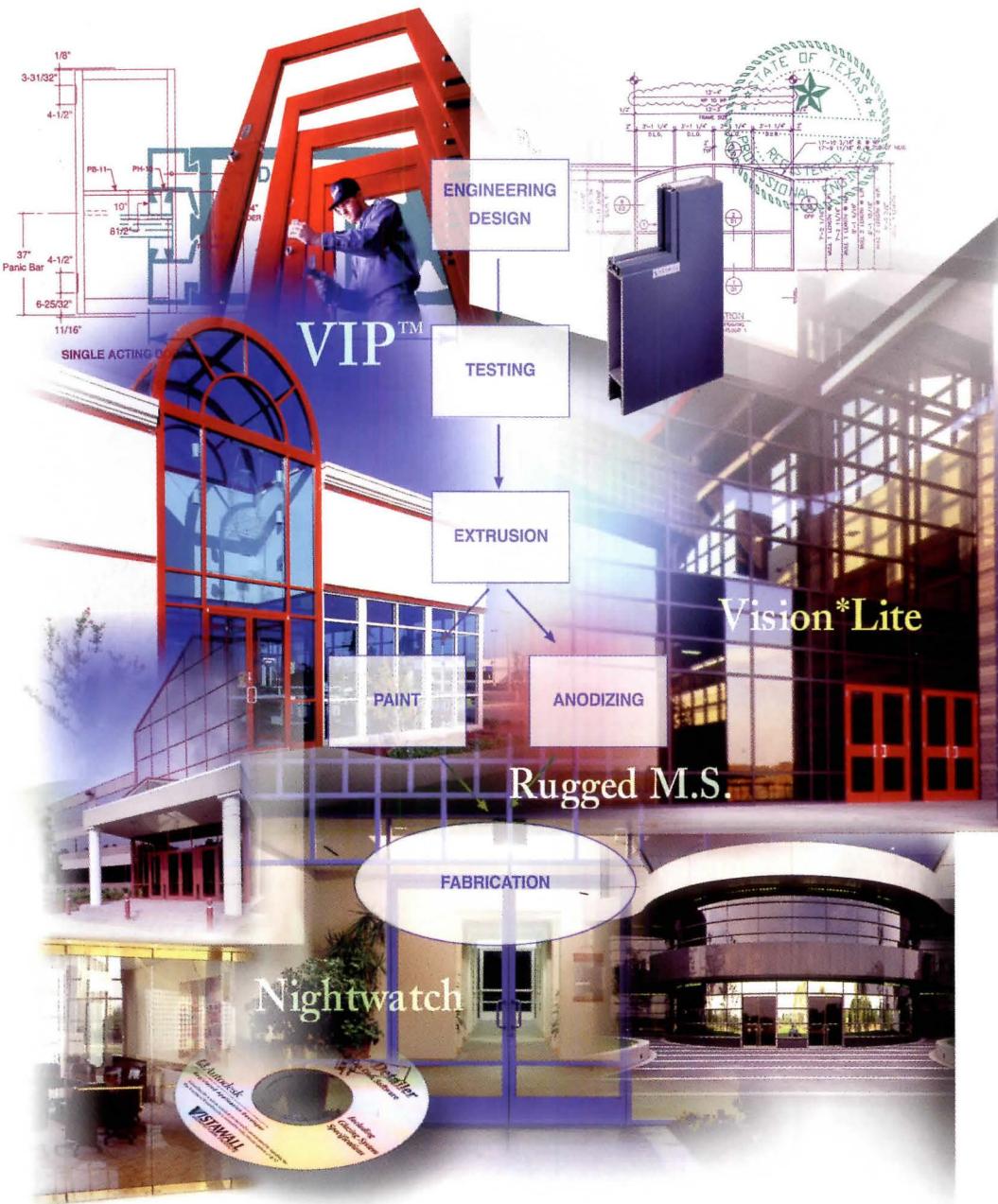
statuary so explicit and didactic, so dependent on social realism that it leaves little to the imagination. The effect of forced passage, a movement system that demands passing before this series of tableaux, each intended to evoke a specific emotion, seemed manipulative, an imposition on my own free-ranging ideas. I found myself saying, "Please don't tell me what to feel."

Where is the Washington Monument's abstract clarity, the Lincoln Memorial's heroic grandeur, or the Vietnam Memorial's spiritual depth? Although the pathway through the FDR Memorial ends in a larger plaza graced by a water cascade, there is no sense of focus, no locus of memory or emotion, no abstraction to cradle speculation.

Less explicit, but a subtext in this design, is an accommodation to the site as commercial attraction, a magnet meant to draw in the tourist, to entertain for a specified duration, and to transfer revenue at a bookshop. Although the site offers an iconographic and actual accessibility to the public, the FDR Memorial remains landlocked and pragmatic, tied to individual pieces when it might have soared.

The commercial imperative, reflected in the need to entertain rather than to trust the visitor's own imagination, left me unsettled after my visit. Strong walls, words, and a single statue in the open air would have sufficed, but ours is often a time of excess and accommodation. The final chapter on the memorial is not yet written. Since it will live far beyond a year or a decade, I'm going back. I'll meet you there, where you can decide for yourself.

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CIRCLE 8 ON INQUIRY CARD

LETTERS

A collaborative AIA Gold Medal

The time has come, as Robert Ivy states in his editorial [RECORD, May 1997, page 29], for great collaborative efforts to be recognized with the same degree of importance we have heretofore reserved for individual talents.

Let's hope that Raj Barr-Kumar, FAIA, and those who with him have the power to make AIA policy, will set the stage for recognition of collaborative excellence in architecture, not because it is our awards season, but because a team has shown us such excellence.

—Dick Thevenot, Hon. AIA
Executive Director, AIA Louisiana
Baton Rouge, La.

I found Robert Ivy's call for a collaborative Gold Medal unappealing (if nicely written). It is not a citation we offer, but a medal. Medals recognize noble, courageous, strong, and heroic efforts, and they are best worn by one person at a time.

To suggest that the medal is indicative of "cultish" or, worse, "male cultish" behavior is, to my thinking, a form of hubris. It bothers me when someone stakes out the "enlightened" ground in this manner. I do not worry that by honoring the achievements of an individual, we will be held in contempt by the "larger culture." Rather, I believe that the world is and will continue to be a better place when heroic efforts are honored.

If recognition of special individual accomplishment is, as Ivy offers, a "nineteenth-century notion," it is one for subsequent times too. I argue it is timeless.

—Donald Wardlaw, AIA
Oakland, Calif.

What an elegant position in terms of substance and style—plus it's timely.

—Robert Venturi, FAIA
Venturi, Scott Brown and Associates
Philadelphia

AIA awards: restoration work deserves more respect

The only reasonable conclusion to make regarding Malcolm Holzman's commentary on the historic preservation projects submitted to the AIA 1997 Honors & Awards [RECORD, May 1997, pages 70–77] is that a separate category is needed for jury selection. The alternative conclusion is to show prejudice toward new work and an unfortunate, if not reckless, devaluation of preservation as merely, in Holzman's words, "good behavior." To surmise that the struggles of the architect of a new building are more meritorious than the struggles of a preservationist/conservator defies good reason.

Change is the nature, the very definition of rehabilitation; respect for authenticity dictates clear differentiation of the product of our own age from the original. But we go too far when favoring an ability "to see what the current architect has actually done." In the future, the jury should be certain to seat a seasoned architect with eyes sensitive to the subtleties of preservation.

Good work doesn't just happen, not by rote or rule. Preservation is an art. It is time we recognize its best examples and its artists.

—James W. Rhodes, FAIA
Beyer Blinder Belle
New York City

A strong voice for RECORD

Three cheers for Michael Sorkin. His overview of the 1997 Honors & Awards [RECORD, May 1997, pages 82–85] was elegant. Give him a regular column and let him loose.

—Walter S. Pierce, FAIA
Lexington, Mass.

Architectural education

I am provoked to write by Lee D. Mitgang's "Saving the Soul of Architectural Education" [RECORD, May 1997, pages 124–30].

If Mitgang was educated in an American school of architecture, he is example enough that something, somewhere is wrong. His observations show only the most superficial awareness of the practice of archi-

ecture and not the slightest grasp of the still-secret issues affecting the architectural academies and their relationship to the profession. The necessary subject remains unattended, yet to be articulated to the level it deserves. There are, however, people who can do it. I would wish to attack each premise of Mitgang's article to the full depth of its weakness, but a gratuitous statement deserves only a gratuitous critique. Please, please dig more deeply toward the truth—even if it remains inaccessible.

—Dennis J. Kilper, AIA
Blacksburg, Va.

Lee Mitgang's article on architectural education made a number of important points, but there are, I believe, two issues of larger significance to be addressed. First is the need to greatly reduce the number of students receiving professional training in architecture. Second is the potential long-term benefit of expanding architectural education for those who major in other fields.

The competition for architectural work is more than twice as severe as it was a generation ago. Surely the answer to this problem is for the schools to stop producing so many graduates until a better balance between degrees and jobs is reached.

Many teachers and administrators in the schools would say that architectural education can be a valuable experience even if a student never enters the profession. I would agree, but I think it would make more sense to stop training students for nonexistent jobs in architecture and divert architectural education resources to undergraduates in other fields of study.

Business school students, for example, could really profit from such learning. For better or worse, they are the ones who will commission much of the architecture of the next century.

—G. Mackenzie Gordon, AIA
Gordon & Gordon
Lakeville, Conn.

Kudos for RECORD

The May 1997 issue was your best to date. It was like a treasure trove. I could not decide where to begin reading it. From the Honors & Awards presentation to the features on technology, the issue shows your commitment to the profession. You have produced a masterpiece in fine print. Thanks.

—Mirza A. Baig, Architect
Karachi, Pakistan

Designing abroad and at home

In his article on designing abroad [RECORD, May 1997, page 36], Khalil K. Pirani makes an important case for architects to design with greater sensitivity to foreign cultures. He might also have added that even within a single country there are many and varied cultural traditions that architects need to address. The similarity of tract housing all over the United States, regardless of site, climate, resource availability, or local tradition, is one example of homogenization.

Schools of architecture should be leaders in teaching a regionalist approach to design, requiring that architecture reflect its time, place, and culture, and that it link the past, the present, and, perhaps, the future. Architecture based on the interaction of contemporary issues, timeless qualities drawn from local culture, and personal visions of designers constitutes a regionalist approach that is neither sentimentally historicist nor disconnected from life. The skills of a regionalist include the ability to understand vernacular landscapes, urban forms and buildings, and to make technological choices based on climate, material availability, and the economics and skill of the labor force. A skill of a different kind is the ability both to "read" culture, particularly as it is manifest in built form, and develop a cross-cultural viewpoint that recognizes that even within one country there may be distinct subcultures, despite commonalities.

The history of architecture tells us that the qualities that I have ascribed to (continued on page 161)



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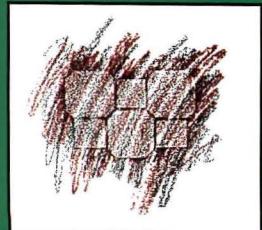
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SPEAK OUT The Competition Killer Initiative: Bellwether for the Nation

BY M. ARTHUR GENSLER JR., FAIA

M. Arthur Gensler Jr., FAIA, is the founder and chairman of Gensler, an international design firm. He is also co-chairman of Architects Registered in California Political Action Committee (ARC PAC), an organization dedicated to defeating the Competition Killer Initiative. For more information on ARC PAC or the Competition Killer Initiative, please call 916/448-9082.

Given the potentially devastating impact of the California Competition Killer Initiative [RECORD, May 1997, page 50] on our profession and the quality of public architecture, I felt this issue warranted further examination.

We believe this measure is indicative of a national trend. Massachusetts fought off a similar initiative in 1992. Federal legislation mirroring the initiative was introduced in Congress in recent sessions. Hawaii, Ohio, New Jersey, and, most recently, Kansas have all dealt with the issue of competitive bidding or using in-house design services under the guise of ethics reform.

Most dangerous of all is the national precedent this initiative would set with regard to qualifications-based selection (QBS). Since passage of the Brooks Act in the early 1970s, which established QBS as the procurement method for A/E services at the federal level, we have seen nearly 40 states and thousands of local entities and special districts adopt similar measures. If the largest state in the union—the seventh largest economy in the world—abandons QBS, begins using in-house A/E services, and starts requiring competitive bidding for any private-sector contracts, then other states are sure to follow.

The initiative's sponsor, the Professional Engineers in California Government (PECG), is the union for engineers and architects employed by the State of California. They would like for you to believe that this measure would protect taxpayers by requiring competitive bidding. But

would a state bureaucrats' union really spend \$2 million to help taxpayers?

This is a cleverly disguised scheme bankrolled by a union of state employees to feather its own nest at the expense of California taxpayers. In brief, the initiative would require the State Controller to perform a cost analysis on any project receiving any amount of state funding or administration to determine whether it would be cheaper to have the project designed by state-employed designers or to contract with the private sector. The catch is that the cost analysis for the state-employed designers accounts for only about 40 percent of the project's costs, ignoring employee compensation, rent, utilities, phones, legal, insurance, and other office expenses. The private sector's analysis, on the other hand, must account for all costs associated with the project, including a hefty state-contract administration fee. That kind of accounting would land any private-sector CPA in jail.

The initiative would also require any private-sector architect or engineer who happens to get a contract with the state to indemnify the state and its employees against their own negligence. Who indemnifies the state employees' design work? Why the taxpayer, of course.

The Competition Killer Initiative applies to schools, hospitals, libraries, courthouses, correctional facilities, low-income and senior housing, mass transit, planning, environmental studies, recreational and park projects, historic preservation, and more.



If this initiative passes, up to 35 percent of the projects currently designed by private-sector architects would be frozen indefinitely while the State Controller hires staff to perform thousands of these fraudulent cost analyses. Up to 100,000 private-sector jobs would be lost in the first year alone just from the delays. The economic impact would be greater than that of the last recession, from which many of us are still recovering.

Enough is enough. Architects should be selected based on their qualifications and most of us are not afraid to compete in this manner. I find it appalling that designers employed by the State of California are attempting to amend the state constitution to guarantee their jobs. Furthermore, the deceptive campaign they are waging borders on the criminal. Shame on them.

Architects are not known for their political activism, but this is one battle we can't afford to lose. We owe it to ourselves and, more important, we owe it to our fellow citizens to prevent public design from becoming the lowest common denominator. ■

Contributions: If you would like to express your opinion in this column, send submissions by mail (with a disk, if possible) to Speak Out, Architectural Record, 1221 Avenue of the Americas, New York, N.Y. 10020; fax 212/512-4256; or E-mail rivy@mcgraw-hill.com. Essays must not exceed 700 words. The editors reserve the right to edit for space and clarity. Where substantial editing occurs, the author will receive final text approval.

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CIRCLE 10 ON INQUIRY CARD

MENTORS How young architects can gain credibility with clients, and whether an employee should report a supervisor's error.

Maryann Thompson and Charles Rose are principals of Thompson and Rose Architects of Cambridge, Mass. Both received an M.Arch. from Harvard University.

Donald Singer, FAIA, is president of Singer Architects of Fort Lauderdale, Fla. His firm received the 1997 Firm Award from AIA Florida.



After working for a large architectural firm for 10 years, I left to form a new company with two partners. We hung out our shingle six months ago. Although the three of us held responsible positions with our former employers, we are concerned that clients may not take us seriously because we are young; we are all under 31. Can you give us advice on how to gain credibility with our clients?

—unsigned

Maryann Thompson and Charles Rose respond: As a young firm, we have faced this question for several years. Our suggestions follow.

We have found that the initial information received by potential clients should include résumés establishing breadth of experience and cover letters demonstrating that you have clearly heard the client's project description and their concerns. You should include articles and awards, as well as brief documentation of your best design work. Good design and examples of quality construction will do wonders in overcoming age discrimination.

Use the job interview to compensate for your age: understand the site, program, and budget, and have a well-rehearsed presentation that demonstrates the thorough preparations you have made. Demonstrate your confidence, mastery of the project, and ability to recognize design possibilities and opportunities. The interview is not the place to reiterate your qualifications or sound your horn. Show the client how well you listen and how

you will respond to their needs. Present your theoretical underpinnings and formal disposition, but be flexible. Show that you can keep architectural arrogance in check.

Maintaining credibility throughout the design of a project is essential to its success and to secure references. Constantly demonstrate design and technical excellence, especially during construction. It is important to know the limitations of your abilities: surround your firm with exceptional consultants. Local AIA chapters present opportunities to demonstrate your ties to a professional organization, yielding a credibility associated with more established firms. Seek opportunities for awards and publication in local and national venues and inform your current clients when successful. Awards for unbuilt work can prove essential to your client's determination to build the project and their ability to raise funds for it.

Primarily, however, maintain credibility with clients by serving them exceptionally well. All drawings and texts that leave the office of a young firm must be proofed by principals. Principals must be immediately accessible to clients. Visit projects well after the job is complete and solve any post-occupancy problems. If you have served a client well, you will be able to call on them to support you in the pursuit of new work.

What do you do when you know a detail is going to get your office in trouble? I am relatively new to a company out West, and my boss sketched a series of

curtain-wall details that I know are not going to work. I should know. The last office I worked in made similar mistakes and the wall had water-infiltration problems. When I brought up the matter, my boss (the project architect) made reference to my youth and basically told me to clam up. Should I go to a partner and point out what I know?

—unsigned

Donald Singer, FAIA, responds: Assuming that you are correct about the detail, this is a question of honesty versus loyalty. Job security is a related issue. Your "boss," however, is the person with the most to lose. If this person is worth working for, there should be no bad feelings or retribution as a result of your discussion. The decision to be honest will let you feel good about yourself, even if you wind up looking through the classifieds for another position.

The loyalty conflict comes, of course, with going "over the boss's head." If reason fails with "the boss," and you do talk with a higher-up, you may have made an enemy, but you have held on to your self-esteem. You will also have done the right thing for the client. ■

Questions: If you have a question about your career, professional ethics, the law, or any other facet of architecture, design, and construction, send submissions by mail to Mentors, Architectural Record, 1221 Avenue of the Americas, New York, N.Y. 10020; by fax to 212/512-4256; or by E-mail to rivy@mcgraw-hill.com. Submissions may be edited for space and clarity.

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CIRCLE 11 ON INQUIRY CARD

PULSE RECORD readers were asked:

Should faculty members at architectural schools be licensed?

YES: 84%

NO: 16%

Yes: Who would say that people who teach others to drive a car do not need a driver's license? Driving teachers should be professionals, not pedestrians with secret agendas because they didn't pass a driving test. Architecture schools have the same obligation to the public.

—Harry Compton, Architect,
Tallahassee, Fla.

Yes: I am a recent graduate of a six-year program that required co-op experience. In and out of the classroom, it was the licensed architects who not only emphasized the application of history, theory, structure, and technology, but related it to the practice of architecture through their own experience. More important than architecture faculty being licensed, however, is for the schools to define whether they are going to train students to talk about

architecture, write about architecture, or be architects. Some schools would have one believe, erroneously, that their program is the total package of talking, writing, and doing. It is the graduates of such programs that have been sold short.—Russell A. DiNardo, Princeton, N.J.

Yes: As a student in the master of architecture program at the University of Michigan, I believe faculty members should be licensed. I think of licensing as the completion of education and I think it is important for the faculty providing me with my education to have gone through what I am preparing to do. Licensing doesn't mean a faculty cannot be diverse, but it does mean they are qualified to build.—Jeri Debaro

No: I strongly believe that faculty need not hold licenses. From my experience, I have found that the essence of the college curriculum is so different from the realities of professional practice, on which most of the Architectural Registration Exam is based, that there is no reason to be a registered architect in order to teach. Furthermore, I believe that licensure by no means makes a person a better architect or designer, and certainly would not have any effect on improving an individual's teaching abilities.—Patrizio Cimino, New York City

No: When I was in architecture school, we had a new professor from South Africa. Because this was a fifth-year studio, there was little time to gain insight into our professor's experience. A license would not have meant anything to stu-

dents at that time. The professor did, however, arrange for a presentation of his work that established a level of respect among the students that a license could not have achieved.—David Zamora, AIA, CLJ & Associates, Birmingham, Ala.

No: An architectural license is not a teaching credential. If, however, a professor is trying to teach the process of becoming an architect or the practice of architecture, then a license would be helpful. But why make a teacher get a license and pay additional dues?—Steve Larson, Architect, San Diego, Calif.

No: While I don't believe that all faculty should be licensed, requiring a certain percentage of architectural school staff to be licensed and practicing might be a good strategy.

—Martin Zelnik, AIA, New York City

This Month's Question:

Are architects today operating within a broadly understood and commonly shared ethical system?

Let us know your opinion:

"The time has come for architects to redefine their professional ethics, the tenets that guide their behavior," writes Robert Ivy, editor in chief of RECORD, in his June editorial. "In our age of cultural relativism, the debate will not be clean or easy. No single ethic will emerge. The conversation should be multilayered, involving everything from doing business with our clients to larger issues like the profession's relationship to society."

Do you think architects today are operating within a broadly understood and commonly shared ethical system?

Yes No

Copy and fax to 212/512-4256, or E-mail to rivy@mcgraw-hill.com.

May an editor contact you for further comments? Yes No

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RECORD NEWS

ACCESSIBILITY AND LIFE-SAFETY ISSUES DISCUSSED AT D.C. CONFERENCE

Architects, advocates for the disabled, and related interest groups convened in Washington, D.C., in June for the Universal Accessibility Conference, co-sponsored by the AIA and the U.S. Access Board.

Keynote speaker U.S. Attorney General Janet Reno called for continued support in the accessibility campaign. "This is not about special designs for special people," she said, "but rather design for all." Reno outlined the Justice Department's three-step education program: explaining the law, negotiating common understanding, and litigating to ensure compliance.

One observer noted that civil rights and building codes groups have addressed the issue from opposite sides. Civil rights advo-

cates want all buildings accessible to everyone, while building codes groups—including architects—are concerned with life-safety issues.

The litigation aspect of the Justice Department's program worries many architects. Building codes vary by state, and plan reviews during the permit process often uncover errors and omissions. Accessibility code compliance is more ambiguous. Civil rights cases are brought only when complaints are filed after construction, and most litigation involves who will pay for required code compliance.

Conference organizers argued for a single document that would include state and local building codes, and federal disability and fair-housing statutes, providing for both accessibility and safety.

MIES HOUSE OPENS TO THE PUBLIC For architects visiting Chicago, there long have been two obligatory stops: the Loop, with its trove of historic skyscrapers; and Oak Park, which offers a cache of houses by Frank Lloyd Wright. Now, 58 miles west of the city, another gem beckons: Ludwig Mies van der Rohe's Farnsworth House.

Its owner, British real estate developer Peter Palumbo, has opened the renowned steel-and-glass pavilion to tours for the first time. The tours follow a \$250,000 restoration, necessitated by a record-breaking rainfall last July. The 46-year-old house, which sits near the north bank of the Fox River, was inundated with five feet of water, though Mies had raised it on steel columns to avoid such a problem. One of the house's huge plate-glass windows cracked, furniture was upended, and artwork spilled into the river's muddy brown waters.

Supervised by Mies' grandson, Chicago architect Dirk Lohan, FAIA, the house has been restored to its Miesian perfection. The Roman travertine floors have been washed of river mud. The flood-warped primavera cabinets have been replaced, and the Barcelona chairs have been re-covered.

The purpose of the tours, Palumbo says, is to make the house financially self-sufficient and to keep it under his family's control. For tour information, call 630/552-8622.



EPA HOPES ITS RENOVATED BUILDINGS WILL SET A NEW "GREEN STANDARD"

Can a government project be done on time and within budget if it includes not only massive historic renovation but state-of-the-art environmental features?

That's the challenge the Environmental Protection Agency (EPA) has set for itself with its new headquarters project under way in downtown Washington, D.C. As the nation's leading environmental watchdog, the EPA hopes the project will become a "green standard" for future government buildings, demonstrating what's possible in sustainable architecture within the often difficult constraints of federal budgets and regulations.

The 2.3 million-sq-ft headquarters project combines construction of one new building and renovation of several historic structures in the Federal Triangle district of Washington. The General Services Administration owns the buildings, and RTKL Associates Inc. is architect of record for the project.

The design includes scores of environmental refinements, some of which challenge federal construction orthodoxy: operable windows, low-flow toilets, energy-efficient lighting, state-of-the-art mechanical systems, and low-emission paints, building materials, and furnishings.

None are "showstoppers," says Michael A. Kazan, a principal of Gruzen Samton, consulting architect to EPA and designer of the project's interiors and environmental specifi-

cations. Instead, says EPA project director Don Flattery, "We focused on available appropriate technologies, not pie-in-the-sky things. We wanted to show what is reasonably feasible in environmental design."

Phase One will be complete this month with the opening of the new Ronald Reagan Office Building (above). The EPA will occupy 200,000 sq ft of the new structure.

The centerpiece of the headquarters project, to be completed in the year 2000, is a 2.1 million-sq-ft, \$180 million renovation of several historic New Deal-era buildings: the Ariel Rios Federal Building and the U.S. Customs Service-Interstate Commerce Commission complex.

By modernizing an existing government office complex, project architects estimate they'll reuse 75,000 tons of concrete, 6,000 tons of steel, 100,000 sq ft of glass, and 3,000 tons of masonry, which might otherwise have ended up in landfills.

Some of the most important long-term savings and benefits of the project will be realized by EPA workers, says Flattery, in the form of less eye strain, lower absenteeism, and higher productivity resulting from advanced lighting systems and improved indoor air quality.

Said Karl Stumpf, project manager for RTKL: "It is the combination of preservation and sustainable design that makes the project so successful." That, and finishing on time and within budget. Lee Mitgang

CONSORTIUM INCLUDING SAFDIE AND SOM TO DESIGN TORONTO AIRPORT

An international consortium consisting of Moshe Safdie Associates (Toronto/Boston), Skidmore, Owings & Merrill (New York), and Adamson Associates (Toronto) has been selected to design and manage the \$2.5 billion redevelopment of Toronto's Lester B. Pearson International Airport.

The Greater Toronto Airports Authority (GTAA) sponsored an international competition and selected the team in June from a total of 220 entries. GTAA assumed control of Pearson—the largest, most congested, and one of the least efficient airports in Canada—from the federal government in December 1996.

The megaproject will replace

existing Terminals 1 and 2 with a single horseshoe-shaped terminal. The privately owned and operated Terminal 3 will remain as is. New parking facilities, runways, cargo and maintenance facilities, and improved public access are also included.

The 10-year project will add 51 new gates, for a total of 130, which will ultimately be capable of handling 50 million passengers a year, double the current capacity. Construction of the new terminal is expected to start next summer.

"Our challenge will be to create an airport that is one of the major Canadian gateways and at the same time a building that is clearly



Canadian in its character and imagery," Moshe Safdie said. Safdie's other major Canadian buildings include the National Gallery in Ottawa, Vancouver Public Library, and the Montreal Museum of Fine Art.

Safdie commented that the megaproject will benefit from SOM's design experience with other air-

ports, such as New York's JFK International, San Francisco International, Chek Lap Kok in Hong Kong, and London's Heathrow. "It is especially satisfying for me, having done a series of cultural buildings in Canada, to have an opportunity to do a building more in the realm of infrastructure and transportation," Safdie added. *Albert Warson*

AGING IN AMSTERDAM Osdorp, an Amsterdam suburb, is the site of an attention-grabbing new 100-unit home-care complex for the "young elderly." Designed by Dutch architects MVRDV, the 810-sq-ft apartments were commissioned by a housing society for people 55 and older in low- and middle-income brackets who want to live on their own but may eventually need the facilities of the nearby nursing home.

Given Osdorp's postwar urban setting, the housing society insisted that the project take the form of a slab on grade. But because of height restrictions, the design could only accommodate 87 apartments. To increase the number of units, MVRDV cantilevered an additional 13 apartments off the red cedar-clad north facade, with steel framework designed by Ove Arup. The south, rear facade has balconies of varying sizes and materials, including orange, green, and purple plexiglass.

This is the first large project by the Rotterdam office of MVRDV, which is named after its three principals: Winy Maas, Jacob Van Rijs, and Nathalie De Vries, all of whom worked at Rem Koolhaas' Office for Metropolitan Architecture. MVRDV's headquarters for a Dutch public broadcasting corporation will be completed later this year.

GEHRY AND THE DISNEY CONCERT HALL: "TRYING TO WORK IT OUT"

With a dramatic storyline tailored for Hollywood, the 10-year saga of the Walt Disney Concert Hall and its design architect, Frank O. Gehry, FAIA, continues to unfold in Los Angeles.

In early June, Gehry was said to be withdrawing from the project he was selected for back in 1987, when Walt Disney's widow, Lillian, donated \$50 million for the new building. Over the last decade, the proposed 2,380-seat Disney Hall—to be sited over a county-owned parking garage—has been plagued with cost overruns as well as political, financing, and leadership problems [RECORD, February 1997, page 28].

"We are working with Frank Gehry to keep him involved. He wants to be involved," emphasized Andrea Van de Kamp, chair of the Music Center's Board of Governors. "We are having ongoing meetings to determine the extent of his involvement and clear up misunderstandings." The problem, says Van de Kamp, "centers around the working drawings and the percentage of what is usable today. The design has been frozen for some time. We

are trying to work it out."

In 1994 a new management team—headed by businessman and former L.A. County chief Harry Hufford—tackled the stalled project, long regarded as an essential catalyst for downtown economic revitalization. An aggressive fund-raising schedule was unveiled, partly to allay county concerns about the project's viability. Billionaire art collector and culture czar Eli Broad, chairman and CEO of SunAmerica, is the lead fundraiser, with major support from Los Angeles Mayor and former businessman Richard Riordan. Each donated \$5 million to jump-start the effort.

Project construction costs are now pegged at \$170 million, excluding the \$50 million already spent. The first fundraising milestone, on June 30, 1997, was \$52 million. As of press time in mid-June, \$64.25 million had been raised from corporate and business sources. An additional \$65 million includes \$25 million from the Disney family and other donations, for total pledges of \$129.65 million. The 95 percent fundraising milestone is June 1998. *Barbara A. Nadel, AIA*



INTERIORS PROFESSIONALS MEET TO DISCUSS CHANGING WORKPLACE

Interior design professionals must understand the changing needs of their clients to effectively operate in today's economically driven business climate. That was the message delivered by several prominent corporate clients speaking at the International Design Conference held in late May in Jackson Hole, Wyoming.

Conference co-sponsors Bob Black of Steelcase and Geoff Colvin of *Fortune* magazine urged interiors professionals to seek a better understanding of business leaders and their corporate goals. Economic concerns have increased the pressure for smaller headquarters and "hoteling"; some companies don't want to be perceived as making major investments in office design,

SHAKESPEARE'S THEATER REOPENS

After nearly 30 years of delays, London's Globe Theatre, where many of Shakespeare's plays were first performed, reopened in May. Neither the new Globe's architect, Theo Crosby, nor its main promoter, actor Sam Wanamaker, lived to see the project completed.

The new Globe theater occupies nearly the same Thames site as the original, which burned to the ground in 1613 during a performance of *Henry VIII*. The theater has 1,500 seats—about half the number in the original—and was built using 17th-century construction methods and materials.

Crosby and master carpenter Peter McCurdy framed the O-shaped structure in native green oak that was supple enough to bend into a circle yet dense enough to resist fire and warping. Workers handcrafted each beam, then attached them using mortise and tenon joints and tapered wooden pegs, the techniques used by earlier builders. Between the posts and beams, the carpenters inserted oak staves smeared with lime plaster and goat

while others opt for less real estate.

Such changes in workplace values have caused anxiety among design professionals. But as conference participants emphasized, these trends also call for more efficient space-planning. The need for flexibility in reconfiguring spaces and providing increased computer access will remain facilities management priorities for the foreseeable future, creating ample interior design opportunities.

Geoff Colvin cited Cesar Pelli & Associates' Owens Corning headquarters in Toledo, Ohio [RECORD, June 1997, pages 152–56] as exemplary—an interior environment whose design was driven by a CEO's ideas about space and management style.



hair. The new Globe is the first thatched-roof structure to be built in London since the Great Fire of 1666.

The theater provides actors and audiences an opportunity to experience Shakespeare's plays in the space for which they were written. The theater includes a thrust stage with a simple canopy, but no microphones, special lighting, or elaborate sets. Crosby believed that by providing conditions similar to those of the original, the reconstructed theater would allow for new insights into the playwright's work.

The theater is the centerpiece of the planned \$50 million International Shakespeare Globe Center, which will contain an education wing, a museum and a smaller, 333-seat theater, based on a design by Inigo Jones. The complex is expected to be completed by 2000. *David Dillon*

ARCHITECTURAL PRESS ROUNDUP

SMELLING THE ESPRESSO IN KANSAS CITY

The Kansas City Star, June 1, 1997 Barbeque aficionados make pilgrimages to Arthur Bryant's for ribs, but no one in decades has been hit with a craving to hang out in downtown Kansas City after dark. Looking to bring life to the central business district, a developer called Centertainment has unveiled plans to transform 11 1/2 blocks into an entertainment, retail, office, and residential complex. Scott Cantrell, the *Star's* architecture writer, calls the design for a Plaza of Light "cheesy, generic, theme-park architecture." "Enough, already, with the retro," he continues. We're on the brink of the 21st century, and it's high time Kansas City stopped living in the 19th. The stockyards are gone, along with Emery Bird Thayer, the Country Club Trolley and the legendary jazz clubs. Wake up and smell the espresso. Here's a wonderful opportunity to make a bold and challenging—but playful—statement... let's put up some real architecture."

I'LL DRINK TO THAT

The Wall Street Journal, May 28, 1997 Looking at the new EMC Insurance Building in Des Moines, Iowa, some people think the architects must have been hitting the bottle. You see, the 20-story office tower has a cylindrical protrusion running up 12 floors of its south facade and a narrower, four-story recess above that, creating—at least in the eyes of some observers—the image of a giant Absolut vodka bottle. According to an article by Christopher J. Knight, "William Anderson, a partner with Brooks Borg Skiles Architecture Engineering, which designed the building, insists the resemblance was not intentional." While denying even any subconscious copying, Anderson said, "he wouldn't mind seeing the work in an 'Absolut Des Moines' ad someday." The next thing you know they'll want their own Gap ad.

NOTHING UP HIS SLEEVE

Dayton Daily News, April 28, 1997 In an article examining the need to design prisons for an aging population of inmates, the newspaper says, "Good architectural design always involves spending time with the client or user of the proposed building. It's just more challenging when the user is *doing time*." While prisoners, like the rest of the American population, are living longer, architects designing correctional facilities must go beyond complying with ADA requirements. "Take the case of a northern Ohio jail that booked a wheelchair-bound man. 'He had an artificial leg to the knee and was also elderly. They treated him with kid gloves,' said architect Harrison Spicer, facilities planner for the Ohio Bureau of Adult Detention. 'Then the son of a gun took the leg off, had a knife hidden inside, and injured one of the corrections officers. You just can't assume that even a handicapped individual is less of a risk.'"

ESCALATOR? WHAT ESCALATOR?

The New York Times, May 22, 1997 An exhibition at the Museum of Modern Art in New York presenting schemes for the museum's planned expansion includes background information on MoMA's original building and all of its additions—except for the one in 1984 by Cesar Pelli. According to the *Times* article, "When asked at the opening of the exhibition if he had noticed the lapse, [architectural curator Terence] Riley, said, 'Uh, oh.'"

GUNNAR BIRKERTS RETURNS HOME TO RIGA BY DESIGNING TWO MAJOR PROJECTS

When Gunnar Birkerts received a call from the city architect of Riga, Latvia, at his Bloomfield Hills, Mich., office in 1988, he listened carefully to what the official had to say.

Birkerts was born in Riga and knew that his countrymen, long under the thumb of the Soviets, were astute communicators of coded messages.

As it turned out, the spoken offer he received was to design a huge new National Library in Riga. The unspoken message was that the building should be a symbol of the freedom for which Latvians yearned. The call came three years before Latvia would become an independent republic. "I grew up with this," Birkerts explained. "[I understood] they could express themselves in a building."

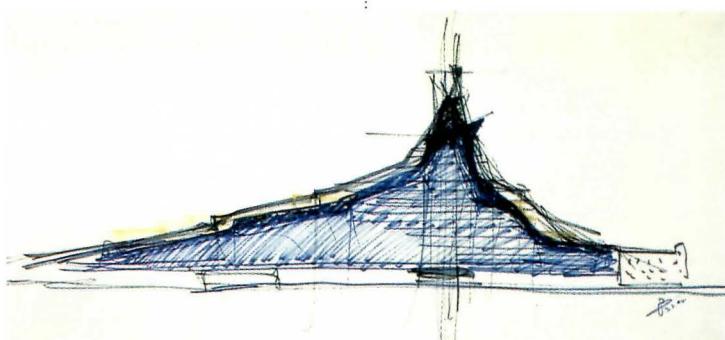
The architect designed a metaphor for independence that needed no explanation. "Everyone understood it right away," he said. The building resembles a glass mountain, bringing to mind a Lat-

\$100 million building, which goes into construction next year, will consolidate the five and a half million volumes now scattered among 10 buildings throughout the city.

The collection will be housed in closed stacks high up in the center of the facility, and books will be electronically retrieved and delivered within 30 minutes to reading rooms on the north side. The 500,000-sq-ft building will have the capacity for eight million books.

The library was Birkerts's first commission in his native country. A second soon followed: a conceptual master plan for Riga's Central Warehouse District, also on the Daugava River. Birkerts's proposal is for a 28,000-sq-ft "Crystal River," a series of buildings that would flow between the historic buildings and above public areas, creating space for new offices, restaurants, and other facilities.

Birkerts has waited nearly a decade to see the library approach



Sketch by Gunnar Birkerts of his design for The National Library in Riga, Latvia.

vian fable in which a princess, representing freedom, is saved when her suitor rides up the mountain.

Birkerts left Latvia after World War II when he was 19. He studied architecture in Stuttgart, Germany, and eventually came to the United States, working for Eero Saarinen and later Minoru Yamasaki before opening his own office. He returned to Latvia only to visit his mother, who remained there until her death.

The library will be on an undeveloped bank of the Daugava River, across from 18th- and 19th-century buildings of old Riga. The

construction. As the country's economy is still struggling, the project is being supported by the government through a series of special excise taxes and through contributions from European and Scandinavian countries.

For Birkerts, the two commissions have a special meaning. "It's an emotional moment," he said. "It's coming home, it's recognition."

Cheryl Kent



DU PONT HONORS CREATIVE USE OF GLASS Kengo Kuma & Associates, Tokyo, was awarded first place for a residential project in the 1997 DuPont Benedictus Awards for Innovation in Architectural Laminated Glass. The firm's

entry, the Glass Villa (above), in Shizuoka, Japan, consists of three glass pods linked over water by glass bridges and stairways. Glass furnishings designed by the architects allow for an unobstructed view of the Pacific Ocean.

First-place winners for commercial work were Rafael Viñoly Architects and associated Japanese firms Masao Shiina Architects and GKK Architects & Engineers for their \$1.6 billion Tokyo International Forum, with its extensive use of laminated glass in exhibition spaces.

The competition, which also awarded cash prizes for winning student entries, was sponsored by DuPont and AIA's American Institute of Architectural Research, with help from the Union of International Architects. The jury included Patricia Patkau, FRAIC, Canada; Hugh Newell Jacobsen, FAIA, United States; and Christian de Portzamparc, Hon. FAIA, France.

BOTANICAL GARDEN HALTS RADIO TOWER, CITING ADVERSE AESTHETIC EFFECT

Sparks are still flying between the New York Botanical Garden and Fordham University over the school's partial construction of a 480-ft radio tower on its Bronx, New York, campus. In May the Federal Communications Commission (FCC) ruled that the 45-story tower would have an adverse effect on the gardens by introducing a visual element out of character with the property and asked the two sides to work out an alternate plan.

The federal decision cited Section 106 of the National Historic Preservation Act, noting that the "area is significant because visitors are drawn to the property by the aesthetic appeal of the Garden's flora and the Conservatory's unique and historically significant architecture."

The decision does not end the static that arose with the tower in 1994. In its original FCC application, Fordham failed to disclose that the tower would be located across from a National Historic Landmark, thereby avoiding an environmental assessment and expediting its FCC construction permit.

In late 1996 the Botanical Garden proposed a flagpole struc-

ture designed by Polshek and Partners (below) as a less costly, more aesthetic alternative to Fordham's original design. The antenna is supported between two tapered, 185-ft steel monopoles in a cylindrical "radome" enclosure, where it is concealed and protected from ice accumulation. Depending on the viewing angle, the tower would appear as a double or a single flagpole.

Mediation talks with the two prominent nonprofit institutions, the FCC, and federal and state preservation agencies were scheduled for June at the FCC's Washington headquarters. Stay tuned. *Barbara A. Nadel, AIA*





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NEWS BRIEFS

New director leads design school

school Neil M. Denari was named director of the Southern California Institute of Architecture (SCI-Arc), succeeding Michael Rotondi, director since 1987. Denari, educated at Harvard and now principal of the Los Angeles-based Cor-Tex Architecture, has taught studio classes at SCI-Arc for the past nine years. His work with Cor-Tex has included exhibition designs for Columbia University, the Museum of Modern Art-Sydney, and the Japan Association for the Promotion of Events. He is currently working on the renovation and master plans for the Arlington Museum of Art in Arlington, Tex. Denari is the third director since SCI-Arc's founding in 1972.

Department store stocked with books

books The Southwestern University School of Law Library recently opened in the former Bullock's Wilshire department store in Los



Before and after: Bullock's Wilshire, and Altoon + Porter's Southwestern University School of Law Library.

Angeles (above). Ronald Altoon, FAIA, of Alton + Porter Architects, designed the \$10 million adaptive reuse of the original Art Deco building by Parkinson & Parkinson. The law library includes reading rooms, study carrels, and open stacks. Alton + Porter passed up the opportunity to design a new facility in order to restore one of the few remaining historic buildings in L.A.

Holocaust Museum chooses Moshe Safdie

Moshe Safdie The Yad Vashem Holocaust Museum expansion and



reorganization project will be designed by Moshe Safdie and Associates, who were selected in a three-stage competition. The program increases the museum to five times its current size and reorganizes the public circulation throughout the 58-acre site. Safdie's winning design calls for a new entry building, connected by a steel bridge to the museum, which consists of galleries organized along a spine that penetrates the hillside from end to end. Also in the final stage of the competition were Avraham Yaski Architects and Planners, Tel Aviv; and Jack Diamond, Toronto, in association with Kolker, Kolker and Epstein, Jerusalem.

Playing with food, helping others

The city of New Orleans recently hosted the first national CANstruction competition, in which architects and engineers built structures out of canned and boxed foods. Part of a benefit to provide meals to people in need, the structures were judged in categories such as structural integrity, best use of labels, and best meal. Among the award winners were Hellmuth, Obata & Kassabaum, for their recreation of a New York City taxicab, including pie-crust hubcaps and a sardine grille. The competition, for both students and professionals, began in 1992 when a group of architects sculpted the state of Washington from canned goods they had gathered for a food drive sponsored by the Society of Design Administration.

RIBA medal goes to Ando The Royal Institute of British Architects presented Japanese architect Tadao Ando with the 1997 Royal Gold

X



Medal for Architecture. Conferred annually by the Queen, the medal honors those who have promoted, directly or indirectly, the advancement of architecture. Ando, a largely self-taught architect, is based in Osaka. Although most of his works are in Japan, he has received international honors; he is an honorary fellow of both the RIBA and the AIA. Citing his Chapel on the Water (Komamu) and the Church of the Light (Osaka), RIBA called Ando a "creative rebel" and an "architectural hero." Frank Lloyd Wright, Le Corbusier, and Renzo Piano are among other architects who have received the award, which was inaugurated by Queen Victoria in 1848.

Working harder and getting less Despite solid gains in productivity, fee levels for design firms have improved little, according to the recently published twelfth edition of the PSMJ Design Services Fee Survey. Because of the traditional hourly labor charge model, produc-

tivity gains seem to have a negative impact on design firms, forcing them to work harder in the long run to keep revenues up. The PSMJ recommends that firms move away from the hourly charge model, noting that fee levels are not in line with current inflation rates. "Since hourly rates are now only about even with pre-1990 rates, when inflation is factored in, real hourly rates are well below the late '80s level," said William Fanning, director of Research at PSMJ Resources.

Denver Library gets temporary interior transformation For the Denver Summit of Eight, held on June 20-22, the Denver Library was transformed into a world-class meeting venue. The metamorphosis, by the Denver-based architecture and design firm RNL Design, included custom carpeting, a custom meeting table, special meeting room lights, and the creation of a reception area outside the Rotunda meeting room and a dining area.

RNL also supervised the return of the library to its original state following the summit meeting, which was attended by President Clinton and leaders from the United Kingdom, France, Germany, Italy, Canada, Japan, and Russia.

Plainfield Town Center Design

Competition winners The team of Richard H. Schaupp of Cooper, Robertson & Partners and Michael M. Franck of Allan Greenberg Architect won first place in a competition to provide a development plan for Plainfield, Ill. Looking to expand the downtown area across the DuPage River, the village had hosted the competition for professional design firms and student teams.

Environmental design recognized

The Portland, Ore., AIA chapter, the Bonneville Power Administration, and the Battelle Conference Center recently sponsored the fifth annual Architecture + Energy competition in Seattle.

Mithun Partners, Inc., Seattle, took the top award for REI's flagship store, notable for its vast interior volumes, energy-efficient design, and sustainable materials. Other winners included the F. W. Olin Science Center in Salem, by Soderstrom Architects, Portland; the City of Portland's Water Pollution Control Laboratory by SERA Architects, Portland, and The Miller/Hull Partnership, Seattle; Portland architect Mark Garvey's Widmer Brothers Brewing Company Expansion; and Portland's Pacific Gas Transmission Headquarters by Group Mackenzie, Portland.

Finding an architect by surfing the Web

Claiming to include all architectural firms in the U.S., ArchitectsUSA offers a searchable Web site listing firms by location, category, and description. The geographic search system is currently running; the comprehensive SearchFile system will be on line July 31. www.ArchitectsUSA.com. ■

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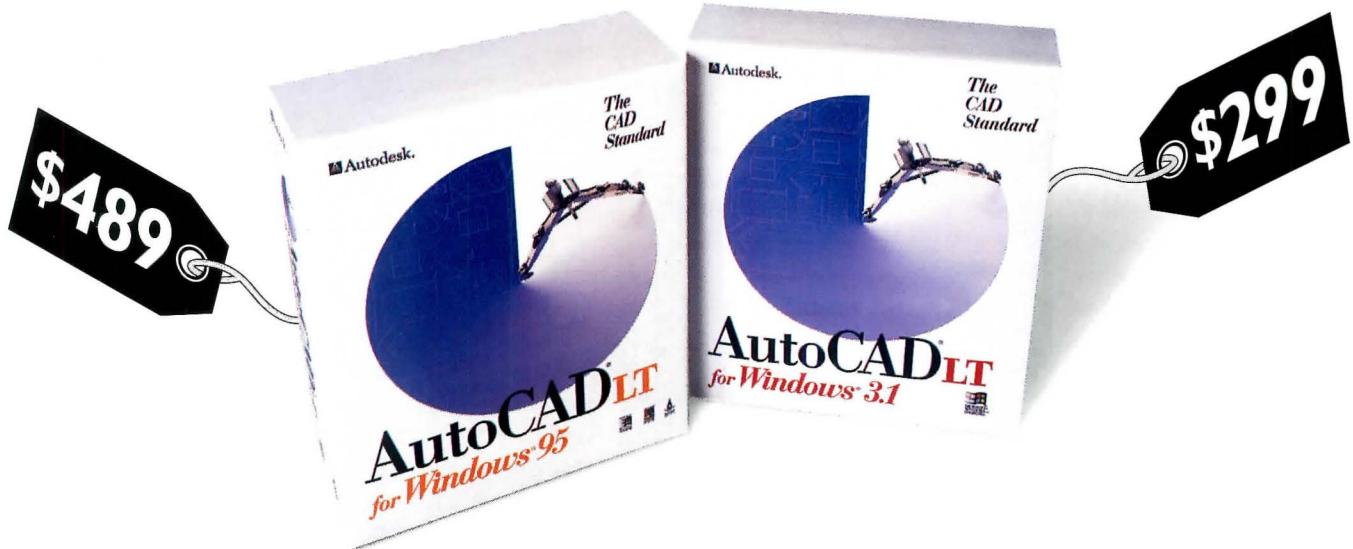
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DATES EVENTS BOOKS

Calendar

Through July 31

Max Protetch Gallery

New York City

Architectural drawings from the early and late works of Frank Lloyd Wright are on view. Call 212/633-6999.

August 8–10

AIA Chapter Headquarters

Seattle, Washington

The Fourth Annual Diversity Conference, "Beyond the Rainbow: Changing Views," unites architects, designers, students, educators, AIA leaders, and allied professionals in an exercise to expand mutual understanding, explore cultural issues, and activate an appreciation of diversity in the people and policies of the AIA and the profession. For more information, call Jean Barber at the AIA at 202/626-7305.

Through August 10

Wexner Center for the Arts

Columbus, Ohio

The traveling exhibition "Viewing Olmsted: Photographs by Robert Burley, Lee Friedlander, and Geoffrey James" examines work by the most influential landscape architect of the 19th century. Call 614/292-0330.

August 14–16

San Jose Convention Center

San Jose, California

Alternative workplace issues concerning people, technology, and environments in the corporate and home office will be addressed at the alt.office conference and exposition. Furniture and office products will be on view. For more information, call 800/950-1314 or visit <http://www.alt.office.com>.

August 24–January 11, 1998

Design Exchange

Toronto, Canada

"Shifting Gears: Green Transportation for the 21st Century" investigates new materials, technologies, and design innovations that have the potential to alter transportation conventions. Call 416/216-2160.

August 24–27

Toronto, Canada

The International Council of Societies of Industrial Design (ICSID) will focus its biennial

conference on the "Humane Village," with the hopes of offering a new perspective on how design can help shape a more compassionate society. Call the Design Exchange at 416/216-2124 or E-mail dx@pathcom.com.

Through August 29

The Skyscraper Museum

New York City

"Downtown New York: The Architecture of Business/The Business of Architecture" is the inaugural exhibition at the Skyscraper Museum, 44 Wall Street. Curated by architectural historian Carol Willis, who founded the museum, and designed by architect Lynne Breslin, the show looks at historic and contemporary examples of the building type. Call 212/968-1961.

Through September 12

Municipal Art Society

New York City

The streetscape of New York City may take on a new character, once plans to award a franchise for new street furniture are completed later this year. The "21st Century Streetscape" exhibition will include full-scale objects and photos of contemporary examples. Call 212/935-3960.

Through September 14

Whitney Museum of American Art

New York City

"Frank Lloyd Wright: Designs for an American Landscape, 1922–1932," a traveling show, examines five unbuilt proposals, through original drawings, newly built models, and computer reconstructions. Call 212/570-3600.

September 15–22

London, England

The AIA's London/UK Chapter is sponsoring a seven-day program of tours and lectures in the city. Contact Norvista at fax 800/526-4927.

September 17–19

Fairmont Hotel

New Orleans

The AIA Committee on Architecture for Justice and the American Jail Association are sponsoring "IDEAS/2001: Jail Innovations for the Third Millennium." For more information, call David Roccosalva at the AIA at 202/626-7418.

September 26–28

Prague, Czech Republic

The Continental European Chapter of the AIA

is sponsoring a low-cost, three-day program of talks and guided tours on architecture and urbanism in the Czech capital. Contact Martina Tomasovicova at fax 420/2-265-702.

Through November 30

Hollyhock House

Los Angeles

Institutional, commercial, and residential work by Steven Ehrlich Architects of Santa Monica, Calif., is on view. Call 213/913-4157.

Competitions

A competition for the design of a **sun shade structure** on Pier 54 at 13th Street in Manhattan is sponsored by the Young Architects Group of the AIA New York Chapter, the Van Alen Institute, and the Hudson River Park Conservancy. The sponsors hope to build a portion of the winning design as an interim improvement on the site, which sits within a proposed waterfront development. Individuals and teams who have received a degree in architecture or related design programs in the past 15 years may participate. The registration deadline is July 31; entries are due September 2. Contact 212/683-0023, ext. 23.

Upcoming deadlines for the **1998 AIA Honors and Awards** program are: Honor Awards for Architecture (entry deadline August 1, submissions due September 5); Twenty-five Year Award (submissions due September 5); Honor Awards for Interiors (entry deadline August 22, submissions due September 19); Honor Awards for Urban Design (entry deadline September 12, submissions due October 10); Fellowship (submissions due October 24). Call Robin Lee at the AIA at 202/626-7390.

The Boston Society of Architects invites entries in **Unbuilt Architecture**, an annual program open to practitioners, educators, and students. Submissions are due August 21. Submit entries to Unbuilt Architecture, Boston Society of Architects, 52 Broad Street, Boston, Mass. 02109-4301. Call 617/951-1433, ext. 232.

The **Shinkenchiku Residential Design Competition 1997**, an annual competition sponsored by *The Japan Architect*, will be judged by Swiss architect Jacques Herzog of Herzog & de Meuron. The theme is "House of Collaboration." Entrants are asked to work in collaboration with an artist or art student to draw an exhibition space for contemporary art for any site. Use two (continued on page 153)

THEY'RE EVEN INSPIRED BY IT.



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A reflecting pool at the
chapel's south is a
“thinking field,” says
Holl. New campus
quads are planned to
the east and north.

What is sacred space? Steven Holl's CHAPEL OF ST. IGNATIUS answers with texture, light, and color.



When clouds pass over, the light pulses," says Steven Holl, AIA, of the interior of the Chapel of St. Ignatius at Seattle University (SU). The scheme is deceptively simple: Holl refers to it as "a stone box, containing seven bottles of light." What makes the interior so arresting and enigmatic are the halos of softly pigmented light sliced through by shocking patches of otherworldly color. The effect, mysterious itself and made more so by the constant variations of light as clouds move across the sky, requires several visits to the chapel to grasp its permutations. "One professor told me, 'I'm not a believer, but this is my third visit to the chapel in two days,'" reports the Reverend Jerry Cobb, chair of the university chapel committee. "People of all faiths, or no faith, experience it as a compelling spiritual space."

"The chapel is the fusion of a spiritual and an architectural notion," says the Reverend William J. Sullivan, president emeritus of SU and the project's driving force. St. Ignatius of Loyola, the Jesuit founder, saw spiritual life as internal lights and darknesses—what he called consolations and desolations. "St. Ignatius's biographical writings inspired me," says Holl. "He uses the metaphor of a light that comes from above."

Holl translated St. Ignatius's imagery into a dramatic roofscape of light scoops that emerge from an inscrutable concrete box. "By design-

Sheri Olson, AIA, is a writer and architect based in Seattle. She is a regular contributor to RECORD on design and technology.

by Sheri Olson, AIA

ing a building without a lot of openings, relying instead on light scoops to bring in the outside world, Holl created a reverential space for an urban setting," says Sullivan. The chapel is the first building to interrupt the existing street grid that rules the surrounding campus. This places it—practically and metaphorically—in the center of what will become a large new quadrangle (see site plan) and creates the potential for an esplanade anchoring a new lower mall.

It's surprising that the Manhattan-based Holl's first major completed public building in the United States is for a small university in the Pacific Northwest. "This is directly attributable to the vision of Father Sullivan," says Cobb. "He wanted to make a significant architectural gift to the city." The chapel is the culmination of the president emeritus' 20 years at SU, which in its 105-year history had never had a freestanding place of worship. Sullivan envisioned a provocative project that would put the school on the map. As part of the selection process, Holl, a Seattle native, along with Moshe Safdie, Bohlin Cywinski Jackson/James Cutler Architects, and Dagit Saylor, was invited to lecture on creating sacred spaces. "The large crowds that turned out when Steven spoke told us that this is someone people are paying attention to," recalls Sullivan of the decision process.

Church building committees are notoriously contentious, and

Project: Chapel of St. Ignatius,

Seattle University

Seattle, Washington

Architect: Steven Holl Architects—

Steven Holl, AIA, principal-in-charge;

Timothy Bade, project architect; Justin

Korhammer, Jan Kinsbergen, Audra

Tuskers, project team

Associate Architect: Olson Sundberg

Architects—Rick Sundberg, FAIA,

Tom Kundig, principals-in-charge;

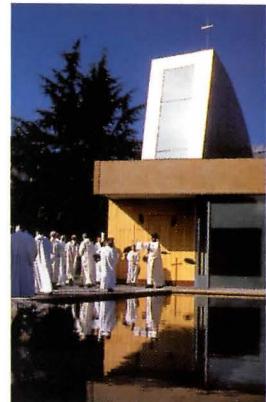
James Graham, project manager;

Janice Webb, team member

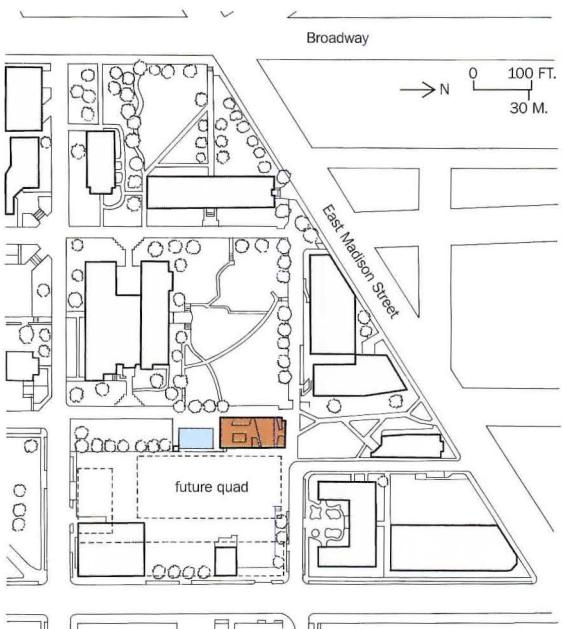
Engineers: Datum Engineers (structural/schematic phase); Monte Clark Engineering (structural); Abacus Engineered Systems (mechanical/electrical/plumbing)

Consultants: Bill Brown, AIA (liturgical); L'Observatoire International (lighting); Peter George and Associates (acoustical)

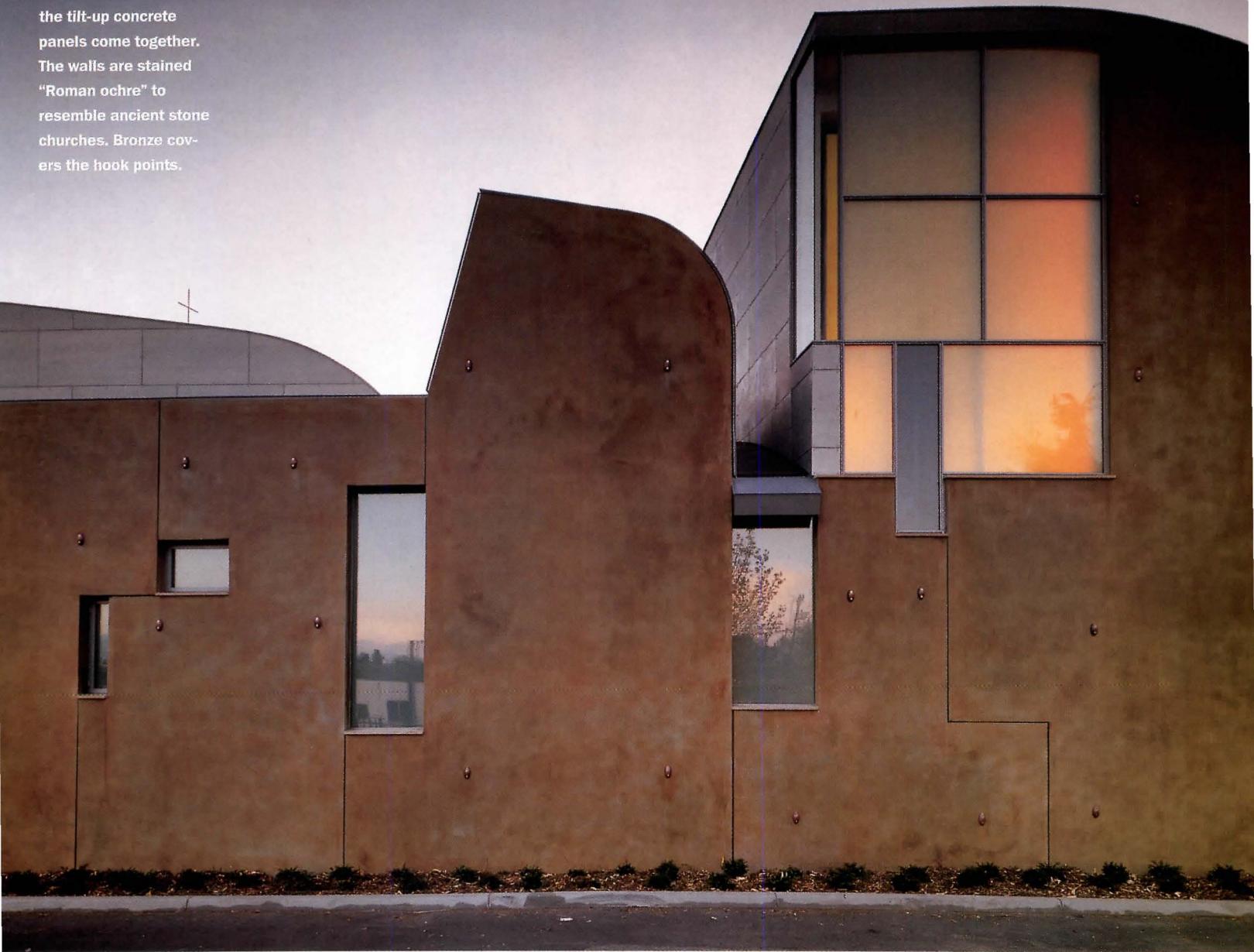
General Contractor: Baugh Construction



Anchored by a slender 52-ft-high bell tower clad in a preweathered zinc (bottom), the chapel's processional route is extended into the campus by a subtly sloped ramp that runs along the 6-in.-deep reflecting pool. The tower's two bronze bells were cast in Anney-le-Vieux, France.



Windows occur where the tilt-up concrete panels come together. The walls are stained "Roman ochre" to resemble ancient stone churches. Bronze covers the hook points.



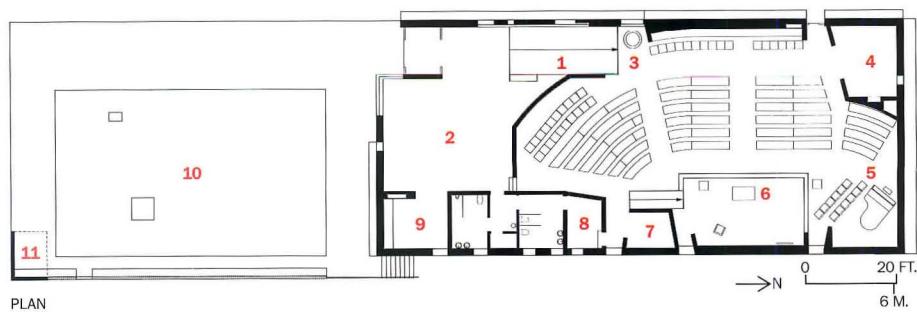
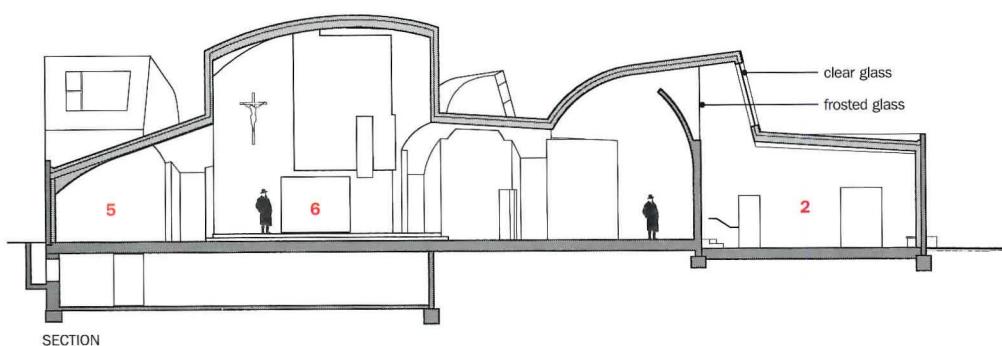
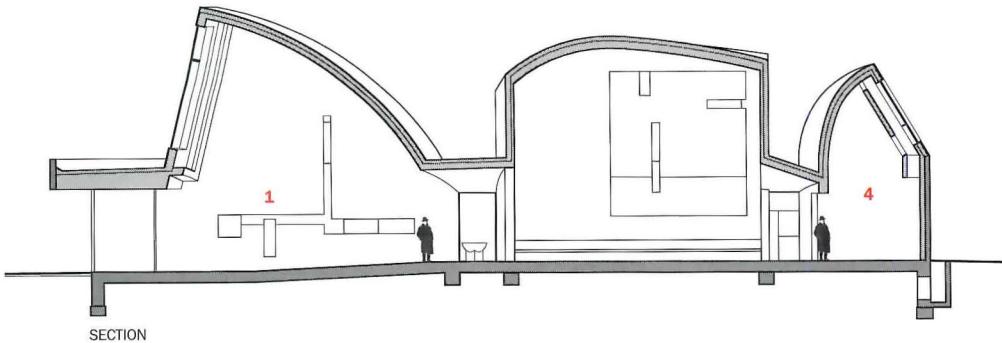
this one experienced its share of differences regarding liturgical interpretation and the resulting architectural implications. Holl found the input from students, gathered over five meetings, to be helpful in resolving issues. "At a time when the campus ministry was moving toward worship-in-the-round, the students were instrumental in helping to make the procession a major aspect of the plan," recalls Holl. The students "also wanted real pews [whereas] the campus ministry wanted chairs, like a lounge."

A slender metal-clad bell tower marks the approach to the chapel. The processional route begins with a rectangular green to the chapel's south and continues up a subtly sloped ramp alongside a shallow reflecting pool. The route "symbolizes the transition from the outside world to the spiritual world," says Sullivan. Set into the pool is a box of wild grasses and a black basalt rock from that venerable State of Washington symbol, Mt. Rainier, which is barely visible from the site. The poolside wooden bench is already a favorite spot for outdoor studying, while the patch of lawn is overrun by Frisbee-throwing students.

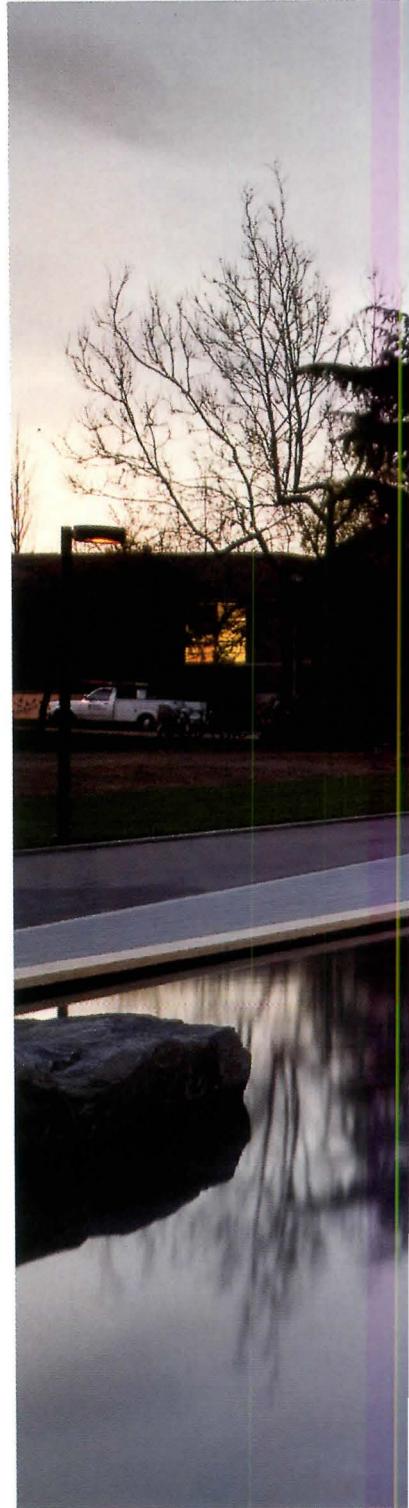
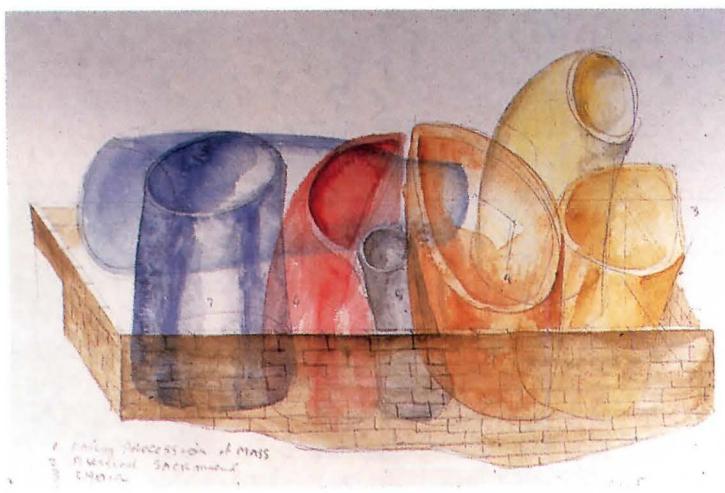
The chapel's tautly planar profile and ochre concrete stain recall

early Roman churches. Holl's original design used yellow Kasota stone, which proved too expensive and now is limited to window ledges and a bench at the chapel's west side. The \$3.25 million construction budget—90 percent of which came through private donation—wasn't sufficient for the initial program of 10,000 sq ft, so the project was reduced to 6,100 sq ft. "Before, the 'bottles of light' were loose inside the frame, and this [reduction] helped to tighten up the scheme," says Holl of the plan's present incarnation, which was literally shrunk to fit. The light scoop volumes shear off when they intersect the perimeter wall, creating an irregularly scalloped edge along the roofline, intensified because of their compression into a staccato rhythm that alternates between swooping and soaring.

But the sense of transcendent space does not stop at the door. "The exterior does not fully prepare you for the interior," says Cobb. Holl explains: "Like a novel, the cover does not reveal everything." The monochromatic exterior is a foil for an explosion of color inside. Light passes through small, intensely colored glass lenses set within (text continues)



1. Procession
2. Narthex
3. Baptistry
4. Blessed Sacrament Chapel
5. Choir
6. Altar
7. Reconciliation Chapel
8. Bride's room
9. Vesting sacristy
10. Reflecting pool
11. Bell tower





Holl's early concept sketch of the "seven bottles of light" (opposite) resembles the final result (above). At dusk, the chapel comes to life—important in a region where thick clouds are com-

mon. Lights on the interior of the scoops duplicate the effect of sunlight on the inside and dramatically reverse the daytime effect outside as colored light is projected into the darkening sky.

"The whole building was horizontal," then 24 hours later, like an apparition, it rose," says Steven Holl of the construction of the Chapel of St. Ignatius. Using tilt-up concrete panels, the process, akin to a modern-day barn raising, was such an event that Holl's office captured it on videotape.

The project's unique conditions required creative rethinking of this typically down-and-dirty construction technique. "We thought of this as job-site precast rather than tilt-up construction due to the level of finish required," says Chris Toher, project manager of Baugh Construction, the general contractor. The chapel's 21 concrete panels interlock like pieces of a giant Chinese puzzle box, adding another layer of complexity.

"The material realization of a project is crucial," maintains Holl.

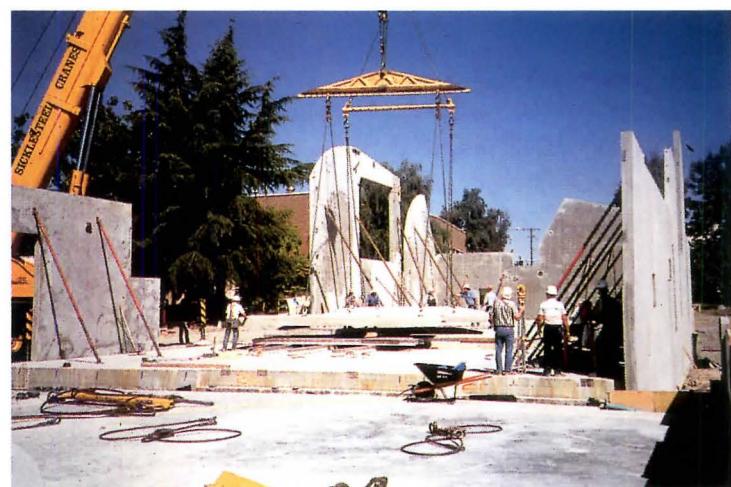


The roofscape looking south (above) and the west elevation of some of the 21 concrete tilt-up panels (below).

Although Kasota stone was originally intended for the chapel's "stone box," he was intrigued by the possibilities of tilt-up, which is less expensive. He was inspired by R. M. Schindler's use of site-cast concrete for his 1922 Kings Road house in Hollywood, Calif. In that project, the spaces between wall panels are glazed, allowing light to filter inside. "The chapel is based on a similar idea; the windows are formed in the interlock of the tilt-up slabs," explains Holl. "It's a pure tectonic expression."

Unlike typical tilt-up construction, which is usually cast on a slab on grade, the chapel's panels were formed on top of precast hollow-core planks over the basement. Since the casting surface deflected slightly, the panels were cast face-up so that any unevenness would be located on their back side and therefore would not be visible. The surface of the wet concrete was smoothed with a steel trowel and finished with an acid-based ochre-colored stain.

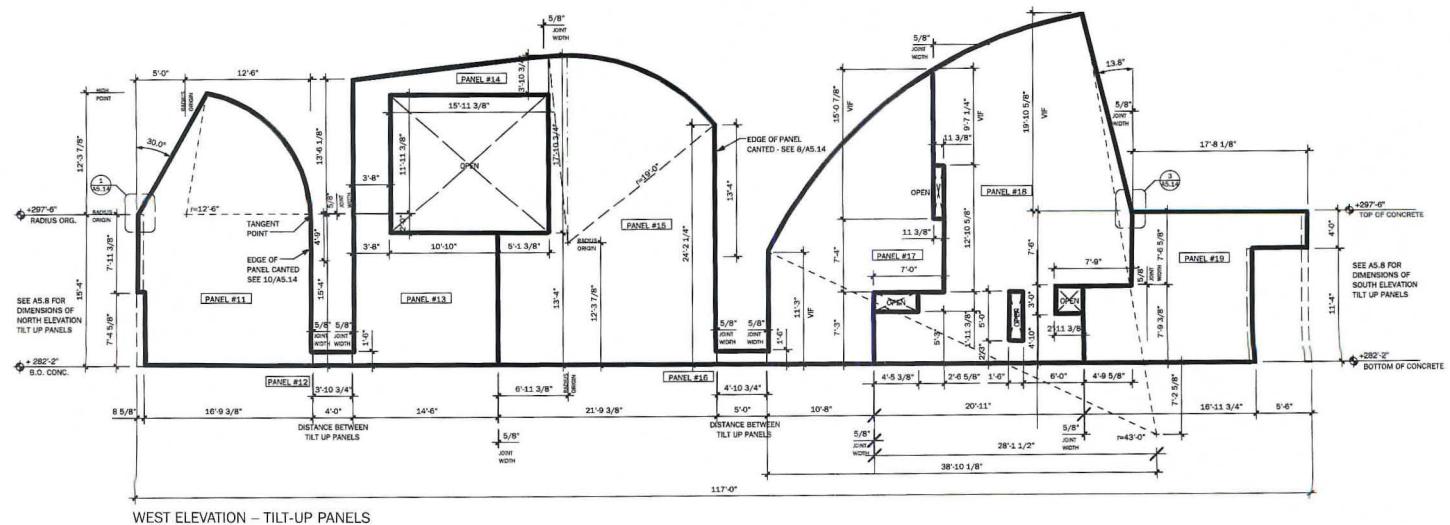
Because of the limited area available for casting, the panels were carefully laid out puzzlelike on the chapel floor. The bottom of the unfilled reflecting pool was also used as a casting area. Since the panels were cast wherever they fit, they couldn't simply be jacked up into place. Instead, the 8- and 10-in.-thick panels—some weighing as much as 78,000 lbs—were picked up, rotated, and positioned by hydraulic crane.

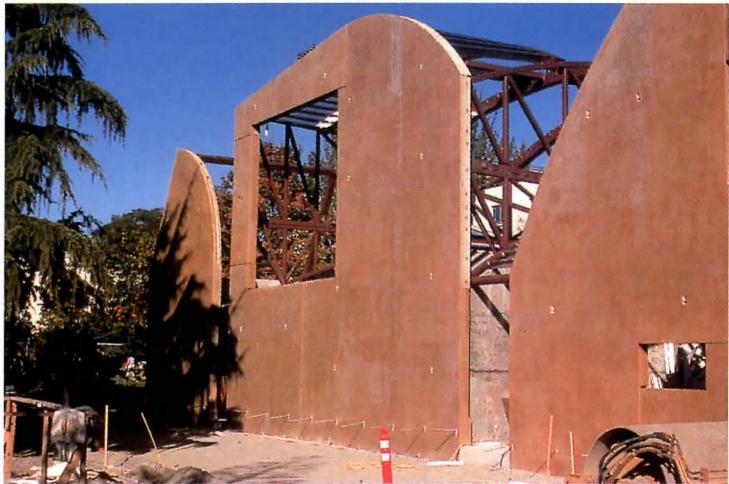


Panels were picked up flat by cables attached to at least four support points on the upper and lower portions of their face. Two cables were then attached to the top edge of the panel before the cables on the bottom portion were released, allowing the panel to go vertical. Since the panels interlock, proper

sequencing was essential. The process also demanded precision with the crane so that edges were not chipped or cracked. "We handled those panels with kid gloves," says Toher.

To cover the holes left on the front of the panels by the pick-up points, Holl's office designed cast-





bronze point-plugs. After the first designs were rejected as "too potatolike," artisan David Gulassa cut a fishing line float in half to create a mold. A close look at the completed project reveals the wood grain of the float. "The plugs serve as traces of the construction method," says Holl, "and cast changing shadows on the walls."

"The most complex aspect of the chapel is the geometry of the structural steel roof framing," says Toher. "It involves 38 tons of steel, and the shop drawings took over four months to draw." The light scoops are formed using a curved steel-tube framing system Holl previously employed on the Stretto House in Dallas. The rolled pipe and tube sections allow elements to attach in multiple directions.

Timothy Bade, project architect at Holl's office, translated the roof form from a cardboard study model

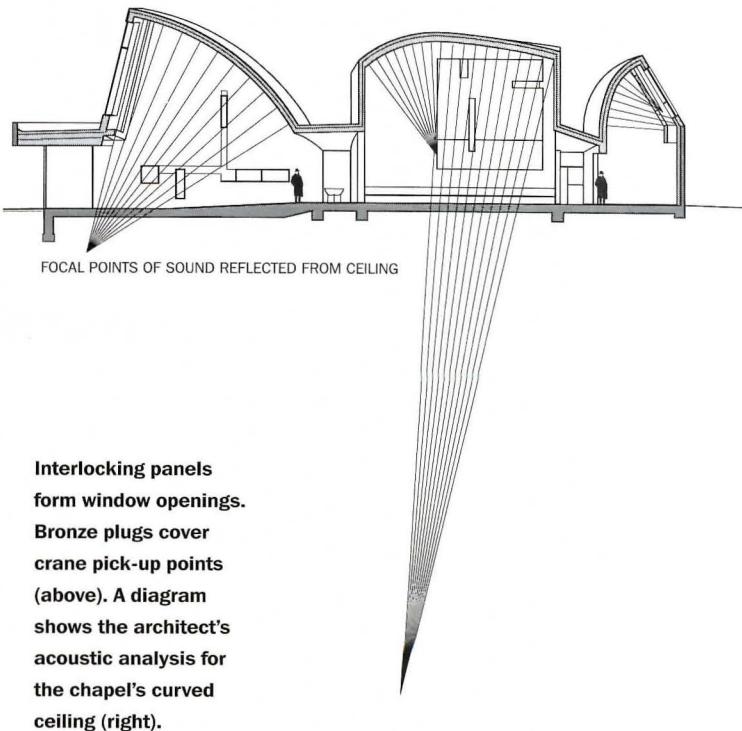
into an accurate computer model by plotting points in space. "What made this project particularly tricky is that the steel [roof] members are rarely horizontal or straight," says Bade. "This resulted in calculating the intersections of angled curved pieces . . . without an orthogonal structural grid while maintaining an accuracy of 1/16 of an inch."

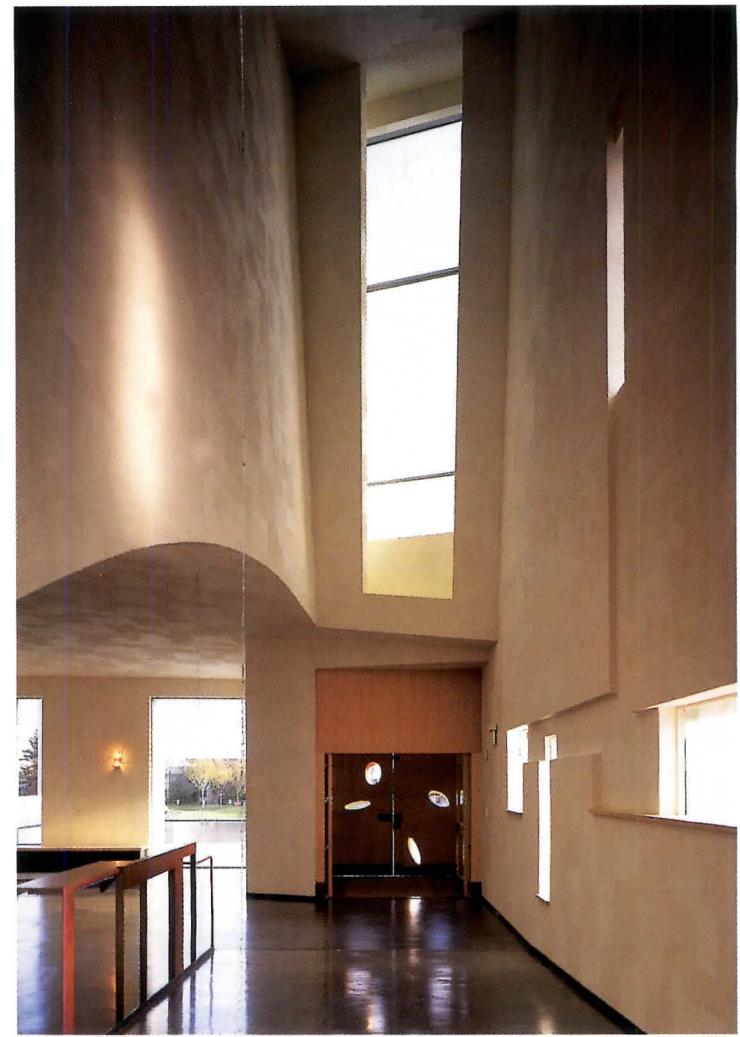
The roof is supported at bearing pockets cast into the backs of the concrete panels. "It's a critical juncture where the two systems come together," says James Graham of Olson Sundberg. "Out of 256 'embeds,' only six were located incorrectly or missing," he says of Baugh's accuracy. For stability, the precast walls were braced until all of the roof's structural steel was in place, constricting work space.

The light scoops and bell tower are clad in Rheinzink, a preweathered solid zinc roofing material. "We

wanted materials that aren't slick or new looking, but show signs of age and history," says Bade. Because of the venting required to keep zinc from corroding, a 10-in.-thick roof assembly was necessary to fit layers of metal decking, rigid insulation, waterproofing, channels, plywood, and felt.

The chapel's curved ceilings were carefully checked during design to ensure that reflected sound would not focus at ear level. "Most of the focal points for sound reflected off of the ceiling fall below the floor level or well above head height," explains Bade. "This allows the reflected sound to be more evenly distributed throughout the space without areas of amplification or dead spots." Complete acoustic isolation of the distinct liturgical zones, however, is not possible without walls. For Mass, voices trained to project don't need to rely on the sound system that was installed just in case. "During hymns the space sounds wonderfully full even when the chapel is not," reports Father John Baldovin.





One of the pair of hand-carved Alaskan yellow cedar doors is oversized for ceremonial entrances (above).

Shaw & Company in New York City [RECORD, June 1992, pages 114–19].

Each of the seven “bottles of light” corresponds to a specific liturgical space, highlighting the episodic nature of the prescribed path through the chapel. In the narthex, where people gather before and after each liturgy, for example, the light is bright and uncolored. On axis with the entry doors, the processional route, another “bottle,” is defined by a high arch overhead and a shallow ramp leading to the baptismal font and the Blessed Sacrament Chapel beyond. The font acts as a hinge between the two modes of worship—communal gathering in the main sanctuary and private meditation in the smaller chapel. It also helps to resolve the conflict between worship-in-the-round and a processional of discrete liturgical spaces. “This plan fuses the two,” explains Holl.

Just beyond the baptismal font, a vista opens into the main sanctuary. Overhead, the ceiling reaches its maximum height of 30 ft and is framed by lower arched areas on either side. The tension between the orthogonal baffles and the sensuous curves of the ceiling creates a feeling of buoyancy as if the chapel is about to float upward. Colors bounce off the highly polished concrete floor in unpredictable ways. Holl had the

the glazed mouth of each light scoop. Drywall-faced baffles coated with complementary Day-Glo colors retract and diffuse the colored light across the curved, stippled interior surfaces, concealing the source of illumination. The effect is reminiscent of Holl’s offices for D.E.

plaster finishers alternate the tooth of the veneer-plaster trowel for a visibly rough texture that catches light in irregular patches.

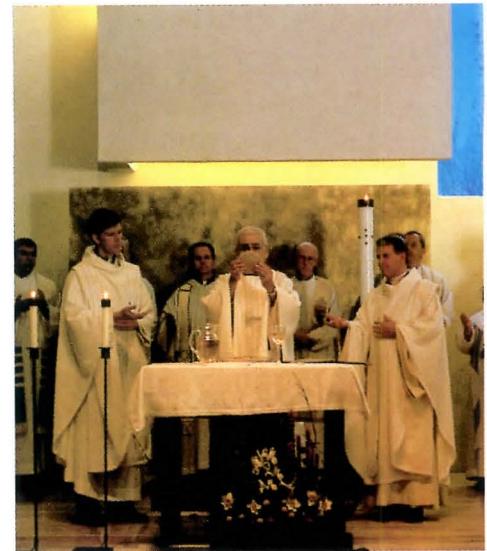
In the Blessed Sacrament Chapel, Seattle artist Linda Beaumont embedded gold-leaf prayer texts in the walls beneath ghostly layers of dripped beeswax; its sweet smell permeates the air. Making furnishings for the chapel within a chapel, Beaumont went beyond SU’s original request, creating an artistic installation of the space itself. In the muted red light (the lens is purple and the baffle is painted orange), the onyx tabernacle containing the Eucharist bread softly glows. A twisted branch of a Madrona tree holds a lantern whose light is visible from busy Madison Street through a Holl-designed fused-glass window.

Similar attention to detail carries through the chapel, beginning with the cast-bronze handles of the cedar doors, which resemble the billowing folds of a priest’s stole. Inside, liturgical furnishings—from wood pews to glass bottles of holy oils—are by Holl’s office and were made by mostly local artisans. “Seattle has an incredible craft (*text continues*)

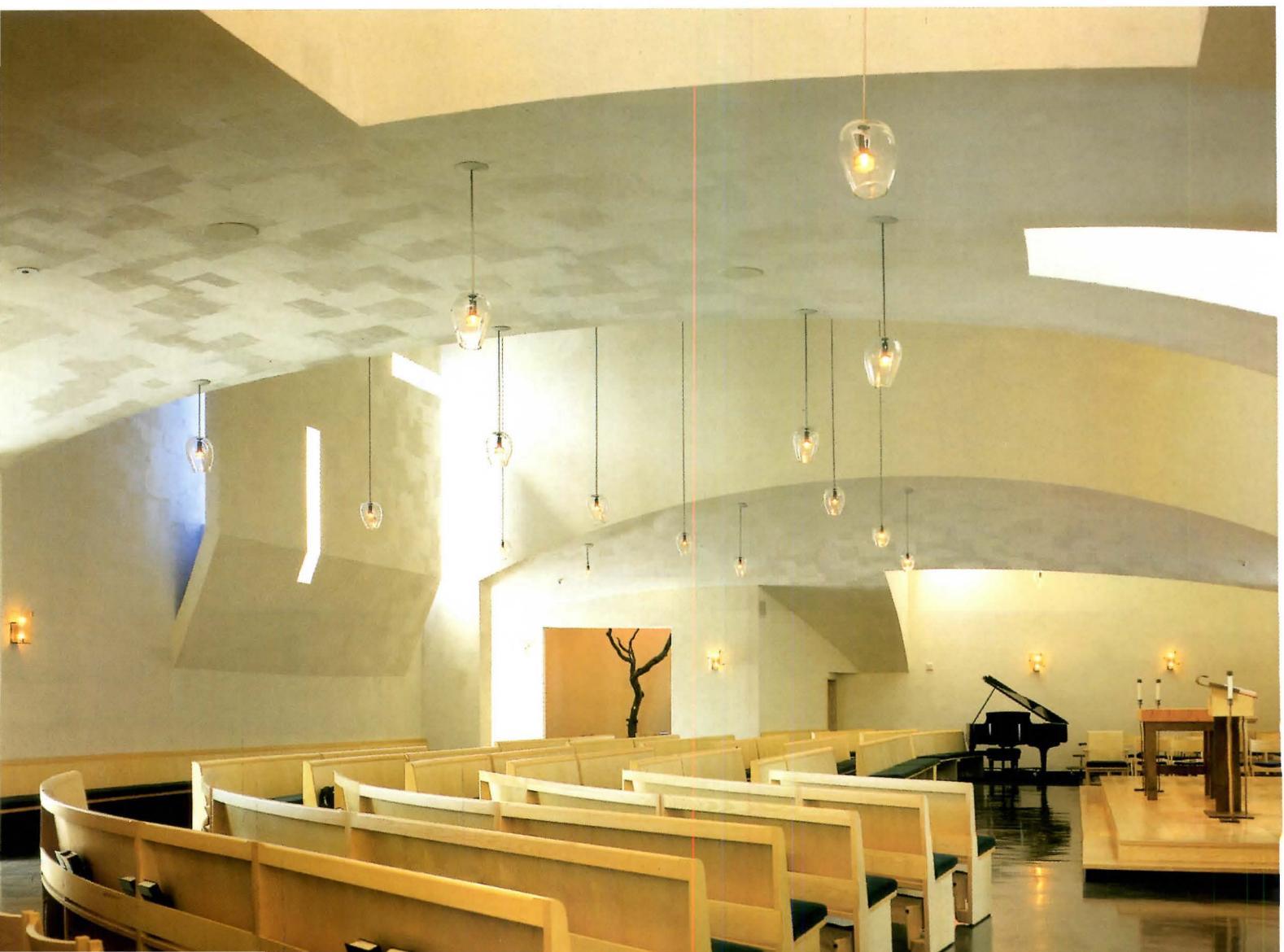




Beeswax walls of the
Blessed Sacrament
Chapel are by artist
Linda Beaumont. Holl's
window has the Seal of
the Society of Jesus. A
Madrona tree symbol-
izes life's struggles.



"We wanted the chapel to be a tactile and multisensory experience," says the Reverend Jerry Cobb of the scratch-coat plaster walls, cedar baptismal font (left), pews (below), and altar framed by gold leaf (opposite and above at the consecration).







The dialectic of colors—one projected through a stained-glass lens and its complement reflected off Day-Glo paint on the back of a baffle—

in the Reconciliation Chapel echoes the back-and-forth between priest and student in St. Ignatius's spiritual exercises.



Holl designed the narthex carpet. Fused glass windows along the processional route are Holl's abstractions of St. Ignatius's four spiritual exercises.

capacity," notes Holl, who tapped local expertise for the blown-glass pendant lights in the main sanctuary and wall sconces throughout the project. To communicate the chapel's complexities to the building committee—and to potential donors—Holl built a model with a mirror hung underneath for a worm's-eye view of interior spaces. The model was purchased by New York City's Museum of Modern Art for its permanent collection.

Bridging the gap between design artistry and constructability was the focus of the collaboration between Holl and his associate architect, the Seattle firm of Olson Sundberg. Holl wanted his office to produce the construction documents and perform construction administration, but SU wanted a more fully involved local firm. In the end, Holl's office produced an unusually complete set of design-development drawings. The collaboration often revealed differences in the two firms' attitudes toward construction expression. "At times we would generate a detail that would not be in the spirit of their vision," says Tom Kundig, an Olson Sundberg principal. "For instance, we would show a reveal where the plaster meets the window frame, but Steven preferred them to butt right up to each other." Certain details proved particularly challenging for all, especially the butt-glazed corner in the narthex and the knife-edge along the top of the precast-concrete panels.

The chapel marks a critical moment in Holl's career as a series of high-profile projects—a major addition to the Cranbrook Institute of Science in Michigan and the Kiasma Museum of Contemporary Art in Helsinki—reach completion. Although traces of past projects are found in the chapel, it is a departure for Holl. For the first time, the meditative quality of light and space that characterizes his work is not just architectural expression but also program. Holl develops the sensory, perceptual, and emotional intentions of a project—what he calls phenomenology—through watercolors that he paints religiously every morning, part of a sketching practice begun as a student at the University of Washington in Seattle.

Holl's return home is causing a lot of excitement in a city that has a large number of architects if not significant new buildings. "The chapel raises the standard for Seattle architecture," claims Douglas Kelbaugh, a local practitioner and a University of Washington professor of architecture. "It should give some of the [area's] Microsoft millionaires something to think about." Just as the Reverend William Sullivan dreamed, the Chapel of St. Ignatius is generating heat as well as light. ■



Manufacturers' Sources

Structural steel roof, tubes: United Iron Works, MKE Detailing
Concrete pigment: L.M. Scofield Co.
EPDM roof: Carlisle Syntec Systems
Zinc "roof bottles": Rheinzink
Sloped glazing: EverGreenHouse
Windows: Kawneer, Fleetwood Aluminum Products
Glass laminating: Northwest Industries
Cast-glass lenses: Doug Hansen
Colored art glass: Spectrum Art Glass
Hand-carved entry doors, baptistry, altar furnishings: Salmon Bay Millwork
Vestibule doors, cabinetwork: W.W. Wells

Door pulls, metal finishes, metal work: David Gullassa & Co.

Integral-color concrete floor: Emil's Concrete Construction Co.

Scratch-coat plaster: O'Malley Brothers' Plastering Co.

Pews, presider's chair, cantor's stand: Solid Visions, Inc.

Exterior lighting: Bega, McPhilben, Norbert Belfer

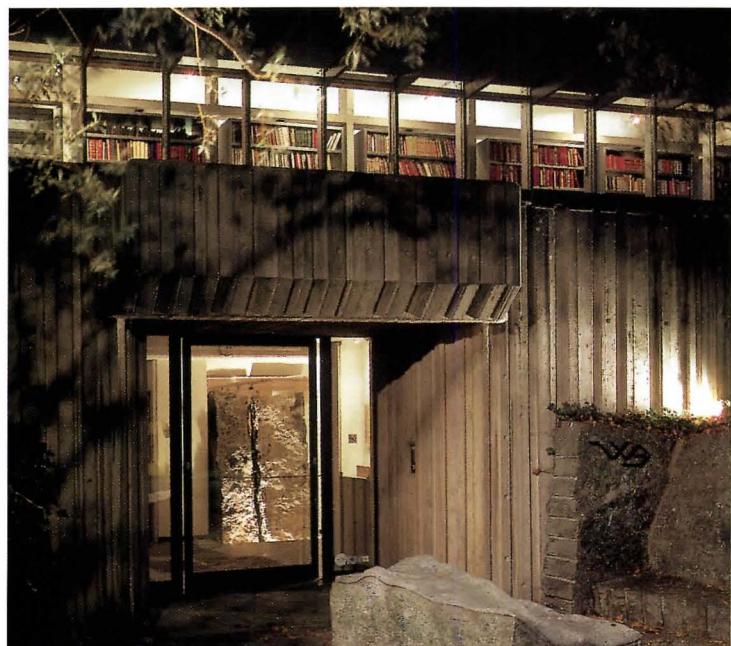
Interior lighting, controls: Halo, Leviton

Custom glass sconces, pendant fixtures: Preston Singletary, Norman Courtney
Narthex carpet: V'Soske



The original one-story library had a tennis court on its roof (opposite right) but now supports a glass-fronted addition (this page and opposite top).

Igloo Architects' second-story addition to the **BIBLIOTHECA WITTOCKIANA** is a family affair with a happy ending.



Michel Wittock has been interested in autographs, rare books, and bookbinding since he was 16, and in the course of the years the Belgian industrialist has compiled a unique bibliophile collection dating back as far as the Renaissance. In 1980 he commissioned a friend, Emmanuel de Callataÿ, to design a single-story museum—the Bibliotheca Wittockiana—for his collection on a plot of land behind the Wittock home in the elegant diplomatic quarter of Brussels. The privately financed museum, one of Brussels' more esoteric institutions, was inaugurated in 1983 and was an unexpected success.

By 1994 quarters at the library were getting increasingly tight and the collection was still growing. So Wittock, who had retired by now, turned to his son, Charly, who was a graduate student at Yale's school of architecture and who had already—at age 29—remodeled a house in Berkeley, Calif., for the writer Alice Walker and started his own firm, Igloo Architects, in New York City.

Asked to expand on what is essentially his father's life's work, Charly was granted less than a lifetime to react. In two weeks he had to

Tracy Metz, RECORD's correspondent based in Amsterdam, is the editor of the feature section of the Dutch national newspaper NRC Handelsblad and writes about architecture, design, and urbanism.

by Tracy Metz

come up with a design to build on top of the existing museum, replacing a rooftop tennis court. The entire process of design and construction had to be finished within a year and a half, as the opening was planned to coincide with an important festival in Brussels.

Old and new architects collaborate

"One of the reasons for the hurry was that I, in fact, already had a design—by the architect of the original building," admits the elder Wittock. "I had simply not stopped to think that I had a son who was now an architect." De Callataÿ, says Charly, graciously agreed to join the design team, which was a boon when it came to the nuts and bolts of connecting the second story to the original one. For example, the existing building's roof is made of concrete slabs, one of which was partially removed for the new stairway, which had to be calculated precisely to fit into the slot.

Charly Wittock flew to Brussels and got straight to work. "During the day I would work on the design and in the evenings we held charrettes with artists, architects, and friends. It was a very exciting and intense time—and we made the deadline." It was during these charrettes that Charly discovered how well he worked with Etienne van den Berg, another young architect—"partly because he can draw and I can't," Charly admits. Since 1996, van den Berg has been Igloo's man in Brussels, while Wittock runs the firm's American office in New York.



Project: Bibliotheca Wittockiana
Brussels, Belgium

Architect: Igloo Architects—Charly Wittock, partner-in-charge; Etienne Van den Berg, project architect; Robert Shepherd (Eyecandy Design), Christophe Bourdeaux, Douglas Gauthier, Corrado Ferretti, Benoît Wittock, design team

Architect of record: Emmanuel de Callataÿ, Bureau d'Architecture et de Décoration—Emmanuel de Callataÿ, partner-in-charge; Jean Coeckelberghs, project architect

Engineer: D.B.D. (Michel David)

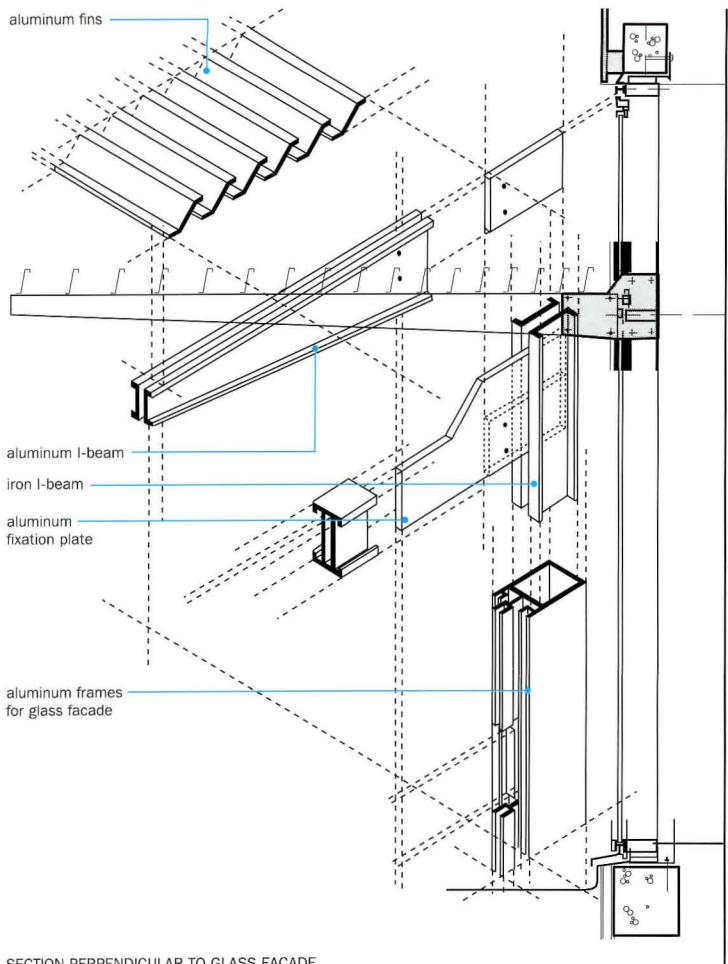
Lighting design: Sign (Guido Gysens)

General contractor: E.G. Co. G. Surkyn & Fils (Philippe Surkyn)



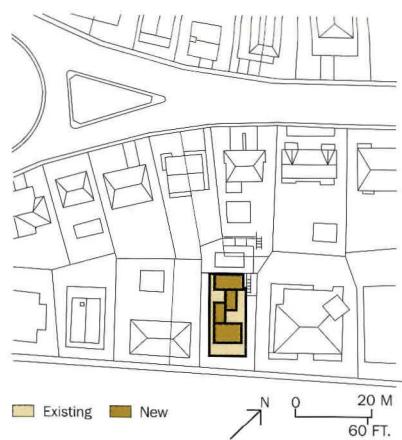
The Brutalist-style concrete library that opened in 1983 now serves as a solid podium for the lighter addition (above). Smooth gray panels of fiber-cement siding

wrap around the walls of the addition on both the outside and inside. Setback requirements and the desire to bring daylight into the interiors led to a series of paved terraces (left).



SECTION PERPENDICULAR TO GLASS FAÇADE

An aluminum brise-soleil (axonometric, left) helps protect the front of the building from direct sunlight. Double-glazing with a UV filter also allows daylight to brighten the reading areas (below).



Igloo's design is different in every way imaginable from that of the original museum. De Callataÿ's building consists of an entrance hall, an exhibition space, a curator's office, a small book shop, and a small room without daylight that's used for bookbinding classes; it is introverted, a vault built to protect a delicate treasure, and therefore admits a minimum of daylight. Despite its Brutalist concrete exterior, the single-story building has a low-key presence, and with its landscaping of trees and ivy might not even be noticed by the casual passerby.

Space is tight and so are zoning laws

For his extension to the museum, Charly Wittock had even less area at his disposal, as new city zoning laws required setbacks of 1 meter at the sides and 2.5 meters at the front. "Rather than repeating the closed box, we 'exploded' it," explains the architect.

The extension, 3,456 sq ft of new construction and 2,700 sq ft of outdoor areas, adds not only space to the museum, but also new programs. A light stairway of steel and tropical efzelia-wood steps leads up from the book shop to the airy reading room at the front of the building and to an open hall with exhibition cases, two small offices on the right, toilets on the left, and an ingenious fold-out café that will be finished when the budget allows (as will the chairs Igloo designed for the reading room).

In the back there is a private apartment, intended to house guest scholars and the festive openings of exhibitions. But the elder Wittock, who now lives in Rome, liked it so much that he uses it as his Brussels pied-à-terre. Both the reading room and the apartment look out onto small courtyards, which bring daylight into all spaces. In the "public"

courtyard behind the reading room a piece of outdoor sculpture is planned.

The glass facade has an aluminum brise-soleil cantilevered off the window frames. In addition to the brise-soleil, the double glazing contains a coated layer that serves as an ultraviolet filter. The setback on the front facade was dictated by zoning regulations, but the result is that the reading room with its northern light seems to have a narrow garden over which the brise-soleil casts intriguing shadows.

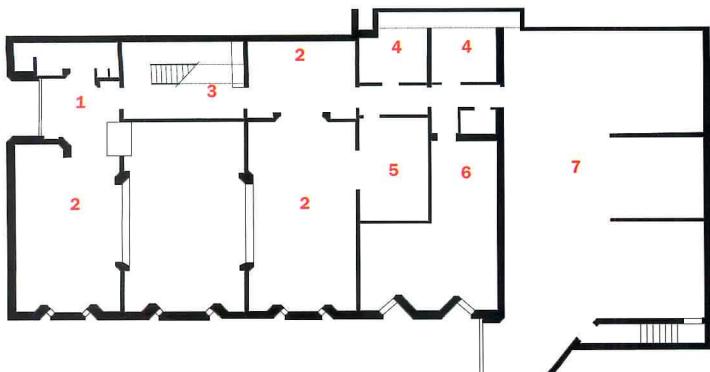
To contrast with the closed facade of the existing building, Wittock wanted to open the new addition up to the outside world so that when passersby look up they see books—not rare books, of course, but catalogues of rare books. Within a frame of exposed concrete, the book-

"RATHER THAN REPEATING THE CLOSED BOX, WE 'EXPLODED' IT," SAYS WITTOCK.

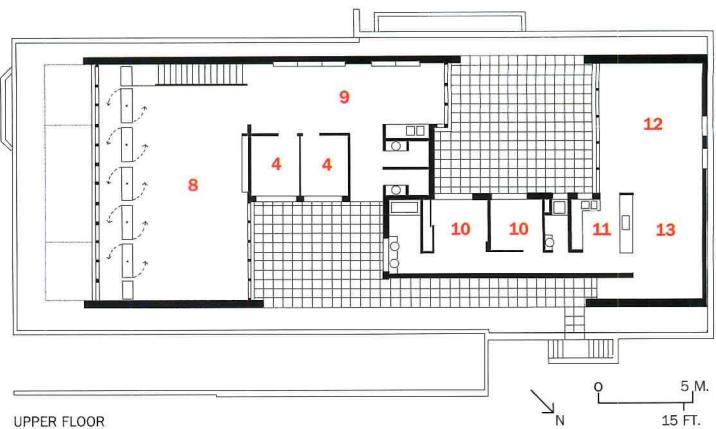
shelves are mounted on ball bearings so they can turn full circle, enlivening the otherwise solemn atmosphere of the reading room. Tongue-in-cheek references to the traditional temple of learning are the lamps, which have green plastic shades and an on-and-off system activated by the heat of one's hand. The tables, also designed by Igloo, have sunken, glass-covered troughs that are now used to display books but will accommodate computers when the library is automated.

Simple, light, and legible

This is indeed a project much in the Modernist vein of "form follows function," with the public spaces of the library larger, taller volumes and



LOWER FLOOR



UPPER FLOOR

- 1. Entry
- 2. Exhibition
- 3. Gift shop
- 4. Office
- 5. Rare books
- 6. Conference
- 7. Storage
- 8. Reading/stacks
- 9. Exhibition hall/café
- 10. Bedroom
- 11. Kitchen
- 12. Living
- 13. Dining



Concrete bookshelves are mounted on ball bearings so they can rotate full-circle, either opening up or closing off the reading room from the outside world (left and opposite). A steel stairway leads to an exhibition hall

(below) where a fold-out café will be built. The 3,456-sq-ft addition has floors made of tropical efzelia wood, and birch reading tables with glass-covered troughs that can accommodate computers.





the private ones smaller and lower. "We pulled the box apart and wanted to keep it as simple, light, and legible as possible," Charly Wittock says. The materials were chosen to enhance this lightness: glass, zinc, and bluestone for the doorsteps. Walls are covered both inside and out with

MATERIALS WERE CHOSEN TO ENHANCE A SENSE OF LIGHTNESS: GLASS, ZINC, BLUESTONE, AND SMOOTH FIBER-CEMENT BOARD.

fiber-cement board, a smooth, gray material that joins interior and exterior in a continuous flow.

The entire Wittock compound is built on a sharply sloping site, with the family house accessed from the street above and the library from the rue de Bemel below; the height difference between top and bottom is a full 33 feet. As a result, the floor between the old and new levels looks unusually thick. Seen from the lower street, the original concrete building serves as a pedestal for the younger generation's contribution—rooted, ironically enough, in an architectural past that dates back to the early European Modernists.

A client who's proud of his architect

On a recent trip to Brussels, Michel Wittock is ensconced in his beloved library, comprising more than 5,000 volumes and several thousand letters from Belgian and French writers and artists. He looks up from a gold-stamped Renaissance volume to say how delighted he is with the building

his son has designed for him. Later, Charly says, "When I was a child, my father was a distant figure, always more involved with his books than with us. Before he built the original museum, he used our house as a repository for his books. An original edition of a 16th-century French book lived

under my bed! To be honest, we were jealous of the collection, and glad of the space we recovered in our house when he concentrated it all in the museum." Charly Wittock pauses for a moment. "This commission is important to me as a beginning architect. But personally it means much more. It was a way to get to know my father again." ■

Manufacturers' Sources

Fiber-cement panels: Eternit (Efex)

Patio paving stone: VCR (Saxon)

Aluminum windows (large): Schüco
(FW 50 system)

Aluminum windows (small) and

doors: Reynaers (T 131)

Door pulls: Carl F. Peterson (d Line,
Model A3.0)

Finn birch plywood bookshelves

and reading tables: custom by
architect

Halospot AR70 lights: Modular
(Mini Multiple 4)

Ambient lights: Fontana Arte
(Scintilla Plafond)

Ambient lights: Luceplan
(Constanza Sospensione)

Task lighting: Luceplan (Constanza
Terra)

A glazed stair tower gives the 20,700-sq-ft building an outsized street presence. Metal cladding faces a playground (opposite).



It's tough, it's small, but this PHYSICAL THERAPY BUILDING helps a college face a future of tumultuous change.



The Physical Therapy Building at the Philadelphia College of Pharmacy and Science (PCPS) is only 18 ft wide at the street and encloses just under 21,000 sq ft, but a lot was riding on it. Its construction represented a renewed commitment by this small (2,000-student), specialized private college to revitalize a physical plant that some argued didn't deserve the attention, and a commitment to a city and a neighborhood that critics said was too unstable to attract top students.

The commitment didn't come easily. The college, founded in 1821, not only had a long history in Philadelphia (moving to its present site in 1928), but had forged affiliations to the region's many pharmaceutical giants and the city's vast medical education infrastructure. (Philadelphia has more medical-teaching universities than any other city.) It is the oldest and among the most prestigious of pharmacy colleges, graduating names long familiar from their appearance on billions of prescription bottles: Wyeth, Lilly, McNeil, Lambert, Burroughs, and Wellcome.

On the other hand, PCPS's 14 buildings could hardly be called a campus. The college is all but invisible to visitors and passersby: parking lots face Woodland Avenue, the busy arterial that splits the college, while buildings turn inward. Narrow pathways link the hodgepodge of buildings and cross Woodland Avenue at the middle of a busy block. Many of the buildings are architecturally undistinguished, are poorly adapted to current and future needs, and have significant maintenance requirements.

by James S. Russell, AIA

Many within the college, and some of the institution's trustees, saw Philadelphia as a problem. The campus, in a neighborhood built up in the 19th century, is at the confluence of a declining industrial zone to the southeast, a growing institutional district to the northeast (including the University of Pennsylvania and Drexel University), and a mix of residential and commercial blocks—some of it stable and middle-class, some of it scarred by disinvestment and abandonment.

These physical plant deficiencies and the standard inner-city woes—fear of rising crime, declining city services, and a high tax burden—drove some trustees to suggest a move. “They asked me,” explains college president Philip P. Gerbino, “if you had \$50 million or \$100 million to do it, would you move the college outside of the city?” The question came at the time Gerbino was being considered for his current position. He said he couldn’t support a move. “We’re part of West Philadelphia and we’re part of Philadelphia, so it’s important to stay here.” He got the job and with it the commitment to revitalize the curriculum and the campus to prepare students for a health-care landscape that is in the midst of tumultuous change.

Building a small first step toward a broad new campus vision

The Physical Therapy Building is the first tangible result of the college's new direction. But the institution not only had limited physical expansion options, it had never previously had any use for architecture as an expression of a vision or identity.

The 200-ft-deep site was hardly ideal. Indeed, Mellet Architects, the designer ultimately chosen to do the building, initially recommended against the location because of the cost of demolishing an abandoned loft building and the logistical costs of erecting a new building within such tight confines. The site, however, was the only land the college could readily obtain to expand the burgeoning physical therapy program. Hastening the decision, structural deterioration of the loft and recurring flooding

Project: Physical Therapy Building
Philadelphia, Pennsylvania

Owner: Philadelphia College of Pharmacy and Science

Architect: Mellet Architects—Yann Mellet, principal; Greg Chiselko, project architect; Ginger Kindred, Sandy

Lichtenstein, Claudia Richardson,
Keum Pyo, project team

Engineers: Michael Beach (structural);
Dangovitsky Kholer (mechanical)

Contractors: Henderson Corporation
(general); Welsh Waymar (HVAC)

threatened adjacent 4500 Woodland Avenue, a warehouse converted to PCPS classroom use. Obtaining the site through a sheriff's sale cleared the way for the project.

A collage of issues molded into deceptively simple form

Mellet Architects, a five-year-old firm, has completed few buildings, but Yann Mellet, its principal, gained the college's confidence through a series of smaller projects. Mellet was able to apply experience (garnered in a variety of large firms prior to founding his own) to do such essentially problem-solving projects as the bare-bones, \$40-per-sq-ft conversion of

THE PROGRAM WAS SIMPLE. ITS REALIZATION, IN A SITE-FILLING, SLABLIKE BLOCK, IS DECEPTIVELY SO.

4500 Woodland and the remodeling of spaces within Griffith Hall, the college's equivalent to an "old Main," into traditionally styled but audio-visually sophisticated lecture rooms.

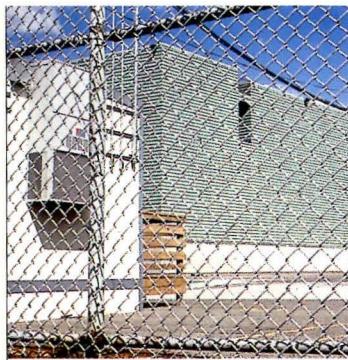
The program—offices and classrooms—was simple. The realization, in a site-filling, slablike three- and four-story block, is deceptively so. In plan, it's a single-loaded corridor, but Mellet molded the form and elevations to meet numerous and at times conflicting criteria. He describes his charge as, "Give us as many classrooms as we can get." In the process of fitting program to site, the mix of offices changed, and classrooms went from eight to six, but labs went from two to three.

On the southwestern side of the site is a playground for a public school, the quality of which is a key neighborhood concern. Mellet met

with representatives who asked (as PCPS did) that the party wall neither be too intimidatingly severe nor a magnet for graffiti. For code reasons, Mellet couldn't punch windows at the lot line, so he carved recesses, permitting limited window areas. He felt he couldn't add many because the recesses deprived the building of valuable floor area, and more west-facing windows would have exacted heavy energy penalties in a structure with such an unusually high proportion of perimeter to interior. He lined the playground-facing base with an undulating chain-link fence as a whimsical graffiti-prevention measure. The chain-link also screens street-level glazing that pours light into ground-floor offices that would otherwise not receive any.

By setting a single-loaded corridor to the north, which could be extensively glazed with little energy penalty, classrooms could borrow light. Mellet and his team built numerous study models to make this prominent elevation more expressive. A glass-block-clad street-facing exit-stair tower became a glowing beacon. Mellet punctuated the predominant horizontal glazing by applying a projected square glazed in a vertical pattern. It marks the location of a special third-to-fourth-floor stair (opposite top). He further modeled the slab by pulling out the innermost exit stair and cladding it in metal siding. A metal-framed trellis civilizes a small, rooftop exterior space. It also visually caps the building and can hold banners announcing major college events.

The long elevation's big-scale gestures offer a fresh, lanternlike symbol of the college to drivers approaching Woodland Avenue from either direction. Its layers of commercial-building materials and patterns pick up the heterogeneous nature of the surroundings, offering a reading that can be appreciated by students and staff day after day. (*text continues*)



P R O C E S S

While the Physical Therapy Building is a beginning, the campus master plan addresses the environment of chain-link fences and parking lots that makes the campus virtually invisible.

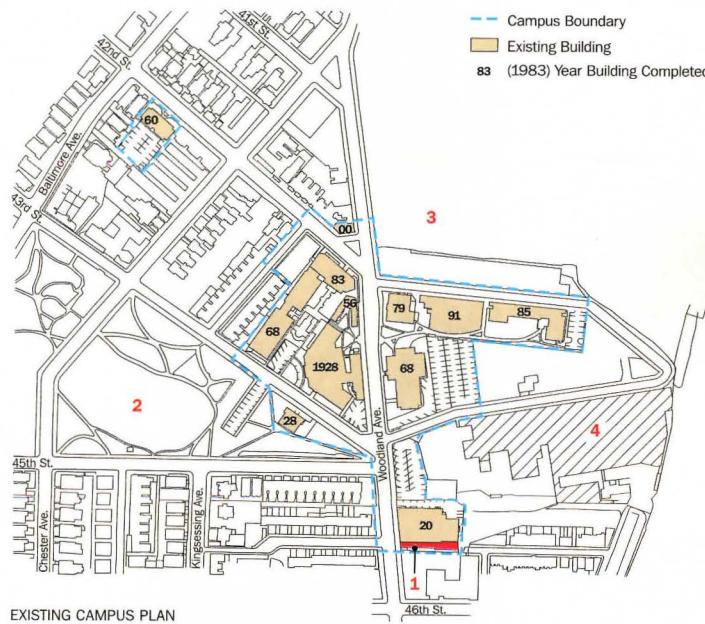


Finding room to grow in a complex urban environment is the challenge facing the master plan prepared for the Philadelphia College of Pharmacy and Science. The institution is not only on the verge of becoming a university, it will likely change its name to reflect a much-expanded mission. Besides training pharmacists, the college's historic mission, it already offers programs for physician's assistants, occupational therapists, physical

therapists, and health psychologists. But as the health-care economy is remade by technology and new managed-care methods, the college is redefining its mix of programs and building new partnerships, not only with other local health-care institutions, but with pharmaceutical and chemical companies. Hence Mellet's plan proposes new labs and integrated health-sciences facilities. It also proposes placing most new structures on land now occupied by

parking lots and a closed ice-cream plant. It recommends the closing of some streets and design changes to slow traffic on Woodland Avenue (above) and make streets more pedestrian-friendly. New buildings will form quadranglelike spaces around green space as another way to develop a sense of place (with an added sense of personal security). Because it works with the most readily obtainable sites, many of the master-plan moves are pragmatic

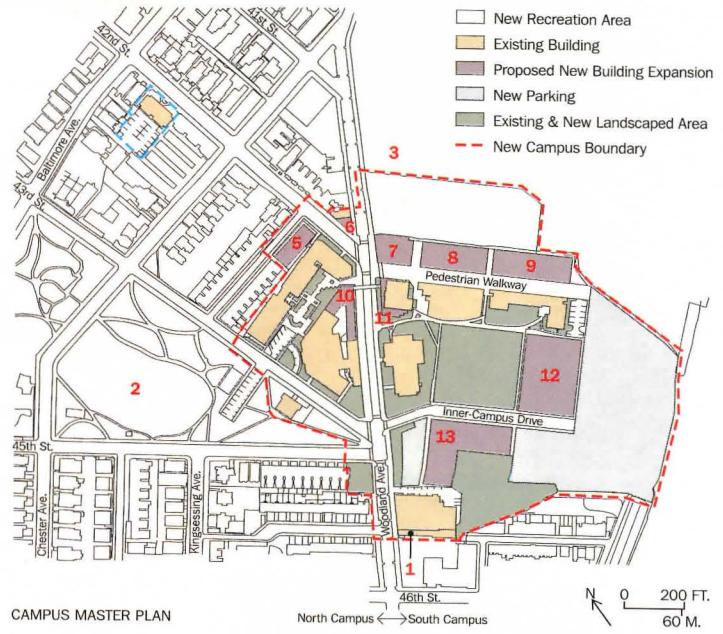
rather than idealized: the leasing of part of a cemetery for outdoor recreation, for example. The college has already forged the equivalent of a business-improvement district with neighboring institutions. Van pools increase access among institutions, and private guards beef up neighborhood security. With such partnerships and an approved master plan, Gerbino is confident he can raise the \$70 million or more he needs to realize this vision.



Existing buildings erected over a 70-year period focused the campus inward on narrow, poorly coordinated passages (plan above). Mellet's master plan moves parking to the

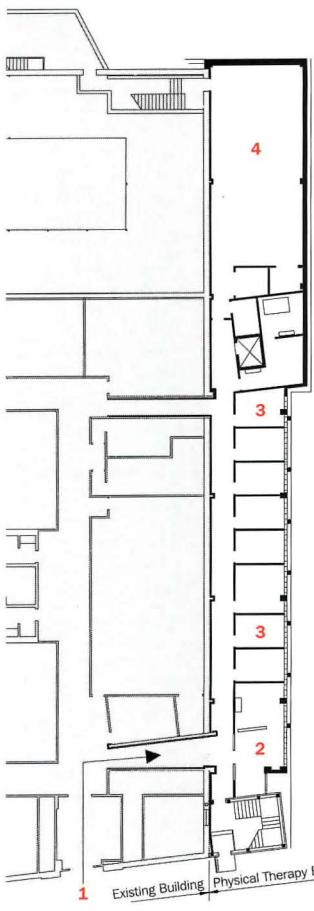
industrial side of the site (right) and creates a new quadrangle, but also increases the college's presence on the spine that divides it, Woodland Avenue.

- 1. Physical Therapy Building
- 2. Clark Park
- 3. Woodlands Cemetery
- 4. Closed factory site
- 5. New research or classroom building
- 6. Annex building renovation/expansion
- 7. New research or resource building
- 8. New dormitory
- 9. Future dormitory
- 10. Klein Hall replacement
- 11. Library expansion
- 12. New athletic fieldhouse
- 13. New humanities or health-sciences building

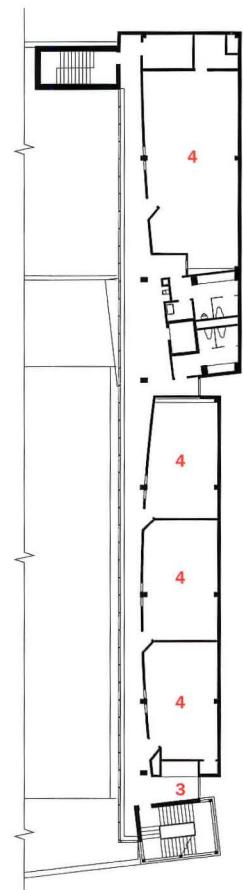


The street-facing glass-block, brick, and limestone stair tower is visually akin to the warehouse-turned-classroom it adjoins.

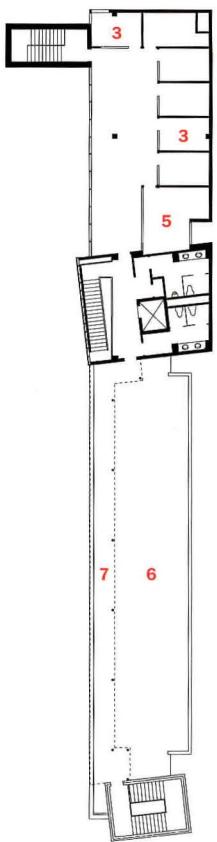




FIRST FLOOR PLAN



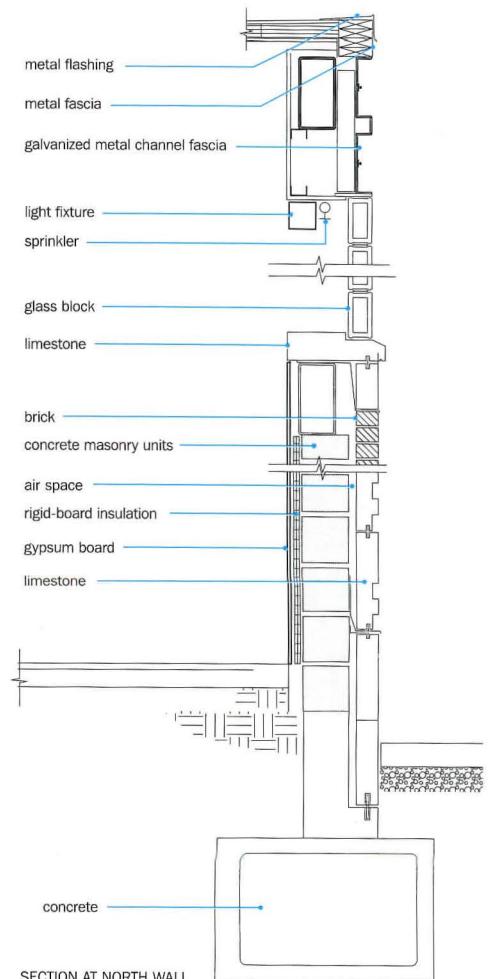
SECOND FLOOR PLAN



PENTHOUSE FLOOR

1. Entrance through existing building
2. Reception
3. Office
4. Classroom
5. Conference
6. Rooftop mechanical
7. Terrace under trellis

A rooftop trellis (bottom left) visually crowns the building. Its leading edge can support banners announcing events. The wall section mixes metaphors: galvanized channels and glass block (industrial); brick and limestone (institutional).



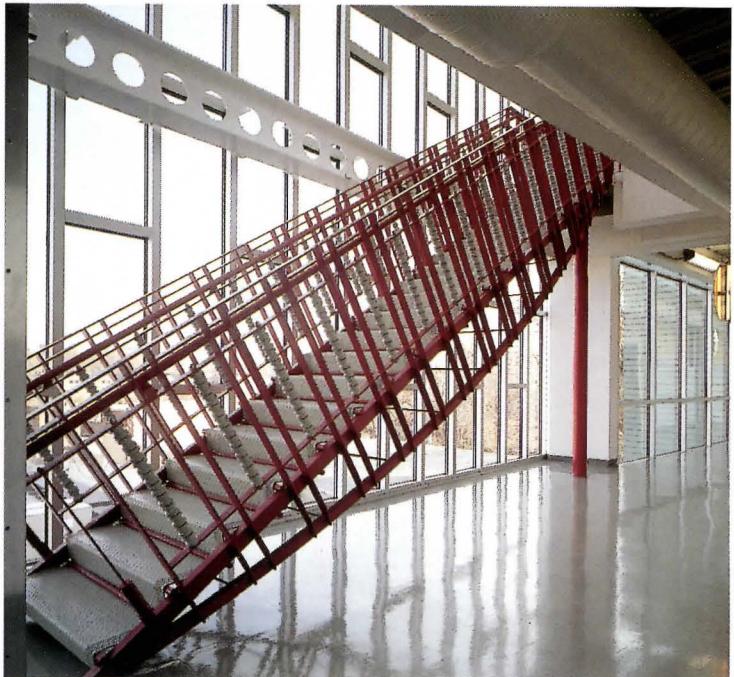


Mellet's custom-designed light fixture (to right and below duct) is complemented by an inexpensive commercial one.

303



Mellet added a note of whimsy by fastening electrical insulators to a stair rail (below right). Classrooms, an office area (right), and exit stairs (left) are light-filled but straightforward.



Preferring the standard to the custom

Mellet kept costs down by working with standard products, limiting complex combinations, and avoiding conditions requiring custom details. The designers minimized complicated intersections by making one long side almost entirely out of a single-source window-wall system; the other is almost entirely clad in metal siding. In the corridor—the principal architectural space—Mellet carefully organized sprinkler pipes and ductwork to eliminate a finished ceiling (opposite). The floor slab visually butts against the glazing, eliminating the need for spandrel panels and sills. The exterior ribbed metal cladding is drawn into the interior where it becomes a wainscot. Inexpensive commercial light fixtures are semiconcealed, while the corridor is enlivened by whimsical lights Mellet's firm fabricated in its own workshop. (Indeed, as a business adjunct, Mellet's firm is designing and fabricating light fixtures and other accessories using such unlikely ingredients as plastic bananas and metal spoons.)

Only at the short street elevations does the building offer a pedestrian-scaled combination of limestone, brick, glass block, and galvanized-channel fascia (section, page 65). Still, hidden foundations, rock, and hazardous materials left over from the site's previous occupant helped push costs up from the targeted \$120 per sq ft to a final \$140.

Mellet admits that those long comfortable with the campus as it was do not love his building. However, students have embraced it, since it offers light and expansive views inaccessible anywhere else on campus. (Even Mellet's renovation of the adjacent warehouse didn't have the bud-

get for punching out windows or skylights.) Its smallish yet attractive public spaces begin to realize Gerbino's expansive and synthetic view of where the college needs to be headed. Since pill-dispensing can readily be replicated by machines, for example, the pharmacist's role is increasingly evolving to become what Gerbino calls a "knowledge purveyor." He sees as crucial using a "facilities vision" to create a new identity for the college. "We're breaking down our one-topic silos and beginning to integrate our sciences—from basic to applied," he says. "Everything has application and connections." Small as it is, Gerbino sees the Physical Therapy Building as galvanizing. He is confident he will be able to raise the money to realize the vision embodied in Mellet's master plan (page 63), making visible the college's (soon to be university's) commitment to its neighborhood and its city. ■

Manufacturers' Sources

Glass block: PPG

Ribbed metal siding (exterior, interior): Robertson Wall Systems

Aluminum-and-glass curtain wall:

Kawneer, PPG (glazing)

EPDM roofing: Carlisle Syntec systems

Fire-rated corridor windows: Ceco

Vinyl-composition-tile flooring:

Armstrong, Forbo

Carpet: Shaw Harbinger

Ceramic tile: Dal Tile

Lighting: American Lighting, Lumax, Mellet Architects (custom fixtures)

Hydraulic elevator: Dover

Maple-veneer wood doors: Mohawk

Metal doors: Steelcraft

Paint: Benjamin Moore

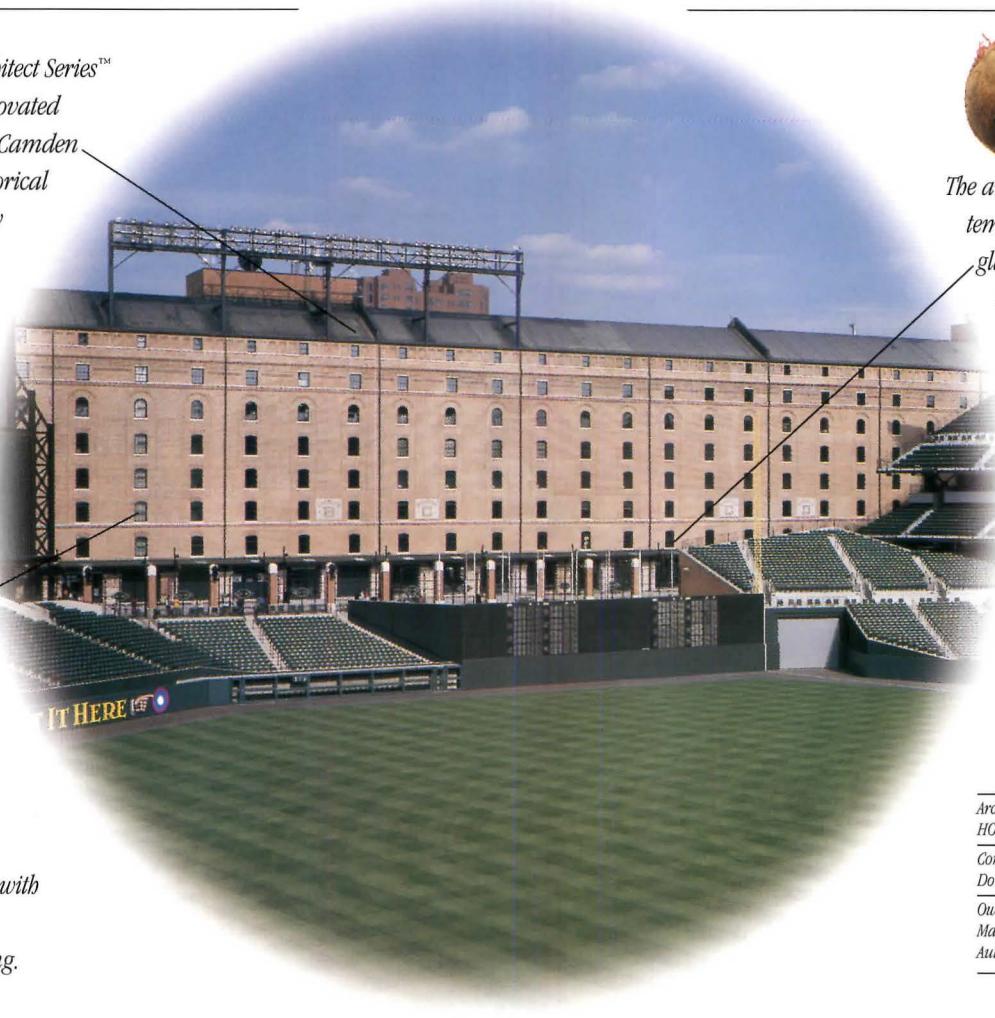
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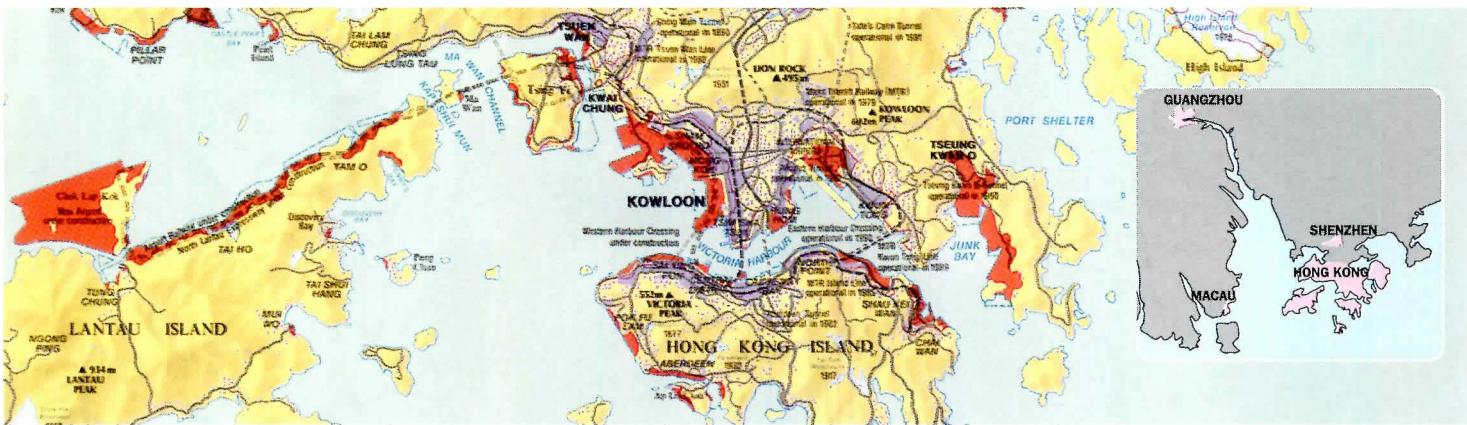
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CIRCLE 24 ON INQUIRY CARD

HYPER GROWTH in South China

FROM THE PEARL RIVER DELTA TO SHANGHAI

by Michael Sorkin



As Benjamin Disraeli famously remarked, "The East is a career." Indeed. Booming China has become American architecture's latest fever dream. The skylines of Hong Kong, Shenzhen, Guangzhou, and Shanghai map a staggering commodification of space: skyscrapers sprout like weeds in a mind-boggling volume of construction. As I walked the steamy streets on a recent trip to south China, every other shop—its doors flung open in a potlatch of BTUs—unleashed a blast of cold air and techno, luring the pent-up consumer demand of decades. On a first trip to China, my own reaction was salivary: show me the moneey!

This astonishing spectacle of hyper-development aroused a colonial fantasy that put me in direct touch with a century's worth of acquisitive incursions. Time to close the Manhattan office and set up out East, down the street from HOK, up the hill from OMA. But, almost as quickly, the guilty liberal counter-reaction set in: what business is it of mine (of ours) to help purvey all this? Should we be abetting the deluge of hermetic, anticlimatic towers, of McDonald's and Haagen-Dazs and KFC, of cellphones and Muzak and Chevy Blazers, the whole apparatus of consumption that seems so tawdry back home? Shouldn't we be telling them there's cancer in Marlboro Country?

The question reminded me of an incident from the early days of

Gorbachev and *glasnost*. I'd been invited to appear as part of a panel of Soviet and American architects to palaver about the coming era of peace and cooperation. As was typical at such events, an American generally took on the role of gently chiding the Soviet comrades that unabashed capitalism was not necessarily a uniformly good thing, that the promise of rapid development had to be taken with a grain of salt.

On that particular evening, this task fell to me and I chose as my cautionary tale an account of the recent opening of McDonald's first Soviet store on a site near Moscow's Red Square. Warming to the chore, I dilated on McDonald's as an instrument of cultural imperialism and global homogenization, as a threat to the environment, and of course as everything nutritionally pernicious.

When I was done, an elderly Russian rose in the audience and addressed me with infinite forbearance and a heavy accent: "Tovarich," he said slowly shaking his head, "to you McDonald's may be a corrupting agent of cultural imperialism but to us . . . it's meat!"

The Chinese have woken up and smelled the bacon-burger in a

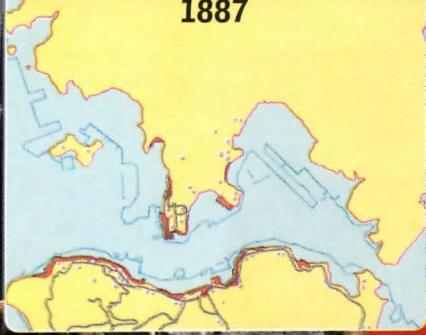
In its rush to build, Hong Kong has been reconfiguring its famous "Fragrant Harbor" since the 19th century. The new Chek Lap Kok airport (red)

area immediately north of Lantau Island on map above) is being built on reclaimed land, as was the existing Kai Tak airport. After more than a century of land

reclamation (maps, opposite), some groups in Hong Kong are raising objections to the latest round of projects that would turn the harbor into a channel.

Michael Sorkin, a contributing editor of ARCHITECTURAL RECORD, was the architecture critic of The Village Voice for 10 years. Currently he has an architectural practice in New York City.

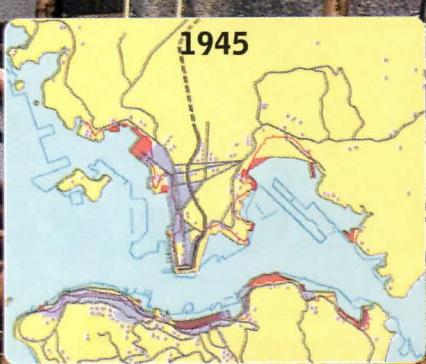
1887



1924



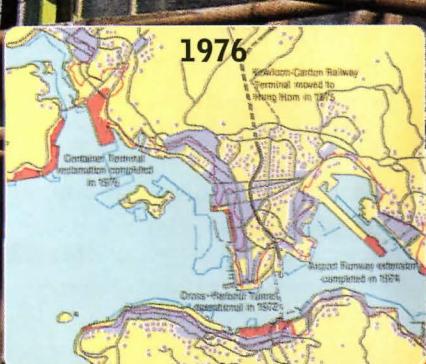
1945

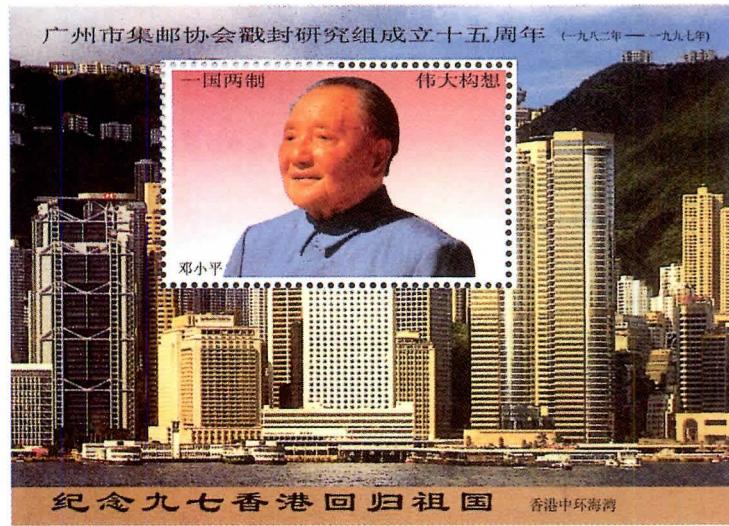


1967



1976





Signs of the times:
commemorative
stamps circulated by
the Chinese govern-

ment show C. H. Tung,
Hong Kong's new chief
executive (left), and the
late Deng Xiaoping

(right) floating above
the Hong Kong skyline.
Boomtown: the Pudong
district of Shanghai is

sprouting skyscrapers
across the Huangpu
River from the city's old
downtown (opposite).

Kohn Pedersen Fox has
designed a tower for
Pudong that will be the
world's tallest building.

big way. Not only has an astounding wave of Coca-Colonization put a McDonald's on seemingly every corner, China is building sprawling McCities that put Los Angeles or Phoenix to shame. The new town of Shenzhen north of Hong Kong, to cite only the most vivid example, grew from a village in 1980 to a city of three million in the span of 15 years, enjoying a consistent 500 percent growth rate in the 1980s. The engine for all this is the country's conversion to what Deng Xiaoping memorably described as "One country, two systems," a more succinct slogan than its wimpy predecessor, "Socialism with Chinese characteristics." Although both slogans try to cannily collapse a contradiction with a phrase, a crucial question lingers: just what, if any, are the Chinese characteristics?

Deng, of course, was proposing the possibility of the coexistence

we understand the world ecologically, in terms of sympathetic patterns of interdependency and delicate husbandings of difference, then all of us have a stake in urban outcomes around the globe, a stake that transcends the routines of profit. Globalism has its own theory of the local, and experience obliges us to be more than a little nervous about the way in which the world economy is influencing urbanism. Ecological insight—thinking globally and acting locally—should cause American architects to ponder long and hard about the energy-sapping, fast-depreciating, jerry-built, carbon-monoxide-laced, freeway-entangled environment we are helping the Chinese to produce, however much they may want it.

One of the hoary chestnuts of classical Marxism is the theory of the stages of development, which describes society's historical trajectory

NOT ONLY HAS A WAVE OF COCA-COLONIZATION PUT A McDONALD'S ON SEEMINGLY EVERY CORNER, CHINA IS BUILDING SPRAWLING McCITIES THAT PUT L.A. TO SHAME.

of command and market economies, overturning the historic idea of mutual anathema that has dominated the geopolitical system since World War II. Countries like China and the Southeast Asian "tigers" represent a version of the once-again fashionable theory of "convergence," the idea that capitalist and socialist systems would ultimately reach the same point, ending class struggle with a whimper instead of a bang. The real issue, though, is not exactly economic: the ultimate hegemony of the market seems all but assured. What is far less certain are the kinds of social, cultural, and especially political institutions that will ultimately emerge.

A visitor to China can scarcely escape noticing the seeming contradiction between economic and political life, the outburst of consumerism and its necessary "freedoms" within a context of political repression. It seems increasingly clear that both the Taipan and the Commissar believe that all social issues are fundamentally economic and that democracy is a hindrance to the ultimate grail of development.

As the world becomes one market, justice and the parity of nations take on an increasingly economic cast: this is called globalism. If

to communist nirvana. The old debate was whether or not it was possible to skip stages, to accelerate, for example, directly from feudalism to socialism without going through capitalism. While the economic and ideological vectors of this construct are now thoroughly moot, it surely has bearing as a model for the environment. It's the burden of the developed world to report our findings and experiences to a society that is in the process of repeating patterns familiar to us and in so many ways regrettable. The hope and frustration at the encounter with cities developing flat-out like Guangzhou or Shanghai is that the opportunity to pursue the next stage of environmental management immediately is lost in the extractive frenzy of the moment.

China is, in many ways, well situated for such a stage-skipping leap. The position of the planner is nearly ideal: the state both owns all the land and licenses the number of residents permitted to live in a given city. This, you might say, is power. However, the key element for the mobilization of this power is lacking internally: money. Because of China's own underdevelopment, the driver for this tremendous growth is foreign

investment and the current strategy for attracting it is a version of the traditional concession. The tithe for access to China's enormous market and labor pool is cash on the barrelhead and it's flowing in like a torrent. The enclaves—by channeling this investment to a limited geographical area (36 percent of all foreign investment currently goes to Guangdong)—create a kind of economic venturi effect, narrowing and thus accelerating the stream. The downside is that investors are in the saddle, giving rise to amazing corruption forced by this imbalance of assets and an eagerness for the transfer of wealth by whatever means necessary. Chinese municipalities wind up not managing growth but dealing for it.

Corruption aside, the official mind-set is not disposed to nuanced urban design. The history of modern Chinese urbanism—like our own—embodies a high level of ambivalence both about the role of the city and about the import of Modernist planning models. The new developments in the special economic zones repeat the arms-length attitudes of the historic concessions, the idea that these places, if useful, were fundamentally alien and had to be isolated.

Post-1949 planning has shown radical swings in attitude toward the city and its role in building Chinese society. Through the early 1950s, official ideology emphasized the city as driver and promoted urban concentration as a means for producing rapid economic results. Within a short span of years, though, attitudes turned dramatically toward decentralization. This was the consequence of a revolution that had been won by the peasants and of an ethos that emphasized the countryside as the source of revolutionary virtue and viewed urban concentrations as consumptive rather than productive. Later, these were joined by a nuclear-war paranoia that prompted industrial dispersal and a de-

emphasis of the vulnerable coast. To their infinite credit, Chinese planners have—through these shifts in policy—managed to create industrial growth without expanding slums. Now, however, as the dominant planning model shifts again—from social welfare back to economics—the idea of the big-city engine and its economies of agglomeration has returned to the fore.

My impression, both from conversations with planners and from English-language sources, suggests that although an extensive professional and scholarly urban discourse exists, it remains highly subservient to primary, economic models. I was unable to discover an

PUDONG HAS BECOME A REMARKABLE URBAN FREE-FIRE ZONE, A MUSEUM OF LATE-20TH-CENTURY EDGE URBANISM.

organized critical, scholarly, or political counterforce to the rapid development paradigm that currently rules. This seems the consequence both of a long history of official strictures on free speech and of another “stages of development” issue. In the exhilaration of the shop-til-you-drop, seemingly automatic boom of the moment, the arrival of the era of liberal anxiety and independence has been further delayed. There are stirrings on the environmental front, but clearly not enough is yet happening on the local and neighborhood levels, and—seemingly—no strong promotion of a longer-term *physical* vision of what might make Chinese cities singular has emerged. In this, the Chinese may have learned from us too well.

This issue of the burden to communicate our own failures becomes especially thorny in matters of culture, where we risk getting





From eclectic Post-modern to cheap Modern, the new buildings rising in Shenzhen cover the full range of architectural styles that can be cribbed from foreign magazines and a plethora of Chinese publications showing American and Western projects. In places like Shenzhen, which was little more than a village surrounded by rice paddies 15 years ago, it's often hard to see what's Chinese in character.

(Shanghai's current rate of growth is a brisk 14 percent) and are being destroyed at a rapid clip: over 16.2 million sq ft demolished and over 100,000 people displaced each year.

In a chat with two well-placed planning officials, I wondered about the disappearance of this texture and heritage and asked whether there was any attempt to keep communities intact. While making all the appropriate noises about the loss of historic, social, and physical textures, they told me that there was no widespread objection to displacement. Like my Soviet comrade years before, they pointed out the obvious. Offered a new apartment with a modern kitchen and bathroom and plenty of space, people leaped at the chance to move to satellite towns a dozen miles from the center. Indeed, the offer of an extra bedroom was strong motivation to move an additional six or seven miles out.

The problems, of course, come later. The satellite towns are regimented, unprepossessing, one-dimensional, and constructed at a scale and increment to frustrate neighborliness. Hilberseimeresque nightmares of parallel slabs, their balconies desperately domesticated with plants, laundry, and caged birds, these new areas are the crucibles—the real melting pots—of the old version of the “new man,” engines for the obliteration of difference at the global scale. Distances tremendously attenuate commuting, adding pressure for automotive solutions. And the redeveloped areas of town are scaled up and discontinuous, valuing the parcel over any sense of continuity, erasing the qualities that make the city particular. This is a problem Shanghai and Guangzhou share with all older cities, finding strategies for the superposition of new modes and patterns for the production of space on a body that could never have anticipated the shock. As in our own cities, the product is sprawl without end and a dramatic loss of the middle-scale.

Shanghai's biggest development is Pudong. Since the days of Sun Yat-sen, Shanghai planners have dreamed of a move across the Huangpu River to claim the territory immediately opposite the Bund and the downtown core. Following the economic liberalization of 1978 and the dramatic experience of the Shenzhen Special Economic Zone, the decision was made in 1984 to perform a similar experiment not simply in the limited area opposite the Bund but over a far greater contiguous territory stretching to the Yangtze—140 sq miles (approximately 70 percent of the area of Hong Kong). Planned only in a general way, flouting the “plan-before-leasing” philosophy that supposedly governs Pudong

into the deepest, most spiritual forms of colonialism. The new building I saw is not simply the same multinational architecture one might see anywhere, it is rapidly destroying the historic textures of the cities in which it rises. For instance, the *longtang* is the traditional form of urban residence in old Shanghai. Developed around the beginning of the 19th century and passing through a complex evolution, these rowhouses combine Chinese and European features and line the narrow lanes that characterize the pattern of city. This structure of houses, lanes, neighborhoods, and districts helps give old Shanghai a legible and tractable sense of locality and of community, however spatially, structurally, and hygienically inadequate many of the structures may be. Of course, lying at the center of town, they're tremendously vulnerable to development pressure



No time to waste: throughout much of south China and Hong Kong, construction goes on around the clock (left). Still growing: photomontage of Hong Kong's skyline shows a proposed development with a tower by Cesar Pelli and ferry terminal by Anthony Ng (opposite).



has become a remarkable urban free-fire zone—a museum of late-20th-century edge urbanism and of the Postmodern skyscraper, the Arquitectonica-esque tower next to the Foster-esque next to the Pelli-esque, not far from the Portman-esque. Added to this is another version of convergence, the ragged space and the wild semiotic encrustation of bright lights and signage, of overhead wires and traffic that make up the local boomtown patina. It's no news in L.A. or Houston that this Asianized version of modernity is reimported to its source: *Blade Runner* got it right.

Touring Pudong or scratch-built Shenzhen, a number of truths become evident. The first is that the general, primarily land-use and infrastructure style of planning, coupled with a proclivity to global Modernism, yields a totally generic condition. It's striking how marginal the particular differences among the dozens of skyscrapers are. Whether

nomic wonder that envelops it. And, in an environment in which all is new, the simulacrum of old Europe is as close as the city gets to having a historic district. Who would have thought that the Long March would finally lead to Orange County?

The model for all of this—not to mention the major source of funds—is Hong Kong. More than any other city in the world, Hong Kong produces an architecture of extraction, which understands real estate strictly in terms of the production of extent. Hong Kong's endless towers are as legible as bar graphs. Already abstractions, their details are trivial, just decorating the primary signifier. In its endless manufacture of space, the city fills in its harbor, its greatest visual and public asset, to increase the availability of prime, harbor-front land for yet more towers. Even the new airport, constructed on an artificial island and the largest construc-

HONG KONG'S ENDLESS TOWERS ARE AS LEGIBLE AS BAR GRAPHS. ALREADY ABSTRACTIONS, THEIR DETAILS ARE TRIVIAL, JUST DECORATING THE PRIMARY SIGNIFIER.

produced by international big offices or just local big offices, the variation in quality is entirely a matter of narrow connoisseurship: the formal convergence is almost total. Just as the buildings from the American firms spring from images clipped from *Progressive Architecture* (the current crop of buildings have been in the pipeline for a while), so the indigenous product is a similar synthesis of necessity and image. Chinese architectural publishing is largely devoted to either technical literature or pattern books, and I was not surprised on a visit to a large Shanghai design institute to find an architect with one eye on his workstation and the other on a book opened to the KPF curtain wall he was cribbing. Soon all differences will be gone: already the copies of *Domus* are beginning to appear on the desktops. And everyone's on the Net.

Structurally, Pudong is an enclave, both physically and legally, another "concession," a wealth machine. Such an instrumental view yields the city as theme park. And the theme is money. This is more than a metaphor: the forms of wealth are produced historically, within the context of culture. Driving into Shenzhen, one sees an enormous reproduction of the Eiffel Tower, centerpiece of the "Wonders of the World" theme park which dances a tango of reciprocal certification with the eco-

tion project currently under way on the planet, may ultimately just represent a strategy for reclaiming exhilaratingly central Kai Tak for development. Hong Kong never blinks. For aviation safety the neon signs atop the towers burn without cease—Soup Noodle and Kirin Beer endlessly illuminate the night.

The skyward growth of Hong Kong is, at least in part, a function of shortage. Hong Kong Island, the core of the metropolis and the territory originally ceded to the British following the Opium Wars, is hemmed by circumstance—harbor on one side and unbuildable peak on the other. Like Manhattan, the compressive linearity begs verticality and Hong Kong's beautiful thicket of towers is the result. Locality springs from the interaction of stunning topography, lush vegetation, marvelous coastlines, dynamic economy (from 1948 to 1986, the number of registered factories in Hong Kong grew from 1,266 to 146,623), and the habits and jostle of culture. This physical autonomy, though, belies the growing continuity between Hong Kong and its Pearl River Delta hinterland, another shortage-induced relationship the Chinese leadership hopes to extend by stages to the rest of the country—as rising costs seek cheap labor in the interior.

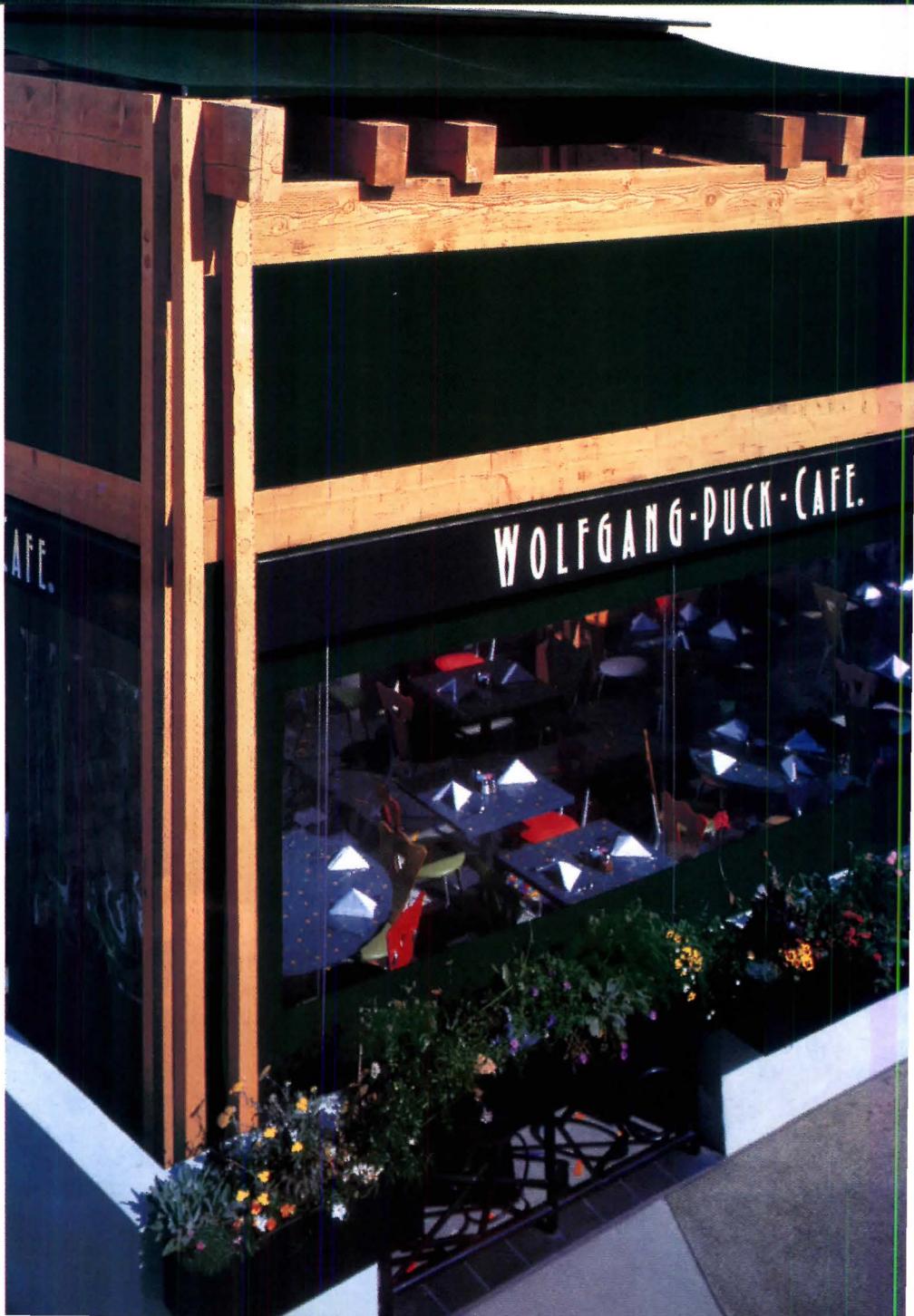
Clearly, what has mesmerized China (*text continues on page 151*)

AS ALL GREAT PRESENTATION

The Wolfgang Puck Cafe's® latest locations are indeed a feast for the eyes. Even before you step inside to see the stunning tile mosaics and the signature chairs, you're greeted by colorful awnings, hanging panels, umbrellas and silk-screened valances made from delectable Sunbrella® fabric.

To set the scene for an explosion of radiant interior colors, award-winning designer Barbara Lazaroff chose bold hues like yellow, red, blue, green and black for exterior use. And she wasn't just drawn to our wide selection of shades.

She also knew that our solution-dyed colors wouldn't fade. She liked the traditional woven appearance that also makes our fabric highly breathable and energy efficient. Plus, she



REPORTS from the PACIFIC RIM

ARCHITECTS FIND BUSINESS FROM INDONESIA TO CHINA.



Five years ago, when ARCHITECTURAL RECORD started its special coverage of the Pacific Rim, one of the great building booms in history was revving up. Sure, Japan's "bubble" economy had just burst, and Australia and New Zealand were wrestling with stubborn recessions. But nations throughout Asia were frantically putting up skyscrapers, building new roads, and turning rice paddies into satellite towns. It was both exhilarating and frightening. Today, some of these same countries are discovering that they've built too many office towers (and not enough housing); that no matter how many roads they've laid, traffic has gotten worse (and so has mass transit); that foreign debt and questionable construction loans are undermining their financial systems (even though building continues). Corruption, a lack of coordinated planning, and widespread damage to the environment have all cast shadows on the present and the future. But recent conver-

sations with architects in the region indicate that design professionals in Asia understand the key issues: housing, public transportation, and sustainable development. While they often feel helpless in the face of momentous change, these architects and planners are asking the right questions. They won't always come up with the right answers or be able to implement their solutions. But knowing what to ask is a good first step. The knowledge gained over the last five years should help countries like the Philippines and Vietnam that are just now gearing up for major development, as well as countries such as Thailand and Korea that are coping with the aftereffects of rapid growth. Finding ways to integrate historic preservation with modern growth and retain local character in the face of global forces are two of the challenges architects must address today. What's also needed is for information and expertise to flow freely so everyone can learn from the mistakes and successes of others. The pages of RECORD are one place where this exchange of ideas, approaches, schemes, and experiences can take place.—Clifford Pearson

Asian building boom
(above, left to right):
Baiyoke II Tower in

Bangkok by Aroon
Chaiseree; Central City
2020 in Bangkok by

RTKL; Fruit Museum,
Yamanashi, Japan, by
Itsuko Hasegawa.

CHINA

GDP, 1996: \$662.8 billion

GDP growth, 1996: 9.7 percent

Projected GDP growth, 1997:

9.3 percent

Inflation, 1996: 8.3 percent

Population, 1996: 1.23 billion

Economic overview: Defying all predictions, China has engineered a soft landing for its economy. With growth remaining just below 10 percent, the Chinese authorities have reduced inflation from 24 percent in 1994 to single

digits last year. But while slower capital investment has helped bring inflation and the GDP growth rate down, the lack of funds for new construction has hampered designers and construction companies alike. The country is littered with unfinished, bankrupt building projects started in the boom days of 1993–95. Luxury developments (including villas and sometimes Class-A office buildings and high-end retail) are frowned on by planners these days.

The new Shanghai airport in Pudong.



The death of senior leader Deng Xiaoping after a long incapacitation has raised the stakes for the current leadership, which faces a series of challenges this year. President Jiang Zemin, Deng's handpicked successor, must oversee the return of Hong Kong to China this month, then fight to keep control over the direction of the country and key personnel changes at a once-every-five-year Communist Party Congress in October. Jiang travels to Washington for his first summit meeting in November, by which time he hopes to have the problems of World Trade Organization entry and the United States' unconditional extension of "most favored nation" trading status solved.

Where the action is: In terms of overall development, Shanghai is still the hottest region in the country. Guangdong Province (including the city of Shenzhen), on the other hand, is not attracting as much attention as it had in recent years. Development has also slowed down in Beijing, in part because of the government's strict enforcement of planning rules. While still encouraging development on the coast, the government is putting more emphasis on interior provinces, offering favorable tax policy for investment there. Reflecting this shift to the interior, China has raised Chongqing's status to that of an autonomous city, putting it on the same level as Shanghai, Tianjin, and Beijing. A new railway, the Nankun line, has also been built in the southwest connecting the Mekong Delta region to the South China Sea.

Residential market: Housing sales are poised to rebound, even as the office-building market remains in the doldrums in major cities. Among 16 sample cities surveyed during the first quarter of this year, nine showed increases in housing sales, with Chongqing, Shenzhen, and Xian having the biggest rates of growth. Chongqing, after being lifted to municipality status, climbed significantly, while Shenzhen, thanks to the booming real estate market in neighboring Hong Kong, also saw housing grow. In Shanghai, city officials have responded to criticism that they are only interested in attention-grabbing office buildings and have started building a number of residential projects for the city's 16 million residents. The country's year-long effort to stimulate the family housing market with tax deductions has helped push prices down. And more home buyers are expected to enter the market this summer when the central government announces new policies on providing mortgages.

Office market: The office-building market weakened this spring with a continued nationwide decline led by Beijing, Shanghai, and Tianjin, all of which logged double-digit plunges in their real estate indexes. Chongqing is the only exception in office building sales; it surged 22 points.

Corruption: China's construction industry continues to be hampered by

corruption, resulting in shoddy quality and fatal building collapses. Figures from the Chinese equivalent of the attorney general's office show that 27.6 percent of economic crimes in China last year involved the construction industry. In Shanghai alone, 39 of the 77 major bribery cases in 1996 involved construction firms. But graft is only part of the problem—a lack of comprehensive laws and regulations has resulted in chaos. For instance, says one disgruntled architect in Beijing, domestic design firms are not allowed to demand high-quality foreign construction materials in their buildings. This architect says that fierce competition, the poor quality of Chinese building materials, and weak supervisory mechanisms have all contributed to the industry's woes.

Taking off: Dozens of airports are being expanded, planned, or built throughout the country, but the two that are getting the most attention are the new Pudong International Airport, planned for Shanghai, and the expansion of Beijing Capital International Airport. After an international design competition, Aeroports de Paris, headed by architect Paul Andreu, in association with the East China Architectural Design Institute, won the Pudong commission, the first phase of which is scheduled to open in 2000. In Beijing, the new 2.33 million-sq-ft terminal, designed by Toronto-based Bregman + Hamann Architects (B+H) and the Beijing Architectural Institute of Design, is the largest airport expansion project in China. The first portion of the project, which will eventually include 26 international and seven domestic gates just a couple of hundred yards east of the old terminal, should be completed sometime in 1998. The entire expansion is expected to be finished by the fall of 1999. B+H has stayed busy in China, also designing the 1.2 million-sq-ft Xiamen Gaoqui International Airport and the 918,000-sq-ft Phase I of the Haikou Meilan Airport on Hainan Island.

Key projects: Shanghai already has 53 buildings of more than 30 floors, and a total of 411 buildings standing between 20 and 29 stories. Yet construction goes on, with Skidmore, Owings & Merrill's Jin Mao Building and Kohn Pedersen Fox's World Financial Center vying for tallest-building-in-China honors. The Jin Mao Building, which was recently topped off, stands 1,388 ft (420.5 meters) high. The Shanghai Huadong Architectural Design Institute and the Shanghai Design Institute also worked on the building, which will include a Grand Hyatt hotel on the top 24 floors and office and retail space below. Just a stone's throw away, Japan's Mori Company has started building the KPF-designed World Financial Tower, which will be the world's tallest building at 1,518 ft (460 meters) when completed in 1999 and will cost around \$1 billion.

Joe Studwell in Beijing

INDONESIA

GDP, 1996: \$218.5 billion

GDP growth, 1996: 8.1 percent

Projected GDP growth, 1997:

8 percent

Inflation rate, 1996: 8 percent

Population: 200.8 million

Economic overview: After the economy was deregulated in the early 1990s, foreign investment in Indonesia soared.

On an annual basis, foreign investment approvals exceeded \$8 billion in each of the four years to 1993, jumped to

\$23.7 billion in 1994, continued to climb to \$39.9 billion in 1995, and then fell off to \$29.9 billion in 1996. Indonesians have seen their world improve markedly since Suharto took control in 1966. Economic growth rates of above 7 percent have become the norm; per capita annual income has risen from around \$50 to more than \$1,000; and poverty has been reduced from 60 percent of the nation's population in 1970 to 13.7.

Despite the Suharto regime's stringent efforts to maintain national stability, Indonesia currently stands at a crossroads between stellar economic success and massive political upheaval. State assembly elections held in May prompted limited but significant unrest from thwarted prodemocracy supporters of Megawati Sukarnoputri—the daughter of President Sukarno, Indonesia's charismatic founding father—and the Islamic Party, both of whom oppose Suharto's ruling Golkar government. Presidential elections due next year are likely to prompt further uncertainty among both the local population and foreign investors. Indonesia can ill afford a political meltdown at this time. Seventy-six-year-old Suharto is expected to stand for and win next year's election, but if he fails to introduce a clear succession plan, 200 million people could be left to cope with the potentially messy aftermath of his 31-year reign.

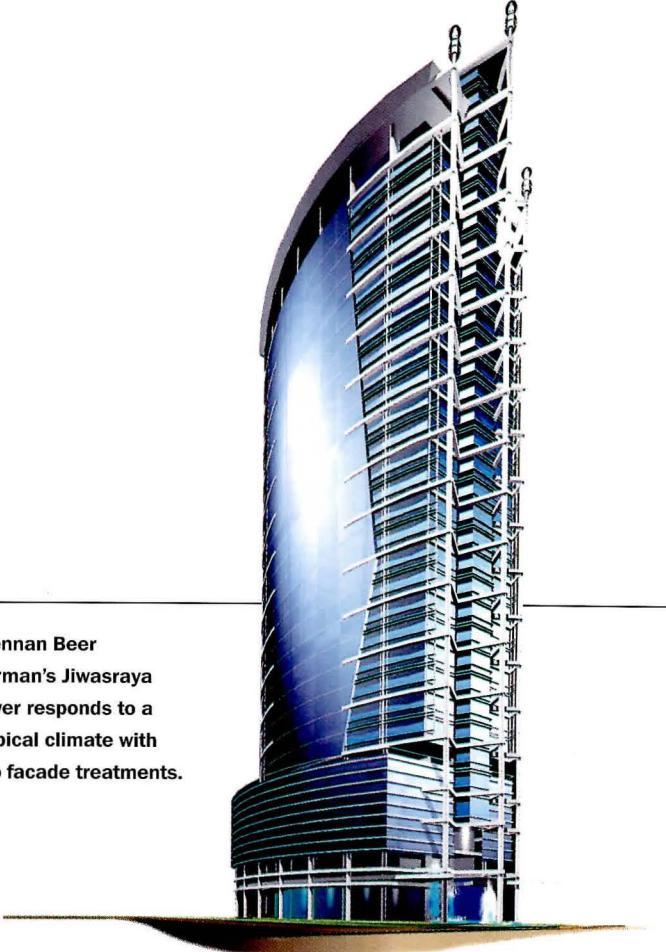
Construction activity: Against all expectations, Jakarta's property market continues to boom. The pie, however, is not being shared equally. While large firms thrive, smaller developers are being squeezed out of the market by oversupply, high interest rates, and lending curbs. Independent builders, many of whom reaped quick profits during the property boom of the early 1990s, are too small to attract overseas financing and must rely on domestic loans which, under a new tight monetary policy, are only available at rates as high as 22 percent. Larger players, however, can tap cheap overseas capital and concentrate on upper-crust segments of the market. According to the Indonesia Real Estate Association, the credit squeeze has led some builders to raise capital for projects directly from consumers prior to construction. In some cases, however, the developments have failed to materialize, leading to mounting complaints in recent months.

Office construction: Jakarta's central business district continues to buzz with massive construction projects. The total stock of Class-A office space now stands at 28.1 million sq ft, an increase of 16.8 percent over last year. Class-A office buildings continue to dominate the market with 54 percent of the supply, a reflection of Jakarta's impressive rate of economic growth in those sectors with a traditionally high absorption of office space: financial services, banks, telecommunications, and trading.

Retail construction: A 28.1 percent increase in the supply of retail space over the last 12 months is a reflection of the increased demand for consumer goods among Jakarta's burgeoning middle class. New construction for the first quarter of 1997 was 893,000 sq ft, bringing the cumulative supply to 11.7 million sq ft, or 7.6 percent higher than first quarter 1996.

Residential building: The same forces are pushing up the apartment and

Brennan Beer
Gorman's Jiwasraya
Tower responds to a
tropical climate with
two facade treatments.



condominium markets, where overall supply increased by 24 percent to 16,753 over the quarter, an increase of more than 81 percent from the same period 12 months ago. However, most developers believe the market will slow down, in part due to disruptions from the general election.

Local perspective: According to Suntana Djatnika, president of the 5,000-member Indonesian Institute of Architects and a partner at Team 4 Architects and Consulting Engineers, the country's enormous construction opportunities are balanced by what he sees as an over-reliance on foreign architectural firms. "Never in the history of our country has there been such opportunity," he says. "However, we also have to admit there is a learning curve for local architects." Too many of the large buildings are given to foreign firms, he believes.

Responding to the local climate: Construction will begin this summer on the Jiwasraya Tower, a 32-story, 700,000-sq-ft office building in Jakarta being developed by P.T. Mitrasraya Adhijasa. Designed by Yann André Leroy, a partner at New York-based Brennan Beer Gorman Architects, the oval-shaped tower has two different kinds of facades to handle tropical solar conditions: on the east and west, deep mullions and an exposed structure help shade the building's skin, while on the north and south, where solar loads are less severe, the curtain wall is flush (drawing above).

Big sport: Government agencies will spend \$200 to \$300 million to build a 54-story skyscraper in the capital. The Indonesia Sports Tower, which will replace the existing National Sports Council headquarters, will become Indonesia's tallest building, a distinction now held by the 46-story BNI City complex.

From diplomacy to capitalism: Local property giant Plaza Indonesia Realty announced plans to build a mixed-use complex in Jakarta with 378,000 sq ft of retail, 497,000 sq ft of apartments, and 659,000 sq ft of offices on a city center site previously occupied by the Russian Embassy. The project is to cost \$225 million. *Nigel Simmonds in Bali*

TAIWAN

GDP, 1996: \$235.5 billion

GDP growth, 1996: 5.7 percent

Projected GDP growth, 1997:

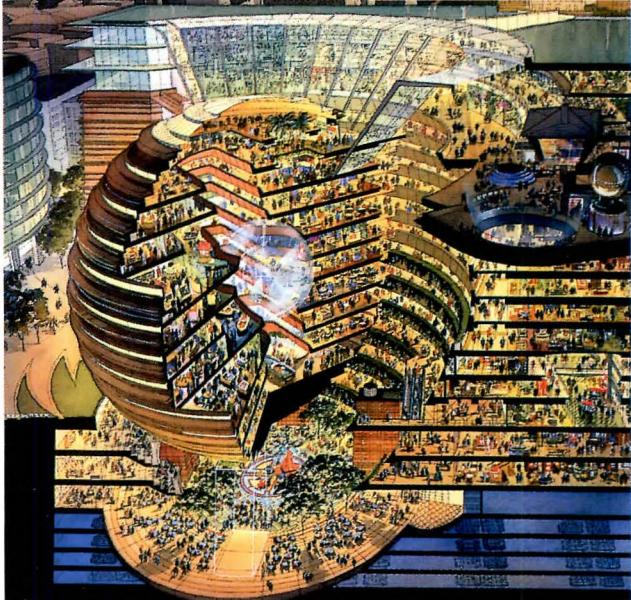
6.3 percent

Inflation, 1996: 3.1 percent

Population: 21.3 million

Economic overview: Taiwan's economy appears to have turned a corner after political tensions with mainland China squeezed GDP growth in 1996 to its slowest rate since 1990. Economists say the economy is picking up as exports

improve; exports could get a big boost if the new Taiwan dollar depreciates against the U.S. dollar. Foreign investment is also up, growing at 28.3 percent in the first three months of 1997, compared to the same period last year. The Taiwan stock market has reached seven-year highs, causing Central Bank of China officials to express concern it is overheating, possibly signaling the return of heavy asset speculation in Taiwan.



Slow growth hurt the real estate market in 1996, although developers say it is showing signs of improving. One factor is the stock market, which analysts expect to have some carryover influence on the real estate market as investors transfer stock-market earnings into new homes. Also, the opening of the first two lines of Taipei's Mass Rapid Transit system should dramatically affect the housing market as demand rises for homes close to new MRT stations.

Housing and retail: The housing market suffered in 1996, as construction declined 22 percent from 1995, to 222.5 million sq ft. Construction spending dropped 20 percent, to \$4.4 billion. The economic slowdown was particularly damaging to the retail sector. New retail construction declined sharply, from 165 million sq ft to 118 million sq ft in 1996, a 29 percent drop. Spending on retail space also dropped by 29 percent to about \$1 billion. Analysts expect the retail situation to change sharply for the better, however. Developers are planning 20 to 30 new shopping malls around the island, says Calvin Wang, general manager of Investec, a Taipei real estate consulting firm. Wang cites tax credits and an easing of zoning rules as reasons for shopping-center development becoming more feasible. "We still don't have any shopping centers," says Wang. Developers will need to look overseas to find architects with mall experience, so this should provide big opportunities for foreign firms.

Office-building construction: The office market is suffering from oversupply, especially in Kaohsiung and Taichung, although the sector grew last year, by 2.5 million square feet, an 8.6 percent rise. Spending on new office space rose 22 percent, to \$541 million. Some of the growth involved projects finished last year that had been planned earlier when the market was better, and some was stimulated by developers' desire to build projects to avoid new zoning limits.

Hospitality: Hotel construction was a bright spot last year. New hotel space rose 52 percent, to 973.6 million sq ft. Analysts credit rising occupancy, especially in Taipei and Hsinchu, the location of Taiwan's main high-tech industrial park, where the rates are 85 percent and 95 percent respectively.

Speed, not quality: Architects worry that the breakneck pace of development has diminished standards and reduced opportunities. Developers have used architects to help them get big buildings up in a hurry, not for designing quality buildings, says Cheng Mei, principal at Cheng Mei, a prominent Taipei firm. With so

much volume being produced, "architects don't have too much to say in the process," Cheng says. Some architects are frustrated at the lack of sophistication of the client base. Rapid economic development resulted in a market for gaudy architecture. "There is a lot of superficial display of wealth, and stuff taken out of context, like Louis XVI furniture," says Taipei architect Carl Shen.

Stadium plans in doubt: Taipei officials want to build Taiwan's first domed sports stadium downtown on the site of an existing baseball stadium. The bidding process is under investigation after the deputy mayor interceded on behalf of one developer. The stadium will have a retractable roof, but the design would break height restrictions for the area near an airport. City officials hope the 1.3 million-sq-ft sports-and-entertainment project will attract trade shows and conventions.

Innovative retail: An unusual shopping center will be built in Taipei by an investment group led by Core Pacific, a Taiwan securities brokerage. Designed by the Jerde Partnership of California, it is similar to Canal City Hakata, which Jerde designed in Fukuoka, Japan [RECORD, March 1997, pages 110-15], and will have 1.7 million sq ft in seven stories below ground and 12 above (drawing above). Taiwan's space limitations mean shopping centers must be built vertically, posing a challenge for managers who have to find ways to get shoppers to use the top floors.

Scraping the sky: In Kaohsiung, Taiwan's Tuntex Group is building an 85-story tower, the nation's tallest. Designed by HOK with Taiwan architect C.Y. Lee, it has an upper section resting on two separated lower towers. Some architects have criticized the design as being economically impractical since builders had to use an extremely heavy steel structure to keep it stable during earthquakes. "It's like a vertical tank," says Shen.

Veterans' housing: A project with a lower profile, but perhaps greater impact, is an island-wide plan to replace veterans' housing (below). The

\$18.9 billion project to build 100,000 housing units will take over nine years. Architect Philip Fei, of Cheng Mei, which is doing the preliminary design work, says the undertaking is the largest single project being planned in Taiwan. The idea is to create a quality living environment with plenty of open spaces. "This will change the way people look at public housing," says Fei. *Jonathan Moore in Taipei*



One scheme for veterans' housing (left).

Jerde's shopping center in Taipei (above).

MALAYSIA

GDP, 1996: \$53.1 billion

GDP growth, 1996: 8.2 percent

Projected GDP growth, 1997:

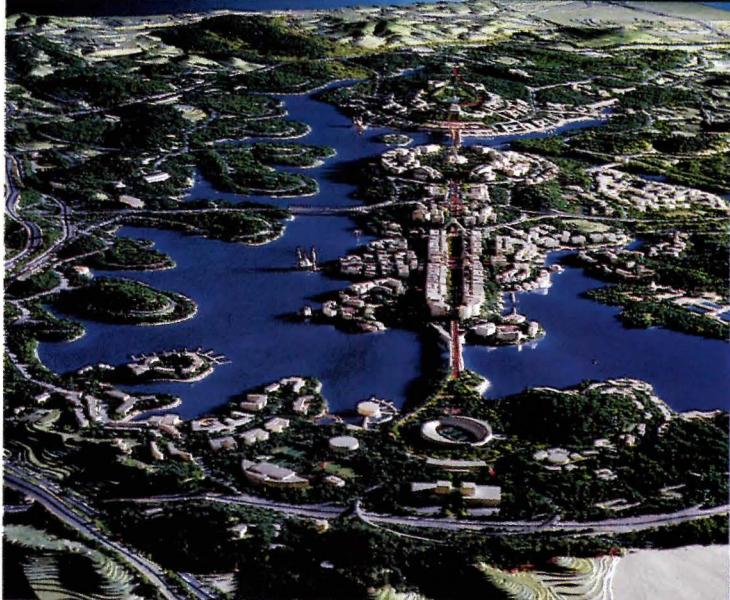
8.1 percent

Inflation, 1996: 3.5 percent (estimate)

Population, 1996: 20.6 million

Economic overview: After overheating in 1995 with 9.5 percent growth, the Malaysian economy returned to a more sustainable rate of 8.2 percent last year. According to Bank Negara (the nation's central bank), the economy should

again grow between 7.8 and 8.2 percent in 1997, continuing a string of eight consecutive years of at least 8 percent growth. The current account deficit is expected to widen to \$6.04 billion from last year's \$5.3 billion, growing at the same rate as the economy and staying at 5.5 percent of the GNP. Manufacturing, construction, and services are the main engines driving economic growth in Malaysia and are expected to grow 11, 13, and 9 percent respectively in 1997.



Intent on turning his country into the information hub of Southeast Asia, Prime Minister Mahathir Mohamad has been promoting plans for a new Multimedia Super Corridor (MSC). Running south from Kuala Lumpur's commercial center, the 31-mile-long, 9-mile-wide development area will encompass the new federal administrative capital of Putrajaya and the new Kuala Lumpur International Airport (KLIA), both under construction. The government has committed \$19.6 billion for physical infrastructure and is attracting high-tech companies such as Microsoft to build offices and manufacturing facilities in the area, which will be serviced by a 100 percent digital fiber-optic network. The MSC project is a key part of Mahathir's strategy to elevate Malaysia to developed-nation status by the year 2020.

A new capital city: At the heart of the MSC is Putrajaya, the new administrative capital for Malaysia. After asking local consultants and government departments to submit master plan proposals for Putrajaya in 1993, the Prime Minister's Department selected a Garden City concept by the firm BEP Akitek, whose lead designer for the project is Kun Lim, a 36-year-old architecture graduate of the University of Houston. The master plan divides Putrajaya, which will eventually accommodate 570,000 people, into 15 self-contained neighborhoods, each with its own schools, shops, and community facilities.

Moving ahead: Construction of the \$8.2 billion project is under way and the relocation of 76,000 government employees to the new capital is scheduled for 1998. Located in Selangor, the city will be easily accessible from the new airport. Putrajaya Corp., which has the regulatory authority of a city government and the development powers of a state economic-development corporation, is charged with building the city and later running its affairs. Putrajaya Holdings, chaired by prominent stock-broker Tan Sri Rashid Hussein, is the exclusive developer. It is a private company owned by government agencies and has the option of building on its own, entering into joint ventures with other parties, or parcelling out land for development to private companies. KLCC Bhd, the project manager of Kuala Lumpur City Center, which includes the Petronas Twin Towers, has been hired as project manager. The plan of Putrajaya—with its axial avenues, grand vistas, nodal points, and monumental landmarks—recalls the City Beautiful tradition of town planning and bears some similarity to Walter Burley Griffin's 1912 design for Canberra, the capital of Australia.

Multimedia haven: Close to Putrajaya will be a new "information technology city" known as Cyberjaya that will include a Multimedia University and research-and-development facilities for such organizations

as Telekom Malaysia, TV3, and agribusiness giant Golden Hope. Groundbreaking for the 1,853-acre site was set for this spring. Cyberjaya is being marketed as a complete yuppie paradise with golf courses, restaurants, shops, and sports clubs. Some of the incentives offered to information-technology firms are tax holidays for 5 to 10 years, free repatriation of profits, reinvestment allowances, and for the biggest players, a seat on the MSC International Advisory Panel. Microsoft's Bill Gates is reported to have accepted a place on the panel and Microsoft is in the process of moving its regional headquarters to the MSC, although it isn't expected to do any core product design there.

A river runs below it: In the center of Kuala Lumpur, private developers are hoping to build KL LinearCity over the next 20 years. Echoing design ideas of Archigram, the British group from the 1960s, the LinearCity would include an above-ground megastructure snaking above the Klang River and using land and air rights of the corridor. In fact, Peter Cook and the late Ron Herron, who were both members of Archigram, served as advisors on the LinearCity project. Connectivity is a key feature of the development, which envisions a pedestrian-friendly environment on a city scale, integrated with a linear park, the river, public transportation, car parks, and major leisure, retail, residential, and business facilities. Design work, which is still in the early stages, is being carried out by Original Scope Sdn Bhd.

Trying to be green: A "river beautification" program is now in place that will see a linear park built along the 7.5-mile length of the LinearCity project. Of this corridor, a stretch of 1.5 miles will be built 33 feet above the Klang River. The developers say the project will address environmental considerations, such as providing adequate sunlight and unobstructed views across the river. An urban entertainment zone, GigaWorld, will occupy part of the project. Construction of the first phase of GigaWorld is scheduled to be completed by the end of 1999. Will it all happen as planned? Critics dismiss these megaprojects as publicity stunts, but proponents say the MSC, Cyberjaya, and the LinearCity will propel Malaysia into the information-technology age.

Down south: Agarta Universe Theme Park is taking shape outside Johor Bahru in the south of Malaysia. Developer Agarta Universe Sdn Bhd, whose chairman is former UN Secretary General Javier Perez de Cuellar, will have spent \$367 million on the first phase of the 250-acre park by the time it opens at the end of 1998. *Robert Powell in Singapore*

Putrajaya, the future administrative capital.

HONG KONG

GDP, 1996: \$155 billion

GDP growth, 1996: 4.6 percent

Projected GDP growth, 1997:

5.4 percent

Inflation, 1996: 6 percent

Population: 6.4 million

Politics and business: Speculation on the future of Hong Kong abounds, but the city's famous harbor and its location at the hub of the Pacific Rim should ensure its status as the largest container port in the world and a major business

location. Some changes in the political environment are inevitable and are already occurring, such as increased self-censorship in the press and more attention to contacts in Beijing. But China has very strong interests in preserving the business environment, being the largest foreign investor in Hong Kong. Politically, Beijing is aware that any hopes for a peaceful reunification with Taiwan depend on its sensitive handling of Hong Kong.



On June 30, Britain's 99-year lease on the New Territories expired and, as delineated in the 1984 Joint Declaration between China and Britain, the whole of Hong Kong reverted to Chinese sovereignty. As a result, the one-time colony has become the Hong Kong Special Administrative Region (SAR) of China. Replacing Governor Chris Patten is Tung Chee-Hwa, chief executive of the new SAR. Although some of China's changes to Hong Kong's laws have been controversial, particularly the revocation of the Bill of Rights, China says it is returning to the legal structure in place when the Joint Declaration was signed.

Fear of the unknown: Although Hong Kong's incoming government will retain most of the current senior staff, the new leadership is bound to make some missteps as it learns on the job. These may play to fears of the handover and cause some volatility, but downturns are likely to be short-lived. The major danger would come if Beijing is distracted by a severe power struggle, which might open the way for meddling and corruption by less enlightened mid-level or provincial officials.

Nevertheless, Michael Enright, a professor at the University of Hong Kong School of Business, asserts, "the Hong Kong economy should be [able to withstand] virtually anything short of political or social meltdown, and I don't see meltdown on the horizon."

Housing boom: Hong Kong has swung back into a strong recovery, which is expected to continue through 1998. Growth this time has been largely demand driven, with an upswing in the residential property sector and stronger retail spending. Housing prices have risen more than 60 percent since December 1995, and with few new units hitting the market next year, increases are likely to continue. Housing is the most important asset of most Hong Kong families, so stronger prices have reinforced confidence and consumer spending. Housing completions in 1996 were 18,089 public rental units, 10,725 for-sale public units, and 17,183 private units.

Office lull: Office construction slowed down in 1996 with only 432,000 sq ft of space built in Central, 216,000 sq ft in Wanchai/Causeway Bay, and 54,000 sq ft in Tsim Sha Tsui—say real estate consultants Jones Lang Wootton. In 1997 these numbers are expected to rise to 1.5 million sq ft, 432,000 sq ft, and 324,000 sq ft respectively, and then higher in 1998.

On exhibit: Of the projects to be completed in Hong Kong this year,

occupying center stage is the highly sculptural extension to the Hong Kong Convention and Exhibition Centre (HKCEC). Not only does the building figure prominently on Hong Kong harbor's skyline, but it is the site of the June 30 handover ceremony. Designed by Hong Kong firm Wong & Ouyang and Skidmore, Owings & Merrill's Chicago office on 16 acres of reclaimed land in the Wanchai district, the extension's most distinctive feature is an uplifting curved roof inspired by seabirds in flight. A total of 683,700 sq ft of exhibition halls, convention hall, meeting rooms, and multilevel atriums are housed beneath what is reportedly the largest curved roof in the world.

New clothes for new roles: The reversal of roles for Great Britain and China in Hong Kong has led to the opening of two symbolic structures this year: the Ministry of Foreign Affairs Building for the People's Republic of China, designed by Dennis Lau and Ng Chun Man, and the

new British Consulate-General/British Council Building designed by Terry Farrell, both

sited on the slope beyond Hong Kong Park.

The two complexes reflect conceptually different views of their respective cultures. The Ministry of Foreign Affairs Building is a Modern tower, enveloped in the glossy finishes that are characteristic

of today's Hong Kong. By contrast, the British Consulate complex wraps midrise buildings in non-reflective kirkstone slate and white-and-dark-gray granite to convey a sense of "Britishness."

View from the top: Sited atop Hong Kong's famous Peak is a new crescent-shaped building resting on four massive piers (opposite). The Peak Tower Project—a retail complex, observation station, and terminus of the celebrated Peak tram—was

designed by Terry Farrell.

Shop walk: Miami-based Arquitectonica is working with Dennis Lau and Ng Chun Man on its first project in Hong Kong, a 912,600-sq-ft shopping mall in Kowloon called Festival Walk that will have carved atriums reminiscent of "canyons, rivers, and glaciers."

Extrudable city: Like layers of theater scrim that successively alter a stage

Top: Ferry terminal by Anthony Ng (foreground), skyscraper by Pelli. **Above:** New air-

port. **Opposite:** Peak project by Farrell.



VIETNAM

GDP, 1996: \$23.2 billion

GDP growth, 1996: 9.3 percent

Projected GDP growth, 1997:

8 to 10 percent

Inflation, 1996: 4.5 percent

Population: 77 million

Source: The Vietnam Business Journal

Normalizing relations: Two events that should boost the confidence of international businesses are the normalization of diplomatic ties with the U.S. and Vietnam's attempt to join the World

Trade Organization (WTO). Vietnam and America have started bilateral negotiations covering copyright laws and most-favored-nation trade status. Pete Peterson, the first U.S. Ambassador since 1975, assumed his post earlier this year. Vietnam's application for membership in the WTO will require multilateral negotiations with WTO member countries and, if successful, will allay investors' fears of long-term accountability and stability.

scene, Hong Kong's century-old tradition of land reclamation has forced formerly visible structures on Hong Kong's harbor line to be hidden by the new. There are already 1,633 acres of existing and committed reclamation areas along Hong Kong's harbor front, and an additional 1,571 acres of reclaimed land have been proposed for Green Island, Central, Wanchai, and South East Kowloon, among other locations. In fact, reclamation plans are so extensive that a number of alarmed Hong Kong residents are voicing their concern. Says Legislative Councillor Christine Loh, "Hong Kong's magnificent harbor is fast shrinking. If the government has its way, the harbor will become a river."

More than just an airport: Although much media attention has been showered on the new \$1.3 billion, 5.56 million-sq-ft Chek Lap Kok airport terminal, master-planned by Greiner-Maunsell and designed by Norman Foster's Asia office on 3,083 acres of reclaimed land off Lantau Island, the most profoundly felt modifications will reach deeply into the infrastructure of Hong Kong and Kowloon. In fact, when the airport opens in April 1998, a departing traveler's airport "experience" will actually begin long before he or she ever reaches Chek Lap Kok. Arriving by subway, bus, ferry, taxi, or automobile, passengers will enter two new express-rail terminals—one in the Central district (designed by Ove Arup & Partners' Hong Kong office along with Rocco Design) and one in Kowloon (designed by Terry Farrell). At either station, the traveler checks luggage and receives a boarding pass at the In-Town-Check-In Hall before proceeding to a railway platform, from where trains will zip over to the airport. The rail route from Hong Kong Station will go beneath Victoria Harbor to Kowloon and Tsing Yi Stations and over the newly constructed Kap Shui Mun and Tsing Ma Bridges—the latter, at 1.36 miles, will be the longest road-and-rail suspension bridge in the world. In 23 minutes, the passenger will go from Central to the three-quarter-mile-long main terminal of Chek Lap Kok.

Seeding future growth: The airport project will also have a profound impact on development throughout Hong Kong. For example, coupled with the construction of the express-rail line is that of a second rail route, the Tung Chung Line. Together, the rail lines are moving Hong Kong's development westward onto Lantau Island and are seeding the development of a new satellite community, the Tung Chung New Town, which is rising from an old fishing village and is projected to house 200,000 people by 2010. Also under way are the developmental stirrings of a 49-acre band of reclaimed land in Central that will include ferry piers, retail, hotel, and office towers, and a landmark 88-story skyscraper being designed by Cesar Pelli. *Zofia Rybkowski and John Seel in Hong Kong*

The economic boom of 1993 and 1994 is over, and in 1996 the number of approved foreign-investment licenses dropped from 406 to 332. Responding to foreign investors' concerns about rapidly changing and sometimes obscure approval procedures, the National Assembly passed a decree in November designed to streamline the process and put a greater burden on the Vietnamese government to respond quickly. The new foreign investment law, however, also levies a tax on all imported building materials. It is not clear whether this tax will be applied to previously approved projects and quantities of material ordered before June 1. But this section of the new law will have a direct effect on the feasibility and costing of future projects.

Construction activity: At present 1,027 of the 1,661 licensed construction projects are in the industrial or infrastructure sectors. Many of the industrial projects are located in the 27 industrial zones and three economic processing zones (EPZ). These EPZs are designated areas where materials can be imported, value added, and exported tax free. There are currently two more EPZs on the boards in Vung Tao and Hai Phong, the major harbor areas for Ho Chi Minh City and Hanoi respectively.

Road work: Vietnam is in great need of all types of infrastructural improvements. It is estimated that \$5 billion will be spent on improving roads from 1996 to 2000, with an additional \$23 billion spent in the following 10 years. Presently, only 13 percent of the country's roads are paved and sealed. The first projects will be Highway 1, linking Hanoi to Ho Chi Minh City, and Highway 5, linking Hanoi to Hai Phong.

Expanding hospitality: In Ho Chi Minh City, the supply of international-standard hotel rooms is expected to grow from 2,405 in 1996 to 5,376 by 1998. In Hanoi, the number should grow from 1,023 to 4,895.

Sustainable development: With a huge rural migration to the cities and a jump in the number of motor vehicles, sustainable development has become a main topic of discussion. The population of Ho Chi Minh City is expected to increase from 4.7 million in 1996 to 7.2 million by 2005. To accommodate all these people, the government opened five new districts for development in April and will open two more in 1999 for a total of 86,000 acres. In the capital, the Hanoi Planning and Development Control Project, which is sponsored by the Australian fund AusAid, is working with the city to preserve the French and Ancient Quarters and encourage appropriate development there. Meanwhile Daewoo is developing Hanoi New Town on 49,000 acres north of downtown. The project is being masterplanned by Bechtel. Nikken Sekkei, SOM, and Rem Koolhaas recently made design presentations for separate parcels on the site. *Joshua Levine in Ho Chi Minh City*

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SINGAPORE

GDP, 1996: \$93.4 billion
GDP growth, 1996: 7 percent

Projected GDP growth, 1997:

7.3 percent

Inflation, 1996: 1.4 percent

Population: 3.04 million

Political overview: While Singapore has established itself as an economic power in Asia and has demonstrated its political stability (returning the Peoples Action Party to power for a ninth term this January), it displays an almost visi-

ble angst. Singaporeans are continually urged by the government and media to maintain their global competitiveness. There are warnings of the dire consequences of an economic slowdown and the increasing competitiveness of its neighbors, who offer low wages and abundant labor. As a result, Prime Minister Goh Chok Tong announced last year the formation of a panel to carry out a comprehensive review of Singapore's economic competitiveness.

In 1991 the Urban Redevelopment Authority published its Revised Concept Plan, which offers a vision for Singapore's development into the 21st century. Singapore has been divided into 55 planning areas, each of which is preparing a detailed Development Guide Plan (DGP). The planning methodology used tends to homogenize the landscape, offering little difference between urban and rural areas, and between one new town and another. The DGPs already completed suggest that this seamless merging of areas will continue unabated.

A new downtown: In 1996 the Urban Redevelopment Authority (URA) issued a plan for a new downtown to be built on reclaimed land to the east of the existing business district. According to the plan, 28 million sq ft of commercial space could be built, along with infrastructure development (including light-rail) and 26,000 new housing units. The sale of land for the first project, a 1.62 million-sq-ft commercial development, will happen this year and a new 540,000-sq-ft National Trade Union headquarters tower will start construction on an adjacent site. The goal is to create a downtown that integrates working, living, and recreation.

New hospital is delivered: In March the new Kandang Kerbau Women's and Children's Hospital was completed by Akitek Tenggara, one of Singapore's most respected firms. The practice, which was set up by Tay Kheng Soon and Chung Meng Ker in 1976, has been at the forefront of developing a Modern architectural language for tropical Asia. Working with hospital-design consultants McConnel Smith and Johnson and the Singapore Public Works Department, Akitek Tenggara designed a sun-shading system for the 1.15 million-sq-ft hospital that uses light-weight-metal louvers and maintenance gangways (below).

Controversial arts complex: Construction of the new national arts center, designed by Michael Wilford and Partners in association with Singapore-based DP Architects, started in August 1996. Known as The Esplanade—Theaters on the Bay, the project will include a concert hall, lyric theater, and three smaller theaters. The project's blending of East and West has been the subject of heated debate in the Singapore media, which has expressed concern over the penetration of Western values into every aspect of life. Robert Powell



PHILIPPINES

GDP, 1996: \$83.3 billion
GDP Growth, 1996: 5.5 percent

Projected GDP Growth, 1997:

8.5 to 10 percent

Inflation, 1996: 8.4 percent

Population: 68 million

Economic overview: A dramatic increase in direct foreign investment, along with the robust performance of the finance, transportation, and communications industries, is pushing the Philippine economy forward.



The brainchild of President Fidel Ramos, Philippines 2000 is a plan to generate GDP growth of between 8.5 and 10 percent and develop 1.1 million new jobs each year, raising this nation to "newly industrialized country" status by the turn of the century.

As they prepare for elections in 1998, Filipinos wonder who will succeed President Ramos, who is not allowed to run again. Among the frontrunners are Vice-President Joseph Estrada, Defense Secretary Renato de Villa, House Speaker Jose de Venecia, and Senators Gloria Macapagal-Arroyo and Edgardo Angara. There is some movement to amend the constitution to allow Ramos to run for a second term, but many doubt this will happen.

Construction overview: Rapid economic growth in 1995 and 1996 created a huge surge in demand for office space, especially among multinationals and newly established corporations. In 1996, 2.8 million sq ft of office space was built in the main business districts of Makati and Ortigas Center. It is projected that between 1997 and 2000 another 10 million sq ft of Class-A office space will be added in these areas.

Homeward bound: An increasing number of overseas Filipino architects who left the country in the 1980s are returning home to take part in the current building boom. Architects such as Bong Recio and Carmelo Casas, who started their firm Recio + Casas in Hong Kong, are now bringing their expertise to the local scene.

Projects: Bonifacio Global City, a 1,085-acre development in Manila, is one of the most visible showcases of the Philippines' building boom. It is envisioned as an "intelligent city" catering to the needs of a globalizing Philippine economy. Planning and design of the project is a joint effort of Filipino and foreign consultants, including HOK, Planning Resources and Operations Systems, and Espina-Perez-Espina and Associates. Two other busy business districts are Makati and Ortigas Center, where premiere office buildings such as One Ayala Triangle (designed by L.V. Locsin and SOM); Jaka Tower (W.V. Coscoluella and HOK); and E.G.I. Tower, designed by RMJM of Hong Kong (photo above), are going up.

Abelardo M. Tolentino, Jr., in Hong Kong

Singapore hospital by Akitek Tenggara (left).
E.G.I. Tower in Manila by RMJM (above).



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NEW ZEALAND & AUSTRALIA

Australia

GDP, 1996: \$335.5 billion
GDP growth, 1996: 2.4 percent
Projected GDP growth, 1997: 3.75 percent
Inflation, 1996: 1.5 percent
Population: 18.4 million
Economic overview: Although Australia is in a growth phase, with inflation and interest rates low, these favorable conditions are not expected to outlive 1997. And unemployment remains relatively high at 8.7 percent.

New Zealand

GDP, 1996: \$61.4 billion
GDP growth, 1996: 2.8 percent
Projected GDP growth, 1997: 2.6 percent
Inflation, 1996: 1.8 percent
Population: 3.66 million
Economic overview: Like Australia, New Zealand is experiencing a period of moderate growth and low inflation. And like the Olympics, the America's Cup yacht race in 2000 in Auckland is pushing up waterfront property prices.

Despite Australia's low population growth of 1.3 percent per year, the residential market is strong and prices are expected to rise up to 12 percent a year for the next three years. With apartment living catching on, most residential construction is in big cities. **Memories of the bad old days:** Michael Peck, chief executive officer for the Royal Australian Institute of Architects, says the architectural profession is still "climbing out of the severe recession of 1993" and is trying to cope with government procurement policies that are pushing fees down. Another fallout has been the exodus of skilled managers and professionals, which has left a tight labor market today.

Preparing for the games: Construction is racing along for the 2000 Olympics in Sydney. The main stadium, designed by Bligh Lobb Sports Architecture, will have 80,000 permanent seats and 20,000 temporary ones, making it the largest Olympic arena to date. Smaller firms working on projects include James Grose, who is designing an exhibition center, and Alexander Tzannes, who is designing a ferry wharf.

Piano down under: The most talked about project in Sydney is a \$400 million complex in the center of town designed by Renzo Piano. Including a 34-story office tower and a 16-story apartment building, the project was commissioned by Australian developer Lend Lease and will be the Italian architect's first building in Australia. The towers will be wrapped in curved skins of nonreflective glass said to be inspired by Jorn Utzon's Opera House.

New Zealand projects: The 1,082-ft-high Auckland Sky Tower by Craig Craig Moller recently opened, becoming the tallest structure in the country. Also in Auckland, Hassell Pty is designing a large project to include a public plaza, 13 highrises, an underground transit interchange, and renovated warehouse buildings. *Graham Jahn and Ann-Elise Hampton in Sydney*

Renzo Piano's project in Sydney (left).



SOUTH KOREA

GDP, 1996: \$484 billion

GDP growth, 1996: 7.1 percent
Projected GDP growth, 1997: 5.5 percent
Inflation, 1996: 5 percent
Population: 45.5 million
Economic overview: While Korea has a high savings rate, great export capabilities, and a well-educated workforce, economic growth for 1997 will slow down to about 5.5 percent, the lowest increase in 15 years.



After years of leading Asia's "tiger" economies, South Korea has stumbled recently. Growing foreign debt, weakened exports,

and bankruptcies at certain units of the country's industrial conglomerates (or *chaebol*) have shaken Korea's vision of progress. And dropping real estate prices have left Korean lenders with \$11 billion in troubled real estate and *chaebol* loans, according to *Business Week*.

Politics: President Kim Young Sam has responded with reforms, including some deregulating of the financial system, opening markets to foreign competition, allowing greater foreign ownership of Korean stocks, and trying to reduce the power of the *chaebol*. But a cloud of corruption hangs over the scene, casting a shadow on politics as usual.

Foreign invasion: As it has been in recent years, the hottest issue in the design community today is the influx of foreign firms. This trend was highlighted by a symposium last year sponsored by Samsung subsidiary Samwoo, one of the largest architectural firms in Korea. Rem Koolhaas, Mario Botta, Jean Nouvel, and Terry Farrell participated in the symposium, each presenting his own design for a project for Hannam that is being coordinated by Samwoo. Jinai Kim, the head of the local architectural and urban design firm Seoul Forum, criticized the event, saying, "What we don't need is a show featuring self-serving architects, a hanging-back coordinator, and a flamboyant patron."

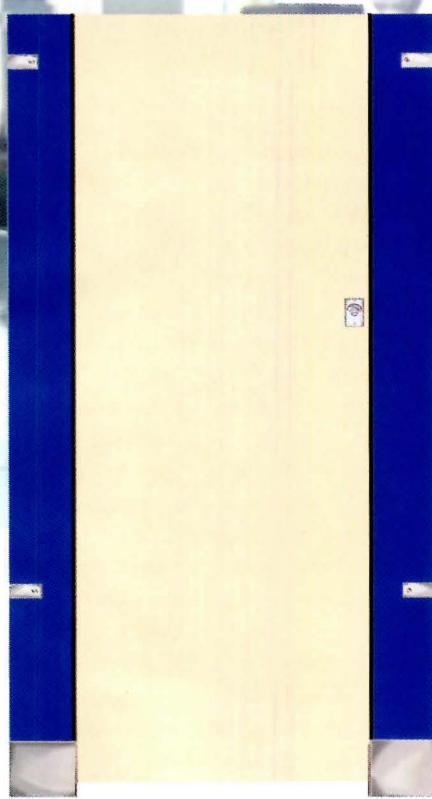
Fashion show: Kohn Pedersen Fox has designed Seocho Fashion Center in Seoul, an 842,000-sq-ft, steel-frame tower with fashion-themed retail, exhibition, and office space (photo above). Construction starts this year and will be completed by the year 2000.

Emerging types of housing: After three decades of living in monotonous concrete apartment towers, some Koreans are buying "garden houses"—wood-frame houses with spacious front yards in satellite cities and outlying areas of Seoul. At the other extreme, some young professionals are moving into "officetels," center-city live-work spaces. For the first time, Koreans are getting some variety in their housing.
Jaepil Choi in Yongin, South Korea

Seocho Fashion Center by KPF in Seoul (above).



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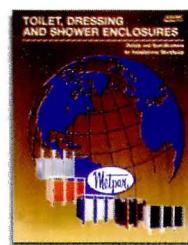


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THAILAND

GDP, 1995: \$166 billion

GDP growth, 1995: 8.6 percent

Projected GDP growth, 1996:

6.8 percent

Inflation, 1995: 5.8 percent

Population: 60 million

Economic overview: Thailand's economy slowed down in 1996, with growth falling below the 8 percent plus average of the last decade. Exports, the engine of economic growth since the mid-1980s, were flat last year. The poor perfor-

mance was blamed on low worldwide demand for electronic products, the loss of business to countries with very low wages, new trade barriers to some nations, and the appreciation of the local currency versus the Japanese yen. The central bank is projecting 7.7 percent export growth in 1997, but there are as yet no clear signs of recovery. The 1996 deficit is estimated at \$15.4 billion, or 8.3 percent of GDP, up from 8.1 percent in 1995.



A general election last November replaced the previous Banharn Silpa-archa administration, whose perceived instability and incompetence undermined the confidence of both foreign and domestic investors. Although full of promises to put the economic house in order, the new government has still to prove itself.

Shaky financial system: The root of the problem, however, stems not so much from falling exports and past government mistakes as from Thailand's financial institutions, which have become alarmingly burdened by bad property loans arising from years of overbuilding. In March the government established a \$4 billion property-loan bailout agency, but its effectiveness remains to be seen.

Oversubt construction markets: According to a Bangkok Post report, office and retail space in Bangkok has increased by more than 400 percent over the last six years. In 1996 new demand amounted to some 5.9 million sq ft, while supply totaled 6.48 million sq ft. In the housing sector, it is estimated that Bangkok has about 400,000 vacant units and a similar number under construction. Worst hit are condominiums, which account for about half the vacancies. In spite of overcapacity, the number of hotel rooms in the Thai capital is expected to increase by 5,000 in 1997. Although most analysts do not predict a quick recovery, the property business is viewed as cyclical and should pick up eventually. The immediate problem for developers, however, is not just selling property but also securing financing.

Chaos reigns: "The boom is definitely over for a while," remarks Bangkok-based architect Robert G. Boughey. "Bangkok is so overbuilt." Boughey also sees Bangkok's traffic and infrastructure chaos as inhibiting development. "It's the same old story, and there'll be no solution until the elevated train system [skytrain] is completed in a couple of years." Architect Ongard Satrabhandhu is similarly pessimistic. He says a shortage of jobs is causing several architectural firms to downsize, and he believes it will be two or three years before things get better. Even then he sees little future for quality architecture in Bangkok. "The skytrain will ruin the city, what's left of it, that's for sure," he says.

But optimism isn't dead: Striking a more positive note is Dr. Sumet Jumsai of SJA+3D architects. While agreeing there is currently a slowdown, he suggests that "the base is so big that there is still a lot happening." He adds that "architecture is healthy because we lack stringent bylaws, which is a blessing in disguise, as it allows architectural experiment." He further believes the skytrain will make a big difference to

traffic flow in the city, and by the end of the century, "Bangkok should be in better shape." A growing awareness of environmental issues is also taking hold, as seen at the Association of Siamese Architects' annual convention held in March. "We tried to prompt people to think about the city and to develop the environment for a more suitable way of living," says Association President Chamnian Sasibuttra.

Troubled new town: The ambitious Muang Thong Thani development, with some two dozen residential and commercial highrises on the outskirts of Bangkok, has sold less than 50 percent of its units, and much of what has been sold was bought up for speculation and remains mostly unoccupied. A recent and controversial plan by various government agencies to relocate to Muang Thong Thani may save the project from going under; other big developments will be less fortunate.

Pachyderm design: The most talked about building in Bangkok today is the Elephant Tower, designed by Ongard Satrabhandhu and due for completion by year end. Because of site constraints, the development was originally conceived as three simple towers until the architect decided to connect the structures at the top to provide more space and a recognizable profile. The client then suggested the "M" shape could be transformed into the abstract form of an elephant, complete with two round windows for "eyes," symbolic ears, and forward protrusions for tusks (designed as usable space). The resulting structure offers 832,000 sq ft of net space in three 32-story towers with 8-story-high bridges connecting the top. The first five floors of the podium are mostly retail. The architect says he would have preferred a more abstract elephant form.

Tallest buildings: The 61-story Thai Wah Tower II on Sathorn Road, which had its official opening earlier this year, is currently Bangkok's tallest building at 647 ft. Designed by Architrave Design & Planning, the pencil-thin building has 615,000 sq ft of gross area. The tower combines the Westin Banyan Tree hotel with 30 floors of offices. Poised to surpass Thai Wah Tower II is the 94-story, 1,518-ft Baiyoke II Tower, set to be completed this year. Designed by Aroon Chaiseree of Chulalongkorn University, this is a reinforced-concrete building wrapped with a reflective-glass curtain wall. The building has a garment center with 501 shops and the Baiyoke Sky Hotel, topped by a telecommunication tower (see rendering on page 81). John Hoskin in Bangkok

Elephant Building in
Bangkok by Ongard

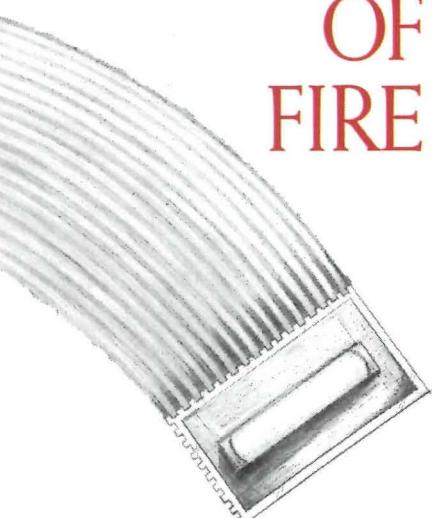
Architects is nearing
completion (above).

THEY
LEFT
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THINGS
WHEN
THEY
NAMED

IT

THE
RING
OF
FIRE



...like monsoons, typhoons, earth tremors, torrid heat, salt water, high humidity and, yes, even snow.

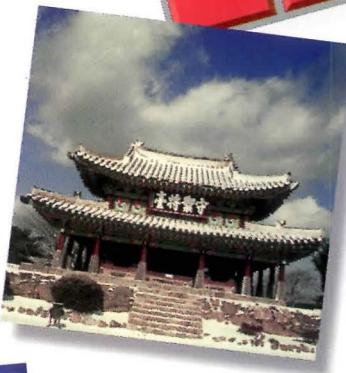
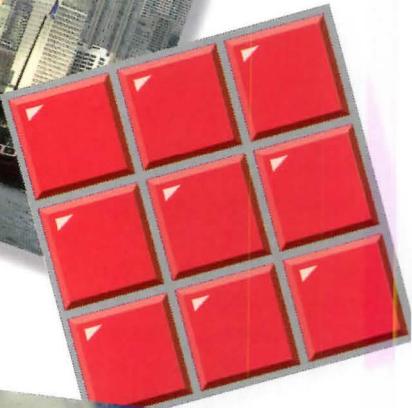
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JAPAN

GDP, 1996: \$4.4 trillion

Growth GDP, 1996: 2.9 percent

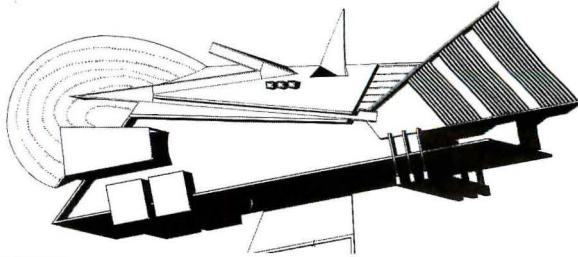
Projected GDP growth, 1997: 1.1 percent

Inflation, 1996: 0.2 percent

Population: 125.9 million

Economic overview: "The Japanese economy has not really taken off from the bottom," laments Hiro Tanamachi, managing director of Hellmuth, Obata & Kassabaum's Tokyo office. And with only 1.1 percent real GDP growth anticipated in fiscal year 1997,

the outlook does not appear good for either private or public spending, according to Salomon Brothers in Tokyo. This projection is significantly lower than the 2.9 percent growth estimated for fiscal 1996, but is an improvement over an earlier forecast of 0.7 percent and reflects the weakened yen and consequent increase in net exports. Salomon Brothers expects the economy to resume a normal pace of growth in 1998.



Despite the sluggish economy, home builders enjoyed something of a miniboom in 1996. BZW Securities in Tokyo reports that housing starts increased a whopping 10 percent. This reflected a rush to build before April, when the nation's consumption tax was raised from 3 to 5 percent. This tax affects all construction-related goods as well as popular prefabricated housing. Low interest rates and dropping residential land prices also spurred builders to break ground. Yet because the fundamental demand for new homes remains unchanged, BZW anticipates a backlash decline of almost 10 percent this year.

Commercial building: The looming consumption-tax hike also stimulated a burst of activity in commercial construction orders in the first half of fiscal 1996. But this was followed by a period of flux, and now there is no sign of recovery on the horizon, reports Salomon Brothers. Even though the office-occupancy rate in central Tokyo rose slightly in 1996, orders for new office buildings, which comprise about 30 percent of all private construction orders, are expected to remain low. With Tokyo's commercial land prices 70 percent lower than their "bubble" period peak, some believe that prices have bottomed out and real-estate investment will pick up. But the Japanese have heard that story before.

Public works: While new public works are still coming out of the ground at an impressive rate, funding for future projects is drying up. Orders for government-sponsored work soared by 10.6 percent in the first half of fiscal 1995, but then fell 5.1 percent in the first half of fiscal 1996. The reason for this precipitous drop is that the government is no longer trying to jump-start the economy with public works and the great Hanshin-earthquake restoration efforts have already peaked.

Foreign architects: For foreign firms, the picture is particularly bleak. "Again the Japanese market is trying to close itself off," says Hiro Tanamachi, managing director of HOK's Tokyo office. In January 1996, the Japanese government replaced its Major Projects Arrangement (MPA) program with guidelines set by the World Trade Organization (WTO). The MPA had helped some foreign firms gain a footing in the Japanese market by enabling them to pursue government work by forming joint ventures with local firms. But WTO guidelines release Japanese firms from these obligatory relationships and instead set a design-fee threshold of 250 million yen (\$2.17 million) for projects that must consider foreign participants—a threshold that few public projects will meet. To make matters worse, many government agencies no longer allow Japanese firms to join forces with foreign ones. Consequently, many foreign firms have

shifted their marketing strategies from public- to private-sector work. Fortunately, some industries, such as health care and retail, still need U.S. expertise. And when the economy finally picks up, renovation jobs are expected to increase, creating more outlets for foreign firms.

Swimming along: One firm still riding the crest of the public-building wave is Jun Aoki & Associates. One of the Tokyo's firm's latest accomplishments is the Yusuikan public swimming complex, completed in January. Located in Toyosaka, a small town north of Tokyo, the 25,000-sq-ft building sits amid a newly created water park. Years ago the site was laced with canals and lagoons which were an integral part of daily life. Sadly, these waterways have all but vanished due to land reclamation. Determined to preserve the one remaining lagoon, the town decided to develop a greenbelt park along its edge. The park will consist of tree groves punctured by round, open recreation areas. One such opening is defined by a reinforced-concrete cylindrical form concealing Yusuikan's 83-ft-long rectangular pool and related facilities.

Memorializing a writer: Prompted by Daijiro Hashimoto, the governor of Kochi Prefecture and the younger brother of Japan's prime minister, to raise the quality of public buildings, the town of Ogata hired Tokyo architect Norihiko Dan to design a memorial hall for local writer Kambayashi Akatsuki. The 24,000-sq-ft facility will house standard memorial fare such as library, lecture hall, and archives when it is completed later this year. But the question that interested Dan was "how to relate architecture to the main theme of literature." He met this challenge by designing the building as a "hill of memory" and blending it with Ogata's landscape, a central theme in Kambayashi's work (top).

Teaching health care: When architect Riken Yamamoto won the limited competition for Saitama Prefecture's University of Nursing and Welfare (above), he gained the chance not only to design a building but to influence the school's curriculum as well. On opening in 1999, the 60,000-sq-ft school will train physical therapists, dental hygienists, and midwives, in addition to nurses. Laboratories and training rooms for all departments will be on the first floor, where students from different disciplines can mingle. These shared facilities will form a base, giving rise to separate pavilions for university and junior-college programs, which will be linked by a common, outdoor space. *Naomi Pollock in Tokyo*

Kambayashi memorial in
Ogata by Norihiko Dan (top).

Saitama nursing school by
Riken Yamamoto (above).

Pacific Rim Manufacturers Directory

This is a quick marketing reference chart to July 1997 advertisers who do business in Pacific Rim countries.

AFFORDABLE HOUSING

Housing Credit's Future?

**ARCHITECTS ARE DEFINITELY UP TO CREATING HIGH-QUALITY AFFORDABLE HOUSING.
IT IS THE FUTURE OF THE LOW-INCOME-HOUSING TAX CREDIT THAT IS IN DOUBT.**

by Charles Linn, AIA



1

San Francisco, California

Market Heights, a villagelike housing project, steps up a hillside to make the best of a difficult site in the Bernal Heights district.



2

Cambridge, Massachusetts

Auburn Court is a three-story affordable housing complex that fits into its neighborhood so well it seems as if it has always been there.



3

Brooklyn, New York

Northside Terrace Condominium, a series of rowhouses, reclaims a site that had been cleared of housing for industrial use, then abandoned.



4

Los Angeles, California

The Young Apartments, an early 20th-century luxury building, was so rundown it was called "Dracula's Castle." It is now affordable housing.



5

San Jose, California

Plaza Maria's trellises and bright colors have become an icon for this city's downtown neighborhood.

All but one of the projects in this building types study were funded to some degree by low-income-housing tax credits. Typically the process works something like this. The federal government gives each state a share of \$2.2 billion in tax credits to fund housing; the size of the share is based on each state's population. The tax credits are purchased by for-profit corporations, who write off their taxes against the credits. In some cases they may also gain some public relations benefit from being seen as investors in affordable housing.

The money used to purchase these tax credits is given to non-profit developers to finance housing. Developers submit project proposals to their state agency in hopes of getting a share of these tax credits, which, if approved, might be combined with local, state, and private financing to fund a project. Putting together a workable financing package can take years. Since Congress stopped directly funding low-income housing in the early 1980s, most affordable housing has used these tax credits.

The affordable housing itself is not given away. To qualify, families must make no more than 60 percent of the median income in their geographic area; rent is a fraction of the market rate determined by income. The developers, or their designated property managers, must ensure that tenants meet income qualifications and that the property retain its affordable status and be maintained (in some cases for 30 years or longer), or the tax credits will be revoked.

The low-income-housing tax credit program has had a rocky life. Originally it was enacted by Congress in 1986. After Congress reauthorized the program several times, the Democratic-controlled Congress made it a permanent part of the Internal Revenue Service tax code in 1993. When the Republicans regained control of the Congress, the program's permanent status was revoked once again, and was set to disappear on December 31 of this year, although Congress-watchers seem confident that the program will be reauthorized at least once more.

Critics of the program complain that it is a deficit-reduction shell game: federal funding for public housing is no longer on the government's balance sheet, but the financial benefits for corporations who fund the housing instead of the government are disproportionately large compared to the amount of housing created. The question then becomes: do the poor gain as much from the housing tax credit as the rich? Perhaps a more straightforward method of fundraising, such as the sale of low-interest bonds, would be better. ■

Market Heights San Francisco

AN AFFORDABLE FAMILY RENTAL COMPLEX MAKES THE MOST OF ITS RUGGED SITE WITH A HILLSIDE, VILLAGELIKE DESIGN.

by Charles Linn, AIA

Project: Market Heights
San Francisco

Owner: Boomerang Housing Associates

Architect: Herman Stoller Coliver Architects—Stuart Stoller, principal-in-charge; Lisa Bruce, senior designer; David Hall, job captain; Robert Herman, FAIA, Susie Coliver, Jane Grover, project team

Consultants: Olmm Structural Design (structural); F.W. Associates (electrical); KCA Civil Engineers (civil); SJ Engineers (mechanical); Tito Patri & Associates, Mori Hatsushi & Associates (landscape); Thornburn Associates (acoustical); Devine & Gong (financial)

General Contractor: Roberts-Ohbayashi Group

Developer: Bernal Heights Housing Corporation

Project Statistics

Cost: \$6.4 million, including \$500,000 in street improvements

Gross livable sq ft: 40,618 sq ft

Number of units: 46

Density: 46 units at 52 dwelling units per acre

Set on a steep hillside in the Bernal Heights district of San Francisco, Market Heights was built on a boomerang-shaped lot wedged between two residential streets and San Francisco's oldest farmers' market. This development of affordable family rental housing labors at being a compatible addition to the neighborhood by respecting the scale of its surroundings. Two-story units face the streets, and additional housing steps down the hill toward the market. A mix of flat and scored stucco, wide and thin horizontal siding, and a palette of subtle Mediterranean colors is used to visually break up what might have been an overwhelming building mass if rendered in a single material and color. The overall effect is that a village has been built here.

Unlike many residential buildings in San Francisco, no garage doors face the streets. Instead, autocourts allow access to either four or six garages, and allow a paved space where children can rollerblade or play basketball. Smaller inner pedestrian courts provide places where young children can play. All of the units have access directly from the street or autocourts without shared corridors.

Not in my backyard

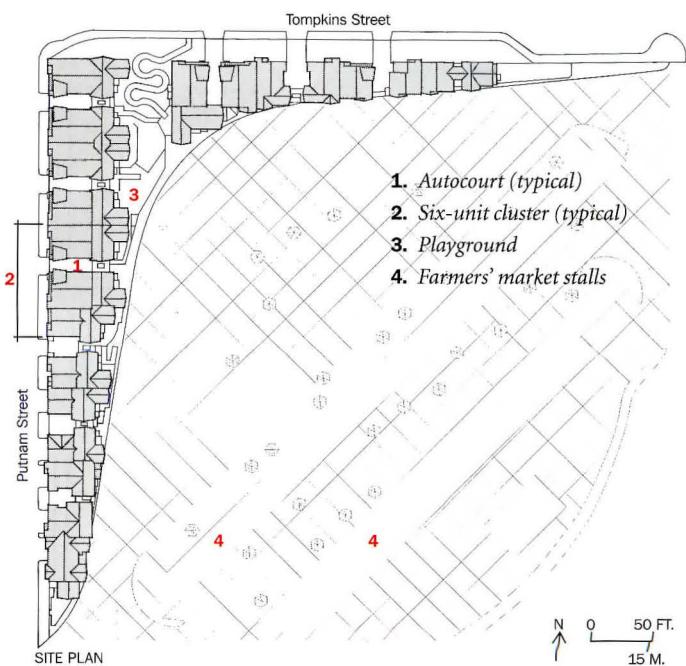
As with many affordable housing projects, Market Heights was not built without a fight, from both

neighbors who were wary of affordable housing, and city officials who felt the city-owned land should be developed as housing for first-time homebuyers.

"There is a public housing project nearby that was built in the 1940s that was not kept up over the years," says architect Stuart Stoller. "It's very difficult to get people to make the distinction between public housing that is paid for and administered by the government, and affordable housing that is funded by investors and operated by a nonprofit corporation. These nonprofits are going to own these

properties for 50 or 60 years. They have to take care of them."

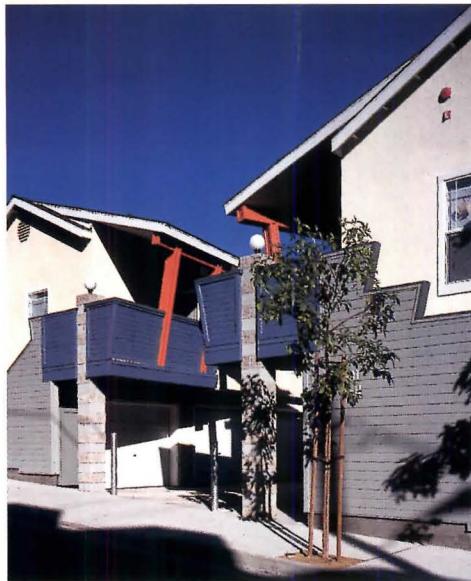
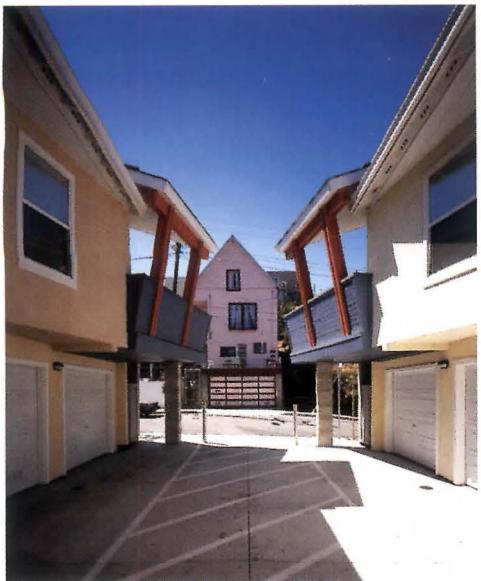
"We actually had agitators attending hearings who were trying to stop the project," says architect Susie Coliver. A local free newspaper joined in to fan the flames of neighborhood protest, but it was never the architecture itself that was in question. "It seems almost amusing in retrospect," she continues. "The articles kept coming week after week—that there was an underground river on the site, a rare snake species that would be threatened, and that the housing would ruin the farmers' market."



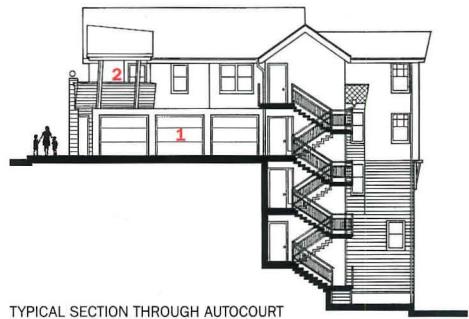


Market Heights' color palette (left) picks up on other dwellings in the neighborhood, and respects its scale. The villagelike quality of the housing seems like a natural extension to the farmers' market. The feared ruination of the farmers' site did not materialize.

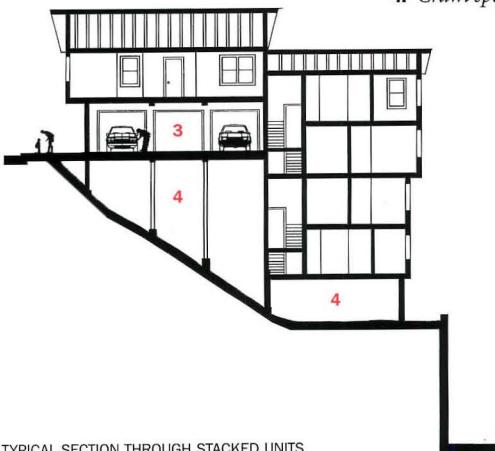




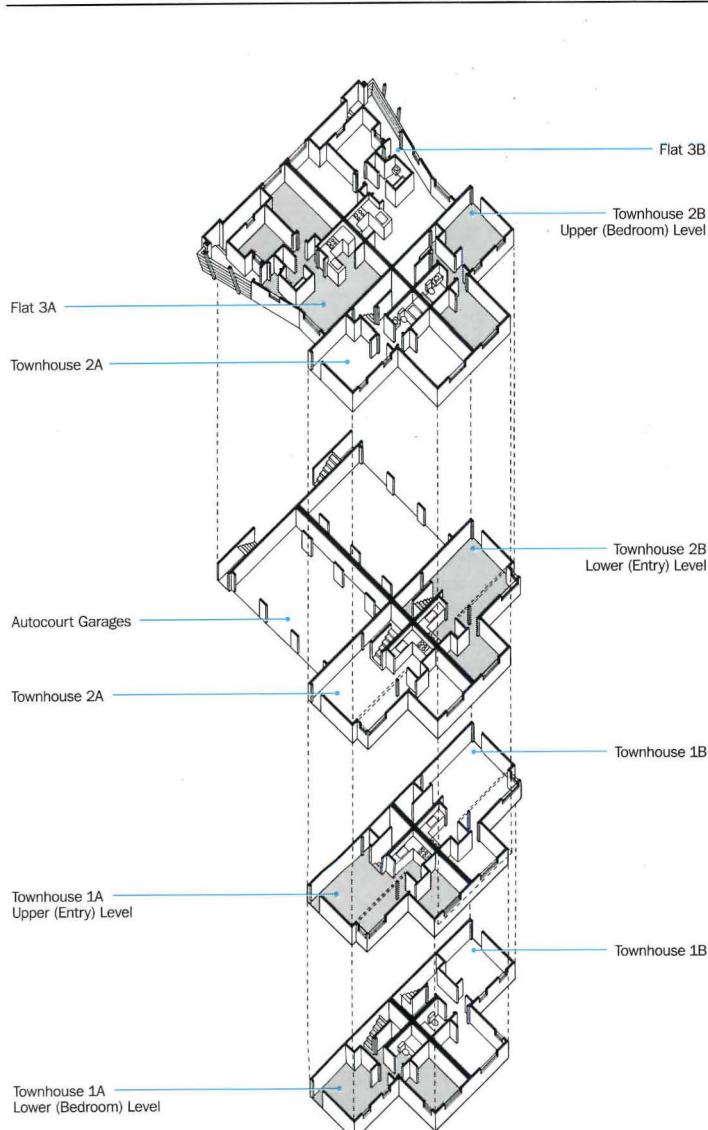
Splayed balconies
overhang the auto-
courts, which keep
cars and playing chil-
dren off the streets.



1. Autocourt
2. Balcony
3. Section at garages
4. Crawl space



TYPICAL SECTION THROUGH STACKED UNITS



PLAN - TYPICAL STACKED UNITS

According to architect Robert Herman, FAIA, "One thing that's good about NIMBY-ism is that it gives architects a chance to get out there and expose the community to what good architecture is all about. We went into our library and picked out slides of housing and market-places coexisting around the world. The project became an excuse to promote design excellence."

The turning point for Market Heights came after a city election removed officials who were opposed to the project, and suddenly protesters disappeared from the hearings. "It turned out that there weren't so many people who were opposed to the project after all," says Stoller.

The architects and developers also made concessions. For example, a proposal to build housing over the market's parking lot was dropped, the general conditions of the construction contract were very specific about not allowing any disruptions of the market to occur during construction, and special

leases were drawn up. People who rent in Market Heights agree to hold the market "harmless" for predawn market traffic and noise.

Stoller himself had a personal stake in keeping up the neighborhood. "I've lived seven blocks away from the project since 1981. There's no way I want to see the neighborhood going downhill!" ■

Manufacturers' Sources

Siding: Weyerhaeuser

Roofing: Dibben USA

Pedestrian roof decking: Vulken

Shingles: Pabco

Windows and sliding glass doors:

Milgard

Steel-clad doors: Therma-tru

Wood doors: Doorcraft by Jeld-wen

Garage doors: Stanley

Hardware: Stanley, Schlage

Paints and stains: Dunn Edwards

Plastic laminate: Wilsonart

Vinyl tile: Tarkett

Carpet: Shaw Industries

Lighting: Progress, Wellmade

Plumbing fixtures: Universal Rundel, Mansfield Kilgore Norris

At the street level (left and opposite top), the units are designed to be low-scale and to fit into the neighborhood. Per federal and state regulations, some units are designed for the handicapped (above).



Auburn Court Cambridge, Massachusetts

ALTHOUGH THE APPROVALS AND FINANCING OF AUBURN COURT WERE ARDUOUS, THE RESULT IS A REWARDING ADDITION TO THE CITY.

by Charles Linn, AIA

Project: Auburn Court
Cambridge, Massachusetts

Owner: Homeowner's Rehab, Inc.

Architect: Goody, Clancy & Associates—John Clancy, FAIA (principal-in-charge); Rob Chandler, AIA, (project architect); Paul Pressman (project manager); Maya Yared (architect); Martin Deluga (construction administrator)

Consultants: Lim Consultants (structural); C.A. Crowley Engineering (mechanical/electrical); Dewan Associates (landscape); Falk Associates (specifications)

General Contractor: Jackson Construction

Project Statistics

Total development costs: \$12.8 million
Construction cost (Phase I): \$9.1 million

Average cost per unit: \$101 per sq ft
Density: 1.92 acres at 40 dwelling units per acre (Phase I); 2.97 acres at 50 dwelling units per acre (Phase II)

Manufacturers' Sources

EIFS cladding: STO Industries

Elastomeric roofing: Genflex

Skylights: Velux

Door closers: L.C.N.

Exit hardware: Von Duprin

Exterior stain: Benjamin Moore

Quarry tile: American Olean Tile

Resilient flooring: Armstrong

Carpeting: Shaw Industries

Lighting: Seagull, Progress, Lithonia

Kitchen sinks: Elkay

Auburn Court takes on the scale, rhythm, and color of its neighborhood. The steel-framed buildings are arranged around a series of courtyards and are sheathed in wood siding of various widths with deep fascia and wide wood trim. Most units give residents either a terrace, a porch, or a balcony.

Phase I of the project consists of 77 units, and 78 more will be built under Phase II. The apartments are built to exceed energy codes, with extra insulation in the floors, walls, and roof, and are built with thermally broken windows.

Although designing Auburn Court was probably not the easiest part of the project, it might seem so compared to getting the project approved and funded. The site was originally part of a 27-acre industrial campus purchased by the Massachusetts Institute of Technology (MIT) in 1970. Although MIT had planned to use the site for a mixed-use development, the community "encouraged" the university to include housing there.

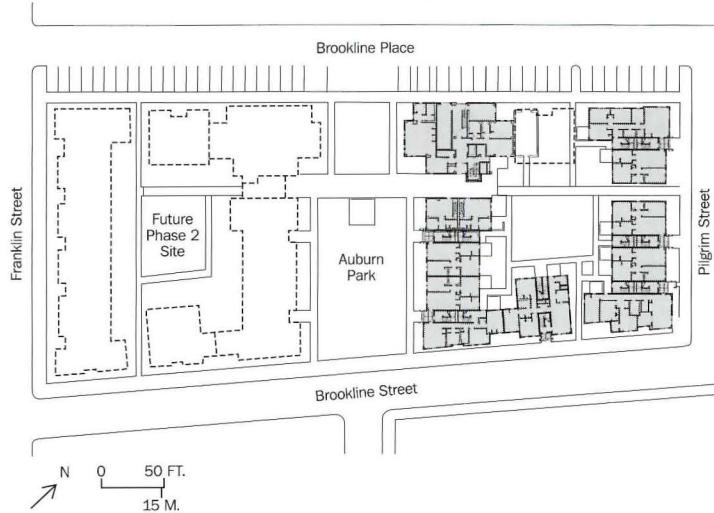
After 15 years of community involvement, the city finally created a special zoning district for the site, by that time called University Park, which required that any development include a total of 400 units of housing, one-third or more to be moderate- to low-income housing. The 4.89-acre Auburn Court site was leased to Forest City Develop-

A variety of building types, including a hipped-roof structure (right), and the use of appropriate colors and materials, give Auburn Court the appearance of an older, well-established Cambridge neighborhood.



ment, who in turn subleased it to Homeowners Rehab, Inc. (HRI) at below-market rates. This break was critical in allowing HRI to finance the rest of the project. HRI raised seed money to cover predevelopment costs from six different lenders and seven charitable organizations, and was assisted with a grant by the city of Cambridge for preparing the site's infrastructure; the local telephone, cable television,

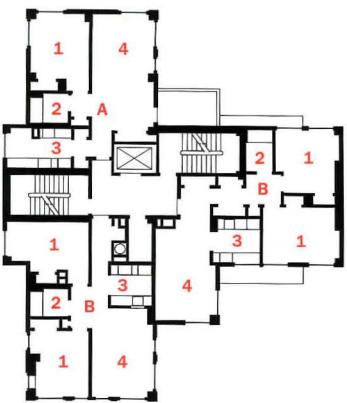
and electric utilities also provided contributions. HRI raised "gap money"—the loans required to bridge the gap between the total development costs and conventional equity financing—from three sources, and finally received permanent financing from two state agencies. The process took over 20 years. "It's complicated enough to scare a lot of developers off," says architect John Clancy, FAIA. ■



TYPICAL 2 & 3 BEDROOM FLATS

- A.** One-bedroom unit
- B.** Two-bedroom unit
- C.** Three-bedroom unit

- 1.** Bedroom
- 2.** Bathroom
- 3.** Kitchen
- 4.** Living room



TYPICAL ELEVATOR BUILDING PLAN



3

Northside Terrace Brooklyn, New York

WHEN AN INDUSTRIAL PROJECT WAS ABANDONED, A VOID WAS LEFT IN THIS NEIGHBORHOOD FOR 20 YEARS. NEW ROWHOUSES HAVE FINALLY FILLED IT.

by Charles Linn, AIA

Project: Northside Terrace Condominium Brooklyn, New York

Owner: Northside Housing Corp., Developer, an affiliate of the Hudson Companies

Sponsoring agencies: New York City Housing Partnership; New York City Department of Housing Preservation and Development

Community sponsor: The People's Firehouse, Inc.

Architect: James McCullar & Associates—James McCullar, AIA, principal-in-charge; Kenneth Bamburak, project architect; Mihaela Alessiu, Thomas Dean, team members

Consultants: Abraham Joselow (mechanical/electrical); Pulaski & Sirota (structural)

General Contractor: Monadnock Construction

Project Statistics

Total development cost: \$7.02 million
Total construction cost: \$5.01 million

Number of units: 57 in 19 three-story, three-unit buildings

Total gross sq ft: 55,171 sq ft
Dwelling units per acre: 75

Manufacturers' Sources

Face brick: Yankee Hill Brick Co.

Wood floor joists: Trus Joist MacMillan

Roof membrane: U.S. Intec

Aluminum siding: Alcan

Infiltration barrier: Dupont Tyvek

Lighting: Hadco, Genlyte, Timely

Plumbing fixtures: Crane, Kohler,

Northside Terrace's site is an odd, almost triangular slice of land in the Williamsburg section of Brooklyn that was, until 1973, occupied by rowhouses. That year, against the wishes of residents, the land was acquired by the city and cleared for an industrial expansion. This never occurred, and for years the land was a vacant pocket of crime.

The New York City Housing Partnership chose an active community organization, The People's Firehouse (so called because of their success in saving a neighborhood firehouse from demolition), as their development partner for the site. The People's Firehouse, not forgetting that residents had left their homes unwillingly over two decades before, advocated that replacement housing be affordable for first-time homebuyers, priced at a level that would allow some of those who had been displaced to return if they wanted.

A site study showed that zoning variances would be required for construction. After these variances were obtained—along with financing—design and construction were completed. Other projects previously put together by the Housing Partnership included flats that could be rented by owners to help offset the cost of mortgage payments. In this case, a condominium approach was used, and all 57 of the units were put up for sale.



The traditionally scaled rowhouses, designed by architect James McCullar, AIA, are compact and spare, in keeping with the building program's affordability requirements, although front and side elevations have been faced with brick. The middle and upper units are entered from stoops, recalling one of the major elements of traditional rowhouse architecture. Ground-floor units have rear terraces, are entered at grade, and are wheelchair-accessible.

McCullar, who has been involved in other housing projects, reveals that there were some surprises in store for him when the units went on the market. "I thought the ground-floor units would sell first, because they have terraces. Apparently people feel more vulnerable to break-in on the ground floor. Much to my surprise it was the units on the third-floor corners that sold first," he continues, "because

Brick-clad rowhouses, designed to be affordable for first-time homebuyers, recall the traditional scale and materials of this Williamsburg, Brooklyn, neighborhood.

they were bigger, had more windows and better views. The rest of the third floor sold and the second floor next, starting with the corners again—a preference for views and security versus a backyard. It's something to think about." ■





Young Apartments Los Angeles

ADAPTIVE REUSE OF A HISTORIC LOS ANGELES APARTMENT BUILDING PROVIDES AFFORDABLE HOUSING FOR SOUTH PARK AREA RESIDENTS.

by Charles Linn, AIA

Project: *The Young Apartments Los Angeles*
Owner: Los Angeles Community Design Center
Architect: Cavædium—Kathleen FitzGerald, principal-in-charge; James Bonar, FAIA, Ken Kurose, AIA, Hue Tong, Christian Sereduke, Sam Waits, project team
Consultants: David Taubman & Associates (structural); M.B. & A. (mechanical); G & W Consulting Engineers (electrical); Melendrez Associates (landscape); Patrick Quigley Associates (lighting); Martin Eli Weil (restoration)
General Contractor: Clark-Porche Construction Co.

Project Statistics
Cost: \$4.2 million including building and site costs, \$80 per sq ft average
Gross sq ft: 52,200 sq ft
Number of dwelling units: 66 one-bedroom units, 400 to 700 sq ft each

Manufacturers' Sources
Mineral-surfaced roofing: Manville
Custom wood doors, windows, hardware: Trimco
Plastic laminate: Nevamar
Ceramic floor tile: Dal Tile
Carpet: Shaw Commercial, Bentley Mills
Lighting: Brass Light Gallery, Shaper Lighting, Hubbell Lighting
Elevator: Otis Elevator
Plumbing fixtures: American Standard, Mansfield Kilgore Norris

Architect Robert Brown Young designed this Los Angeles apartment building for oilman William F. Young. When construction was completed in 1911, the Classical Revival-style building was considered one of the finest apartment buildings in Los Angeles. The apartments were designed for single, working people, and William Young thoughtfully provided tenants with an Arts and Crafts-style lobby and, in the basement, a billiard room and a ballroom.

With the passing of the decades, the building deteriorated so badly residents nicknamed it "Dracula's Castle"; eventually, living conditions became so awful that the owner was cited by the Los Angeles Slum Landlord Task Force. Beginning in 1990, the building was vacant and left to squatters, damaged by vandalism, and marked by graffiti. As in most recent affordable housing projects, the developer's creation of a funding package was one of the project's most troublesome pieces. In the case of the Young Apartments, this difficulty was exacerbated by the fact that construction was not new. The city's Community Redevelopment Agency had approached a not-for-profit developer, the Los Angeles Community Design Center (LA/CDC), to develop funding for the building so that it could be rehabilitated for low-income housing. But even though

the LA/CDC had a good reputation for their affordable housing projects, the Young Apartments had such a bad reputation that getting funding was not easy. The LA/CDC worked for three years to package funding from tax credit investors, state and community development funds, conventional financing, and local redevelopment loans.

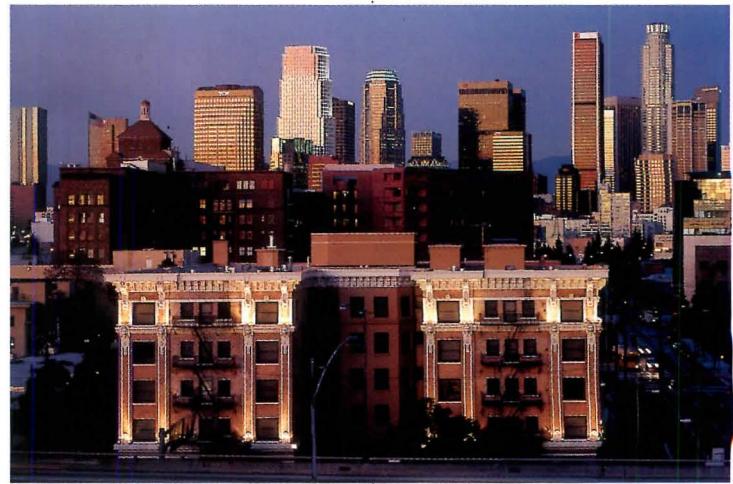
Putting it back together

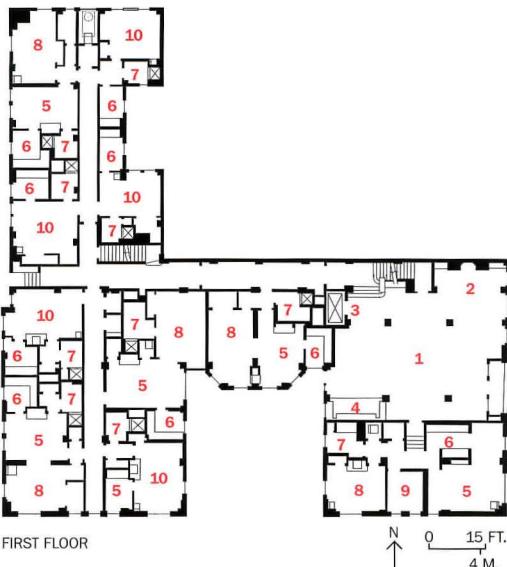
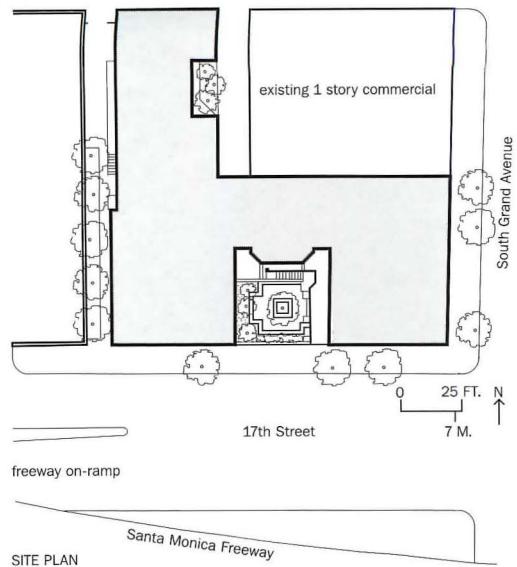
After funding and feasibility, one of the architectural firm Cavædium's first considerations was the building's landmark status. This was not a problem, according to Kathleen FitzGerald, project architect: "Because the building is a City of Los Angeles Historic Cultural Landmark, it had to be reviewed by the city's Cultural Affairs Department during the schematic phase

and design development. But the city was always very supportive."

The exterior of the building offered a number of challenges. Metal brackets were re-created from the originals, terra cotta was repaired, the building was cleaned of graffiti, and concrete was painted to match its original color. The wood windows were deemed unsalvageable and replaced with new wood windows whose sashes were fitted with laminated glass for sound control—the building is within a stone's throw of an on-ramp for the Santa Monica Freeway.

This prominent location gave the architects an opportunity to do something that would signal the return of this landmark and the neighborhood: they lit the facade, revealing its elaborate cornice and terra-cotta lions' heads.





Formerly known by residents as "Dracula's Castle," the Young Apartments have returned to life as affordable housing. The architects illuminated the building's facade to make it stand out next to the Santa Monica Freeway. The building's restored Arts and Crafts lobby (far right, top) has a permanent exhibition of the building's history. Apartments (far right, bottom) feature built-in buffets that replicate the originals.



The small outdoor space between the building wings was redesigned as a courtyard. Heavy shrubs protected by a wrought-iron fence screen the area from the noise of the freeway; inside, shade trees, benches, flowers, and potted herbs provide a relaxing refuge for residents.

Layouts of the apartments weren't changed except to accommodate mechanical equipment. The living rooms in most of the existing 66 units were damaged, but most had not been severely altered. Missing woodwork was replaced, plaster was repaired, and the units'

built-in buffets were rebuilt. Bathrooms and kitchens were beyond repair, so these areas were rebuilt in a manner that would be sympathetic to the original interiors. Some new mechanical equipment was installed in a newly enclosed air shaft; the balance of the space was added to the kitchens and bathrooms. Piping for sprinklers was installed in either kitchens or bathrooms.

Heating and air conditioning is provided by vertically stacked heat pumps that were installed in closets or furred out where necessary. The Arts and Crafts lobby was

marred by missing Honduras mahogany panels and trim. The architects replicated the design from fragments of the original materials that remained and from architect Robert Brown Young's working drawings. The restoration here also included work on the mosaic tile floor and restoration of the original fireplace.

Scrimping is not saving

FitzGerald cautions architects not to scrimp on materials, finishes, and hardware when designing for affordable housing. "We specified a higher grade of hardware than is usually



found on market-rate housing," says FitzGerald. "We used painted wood panel doors on the buffet instead of laminate not only because they go better with the spirit of the times, but because they are more durable than the alternatives. We also searched for a loop-pile carpet instead of a cut-pile, and found one that would resist being stained by bleach and hide dirt."

"Nonprofits who manage their own properties have a greater incentive to push for high-quality materials initially. They can't just sell out in five years like private owners can," FitzGerald concludes. ■

Plaza Maria San Jose, California

THE TRELLIS-CAPPED TOWER OF AN AFFORDABLE HOUSING COMPLEX SIGNALS CHANGE NEAR DOWNTOWN SAN JOSE.

by Charles Linn, AIA

Project: Plaza Maria Family Affordable Apartments
San Jose, California

Owner: Mercy Charities Housing
California

Architect: David Baker Associates
Architects—David Baker, FAIA, principal designer; Peter MacKenzie, AIA, project architect; Jeff Burris, project designer

Consultants: Steven Tipping & Associates (structural); MHC Engineers (mechanical); Pete O. Lapid (electrical); Sandis Humber Jones (civil); Terratech (geotechnical); Cottong Taniguchi (landscape); Edward L. Pack Associates (acoustical); BEC (energy)

General Contractor: L & D Construction

Project Statistics

Total project cost: \$4.9 million
Cost per dwelling unit: \$92,453
Number of units: 53
Density: 38 dwelling units per acre
Total gross sq ft: 74,045
Cost per sq ft: \$66/sq ft

Manufacturers' Sources

Vinyl windows: Mercer
Metal doors: Ceco; Viking
Door hardware: Schlage; LCN
Overhead doors: Kinnear
Paints and stains: Fuller O'Brien, Benjamin Moore
Plastic laminate: Wilsonart
Vinyl composition tile: Azrock
Vinyl sheet flooring: Mannington
Lighting: Seagull, Shaper, Progress

Plaza Maria, a 53-unit housing complex, sits on the edge of the downtown San Jose redevelopment zone. Developed by Mercy Charities Housing, a nonprofit housing development corporation, it was funded by low-income-housing tax credits. A striking part of the development of this complex is that NIMBY-ism did not play the role that it has in many projects. It was not people in the project's backyard who opposed it, but policymakers in San Jose's city government. They felt it was preferable to try to attract high-income residents to the retail-and-entertainment core of the city, rather than people who would be eligible for affordable housing.

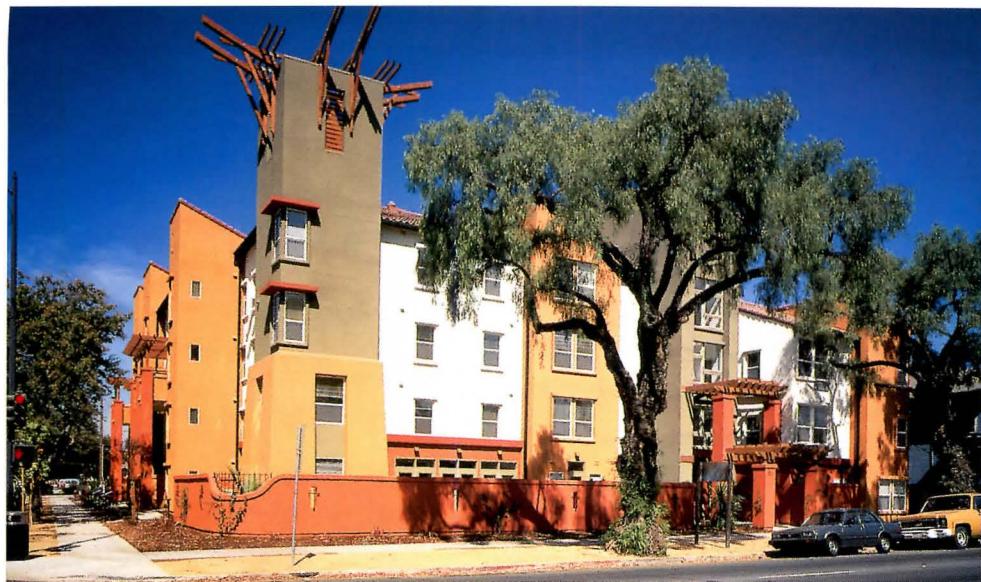
Over time Mercy Charities prevailed. They showed that rental-market rates in the area were already lower than 60 percent of median income, which is the most that low-income tenants can be charged, and therefore market-rate housing was not feasible. Even though the city backed down, the developer and architect David Baker, FAIA, knew a special building was called for.

Baker worked to make the complex blend in with the working-class neighborhood's Craftsman-style houses. Bright earth tones found elsewhere in the city were used for the exterior finishes, trellises were built over balconies, and the massing of the buildings was

broken up with setbacks formed by cutouts in the floor plans.

There are four floor-plan types, designed so they can be reversed or combined in a number of different ways, to fill the site as efficiently as possible while gaining the desired dwelling-unit density and creating the exterior setbacks.



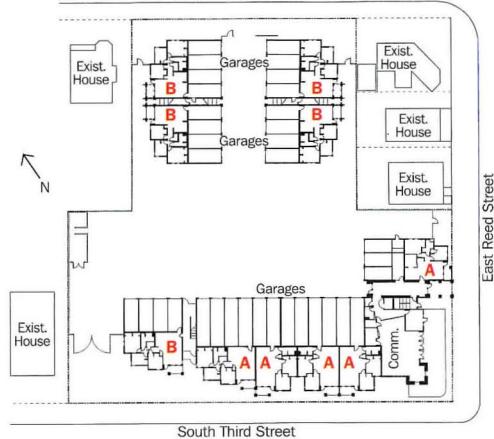


The trellis-topped corner tower (left) has become an established icon for the entire neighborhood.

The interior of a resident's apartment (below) is light and airy.



South Fourth Street



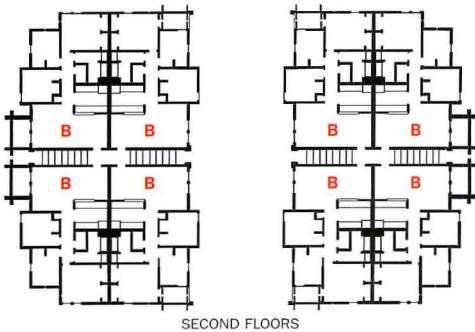
Unlike other affordable housing projects, lots of parking is included here (site plan, left). The plans of the different unit types (below) are interlocking and can be rearranged a number of ways, to make the most of the site and to give the building form visual interest.

At one corner of the complex, a tower topped by a trellis rises a full story above the rest of the apartments. Baker comments that, although it has no real function except as a marker for the building, the tower has become an established icon for the entire neighborhood and is even used as a logo on a community newsletter.

The complex itself is safely tucked behind masonry walls and wrought-iron gates. The apartment buildings are arranged around a large courtyard with parking

areas. Garages are accessible from the courtyard, although some can be reached from their attached apartments. A community room, laundry, and play lot are adjacent to each other in one corner of the property.

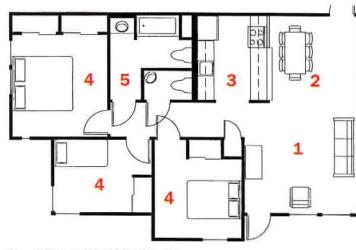
Plaza Maria has been endowed with much that is lacking in market-rate housing. And perhaps sometimes it is an architect's need to respond to political pressure that results in such a building—one that is a gift rather than a burden to a neighborhood. ■



SECOND FLOORS



A - 2 BR APT. 828 SQ. FT.



B - 3 BR APT. 962 SQ. FT.



C - 2 BR APT. 830 SQ. FT.

1. Living room

2. Dining room

3. Kitchen

4. Bedroom

5. Bathroom

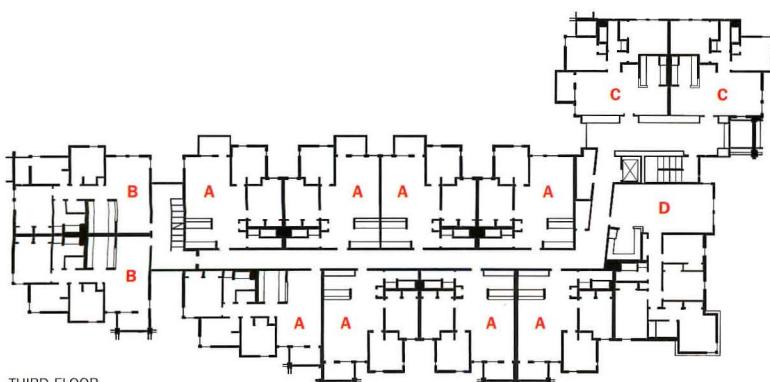
6. Terrace

A. Two-bedroom unit

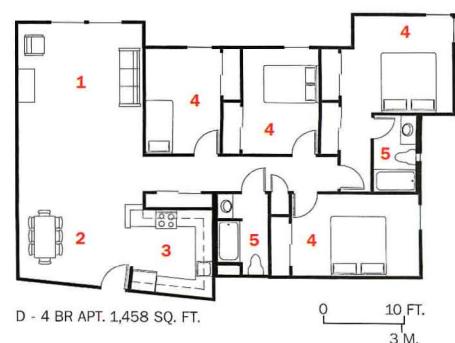
B. Three-bedroom unit

C. Two-bedroom unit

D. Four-bedroom unit



THIRD FLOOR



D - 4 BR APT. 1,458 SQ. FT.

0 10 FT.
3 M.

Project Outline DESIGN A WATERFRONT COMMUNITY CENTER BUILT TO WITHSTAND SALT AIR, HIGH WINDS AND SEASONAL TEMPERATURE VARIATIONS. IT MUST MEET THE APPROVAL OF AN UNUSUALLY DIVERSE CONSTITUENCY, INCLUDING THE ARMY CORPS OF ENGINEERS, MARYLAND STATE DEPARTMENT OF NATURAL RESOURCES, TOWN OF OCEAN CITY AND HERON HARBOUR ISLE RECREATION ASSOCIATION.



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Design Solution DRAW FROM INFLUENCES OF LIGHTHOUSES AND TRADITIONAL EAST COAST ARCHITECTURE TO CONSTRUCT A FACILITY THAT UNIQUELY REFLECTS THE COMMUNITY AND ENDURES THE CHALLENGING NATURE OF ITS ENVIRONMENT. USE A WIDE VARIETY OF ANDERSEN® WINDOWS TO OPEN UP EACH ROOM TO THE VIEWS OFFERED BY THE SITE, AND BRING IN AN ABUNDANCE OF WARM, NATURAL LIGHT.

AIA Documents: The Rules Are Changing

NEW VERSIONS OF THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AND THE OWNER-ARCHITECT AGREEMENT ADDRESS DISPUTES AND SERVICES.

by Dale R. Ellickson, FAIA, and Mark H. McCallum

It is hard to exaggerate the importance of the AIA documents to the American construction industry. Speaking to an audience in the UK recently, Justin Sweet, Professor of Law Emeritus at the University of California at Berkeley's Boalt Hall, described them as "the principal reason that American construction law is generally uniform in nature." When other documents are used, they typically draw on AIA provisions—and they cannot avoid relying on case law built up in the interpretation of AIA language.

But AIA documents don't operate in a vacuum. They have been a constant within the industry partly because their drafters pay attention to changes within the industry. "Architects have to redefine their profession," says Ed Tsoi, FAIA, of Tsoi/Kobus & Associates, a member of the Documents Review Task Force of AIA's Practice and Prosperity Initiative. "This is true for a number of reasons, not the least of which is the fact that our clients are redefining themselves."

Since early in this century, AIA's flagship document has been the General Conditions of the Contract for Construction, now designated A201. Other AIA general conditions take their direction from A201, which describes the architect's role in administration of the construction contract. More than any other AIA document, A201 defines the rules for the industry. The Owner-Architect Agreement, B141, in turn defines the role of the profession within the industry.

Semifinal drafts of A201 and B141 were distributed for comment at the AIA convention in May. Input is still being received as this article goes to press. The Documents Committee will review these comments and finalize the drafts for publication in October. Publication of these documents will mark the completion of a 10-year revision cycle. The AIA began taking comments on A201, B141, and related documents

shortly after the 1987 editions were published. The Documents Committee has received input from architects through roundtables held by AIA component chapters, which have also contributed by hosting owners' roundtables. Input has been received from the Associated General Contractors, the American Subcontractors Association, the Associated Specialty Contractors, the American Bar Association, and the American College of Construction Lawyers. The revision process also coincided with AIA's Practice and Prosperity Initiative, which provided support for a fundamental reassessment of the architect's role. New editions of the other documents in the A201 family will appear as well.

A201: Incremental changes

In revising A201, the AIA Documents Committee has squarely addressed the most persistent problem in the construction process: disputes. Three major changes in the document are the contractual equivalent of tort reform.

- Mediation is now required prior to arbitration, in order to defuse disputes before they escalate. The mediation and arbitration provisions are separate, so that either can be deleted without affecting the other.
- A mutual waiver of consequential damages keeps a lid on the amount involved in any dispute by excluding indirect or incidental damages. Both owner's and contractor's claims are limited to amounts directly arising from the other's breach.
- Termination for the owner's convenience is permitted, with appropriate payment to the contractor. "Opt-out" provisions of this kind have been used by federal agencies, and permit the owner to withdraw from a contractual relationship that proves unworkable.

A hot issue between architects and contractors has been the allocation of responsibility for incidental design. This usually involves fabricated or manufactured building components such as curtain walls and elevators. A new provision in A201 sets out procedures and gives a detailed allocation of responsibility. It is not a radical departure from the 1987 wording, but will eliminate some areas of doubt and disagreement. (See "The Associated General Contractors Comment on General Conditions," page 124.)

The new A201 contains detailed requirements for contractor review of the contract documents and field conditions. The expectation is that the contractor will conduct such review in order to expedite construction, not to discover discrepancies. However, any discrepancies that come to light must be reported promptly.

Other, minor changes occur throughout A201. "We took a fresh look at the whole document," says Leo G. Shea, FAIA, of Kughn

Continuing Education This month's installment of the ARCHITECTURAL RECORD/AIA Continuing Education Series looks at the proposed 1997 revisions to the AIA contract documents. We thank Joseph Dundin and Douglas E. Gordon for their education contributions. After reading this article, complete the questions (page 162) and check your answers (page 164). AIA members may fill out the self-report form in this issue (page 164) and send it in for two AIA Learning Units.—Mark Scher, AIA Director Professional Education Products and Services

Learning Objectives After reading this article, you will be able to:

1. Summarize the intended changes in the Owner-Architect Agreement involving communication, professionalism, intellectual property, and dispute resolution.
2. Cite the consequences for owners and contractors when an owner terminates a contract.
3. Identify three elements of the new AIA Owner-Architect Agreement that apply in a given design situation.

Dale R. Ellickson is the AIA Contract Documents Program counsel. Mark H. McCallum is the AIA Contract Documents Program associate counsel.

Enterprises, chairman of the Documents Committee task group responsible for A201. "You'll see adjustments to many facets of the relationship. These include the contractor's right to rely on owner-furnished information, broader hazardous-material provisions, and the owner's right to assign the contract to the lender providing construction financing. Questions that existed under the 1987 edition, such as whether the contractor was entitled to payment of amounts not in dispute under construction-change directives, have been laid to rest through language in the 1997 edition. The idea throughout has been to bring the document into line with current practices and, where we have a choice, to foster the best practices."

B141: New departures

If the changes in A201 are incremental, those in B141 are revolutionary. Responding in large part to the Practice and Prosperity Initiative—which recognizes that architectural services extend well beyond building design and construction, that they are based on long-term relationships, and that they place architects in facilitator/integrator roles—the AIA Documents Committee undertook a complete reevaluation of the document and its role in the practice of architecture. The committee was able to identify 11 conceptual principles that the new B141 would need to satisfy:

- Allow the architect to provide an expanded range of services over the life of the project.
- Enhance the link between fee negotiation and the services to be provided by making clear to the owner the value of services being negotiated, and how those services can be compensated.
- Offer clear descriptions of services.
- Evidence a tone and character that are positive, comprehensive, inclusive, proactive, and educational.
- Demonstrate the value-added nature of the architect's services.
- Clarify the owner's role, responsibilities, and obligations.

- Provide for conflict avoidance and resolution.
- Permit flexible selection of compensation and project-delivery methods.
- Describe known project assumptions in detail, including scope, budget, site, and schedule.
- Provide a means of managing costs through the life of the project.
- Provide some familiarity to users of AIA documents and preserve links to related documents such as A201.

"We sought and obtained input from owners, architects, attorneys, and insurers," says Bob South, AIA, of the Gorder South Group, chairman of the Documents Committee task group that drafted B141. "We found there was support among all these groups for a more proactive role for the architect." One example is the proposal that the architect have more responsibility for keeping cost within the owner's budget. If costs became too high, redesign would be the architect's responsibility.

The general call was also for a document for architects willing to take on more duties, a document with a can-do attitude. The resulting draft, currently in its final stages of revision, differs radically from the 1987 edition, primarily in three ways:

- It is in the form of a three-part document "kit" rather than a single, free-standing document.
- It requires an active dialogue between architect and client that will establish a better understanding up front of what the architect will do.
- It enables the architect to offer the client an expandable range of services.

In many ways, the new B141 takes a step back to a time when architects offered the comprehensive project-administration services owners often seek from others today.

"Architects have been disconnected from the construction site," says Raj Barr-Kumar, FAIA, RIBA, of Barr-Kumar Architects Engineers, president of the AIA. "The more aggressive, assertive, entrepreneurial architects are already producing these kinds of relationships."

THE ASSOCIATED GENERAL CONTRACTORS COMMENT ON GENERAL CONDITIONS

From many contractors' perspectives, the design-delegation clause in the new edition of A201 will be a radical departure from the clause in the 1987 edition. Given that the 1997 edition of A201 would have more explicit language than that of the 1987 edition's rather vague and frequently overlooked clause, the Associated General Contractors' (AGC) task force worked to try to influence as many protections for contractors as possible. Because it is an explicit statement, it is a much safer provision; but this is not a contractor's protective provision. The provision is a very detailed statement of the conditions under which a contractor may be required to pro-

vide professional services. While it does not mandate the delegation of design, the provision does permit it. It must be recognized by all to be a shifting of more risk to the contractor, which can have serious professional licensing, insurance, and public-policy implications.

Contractors will have to carefully review the contract documents to determine their design responsibilities and to make sure the project design professionals have met their obligations under the provision. It would be prudent for them to review the state licensing laws and regulations governing design professionals for each jurisdiction in which they do work. The delegation of design

responsibilities is currently being challenged in at least one state.

Insurance will become an even more important part of the contractor's risk-allocation protection. Since liability for the delegated design will "pass through" the general contractor, a condition of any subcontract where design work is required should be that the design professional providing the delegated design have appropriate professional liability insurance coverage. Contractors will have to learn the particular language of errors and omissions coverage. There is a growing new market for contractors' contingent liability coverage as well as stand-alone design liability coverage, but these policies are virtually untested and are being offered in an unusually soft insurance market.

There are many other significant changes from the 1987 edition: a mutual waiver of consequential damages, an expanded definition of hazardous materials, a termination-for-convenience clause, a requirement that substitutions be authorized by change order, and a provision requiring the owner to disclose any financing changes. While the AGC strongly supports the inclusion of mediation in dispute-resolution procedures (a provision in AGC standard forms for the last six years), it is unfortunate that the AIA has retained the prohibition against consolidation or joinder of arbitrations. Cheryl Terio

Cheryl Terio is Counsel for construction law and contracts of the Associated General Contractors of America.

THE THREE-STEP ORGANIZATION OF B141 (1997)

New three-part format

A modular format in three distinct sections was chosen so that the architect and the owner can more easily tailor services (and services packages) to specific project needs. The three parts are:

- An Agreement form containing blanks for preliminary project information, such as the proposed use, anticipated time constraints, and the names and addresses of the owner's designated representative and consultants, along with terms and conditions and payment provisions.
- A Scope of Services form describing the services to be provided by the architect. (In the form to be released in October, there is only one Scope of Services, which is very similar to that in the 1987 edition, comprising services for the design and administration of the project. This will, over time, be joined by other, alternative Scopes of Service as need is identified.)
- Supplemental Attachment forms that may be used to modify or add to the Scope of Services form from part two. For instance, the architect and owner may negotiate for the architect to provide extended project representation services beyond the level offered in part two.

"The multipart format offers greater flexibility through the life of the project," says Alan Sclater, AIA, of Sclater Kimball Architects, who coordinated the drafting of B141. "There's more than one way to structure your services, and that often becomes evident in the course of a single project."

The Agreement Form

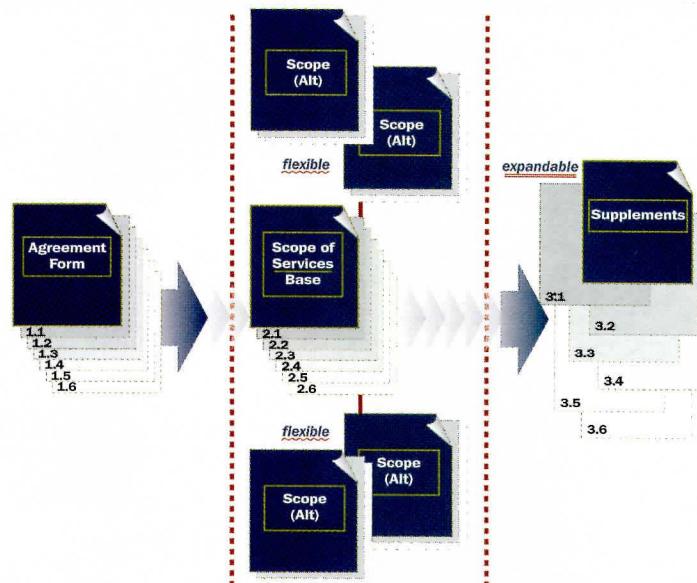
The Agreement Form is the key coordinating element of the three parts. Its first article, entitled Preliminary Project Information, is critically important. This set of fill-in blanks calls for quite specific information about the project. The object here is to stimulate dialogue between client and architect about the size and location of the project, its proposed use, the owner's budget, the proposed method of contracting, the parties' representatives and consultants, and so on. "There is no doubt that a majority of construction claims against architects have their genesis in faulty communication," says Paul Genecki of Victor O. Schinnerer & Co. This new article is intended to correct that problem by getting all the important assumptions and expectations out on the table for discussion.

The professional character of the owner-architect relationship is underscored by new provisions requiring disclosure of conflicts of interest and maintenance of the confidentiality of client information. The latter is intended to obviate the need for custom-drafted provisions where the owner will be sharing proprietary information with the architect. A source of concern in recent years has been the preparation and handling of the architect's drawings and specifications in electronic format (see "Copyright Law in the Age of the Web," RECORD, June 1997, pages 169-70). The new Agreement extends the same protection to such materials as to their paper equivalents. It also allows for their transfer between the parties once format, ownership, and use have been agreed to.

Arbitration is mandatory under the new B141, just as in previous editions. Mediation has been added, as in A201. The architect and owner agree to split the cost of mediation equally. And as in A201, the B141 Agreement contains a waiver of consequential damages, that is, damages alleged to flow indirectly from a breach of the contract. (Needless to say, the only limit on such damages may be an aggrieved party's imagination.) B141 also permits termination for the owner's convenience, with appropriate compensation and expenses to the architect.

The Scope of Services

When it is published in October, the new B141 will contain a Scope of Services that approximates the services set out in the 1987 edition of

**Step One**

Establish terms and basic conditions in the **Agreement Form**

Step Two

Choose from alternative **Scope(s) of Services** (or develop your own)

Step Three

Expand scope, if needed, beyond baseline by choosing **Supplements**

A MODULAR FRAMEWORK The most revolutionary element of the new Owner-Architect Agreement is its organization into multiple standard parts assembled in a three-step process. The concept, derived from discussions among the AIA Documents Committee, the Practice and Prosperity Task Force, and Institute leadership, was to make the document applicable to the specifics of any project. Full-service firms, niche specialists, even architects providing pure consultation services not related to a specific building can create a solidly documented agreement from the B141 form.

STEP 1 establishes Basic Terms and Conditions It also includes a discussion outline for owner and architect to use to come to agreement on mutual responsibilities and expectations. Step 1 does not specify services, and can be used alone (with the architect's or client's own description of scope of services) or in conjunction with either Step 2 solely or with Step 2 and Step 3 together.

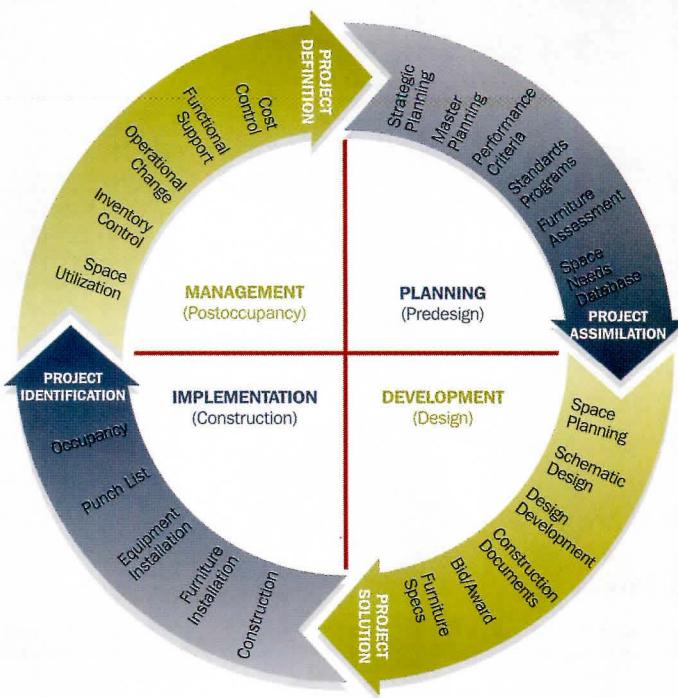
STEP 2 describes Scope of Services Currently, this step is comparable to the 1987 basic Scope of Services. Over time, the AIA Documents Committee will be creating numerous approaches as the committee identifies those approaches.

STEP 3 will supplement the Scope of Services A set of attachments will allow any one or more of the baseline services detailed in Step 2 to be enlarged as negotiated between owner and architect.

B141. The AIA will be developing other scopes of services for other types of projects; those under consideration include scopes of services for interiors work, design services without contract administration services, and contract administration services without design services. Users who wish to develop their own Scopes of Services will be able to do so and still use the standard Agreement form.

A significant advantage of the new Scope of Services is its detailed description of the services to be provided by the architect. By establishing a more thorough understanding at the outset of what the architect is going to do, the new form removes some of the basis for disagreement as services proceed. Space is also provided for the parties to

ARCHITECTURAL SERVICES: A CLIENT'S-EYE VIEW



The new B141 breaks away from the earlier entrenched thinking of phases of services (i.e., predesign, schematics, design development, contract document, and construction administration). The weakness of grouping architectural services by phases is that it creates a limiting mindset, argues William T. Coleman, AIA, of Sindik Olson Associates, Santa Monica, Calif. Viewing facility life cycle from the client's perspective creates a circle that greatly expands the potential for architect involvement in all a client's facility-related needs.

specify the number of site visits, shop drawing reviews, and inspections for substantial completion.

Phases of services have been eliminated in favor of groupings according to the type of service involved. The groupings are:

- Project Administration Services
- Evaluation and Planning Services
- Design Services
- Construction Procurement Services
- Contract Administration Services
- Facility Operation Services

The distinction between basic, additional, and contingent additional services has been eliminated as well. In place of contingent additional services, circumstances requiring a change in the services of the architect—and entitling the architect to an adjustment in compensation—are described in the Agreement.

Needless requests for information from the contractor have been a problem on many projects. Under the Scope of Services, responding to such requests constitutes a change in service.

A persistent source of client dissatisfaction has been the failure of architects to stand behind their cost estimates. In earlier editions of B141, the parties have had the option of proceeding with a fixed limit. In response to owners' comments, that option becomes the standard in the new Scope of Services: if the lowest bid or proposal exceeds the owner's budget, the architect will redesign as necessary to comply with the budget. A further change under consideration as this article goes to press is use of

the term "general supervision" to describe the architect's relationship to work under construction. Since the early 1960s, the term "observation" has been used. Comment has indicated that "supervision" more accurately describes what architects actually do in the course of contract administration. The term also has value to owners, who want somebody on the project to supervise. The question still being considered by the Documents Committee is, "Why not the architect?"

Victor O. Schinnerer, after reviewing pertinent case law, has agreed that "supervision" is insurable terminology. The proposed move back from "observation" is based on the same arguments as were made in 1960 when William Stanley Parker presciently wrote, as an AIA consultant on contract procedure: "It seems to me the trend of intent in these various amended phrases is to belittle the duties of the Architect in the field. I feel that the long-familiar use of the word 'supervise' is justified, and that if the proposed amended phrases should be adopted...the Architect [should be] reduced to a more or less casual observer of the construction process...and any Client would be justified in deciding to do away with the Architect's supervision and make other arrangements."

The Attachments

A third part—or, more accurately, parts—of the new B141 is contemplated: a set of attachments for use in modifying the Scope of Services. Several attachments corresponding to the groupings of services in the Scope may be published with the new B141 in October. Other attachments may follow, and still others will be developed for use with other scopes of services. As with the Scope of Services, users are free to develop their own attachments.

The intention, however, is to provide enough flexibility within the standard document to accommodate most uses. Customization is an option, as it has always been. The new B141 differs from earlier editions in providing a modular framework for customization and modification. "Architecture is not a one-size-fits-all profession," says Barr-Kumar, "and this is not a one-size-fits-all document. These forms are meant to be tailored—customized to meet the client's needs and the specific project needs. They are meant to be modified. They are a living document." ■

Resources for AIA Documents Information

The dialogue on A201 and B141 among AIA members at the component level came to a close July 1. For more information on those discussions in your area, contact your state or local AIA component.

The final forms of AIA Document A201, General Conditions of the Contract for Construction, and AIA Document B141, Standard Form of Agreement Between Owner and Architect, will be available this October through AIA documents providers, including AIA component bookstores and the national fulfillment house, 800/365-2724.

The AIA also has initiated a fax-on-demand service for ordering Institute-related information. The following index is for AIA Contract Documents Program mailings. Call 800/AIA-DUES and follow the voice prompts to order copies of these documents. Document number/Document name

1. Index
11. AIA Contract Documents Price List
12. AIA Documents: Use and Reproduction
13. Documents Drafting Principles
14. Construction Management Article
15. Ownership of Documents: Parts 1 and 2
16. Revised Design/Build Documents Published
17. New Owner-Architect Agreement for Developer Housing Projects Published
18. You and Your Architect

Getting Your Feet Wet in CAD

WHILE ENTRY-LEVEL APPLICATIONS MAY SEEM AN OBVIOUS CHOICE, THERE ARE NOW MANY PATHS WORTH CONSIDERING FOR THE HERETOFORE COMPUTERPHOBIC.

by B. J. Novitski

For the thousands of architects who have not yet incorporated computer-aided design into their practices, the pressure to adopt mounts every year. As clients, consultants, subcontractors, and even fabricators come more and more to rely on CAD documents, firms without CAD may find it increasingly difficult to compete. Some firms have shied away from CAD technology, but fortunately the ease of automating is improving at the same time that hardware and software costs are declining. Nonetheless, the number of available choices is still daunting. How do you select a suitable software system that won't break the bank?

For the newcomer, there is no one-size-fits-all solution to the CAD equation, say experts. For firms that have long avoided CAD, one key to making an initial selection is to examine why the firm has resisted the technology. The obstacle may have been technophobia (or technoskepticism). Perhaps cost has been the barrier. And a few creative souls whose idiosyncratic design styles are in contrast to stereotypically rectilinear computer graphics have been justified in staying away from systems that would force them into straight lines and square boxes. Whichever category you may fit into, the marketplace now offers a variety of options. And whatever your reason for holding out, it is probably better to reassess whether current systems meet past objections now than to wait until you find yourself faced with clients or consultants who won't work with you if you don't have CAD.

You can choose to start modestly and grow gradually, or you can take on the technology aggressively, attempting to get through the transition rapidly. Either way, it's important, experts agree, to match your move with the capabilities of your firm. Even a small, inexperienced firm, says Minneapolis consultant David Jordani, can tackle the more complex systems if enough people in the firm have the right disposition toward technology. "The bottom line," he emphasizes, "is that success always depends on the people." Barry Isakson, of Architectonica, a Los Angeles-based consulting firm, agrees but he cautions his clients about taking too big a bite. Adopting any new system takes time and pulls staff away from the immediate job of getting projects out the door. "If everyone in a small firm dives in over their heads," Isakson warns, "they may find they're losing money because they can't get the drawings out." But entry-level software allows newcomers to get their feet wet gradually.

What was good enough for my father...

Such gradual transitions may be most appropriate for firms that have held out due to inexperience, fear of the unknown, or a healthy wariness of awkward technologies. Many small firms are so adept at producing draw-



ings by hand that computers would slow them down. But even the most resistant CAD holdouts have probably already discovered the productivity gained through word processing, spreadsheets, and other automated office functions. Older practitioners, who didn't have access to computer training in architecture school, are learning from their children or grandchildren how accessible technology can be. These holdouts may be wondering if CAD can become another routine tool for enhancing efficiency.

For such beginners, Isakson recommends starting with simple drafting software that simulates what architects already do by hand. He works only with Macintosh, and cites PowerCADD, MiniCad, and MacDraft [see "CAD Software Sources," page 132] as low-cost, entry-level systems. "Power is nothing if it's not accessible," he says, "so novices should start with something appropriate to their skills. They can always migrate up later after they come to appreciate the differences between the easy-to-use systems and the more sophisticated ones." These 2D drafting programs work in a simulated paper environment so they are easy to learn by architects who have many years of experience on drawing boards. "You draw lines on a white background," says Isakson, "and when you press Print, you get what you see on the screen." He notes that even though Macintosh software has gained in power over the years, it is still relatively easy to use.

This also is increasingly true for PCs running Microsoft Windows operating systems. Those looking for 2D drafting software on PCs might want to consider Chief Architect, Imagineer Technical, MicroStation PowerDraft, Vdraft, or Visio Technical. The graphic user interface, with mouse-click commands, pull-down menus, and consistent

Though AllPlan is not simple, one analyst says such integrated programs are what even novices need.

file management, is a radical departure from the older text-based DOS (disk operating system) that many visually oriented architects found difficult to master. Jan Bower, an architectural technical support person at Bentley Systems, served for several years as CAD systems manager for an Atlanta architecture firm. She notes the tremendous improvement in software usability in the past decade. "Terminology is the area of greatest improvement," she says. "Systems used to operate with terminology that made sense to the computer programmers but not to the architects. For example, walls weren't called 'walls' but 'class codes'."

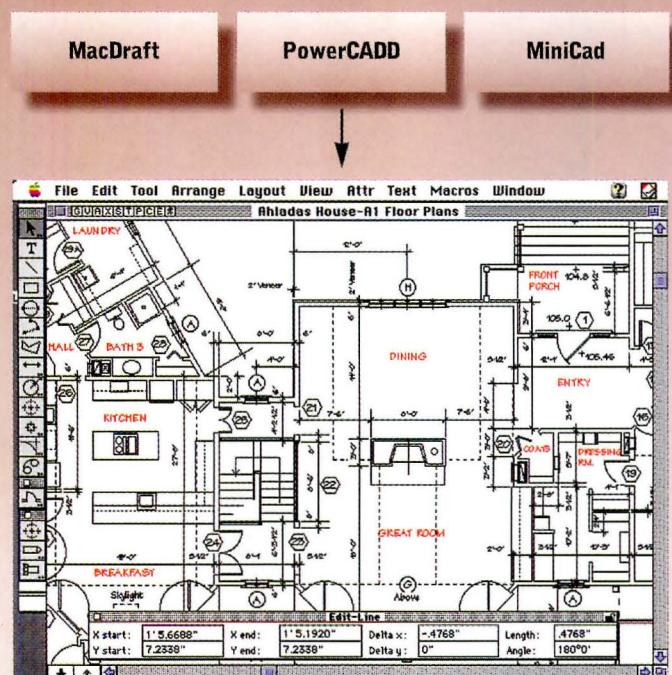
After a firm has gotten comfortable with a 2D drafting program, it will be better able to understand the benefits (and risks) of taking on 3D modelers or systems that integrate 2D and 3D, suggests Isakson. In the future, some say, most design work will be done on 3D models, which will generate 2D drawings as a byproduct of the process. But for architects whose training predates the widespread popularity of computers and who are comfortable with and efficient in designing by drawing on paper, working mainly in 3D may not be realistic. But for those interested in making the transition, ArchiCAD, available for both Mac and Windows, may be an attractive alternative. This system enables the user to draw in plan but simultaneously create a 3D model capable of generating sections, elevations, perspectives, animations, and quantity takeoffs.

Geoffrey Langdon is a principal of Architectural CADD Consultants in Boston and author of *Architectural CADD: A Resource Guide* (<http://www.architecturalcadd.com/book.html>). This book offers software recommendations for small firms. Langdon often recommends ArchiCAD and DataCAD to his clients, but he notes that architecture schools have a different perspective on what is suitable for beginners. "Schools," he explains, "see their job as teaching design, not drafting. Form-Z and 3D Studio are big in design schools around the country because teachers want to encourage their students to start with 3D modeling. But what's entry-level for young architecture students is not necessarily easy for older novices to learn."

When the bottom line is cost

For some small firms, it's not technical difficulty but cost that provides the barrier to adopting technology. This remains true even though com-

Simple Drafting Software For many users, Macintosh-based systems are more readily mastered. These 2D drafting programs work in a simulated paper environment so they are easy to learn by architects with many years of experience on drawing boards.



puting power that once cost hundreds of thousands of dollars is now available for a few hundred. Small firms are especially wary of any new expense when they are still experimenting. It is for this reason, too, that Isakson recommends the low-end systems mentioned earlier. For a small investment, and with relatively modest hardware, a firm can learn enough about the technology before making a major expenditure. He says: "I tell my clients to do some experimentation and see if the technology fits their

BEFORE—AND AFTER—YOU BUY

The following advice is a gift from experienced CAD users to those just starting. It is excerpted from *The CAD Rating Guide*, edited by W. Bradley Holtz. The fifth edition of the guide has just been released by Pennwell Publishing Company (<http://www.cgw.com>).

Get organized: Don't mistake computerization for organization. It's more of an "amplifier." If your office procedures are organized and systematic, computerized documentation will amplify that. If you are disorganized, CAD will amplify that as well.

Set standards: Identify your firm's processes and how bringing in CAD should complement them or how they should change. Devise and put in place standards for design, document consistency, systems usage, systems management, and training.

Make real-life comparisons: Visit actual installations to see how the programs you are considering really work. Dealers demonstrate using small, oversimplified files that don't duplicate the way projects really must be handled.

Buy hardware: Put money into

faster, more powerful computers, printers, plotters, and so forth. And buy as many seats up front as you can handle. Hardware represents a small fraction of the total investment needed for CAD, but it has a major impact on productivity.

Buy tools you will use: Do not make a final buying decision based on the software's spec sheet of features. How well the most-used commands are implemented is much more important.

Plan the transition: You must have a well thought-out plan for

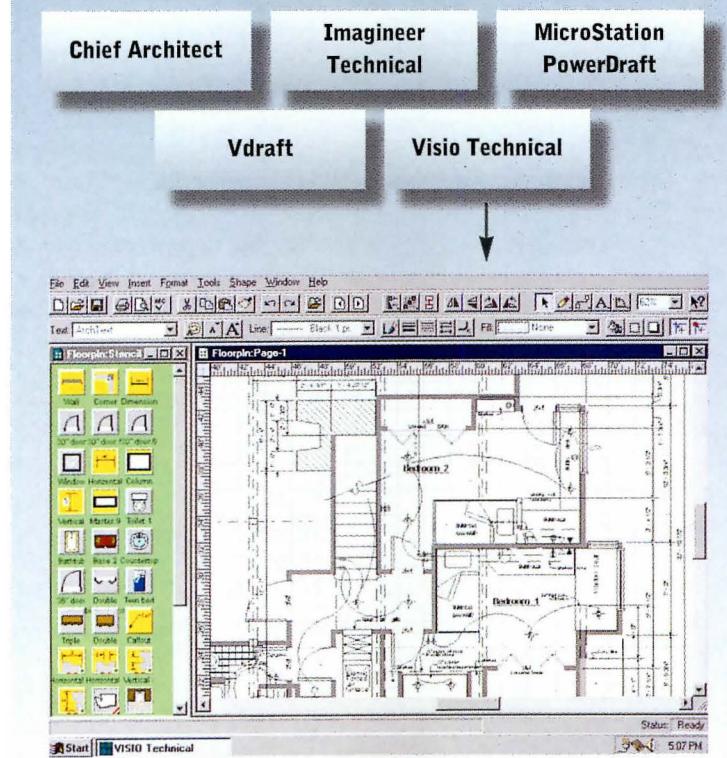
moving into CAD and managing the hardware and software. If CAD workstations are given to employees without proper training, and proper management and production standards, the employees will likely use CAD the same way they used their manual drafting tools: inefficiently.

Train, train, train: Don't skimp on training and continuing education. This is where your firm realizes the long-term productivity payoffs of its investment. Make sure everyone using the system is able to spend the time necessary to learn the hardware and software.

needs. If they don't like it, they're only out a few hundred dollars and some time. And what they will learn will apply later to any software."

Indeed, some firms never do "move up." Depending on the firm's way of doing things and the complexity of its projects, a 2D drafting program may be perfectly suitable indefinitely. Also, as University of Minnesota professor Lars Peterssen notes, the firm's sophistication in the use of software may grow in tandem with the software itself. "The programs change constantly as they compete with each other for market share," says Peterssen, who helps firms get started with CAD. What this means is that features once available only on high-end applications migrate down to less-expensive ones. "If you buy DataCAD or MiniCad

2D PC Drafting Software The graphic user interface of today's Windows-based programs is a radical departure from the older text-based DOS systems that many visually oriented architects found difficult to master.



today" as a stepping-stone to a more sophisticated program, observes Peterssen, "you won't necessarily outgrow it."

When you're shopping for CAD, keep in mind that you don't always need to pay retail. Also, some software can be leased. Other software, such as the 3D modeler DesignWorkshop, is available at no or low cost in a demonstration version which does not contain the system's full features. This gives you an opportunity to "try before you buy."

The initial outlays for hardware and software are not the full cost story. Training, hardware maintenance, software upgrades, and the inevitable but temporary loss of efficiency during learning periods all have to be factored in. It may be more economical to select a system that's more expensive initially but easier to learn or that promises more productivity improvements in the long run. Also, don't assume that any CAD system is well suited for architectural practice. Architecture-specific systems like ArchiCAD and AllPlan have what seem like high sticker prices.

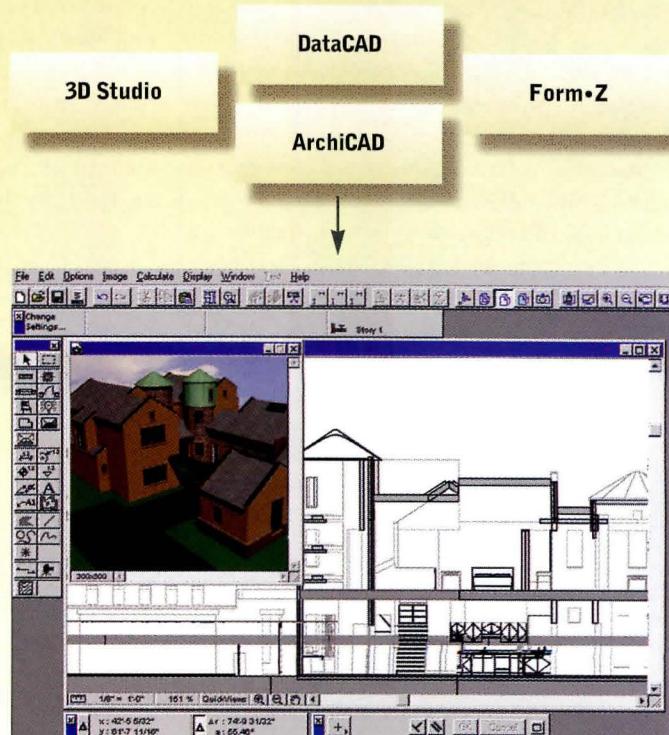
But other systems, such as AutoCAD and MicroStation, are really generic engines also sold to engineers and industrial designers. They can end up costing much more when you add on the third-party applications, such as AutoArchitect for AutoCAD and MicroArchitect for MicroStation. [See RECORD, January 1997, pages 169-74.]

You don't have to speak DXF

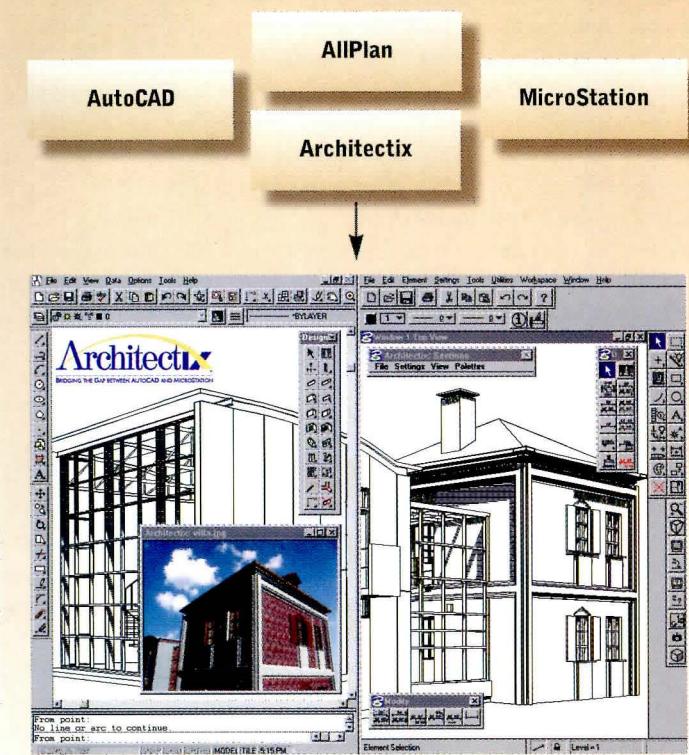
Some firms are CAD-resistant because neither consultants nor clients have demanded CAD files. Small projects may not require engineer input and speculative commercial projects may have an owner or developer who does not make facilities management a high priority. Such projects are becoming rarer, though, and institutional and public-sector clients nearly always require digital "deliverables."

The architecture firm concerned about the ability of various programs to read files has more choices than it did five or ten years ago. AutoCAD's DXF format has long been the de facto standard for file exchange, so many architects have felt obliged to work with AutoCAD. Clean translation is among the reasons AutoCAD dominates the CAD market in this country. Now, however, other systems that are more architect-friendly are able to read and write compatible files. So it's perfectly possible for a firm to work in another system, even on a Macintosh, yet be able to exchange DXF files with engineers and deliver AutoCAD-compatible disks to clients at the end of a project. The release of Architectix by IdeaGraphix seemed to portend even more compatibility. It runs AutoCAD and MicroStation simultaneously, useful for mixed-system environments. It has, however, just been acquired by Bentley; we don't yet know how it will fit into Bentley's product line.

2D/3D Systems Students often are trained on these 3D modelers or systems that integrate 2D and 3D. In the future, some say, most design work will be done on 3D models, which will generate 2D drawings as a byproduct of the process.



Full-Featured Systems Although systems of such complexity are not generally regarded as entry-level, the number and range of features may make them essential for firms with complex needs. Architectix allows users to work with both MicroStation and AutoCAD.



Is CAD finally realizing its early promise?

For a small but significant segment of the population of architects, the reason for avoiding CAD until now is that it simply hasn't been responsive to their needs. To put Frank Gehry's irregularly shaped buildings and fish sculptures on computer, for example, his office has been struggling with software designed for the aerospace industry. Others who work with curvilinear forms have simply stayed away from the mainstream technologies, which work primarily with simple room divisions and vertical walls, and offer few deviations from conventional forms.

Enhancements in 3D CAD technology give architects with a sculptural approach to form-making a reason to take a new look at software they may have passed up in the past. Chicago consultant Kristine Fallon, of Kristine Fallon Associates, Inc., has observed several firms with unusual vision about technology's ability to enhance, rather than impede, their design experimentations. Author of *The AEC Technology Survival Guide: Managing Today's Information Practice*, recently published by John Wiley & Sons, Fallon cites AllPlan as a system that fulfills many of the early promises of CAD development.

AllPlan has been introduced in this country only recently but is a bestseller in Europe. It combines freehand sketching, 3D modeling, presentation- and construction-document drawing, rendering, and quantity takeoffs. Although such a complex system would not normally be considered entry-level, Fallon notes that novices may have an easier time learning it than those who have worked with mainstream CAD systems.

Chicago architect Gregory Landahl, FAIA, has recently brought AllPlan into his 16-person office and is using it to design the interiors for

dinner-cruise ships. The system can model the complex forms of these "floating cigars," and Landahl appreciates the creativity and independence it supports. He explains: "AllPlan gives me an opportunity to think the way I typically do, but on a screen rather than a cocktail napkin, and with direct translations of those sketches into construction drawings. In a small firm like mine, you frequently don't have a technical person around at all hours. AllPlan allows me to do pretty much everything from the same screen. So if I need a drawing, I can easily get to it just as I can with paper drawings in flat files." Landahl also anticipates putting his design files on a laptop computer so he can take them to client meetings.

According to Fallon, who is assisting Landahl's office with its installation, CAD software development has finally come full circle. "Back in the early '70s," she recalls, "the goal was to make computers a value-added design aid. Early software was all in 3D with a quantitative component so you could do space totals, analyses, and so on. But the marketplace moved to 2D drafting because a general-purpose drawing tool could be sold to a population much larger than just architects." The early adopters in the '70s, she recalls, tended to be disappointed with what developed in the '80s. "Now we're beginning to see powerful PCs and interesting programs that do what people envisioned 20 years ago."

And that opens exciting opportunities for architects who are just beginning to study their options. Fallon sums up: "In my opinion, computer-aided drafting was an unfortunate sidetrack from the larger issue of automating, integrating, and streamlining design decision making. People who have avoided that detour are now in a good position to get on what I think should be the mainstream track. Intelligent building modeling was abandoned for a while, but it's moving forward. I'm an optimist about how architects will adopt technology." ■

CAD Software Sources

- **AllPlan:** Nemetschek Systems, Inc. 614/488-8838
800/479-0735
<http://www.nemetschek.com>
- **ArchiCAD:** Graphisoft U.S., Inc. 800/345-4856
415/703-9777
<http://www.graphisoft.com>
- **Auto-Architect:** Softdesk 800/622-7568
(Autodesk, Inc.)
415/763-8337
<http://www.softdesk.com>
- **AutoCAD:** AutoCAD LT for Bentley Systems, Inc. 800/236-8539
Windows 95; 3D Studio;
Autodesk, Inc.
415/507-5000
<http://www.autodesk.com>
- **Chief Architect:** Advanced Relational Technology, Inc. 410/290-5114
800/482-4433
<http://www.chiefarch.com>
- **DataCAD:** DataCAD LLC 910/299-4843
860/677-4004
<http://www.datacad.com>
- **DesignWorkshop:** Artifice, Inc. 800/877-1875
800/203-8324
<http://www.artifice.com>
- **form-Z:** auto-des-sys, Inc. 206/521-4500
<http://www.visio.com>
- **Imagineer Technical:** Intergraph Corporation 800/345-4856
<http://www.intergraph.com>
- **MacDraft:** Microspot USA, Inc. 800/622-7568
<http://www.microspot.com>
- **MicroStation PowerDraft:** MicroStation Architectix 800/236-8539
<http://www.bentley.com>
- **MiniCad:** Diehl Graphsoft, Inc. 410/290-5114
<http://www.diehlgraphsoft.com>
- **PowerCADD:** Engineered Software 800/877-1875
910/299-4843
<http://www.engsw.com>
- **Vdraft:** Softsource 800/877-1875
<http://www.vdraft.com>
- **Visio Technical:** Visio Corporation 206/521-4500
<http://www.visio.com>

NEW PRODUCTS

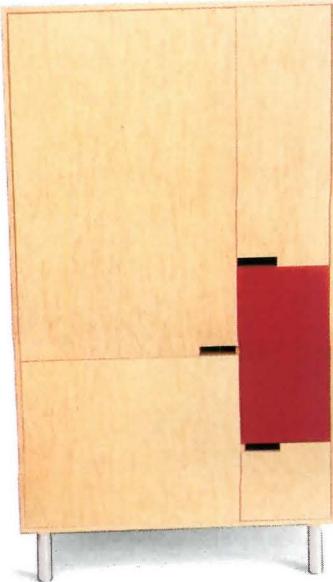
SIMPLE SHAPES INSPIRE MULTIFUNCTIONAL DESIGNS

Combining European and American design, blending simplicity and functionality, Charles C. Deam builds his furniture by eliminating the unnecessary. "I'm inspired by things that are elegant but simple," he says. "I'm inspired by the shape of a surfboard."

The Milan-trained architect, who opened his San Francisco-based architecture and furniture design studio, CCD, in 1991, began his career in the studios of Memphis's Matteo Thun and Antonio Citterio. A licensed architect in California, he has also worked with architect Frank O. Gehry.

On a quest to make his furniture "essential," Deam seeks to create furniture with multiple purposes. "I'm trying to accommodate the dualities in the way people live today," he says.

Accordingly, his Belly Table provides both a double-sided dining surface and a storage area. The top, of durable plastic laminate, can be flipped over to reveal natural white-maple wood on the other side. The laminate, Deam says, is perfect for kids, while the white maple creates a more formal dining surface.



For more information, circle item numbers on Reader Service Card

Perched on tumbled aluminum legs, the hollow of the bent and painted plywood body provides the storage space, the "belly." Because the table, which seats six, is custom fabricated, any combination of colors or materials may be used.

Like the Belly Table, the Stubby Table demonstrates the multifunctionality typical of CCD's pieces. This table with a "dual personality" doubles as a coffee table and a display cabinet. Hidden drawers at each end allow access to the glass-covered showcase. Made of maple and vermillion-stained hardwood, the table is also available in custom combinations.

Unlike the open-exhibition-style Stubby Table, Deam's combination TV/stereo cabinet conceals with retractable doors. On aluminum legs, Lisbon stands 60 in. high, 33 in. wide, and 24 in. deep but is also available in custom dimensions. Made of maple plywood and stained with red aniline dye, the table includes adjustable shelves to accommodate individual home-entertainment systems.

Gallery Black is outfitted with three upper drawers and two aluminum doors below. Constructed of maple plywood and aluminum, and stained with black aniline dye, the storage unit is part of the permanent collection at the San Francisco Museum of Modern Art. A companion piece, Gallery Blonde, can be



In July, RECORD's New Product pages include furniture pieces created by three architects, illustrating some of the material sensibilities and design influences their training brings to these smaller "structures." Coverage of new masonry (page 145) features a range of products that are longer, wider, bigger, stronger, or lighter. Product Briefs includes a bullet-resistant glass block in a new pattern and Victorian-style floor tiles that could have been the height of fashion in 1873. This month's coverage of new literature and design manuals also focuses on masonry and similar materials; see page 149. —Joan Blatterman, New Products Editor

combined with Gallery Black to make a storage system called the Gallery Pair.

"I'm very interested in furniture that is becoming smarter," Deam says, "that's doing more with less. My goal is to try to create pieces that make sense, by using nothing

extra and by constructing them through the fewest possible moves."

Produced in Deam's studio and shop with the help of four to six assistants, his custom furniture ranges from \$500 to \$1,000 and above. 415/543-4305. CCD, San Francisco. **CIRCLE 250**



Lisbon (far left) and Gallery Black (top right) cabinets conceal, while the Stubby Table (left) doubles as a display case. The Belly Table (above) acts as both a storage unit and a multipurpose surface.

SOLVING PROBLEMS BY REDUCTION

Manipulating the ordinary, according to Eric Pfeiffer, is a way to solve a functional problem. "I'm taking the ordinary things, tweaking them, and turning them into functional things." The Pants File, below left, a proto-

type developed for an international Gap store, allows the retailer to conserve space and put more product on the floor. When he was first presented with the Gap's problem, the solution was obvious, Pfeiffer says, referring to his stainless-steel and sandblasted glass relative of the fil-

ing cabinet. "We're striving for some sort of purity of form," he says, "and what drives it is reduction."

Turning a table into a chalkboard was just another simple reduction, according to Pfeiffer. "Now you don't even need a pen and paper." The Chalkboard Table is

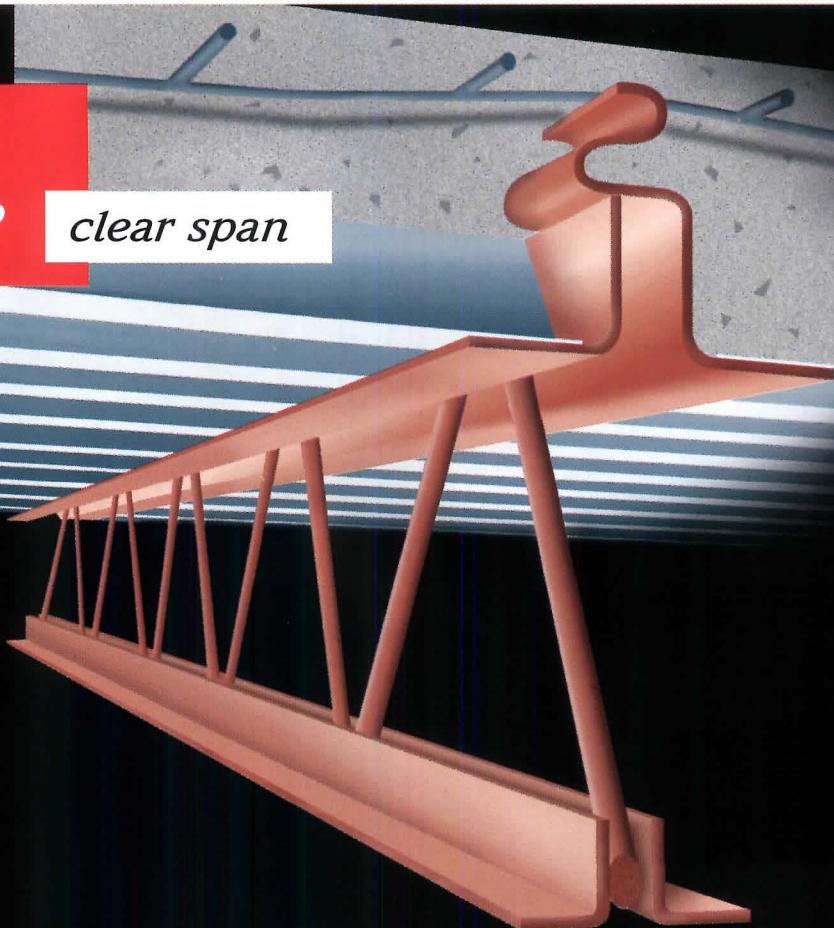
constructed of powder-coated steel, an MDF top, and a stainless-steel bowl set into the surface. Other surface options, such as a dry-marker board, are also available. Each piece is custom made; prices start at \$2,500. 415/495-3914. Bravo 20, San Francisco. CIRCLE 251



COMPOSITE FLOOR SYSTEMS

40-ft.

clear span



For more information, circle item numbers on Reader Service Card

DYNAMIC DESIGNS STRIVE FOR AFFORDABILITY

Partners Marissa Brown and Havelay Graves set themselves a goal when they launched their furniture and design firm in September 1996: to broaden the scope of furniture, to make it more dynamic.

"We wanted to design something that was affordable but designed well, and that could fit in small apartments," Brown said of their Tilt-Up Tables. Intended for indoor and outdoor use, these tables feature brightly colored sandblasted-acrylic legs that interlock to

support an anodized-aluminum disk top. They are also available with legs and top made of natural maple or aniline-stained Douglas fir.

The Kitchen/Bar Stool, of maple-veneer plywood with powder-coated steel legs, consists of an inner and an outer shell. "When you

lean back in the inner shell, the load is resisted by the outer shell and transferred to the frame," says Brown.

The tables cost \$300, while the barstools retail for \$550–600. 212/965-0284. Brown•Graves, Inc., New York City. **CIRCLE 252**



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07.97 Architectural Record **143**

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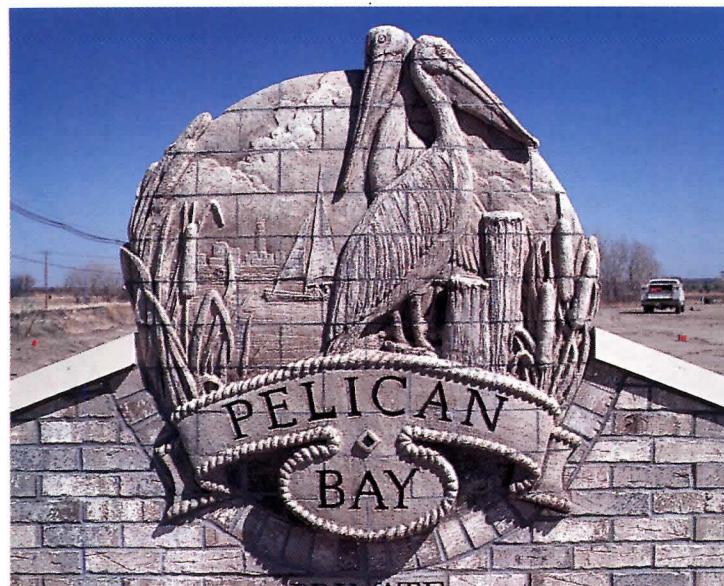
MASONRY MATERIALS CARRY WEIGHT

ASTM's committee C-15 (Manufactured Masonry Units) has authorized a new job-site quality-assurance test procedure (C 1314) that describes the construction and testing of masonry prisms for compressive strength; the Brick Institute of America feels this data will be very useful to designers of reinforced and load-bearing masonry structures. Meeting last month, the C-15 committee also discussed hail-impact testing for fiber-cement roofing. *Masonry Standards Third Edition* (PCN 03-315097-60; 1997; \$49) includes C 1314 and 53 other standards, many new or revised. Order from the American Society for Testing and Materials, 610/832-9585 (phone); 610/832-9635 (fax)—J.F.B.

▼ Brick-look precast

The Slenderwall architectural precast panel can now be specified in a realistic brick-texture finish. The proprietary panel system, fastened to a steel frame, has only a 2-in. thickness of concrete, making it 40 to 60 percent lighter in weight than other precast claddings. 540/439-3266, Smith-Midland Corp., Midland, Va.

CIRCLE 253



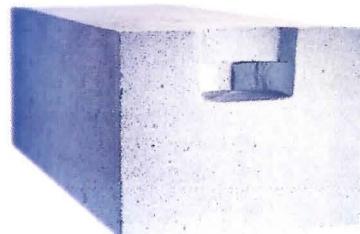
▲ Sculptured brick signage

The attention-grabbing pelicans shown above are representative of the types of three-dimensional pieces this studio can create in bas-relief brick sculpture. Working from original drawings submitted by an architect or other design professional, or from sketches by their own artists, the atelier translates murals and other graphics onto a grid made of brick.

Laid up on an easel, individual bricks recreate sections of the design in hand-sculpted wet clay. Each brick is then numbered, and fired separately in a brick kiln. Special care is taken to blend the thin mortar lines into the finished image. Masonry sculptures can be commissioned in almost any scale, for interior or exterior sites. 800/449-6599. Brickstone Studios, Lincoln, Neb. CIRCLE 254

► Autoclaved aerated concrete

A masonry product developed by Swedish architect Johan Axel Eriksson in 1924, autoclaved aerated concrete (AAC) is being made for the U.S. market in a new \$35 million facility in Florida. Offered as block, reinforced floor slabs, roof panels, and lintels, AAC is as strong as standard block but much lighter, and can be cut like wood. 800/986-6435. Ytong, Ltd., Haines City, Fla. CIRCLE 255



◀ Wider precast double-tees

Said to be an "industry first," precast-concrete double-tees in a new, 15-ft width reduce the erection and production costs involved in the construction of parking structures. The wider structural member also lessens the number of potentially troublesome joints. Beams are delivered by trucks fitted with an unusual tilted frame that keeps the load within the highway-standard 10-ft width, lowering shipping times and costs. 800/PRECAST. High Concrete Structures, Inc., Denver, Pa. CIRCLE 256

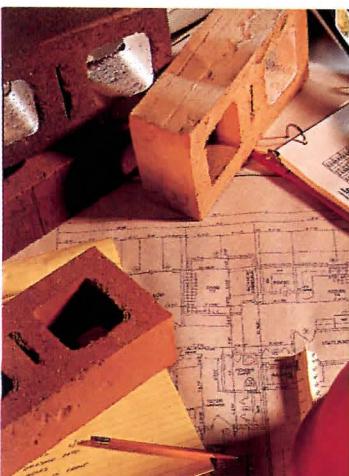
▼ Concrete roofing tile

A free Windows-format CD-ROM, Boral View visualizes a Lifetile roof on over 80 different "buildings," commercial as well as residential, and lets the user explore almost infinite combinations of roofing-tile profiles, colors, architectural styles, trims, and painted, brick, and stucco exteriors. The company will customize the disk from images of specific projects. 800/274-6505, x1499. Boral Lifetile Inc., Newport Beach, Calif. CIRCLE 257



▼ Structural reinforced brick

The SuprKing structural brick—2 3/4 in. thick, 4 5/8 in. deep, and 9 5/8 in. long—is sized to accommodate standard door and window dimensions. For single-wythe, bearing-wall construction (wall, framing, and exterior finish in one), brick can meet Zone 4 seismic requirements. Units come in a range of red, brown, orange, pink, and tan colors, as well as special shapes for arches, treads, and sills. Design manual and software available. 800/414-4661. General Shale Brick, Johnson City, Tenn. CIRCLE 258 ■



PRODUCT BRIEFS



▲ Jailhouse block

Solid-glass units 3 in. thick, Vistabriks were used by The Grosfeld Partnership, architects, to create a secure emergency-egress stairwell at the Westchester County Correctional Center in Valhalla, N.Y. As life-safety codes require 24-hour illumination within the stairwell, the enclosure becomes a nighttime accent in an otherwise monolithic facade. Now offered in a more-private stipple pattern, Vistabrik is able to withstand shots from a 30.06 rifle and pass bullet-resistance levels 1, 2 and 6, UL 752. The block transmits 80 percent of available light in both directions, and the glass itself resists marring from graffiti without offering an "obvious challenge" to taggers. 800/992-5769. Pittsburgh Corning Corp., Pittsburgh. CIRCLE 259



► Curtain-wall fire containment

Thermafibre insulations are available in 16 rated variations for different wall constructions, including spandrels of aluminum, glass, granite, and glass-fiber-reinforced concrete. Designed as a barrier at floor and ceiling intersections that prevents floor-to-floor fire spread, the system includes foil-faced curtain-wall insulation, safing placed between floor slab and curtain wall, and a smoke-blocking sealant at all gaps. United States Gypsum Co., Chicago. CIRCLE 260



▲ Tilt-turn function casement

European-style hinging hardware adds a new tilt-turn option to this maker's Magnum window line. The wood frame can swing in, as shown, for complete opening or cleaning, or tilt open at the top for secure, weather-resistant ventilation. Available in high-performance K-Kron finish. 800/955-8177. Kolbe & Kolbe, Wausau, Wis. CIRCLE 261

▼ Victorian-era floor tiles

A re-creation of a traditional encaustic appearance in a less costly unglazed vitrified body, British-made geometric floor tiles come in eight colors. There are also decorated tiles in matching colorways, which can be assembled along with the geometrics in large-scale panels to create designs such as Palmerston, shown below. CAD software is offered to help architects plan custom floor installations. Fax: 800/273-0636. Original Style Ltd., Exeter, U.K. CIRCLE 263



◀ Sleek suite

Part of a newly designed bathroom line, Savona pedestal lavatory is sleek and simple, with a reasonable amount of level space for sundries. Not pictured—but the star of the line—the Savona toilet represents a rethinking of gravity-flush, low-water-use plumbing. Made with smooth rounded lines and an easy-to-clean base, the w/c has features such as a "finger lift" for the toilet seat and a color-matched flushing lever. All china available in 15 colors. 800/524-9797, x199. American Standard, Inc., Piscataway, N.J. CIRCLE 262

▼ Virtual fabric sampling

A CD library of contract, hospitality, and health-care upholstery and wallcoverings lets designers search by price, color match, pattern, weave: the program displays all fabric options in a realistic, almost 3-D format. 800/221-1540. DesignTex, New York City. CIRCLE 264



▲ Etched stainless-steel signs

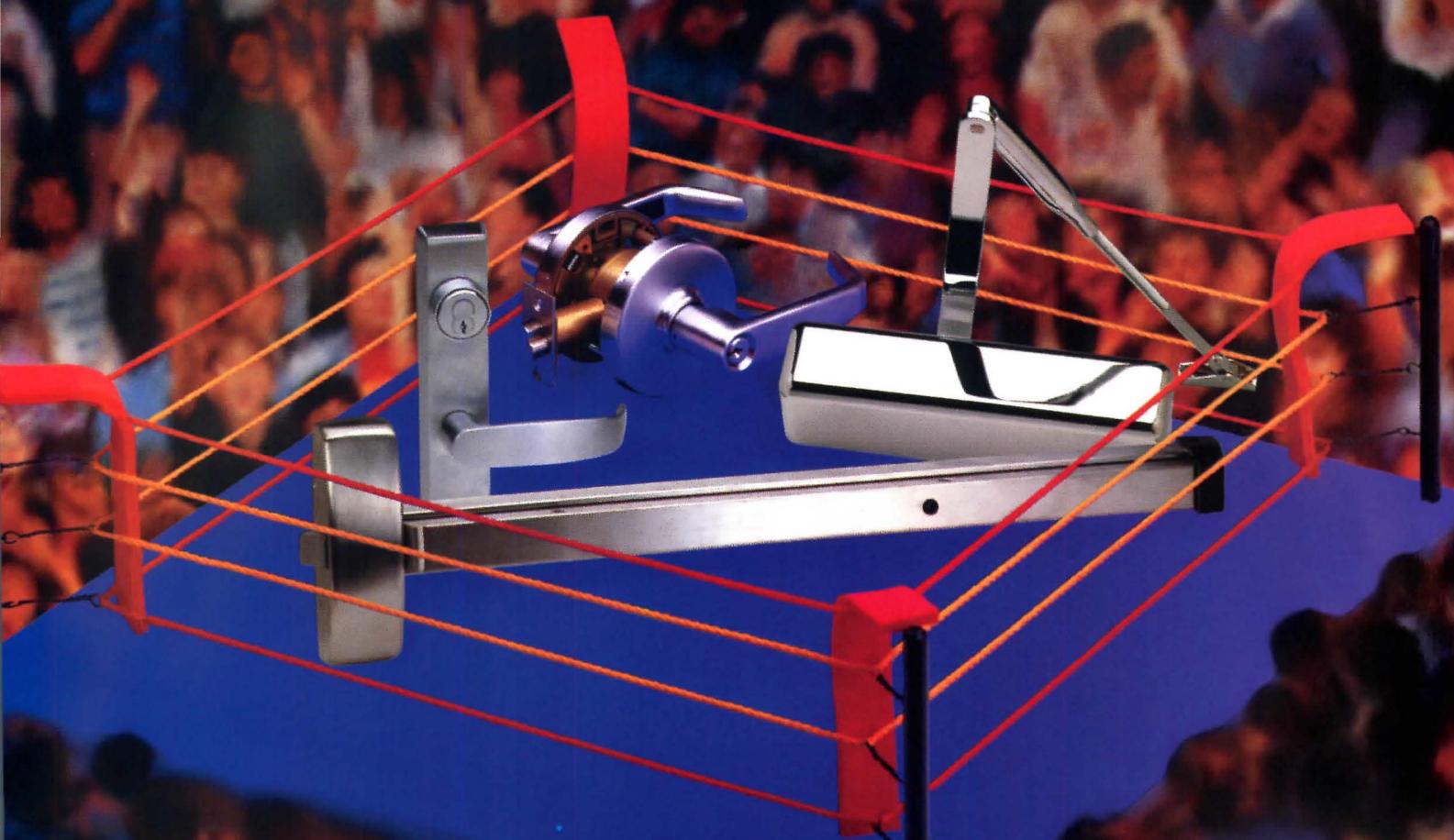
An unusual chemical etching creates tactile, reverse-etched signage in permanently colored stainless steel. Graphics are fully UV- and weather-proof. Kolcolor USA, Fort Collins, Colo. CIRCLE 265



▲ Tarnish-free for a lifetime

Omnia says its new Max Brass clear finish will prevent tarnish, pitting, and flaking on solid-brass mortise handle sets, such as the Regal entrance (above), even when exposed to the harshest sun and weather. 201/239-7272. Omnia Industries, Cedar Grove, N.J. CIRCLE 266 ■

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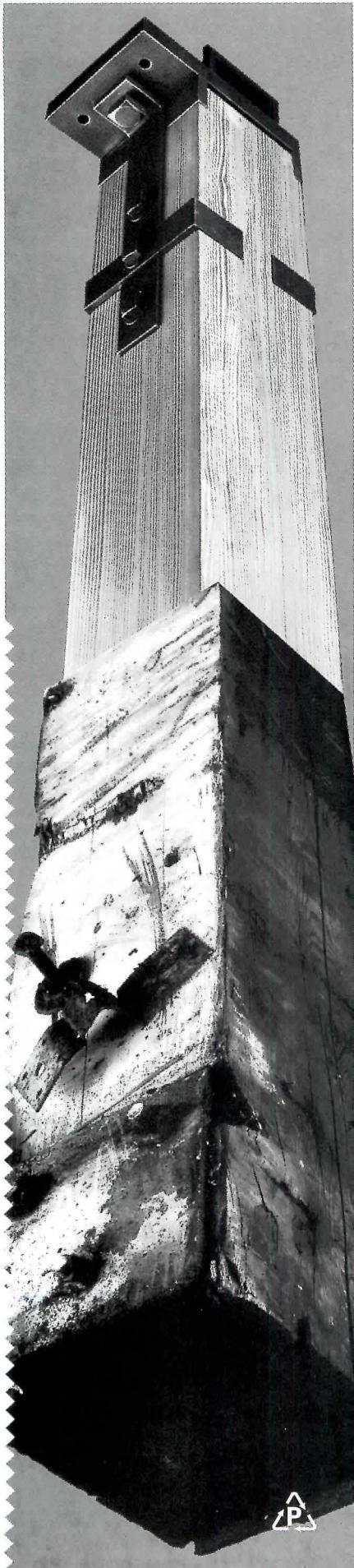
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PRODUCT LITERATURE

Insulating concrete forms

A video training series prepared for building contractors and those involved in residential design shows step-by-step how to design, set, place, and finish foundations using stay-in-place insulating concrete forms. All five videos: \$89.85. 800/868-6733. Portland Cement Association, Skokie, Ill. **CIRCLE 267**

Glazed masonry

A lightweight, modular block with a permanent glazed facing, Spectra-Glaze II units provide fire-safe construction, sound control, and a lifetime aesthetic. A chart displays all standard, Vari-tone, and special color options; custom glaze colors may be ordered. The Burns & Russell Company, Baltimore. **CIRCLE 268**

Full line of brick

An eight-page catalog illustrates brick in a broad range of colors, textures, sizes, and shapes, manufactured in seven different plants. An applications list cites major brick projects and the architectural firm involved. Belden's Antique Colonial brick, a specialty, can be specified in handmade shapes such as a watertable cove stretcher. 330/456-0031. Belden Brick Co., Canton, Ohio. **CIRCLE 269**

Masonry expertise

A brochure demonstrates the range of competencies offered by skilled masonry craftworkers: the trowel trades of brick-laying, tile setting, and terrazzo and stone work. A joint union/employer effort, the Institute trains both masons and architects in correct application and installation of brick, stone, and tile. 800/464-0988. International Masonry Institute, Washington, D.C. **CIRCLE 270**

Concrete-masonry inspection

"Useful and easy-to-read," a new manual helps architects and building officials create a process for examining masonry construction in the field. Checklists cover the process from preconstruction and material selection to quality-assurance testing. Single copy: \$35. 703/713-1900. National Concrete Masonry Association, Herndon, Va. **CIRCLE 271**

Block overview

An Oldcastle brochure highlights innovative systems such as the Integra post-tensioned wall, insulated with expanded polyurethane for an R-value of 28. Architectural and ground-face masonry designs are included. 800/899-8455. Oldcastle, Atlanta. **CIRCLE 272**



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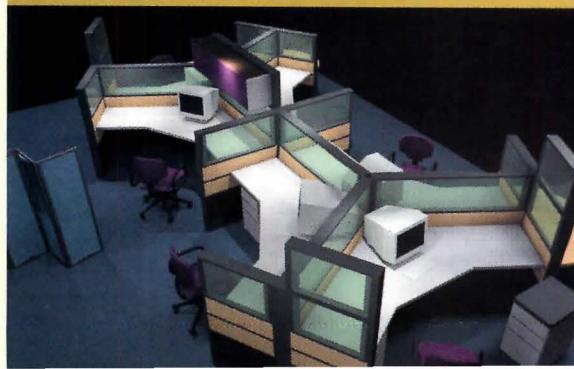
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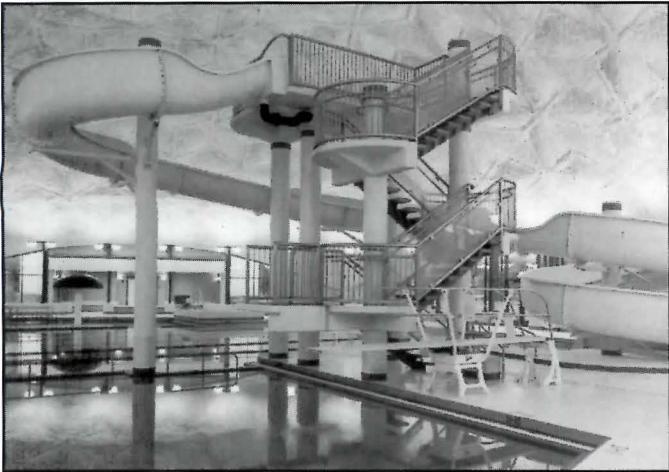
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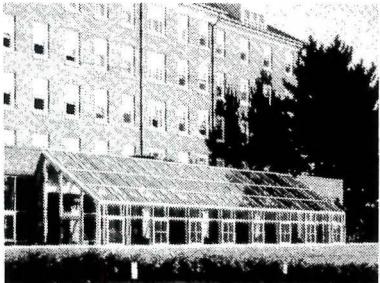
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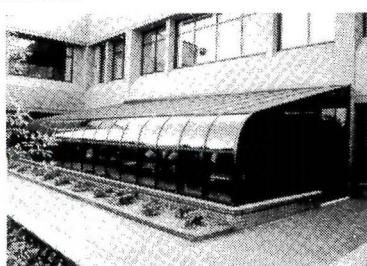
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CIRCLE 49 ON INQUIRY CARD

(continued from page 77) has less to do with architecture than with the amazing economic dynamism that produces it. And it is breathtaking: the delta is total Adam Smithland. In the special zones, one can see the invisible hand working in real time and space, mapping the circuit of capital with concrete and mirror glass. There's no doubt about the results: Guangdong Province now has both the highest wages and highest living standards in China. I wish I'd been along in 1992 when Deng took his now legendary trip south to see what his new policies had wrought. I can imagine a giddy, Dr. Frankenstein experience at the sight of this creation, a pulsing city of pure accumulation. From Hong Kong to Shenzhen and up the Pearl River Delta to Guangzhou, a megalopolis had leaped into being. Soon the population of the Hong Kong-Guangzhou-Macau triangle will exceed 30 million. Already, one-third of Chinese exports originate in the delta. Show us the moneeeeey!

Deng's formula simultaneously yielded a miracle and a disaster. On the one hand, prodigious amounts of wealth are being generated along with real improvements in the quality of life. On the other, an urban form is being produced, which, while exhilarating for its dynamism, is also a formula for trouble. The marvelous, intimate textures of Guangzhou with its beautiful arcaded streets or Shanghai with its lanes and delicate domestic architecture are being obliterated for a standard-issue version of progress. A culture of bicycles is becoming a culture of cars. The possibility for urban limits is being swallowed up in a sea of development. The environment is suffering terrible degradation. And the dominant model of city building remains too abstract, focused on apparatus and icons without a rich enough fantasy of the future. In the Pearl River Delta, ironically, one of the crucial missing ingredients is more centralized coordination of local and regional interests. The warlordlike autonomy exercised by individual municipalities has resulted, among other things, in the construction of four international airports within a radius of 30 miles and a half-built bridge begun by one town but with no place to land in the next.

The issue of such generic architecture and generic cities is not that certain programs of the global economy—office towers and business hotels, international airports and computer-assembly plants—have become a form of universal content. It's to miss the point to insist that the only effect of this economic and cultural convergence is an unavoidable skeleton of sameness, just awaiting local elaboration. Rem Koolhaas, in his bitter, size queen's enthusiasm, seeks to surf this fatalistic wave while keeping his liberalism dry in a wet suit of ironic celebration and Modernist nostalgia for universal forms. But why embrace this homogeneity? Shouldn't the question be how, within this context, meaningful difference can be achieved without reversion to decorative nostalgia, deracinated Modernism (whether OMA or HOK), Disneyfication, big bangs, or historic patterns whose own content—whether picturesque slums or the mansions of privilege—is deeply suspect?

While it may be unfair to burden the Chinese with finding solutions to urban problems that no one else has been able to handle, the opportunity, the energy, and the potential synergy are themselves like no place else on earth. In the Pearl River Delta, the moment is ripe to create, for example, a coordinated system of parks and open space, and to deal with issues of growth on a regional basis. The time is ripe to reformulate basic structures of traffic. The time is ripe to reinvigorate and elaborate the idea of the satellite city. And the time is certainly ripe to dispense with one-dimensional exaltation of size and replace it with a fantasy modeled from the best of Chinese life—the scale and sense of landscape, the structures of community, the arcane geometries, the exuberant streets—that doesn't sacrifice the dynamism and creativity of the new. ■

(continued from page 34) sheets of paper; no electronic media. Contact Tomoko Ochiai, *The Japan Architect*, at fax 81/3-3811-0243. Entries must be received by September 10.

The Urban Studies and Architecture Institute has launched an international ideas competition for ferry terminal buildings in Manhattan, Brooklyn, and Queens, connecting with La Guardia Airport (unrelated to the terminal for the Staten Island Ferry). **The Fluid City/Point by Point: Ferry Stations, New York** may be entered by practitioners who completed their terminal degree within the last ten years, as well as architecture, urban design, landscape, and interior design students. The registration deadline is September 15; entries are due January 15, 1998. Contact Urban Studies and Architecture Institute, 10 West 15th Street, Suite 1126, New York, N.Y. 10011-6826. Call 212/727-2157, fax 212/727-2159, or E-mail Ldusainst@gnn.com.

Reviews

Luis Barragán: Mexico's Modern Master, 1902-1988, by Antonio Rigen Martínez. New York: Monacelli, 1996, 256 pages, \$60.

This is no coffee-table monograph, although it does offer many photos, drawings, and renderings of Barragán's influences and his own work. The extensive and, for the most part, accessible text by Antonio Riggen Martínez, who wrote his doctoral dissertation on Barragán, positions the Mexican architect within the social, political, economic, and cultural climate of his time while analyzing the philosophical and theoretical underpinnings of his work. Martínez, with the help of introduction co-authors Francesco Dal Co and Juan José Lahuerta, takes the reader along on Barragán's highly influential journey through the 20th century.

Hodgetts + Fung: Scenarios and Spaces, introduction by Kurt W. Forster. New York: Rizzoli, 1997, 168 pages, \$50 hardcover, \$35 paperback.

The work of Craig Hodgetts and Hsin-Ming Fung cannot be easily categorized, which is, in part, what has made their Santa Monica-based studio the subject of much attention over the years. The title (and the content) of Kurt Forster's introduction, "The Supercalifragilistic Architecture of Hodgetts + Fung," is

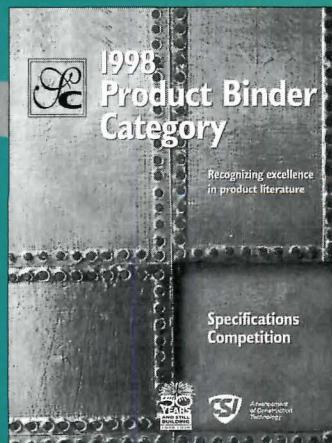
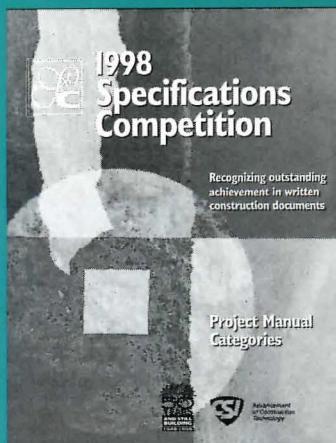
not a bad attempt to position the firm within contemporary practice. The designers' creative powers and predilection for unconventional materials and technologies are on display in this first volume dedicated to the firm's work. The book includes 32 projects, from permanent buildings to temporary structures and installations.

Moshe Safdie, edited by Wendy Kohn. London: Academy Editions, 1997, 320 pages, \$85.

The work of the Israeli-born architect, whose career spans more than 30 years, is here given extensive coverage in a large-format publication, with an essay by and interview with Safdie. Covering 40 built and unbuilt projects, from the seminal Habitat housing complex (1967) in Montreal to the controversial Library Square (1995) in Vancouver, Safdie's monograph includes essays by Michael Sorkin on "Habitat and After," Paul Goldberger on "Rebuilding Jerusalem," Peter G. Rowe on "Trajectories, Traces, and Tropes," and Witold Rybczynski on "Northern Lights."

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(continued from page 14)

regionalist approach have always been inherent to a definition of "good architecture."

—William Bechhoefer, FAIA
Director, Regional and International Studies, School of Architecture, University of Maryland Baltimore

Licensing exam

Your splendid May issue was spoiled by a letter from Charles D. Carter [RECORD, May 1997, page 32]. He suggested that Bracken Raleigh, the designer who has failed to pass the NCARB exam 30 times [April, page 28], should seek therapy.

Carter's acidic attempt at humor underscores an important aspect of the public's perception of architects: unbridled arrogance. He argues that the architectural profession must look past individuals to do what is best for our grand institute's position of community importance. Carter's call for the AIA to swat Raleigh's hand for practicing without

a license shows the lunacy of our predicament and his own naivete.

Surely, we will admit that unlicensed, recent graduates do the majority of the work in our firms. To think that the AIA is going to stand in the way of an opportunity for project profitability is twisted logic.

—Daniel Alexander
MPC Associates, Inc.
Washington, D.C.

Preserving Modern ideas

Alastair Gordon's provocative *Speak Out* column [RECORD, April 1997, page 26] used the Aluminaire House as an example in his essay on preserving Modern architecture. As directors of the Aluminaire project at the New York Institute of Technology, we can amplify his argument.

The Aluminaire House has been moved three times since its completion in 1931. The first two moves were to separate locations on the property of architect Wallace K. Harrison. The last move, which

saved the house from demolition, was to our campus in 1988–89. These moves, combined with the insensitive changes made by Harrison, left the house beyond repair, particularly the aluminum panels that represented its critical image.

We had to argue for replacement of the panels to our primary source of funding, New York State. This argument was made into a carefully constructed Historic Structures report with our consultants, Higgins and Quasebarth of New York City. We had to formally state the case that it was more important to save an "idea" than a "thing." With the acceptance of this report, New York State has gone beyond standard definitions of preservation to accept our concept and approach.

The house was an experiment in ways to use new materials and ideas about space to create affordable housing solutions. This is as pressing a problem today as it was

in 1931. The intervening years and polemics have not advanced us much with regard to this critical issue. The Aluminaire House may continue to remind and move us since the project represents (preserves) this idea; it is not merely an aged artifact.

—J. Michael Schwarting and Frances Campani
School of Architecture and Design, New York Institute of Technology Central Islip, N.Y.

RECORD may edit letters for grammar, style, and space availability, taking care not to change the author's meaning.

Correction

In "Crescent City on the Edge" [RECORD, May 1997, pages

136–39], credit for the New Orleans Center for the Creative Arts should have been given to the joint venture of The Mathes Group, APC and Billes/Manning Architects.

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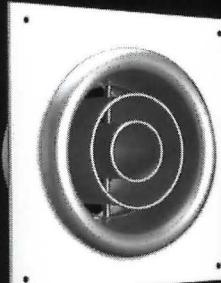
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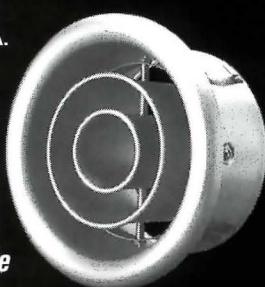
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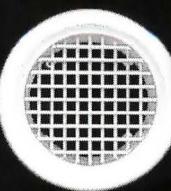


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INSTRUCTIONS

- ◆ Read the article "AIA Documents: The Rules Are Changing" (pages 123–26), using the learning objectives provided to focus your study.
- ◆ Complete the questions below, then check your answers (top of page 164).
- ◆ Fill out the self-report form on page 164 and submit it to receive two AIA Learning Units.

—Mark Scher, AIA Director Professional Education Products and Services

Questions:

- 1.** Why might the new B141 be characterized as both more demanding and more beneficial with regard to architect and owner communication?

- 2.** Describe three key areas in the new B141 that are said to improve the professionalism of the agreement.

- 3.** What dispute mechanisms are called for in the new documents?

- 4.** You are an architect talking to a (potential) client. How do you assemble an Owner-Architect Agreement from the new B141 "kit" for the following situations?

- a)** The client wants you to design a building and administer the contract for construction. The client is also considering retaining your services for assistance during facility start-up.

- b)** The client wants you to evaluate an existing facility.

- 5.** An owner has contracted with a contractor using the new A201. The owner has now decided to terminate the contract—not because of any fault on the contractor's part, but strictly for the owner's own convenience. Can the owner do that? Assuming the answer to the question is yes, can the contractor recover for consequential damages?

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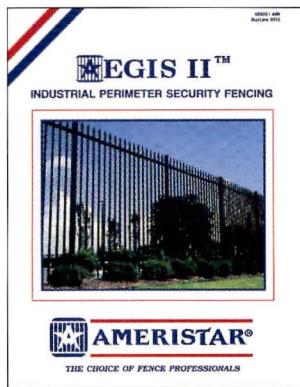
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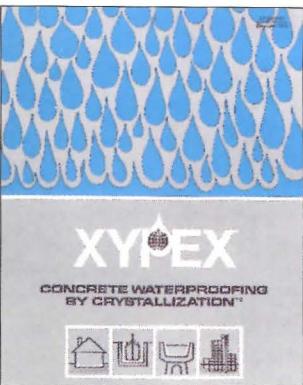
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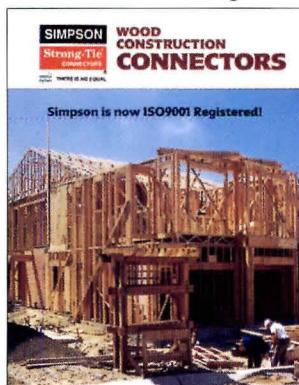
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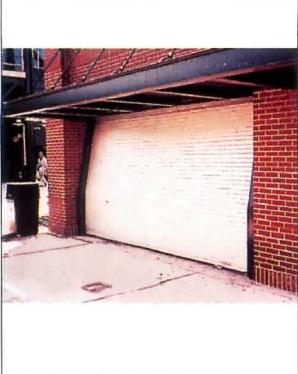
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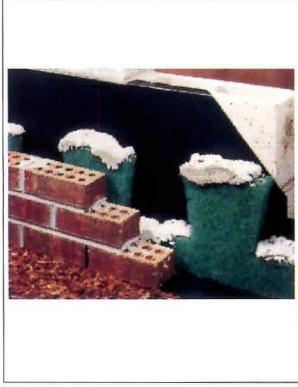
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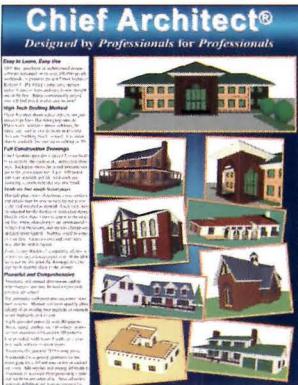
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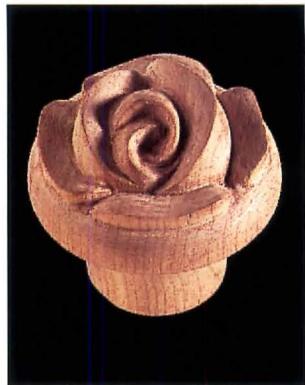
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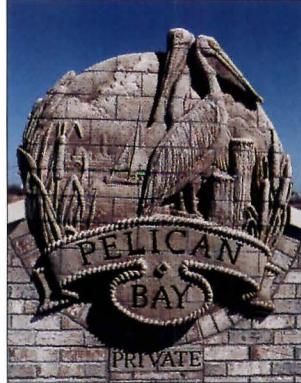
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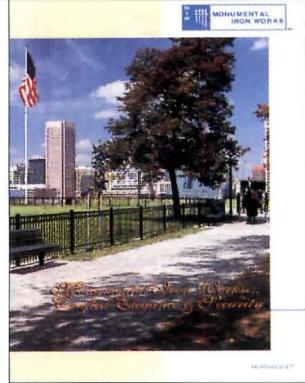
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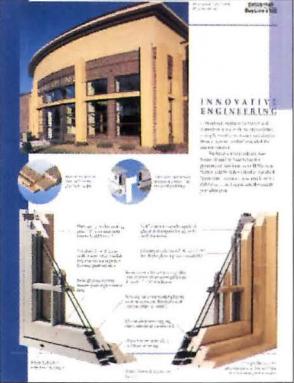
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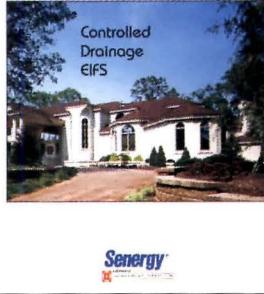
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Senergy CDsystems



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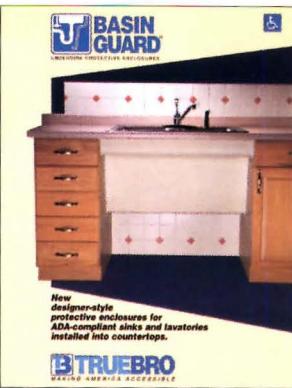
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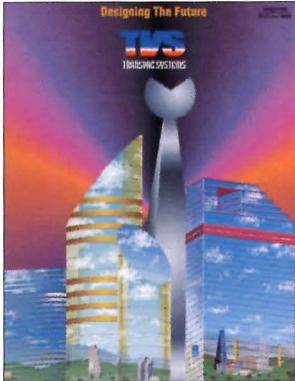


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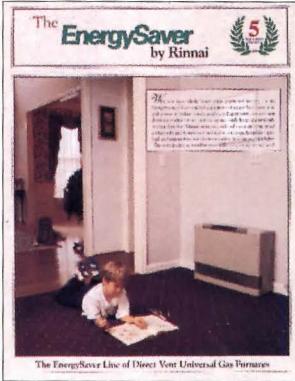
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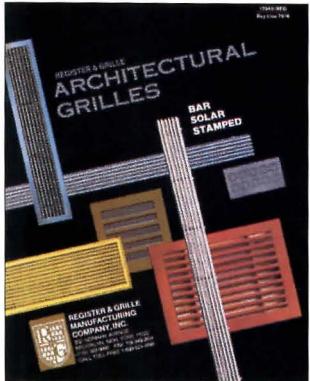


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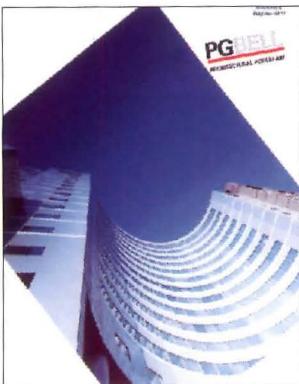
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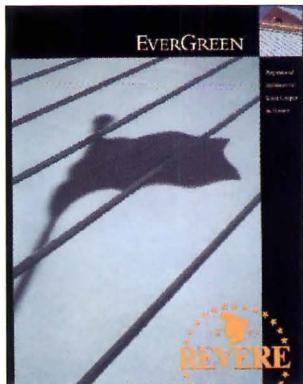


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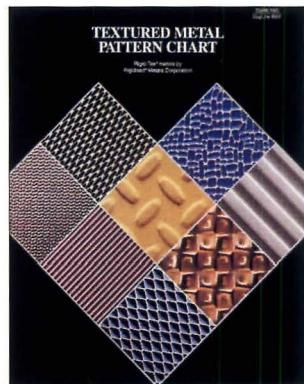


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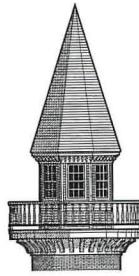
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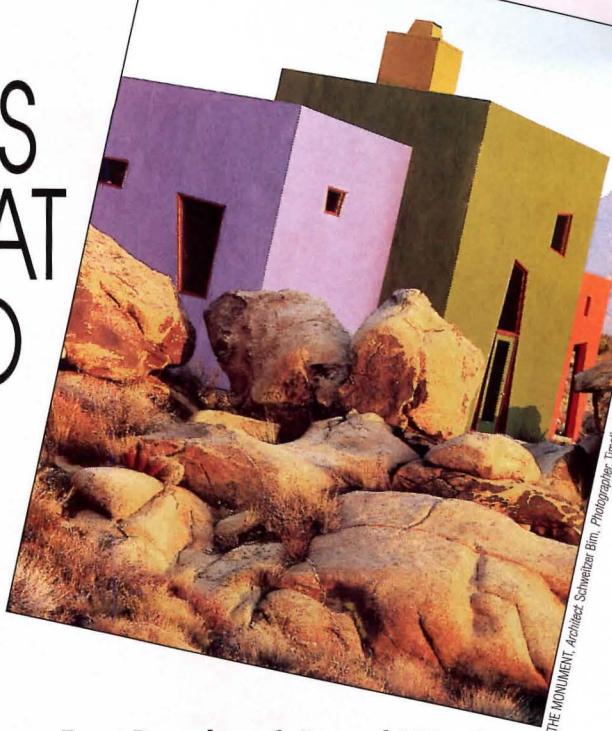
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THE FUTURE: A new urban transit system stands a chance of getting people out of their cars.

BY JOAN BLATTERMAN

I have seen the Future (on video) and it just might work. This month's column describes a developing light-rail technology that promises to reduce traffic congestion with fixed-guideway transit that fits easily into an existing urban street grid; costs much less than other light- or heavy-rail systems, subways, or roads in crowded cities; and, unlike buses, should be really fun to ride.

On a recently decommissioned navy yard in South Carolina sits a quarter-scale model of a transit idea that needs only a funding boost (from ISTEA's Congestion Mitigation and Air Quality program?) to go into real-life operation. In development over the last 10 years, the concept has received lots of favorable buzz in engineering and mass-transit circles here and abroad.

Called System 21, the transit system has streamlined, podlike cars and sleek, slender pedestals. And the engineering is elegant. Unlike other monorail-type equipment, which needs expensive dual

tracks or offers only closed-loop layouts, this design provides for simultaneous two-way traffic on a single, 6-ft-wide hollow-wedge elevated beam. Individual cars, constructed of a rugged fiberglass/plastic composite, are cantilevered from either side of this beam by a steel outrigger structure; steel wheels on each car travel in a contoured rail truck recessed in the beam. Standard commercial DC power is delivered via the beam to alternators onboard each car, which in turn supply AC current to each of the independent drive wheels. Single cars can hold about 50 passengers, with extra space available for special-needs users. Cars and support beams are modular, and easily connected. (Futrex claims the entire system can be removed and reassembled elsewhere.) Train makeup can be adjusted quickly to meet peak-hour traffic requirements without need for a switching yard.

Working from an original design by aerospace engineer Lawrence K. Edwards, the fixed-guideway transit

scheme is being developed by Charleston, S.C.-based Futrex, with a group that includes the Battelle Memorial Institute, transportation consultants Frederic R. Harris, Inc., and engineers Powers Design International contributing significant technical and financial assistance. The government also anted up a \$1.25 million seed-money loan from a Commerce Department fund intended to advance American technology. (Canada, France, and Germany all have substantial urban-rail manufacturing capacity, but this equipment is considered by transit experts to have limitations, such as a price tag in the \$50 to \$70 million-per-mile range.)

The consortium is planning to build a 1.6-mile full-scale version at Charleston International Airport that will demonstrate System 21's ability to carry large numbers of passengers safely at speeds of up to 60 miles per hour. (Speeds of up to 100 miles per hour will be possible eventually.) So far, model-test results appear to validate the proprietary structural and mechanical design elements. While System 21 incorporates existing steel-wheel drive technology, it has many unique, patented features, including the method of attaching the cars to the beam and the mechanics of grade-separated branching, which let the cars switch direction smoothly.

Architectural implications

System 21 should be able to fit relatively unobtrusively into existing streets, where design issues are air space, span lengths, and minimizing intrusion at grade level. System 21



With slender supports and a compact footprint, System 21 stations will fit easily into an urban setting.

can take on and discharge passengers, round tight curves (the system has a 90 degree turning radius), and switch from branch to main line—all 16 feet in the air. A station able to accommodate four cars would need a 14-by-120-ft ground-level landing area to provide station access by stairs and elevator (top photo). In its current, steel-framed configuration, System 21 can span 84 feet from column to column; planned precast-concrete structures will be able to carry about 100 to 120 feet between supports. The guideway columns are slender, requiring only a compact, 18-in.-high concrete base pedestal. Site-work involves just the preparation of the 7-by-7-by-2-ft foundation for each column, supported by four pilings driven to bedrock. All other components—beams, stations, branching points—are manufactured and assembled off site, to be placed by trucks and lift cranes as foundations are ready.

While the standard height is anticipated to be in the 16-ft range, easily clearing ground-level truck traffic, the system can be placed just a foot off the ground—say in a fenced right-of-way. Heights of 40 to 50 feet are possible, and trains can handle grades of up to 10 percent. Futrex says the beam-mounted rail system can meet hurricane-force winds and Los Angeles-caliber seismic loads.

And about that video: call 803/853-3207 to get one free. ■





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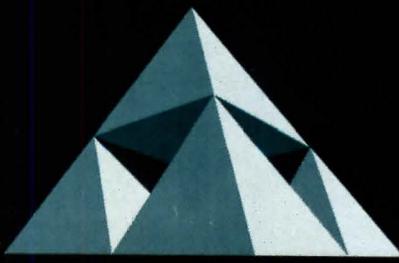
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