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EDITORIAL:

From Singularity to Cooperation

BY ROBERT A. IVY, FAIA



Here is one clear point I'll be happy to debate with you: The time has come for a collaborative Gold Medal, but only when the occasion warrants. Disregard personality for a moment, since this change is not leveled at any specific partnership. Set aside politics and polemics, although ideology underlies my assertion. Instead, I argue primarily from reality, modified and evolving with architectural practice.

The nature of who an architect is, and what he or she does, has changed from master builder to spirited collaborator—whether with client, consultant, or partner. Call it the zeitgeist, the spirit of the age, or something in the water; perhaps it is a by-product of feminist realpolitick. It is not uncommon today to find couples and small groups, regardless of gender, practicing together at the highest levels of creativity and skill, filling in each other's thoughts, dancing in each other's minds. Often, the genesis and development of ideas float above the studio, hovering blissfully above hierarchy or ownership, the fruitful product of intellectual mating, by one or many.

Yet publicly, we continue to recognize and honor our own professional efforts through a narrow lens, and the perspective is limiting. We are stuck with a top-down pyramid that glorifies the extraordinary contributions of a handful, the "stars" of our tiny galaxy. By limiting this panoply to a few, isolated persons, we sanctify them, confusing both other architects and the public we seek to engage. Such architectural demigods inhabit an easy, mythical realm, but reality is richer, laden with effort, and more human.

We have tried to correct the imbalance without complete success by honoring firms. Kliment and Halsband are the worthy recipients this year of the AIA Firm Award, yet somehow the firm award lacks the symbolic luster of gold. It is a question of semiotics, of the signs and symbols of our actions. There is but one gold standard, one precious metal linked inextricably in the collective imagination with the highest and best. One sign of what we care about most.

Don't mistake my purpose: The idea of honoring architects is good, but the idea of limiting the number for a given project is archaic. Historically, the glorification of the individual is kin to a nineteenth-century notion bound to Emersonian individualism, Napoleonic hubris, and the Romantic poets—the male cult of genius. Is this the message we want to share with the larger culture?

My argument in no way is meant to diminish the outstanding contributions of this year's winner, Richard Meier, or previous winners. Art is often tied to the individual, as these strong individualists prove. Instead, I propose that in reviewing a listing of architects producing stellar work in 1997, among the generation currently in their 40's and early 50's, contemporary genius often includes a shared vision.

My proposal applies to other honors programs, such as the Pritzker Prize, whose juries must ultimately face the same questions. Of other awards programs, it must be noted that the Royal Institute of British Architects made the switch in 1979 by honoring a husband and wife design team, Charles and Ray Eames.

Where can we make an immediate difference? I suggest that America's architects, through their representative body, the American Institute of Architects, make a positive change in one small, significant way. Open the Gold Medal to the potential of collaboration. My guess is that the majority of future honorees will be individuals. However, by broadening the medal to include joint winners, the Institute will send an important message that our institutions are capable of change, as our profession shifts focus from singularity to cooperation.

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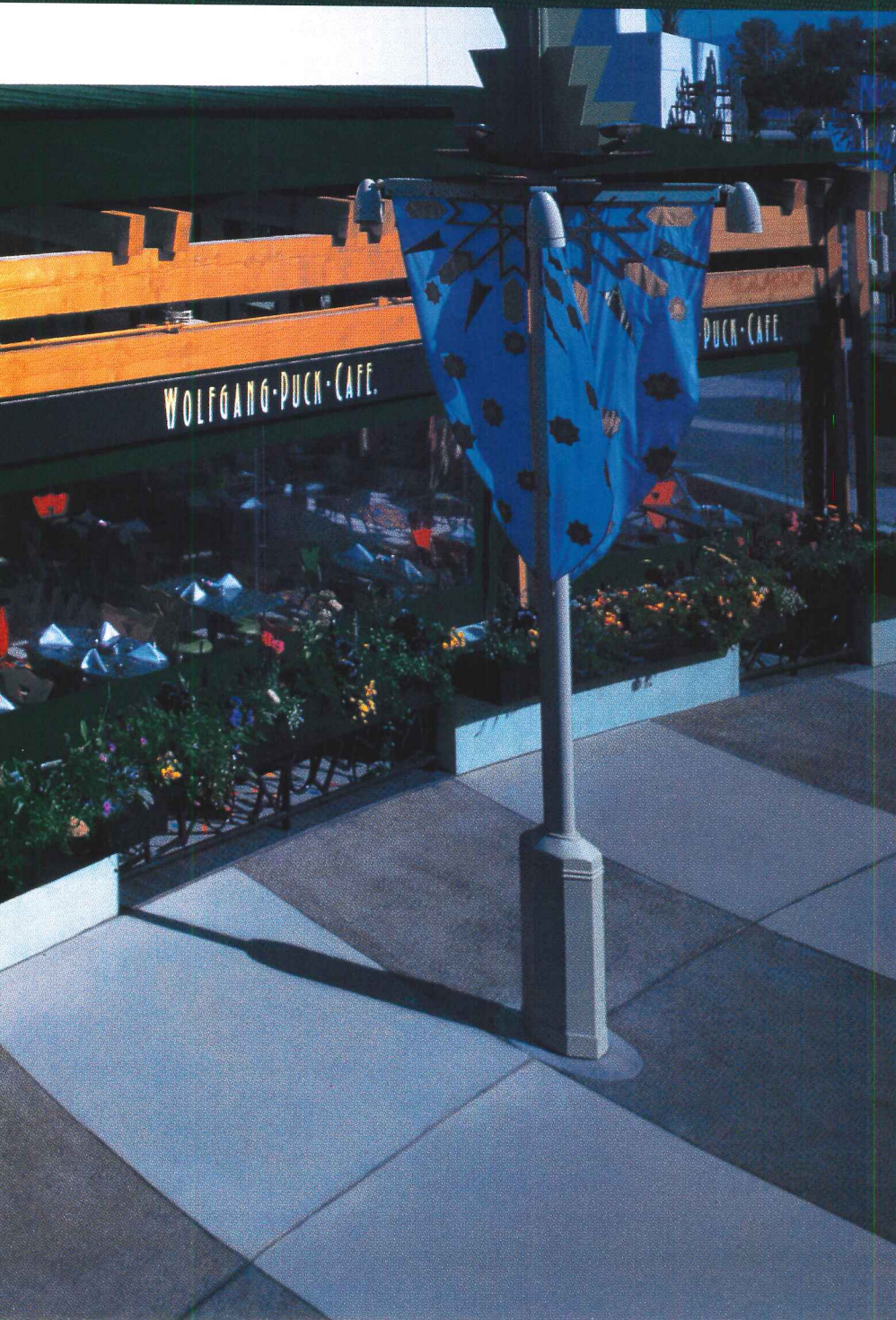


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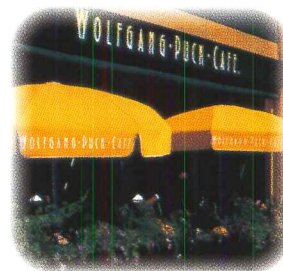
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CIRCLE 15 ON INQUIRY CARD

LETTERS

ARCHITECTURAL RECORD solicited the following letter as counterpoint to this month's editorial.

AIA Gold Medal: one award, one architect

The Gold Medal of the American Institute of Architects says volumes about what architecture is and what it is not.

Everyone understands that architecture is—inherently and fundamentally—a collaborative undertaking. No architecture is ever the product solely of one person. From the initiation of a project by a client, to the actual design by the architect, to the creation of the working drawings by his or her staff and the translation of the drawings into the language of construction by the contractor, all sorts of contributors participate in the creation of a project. It has always been so.

However, while the substance of architecture is the result of collective effort, its soul comes from the spirit of the individual. From time to time this world is blessed with those special individuals who, by dint of personality, intellect, and force of will, bring to that collaboration their essence, which elevates the results to something that soars—something that is unique and uplifting and memorable. It is the contribution of the individual that separates architecture from mere construction, and it is this special individual spirit in architecture that the Gold Medal recognizes and celebrates.

Every so often, the criteria of the Gold Medal is reviewed by the AIA Board of Directors and the idea of a collaborative or group Gold Medal is exhumed. This usually happens when one pair of popular architects or another insist that their work is pure collaboration and that neither would accept the medal without concurrent award to their partner. Fortunately in the past the debate has brought the board back

to an understanding of what the Gold Medal really stands for.

The argument for a collaborative Gold Medal sometimes rests on the assertion that the profession has changed dramatically and fundamentally since the initial criteria for the Gold Medal was written. Of course, it has changed. Change is the only sure thing about the profession. But that is an issue of style, not substance. We all change our styles of dress fairly frequently, and sometimes rather drastically, but we are still cladding basically the same number and layout of limbs.

Sometimes good things come from this periodic revisit. For instance, in recent years, the board has recognized that much more emphasis should be given to the recognition of the importance that uniquely inspired collaboration brings to our art; to that end, the AIA Firm Award has been given much elevated status in recent years, as it should be.

The AIA Board is once more reviewing its awards policies, and the Gold Medal criteria are again being reconsidered. From what I see, this is a good and thoughtful group of Regional Directors, and I would be very surprised if their judgement were to be clouded by a misreading of what the Gold Medal says about the profession. Altering the criteria to include pairs or groups or whatever may be a feel-good notion at first blush, but would miss the fundamental intention of the award. The creators of the Gold Medal knew what they were doing when they stated that the Medal should be awarded "...to an individual who has made significant contribution to the profession of architecture." They knew—and I am confident that this Board will concur—that the Gold Medal is like a river; when you alter its natural course, what you gain in width you will surely lose in depth.

—L. William Chapin, II, FAIA
Daytona Beach, Florida

Licensing exam

I read the *Mentors* column of your

April issue [RECORD, page 28], in which Robert K. Clough, FAIA, advises Bracken Raleigh on the professional licensing exam. I commend Clough for the encouraging words he offers to this perplexed individual. One must wonder why, after 30 unsuccessful attempts to pass the professional licensing exam, Raleigh hasn't taken up telemarketing or undergone therapy to change careers.

More importantly, however, is the issue of a nonlicensed individual openly practicing (to the tune of \$5.3 million by his own admission) without chastisement from the AIA. Clough was right to encourage him so that he might practice legally but wrong to allow him to do so illegally.

—Charles D. Carter, R.A., C.S.I.
Duchscherer Oberst Design PC
Buffalo, New York

Sensing the future, now

Your enthusiastic report of an exciting future in structural sensor technology [RECORD, March 1997, page 190] was applauded by practitioners of automated structural monitoring in my office. The federally funded applied research efforts you wrote about will doubtless advance sensing technology to a level that soon precludes even the need for tying fiber optic tapes to reinforcement and other structural elements. I believe the next decade will bring microscopically task-specific, cable-free, remotely transmitting sensors or sensor bundles that will be distributed throughout the raw materials during the manufacture of a structural component. These advances are already being explored by both defense and civilian manufacturing sectors.

Remote structural monitoring experience of more than two decades has taught us that the greatest impediment to technologically farsighted structural monitoring is not the lack of suitable sensors, complexity of cabling efforts, environmental interference, or scarcity of ruggedized systems. It is, primarily, the tendency of owners and the

construction community to plan and finance critical public and private structures on a "first-cost" basis that greatly hinders the life cycle needs of the structure. While all facilities may not benefit from advanced sensor systems, the construction community has systematically deferred monitoring of the effects of age, repeated loading, accidents, deterioration, and other conditions to the next generation of owners and professionals.

To place things in perspective, consider the advanced sensor-based hvac/mechanical monitoring systems that are routinely installed in large commercial and industrial facilities with realized benefits in the form of operating and maintenance cost savings. Structural monitoring networks would be no more costly.

On this basis, assess the owner/public benefit to be realized from corrosion rate sensors on components in aggressive environments, or fundamental structural frame sensor networks passively monitoring effects of a structure's settlement or seismic activity, acquiring fatigue response data, and enabling immediate identification and cordoning off of structurally unsafe zones for emergency and rescue personnel. These structural monitoring networks can be installed in most modern buildings; digital communication spines necessary for structural monitoring networks have been built in.

What is the moral of this story? We must do a better job of disseminating information regarding the practical benefits of so-called smart structures. They already exist and talk back!

—Adrian T. Ciolko, PE
CTL Structural/Architectural
Engineering, Testing and Materials
Technology
Skokie, Illinois

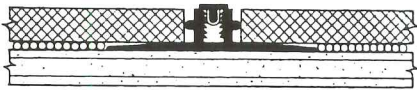
The architect as heroic design visionary?

We are writing in response to the publication of the Sahara West

(*Letters continued on page 35*)

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CIRCLE 17 ON INQUIRY CARD

(Letters continued from page 32)

Library in Las Vegas [RECORD, March 1997, pages 54–61]. As presented by RECORD, authorship of the project was solely attributed to the project's Design Architect, downplaying the role and importance of the Executive Architect. This perpetuates the practice of framing the architect as heroic design visionary, without recognizing the value of technical expertise and managerial acumen. This definition, aside from being at odds with the common practices of the profession, diminishes public awareness of the role and breadth of the architect's responsibilities.

In the case of Sahara West Library, responsibilities between the Executive Architects and the Design Architect were divided along technical and esthetic boundaries. Beyond this, the Executive Architect was the overall project administrator, with the sole responsibility for associated consultants' services and construction contract administration. As contractually defined, the role of the Design Architect was to establish esthetic intent, general massing and dimensions, and esthetic review during the post-design development stages of the design process. In addition to administrative duties, the Executive Architect's contribution to the design process was essential, providing expertise on local issues, including an experiential understanding of the demanding regional climate, appropriate materials usage, and particulars of the local construction industry.

Ultimately, the contextual input, production of construction documentation, and construction administration weights authorship of the built project (versus the esthetic design) equally with the Design and the Executive Architects. Further, the difference between design and building has an insulating effect for the respective firms. For the Design Architect, this translates into being distanced from the repercussions of both construction difficulties and public opinion. In this case, public

opinion has not been favorable, which was not fully covered in your article. The Executive Architect, on the other hand, is primarily excluded from project accreditation, while being vulnerable to the lasting effects of public perception. Within the Executive Architect's community, the success of the building is essential to maintaining the positive reputation necessary to the pursuit of new work. RECORD should recognize that the presentation of the Sahara West Library, which focused solely on the role of Meyer, Scherer & Rockcastle (possessively in the article's title), reasserts the public's perception of the Executive Architects as secondary.

It should be the responsibility of the publisher to verify the role of respective architects in joint ventures. In the case of Sahara West, the Executive Architect was essential to the design process for local expertise, as well as the legal aspects of being the construction architect of record and should, at least, be recognized consistently and equally.

—William E. Snyder, AIA
Tate & Snyder Architects
Henderson, Nevada

Entertainment design

Is there something wrong with the way you are binding your issues? Our copies have been bursting at the seams...most likely from overuse and rereading by eager associates in the office. I would like to congratulate the RECORD team for a successful and popular transition to an impressive new format.

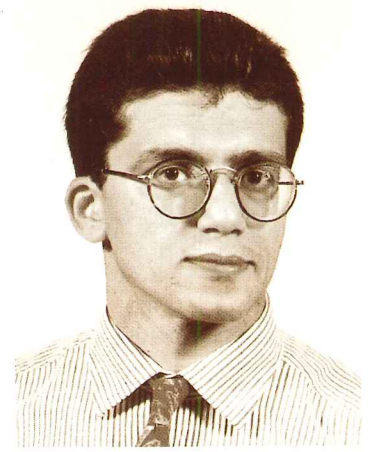
I was particularly intrigued by your Building Types Study 747 [RECORD, March 1997, pages 90–115]. There is a growing need in the post-television era for "real" fantasies. Viewers want to leave their living rooms to actually experience the fantasy. Technological advances in all media have blurred the line between fantasy and real experiences to the point that it has

(Letters continued on page 274)

SPEAK OUT Designing Abroad:

“Architects need to design with greater sensitivity to foreign cultures.”

BY KHALIL K. PIRANI



Khalil K. Pirani works for Graham Gund Architects in Cambridge, Mass. He received an AIA Advanced Research Scholarship award in both 1995 and 1996 to study the architecture of mosques in the United States. Currently he is working with Attilio Petruccioli, the director of the Aga Khan program for Islamic Architecture at the Massachusetts Institute of Technology, on a book titled Understanding Islamic Architecture.

With the increase in communication systems from high-speed modems to the Internet, combined with the demands of a booming international construction market, architectural ideas and design trends get transmitted across cultures and national boundaries in a matter of minutes. This has allowed architects with often limited knowledge of their foreign clients' culture and design traditions to take on the responsibility of creating important buildings, many that will stand for decades as civic symbols.

This phenomenon has flooded developing countries with buildings seemingly identical to those in New York City and Dallas, and with very little relation to the indigenous society. More than ever before, it is important for architects to understand foreign cultures and design buildings abroad with a higher degree of sensitivity.

The architecture of Islam is a case in point. For many American architects, Islamic architecture is nothing but buildings with either domes or arches—history provides only a menu of architectural icons and embellishments from which to choose. Such an attitude has produced buildings in Muslim societies devoid of meaning and proper interpretation of the culture. This, coupled with an increased craving by clients for Western styles as symbols of progress and modernity, has diluted opportunities for the development of a contemporary architecture of Islam.

A common image of international projects in China, Malaysia, Saudi Arabia, or Kuwait is a sky-

scraper towering over a low-scale fabric. This may be a result of a client's wishes to have a singular symbol, but architects need to ask if this is the best solution.

Architecture in Muslim societies, however, need not be like that of the West nor simply an amalgam of traditional icons. It can be something that takes advantage of Western developments in technology while keeping in sync with the local culture. The Islamic faith maintains that there is no separation between the material and the spiritual, and so new houses, schools, and office buildings have to not only provide a higher level of finish and detail, but also fulfill the more intangible assignment of elevating the souls of the users. But as architects who closely study the culture can learn, Islam encourages principles that have architectural implications: diversity as a strength, not a weakness; respect for nature and its eco-systems; concern for the poor.

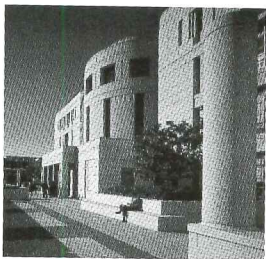
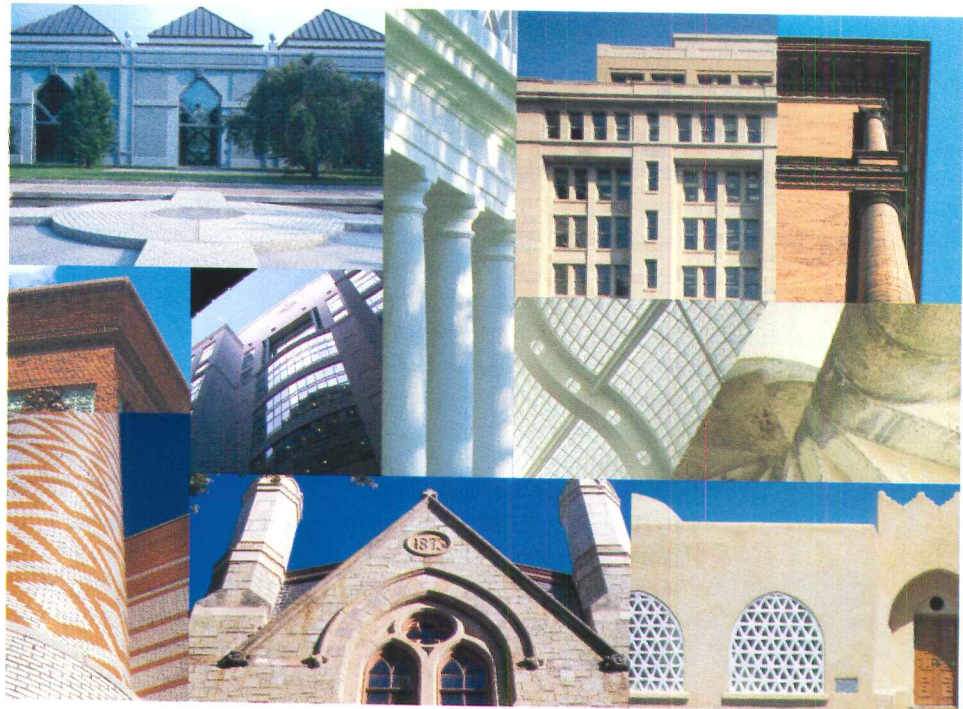
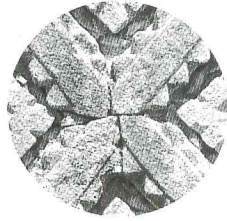
One good example of reconciling Western aspirations of high technology with the lessons of the local building vernacular is the Aga Khan University, Hospital and Medical College in Karachi, Pakistan [RECORD, May 1987, pages 136-149] by Payette Associates of Boston. It contains state-of-the-art medical facilities (the hospital has an affiliation with Harvard University), but it is housed in a cluster of ruddy-colored, low-rise structures that blend with Karachi's reddish soil. The project was clearly the outcome of intensive design investigation on the part of both the client and the architect. (Other good

examples of a successful interweaving of cutting-edge construction systems and time-honored building techniques are found among the winners of the Aga Khan Award for Architecture. The program, based in Geneva, Switzerland, recognizes architectural achievement by and for Muslim peoples.)

Foreign countries, including the European nations, look to North American architects to take a lead in architecture, both in education and output. This makes it all the more important for American firms to increase their awareness of and sensitivity to foreign cultures. Moreover, it also demands a more rigorous education process for local architects in the developing countries since designing outside the U.S. should be a sharing process among the outside architect, local architect, and client. The local architects need to be both receptive to new ideas and also teach foreign architects their cultural values and traditions. As American architects like Peter Eisenman and Frank Gehry have commented, foreign cultures have as much to offer us as we have to share with them. ■

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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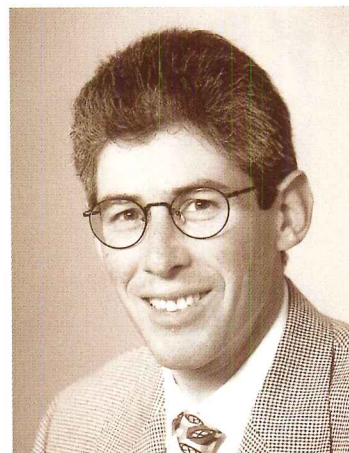
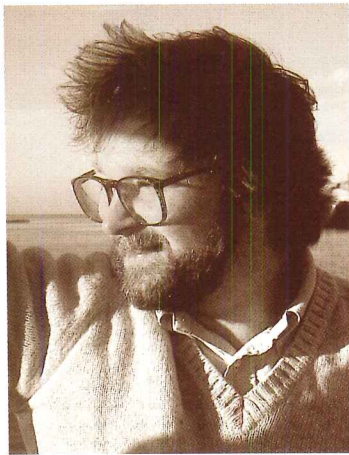
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MENTORS When it's time for residential owners to stop calling, and how to handle clients who compare your fees to cheaper firms.

Duo Dickinson is a registered architect in Madison, Conn., whose residential practice has built over 250 projects. He has taught at Yale University and Roger Williams College, and has written five books on the subject of residential architecture.

Michael Strogoff, AIA, is a negotiations consultant in Mill Valley, Calif, and has taught seminars to AIA chapters and related organizations. As an advocate for architects, he leads or advises firms throughout the negotiations process.



As a sole practitioner with a large percentage of my work being residential, I deal personally with my clients several times a week, if not several times a day, depending on the phase of the project. I usually enjoy the interaction, and often find that their involvement enriches the design. But what about when the project has come to an end, and the client's calls have not? For how many months, years, do I continue to be the liaison between the client and the general contractor, or the resourceful problem solver for my clients?

—*unsigned*

Duo Dickinson responds: In legalistic terms, your liability/responsibility can be tightly circumscribed by existing AIA documents B141, The Standard Form of Agreement, and A201, The General Conditions of the Contract for Construction, but given the exquisitely human qualities of residential design, architects need to learn more from psychotherapists than lawyers about how to reach “closure.” In truth, you should set the “rules” for transitioning out of an active role before signing a contract.

Very few homeowners have ever worked with an architect. As an architect you are not only responsible for showing clients the potential for utility and delight in their home, but you should also be telling them how architects work in general and how you run your specific practice.

Most small firms engaging in residential design run the risk of selling themselves as purveyors of

objects vs. the truth that you are a service provider—offering a process that has a beginning, a middle, and an end to it. If the client feels that you are providing them with an object, then you are in effect the “parent” of that object and responsible for its development through infancy, the wonder years, awkward adolescence, and on and on. Before I sign a contract with a client, I make it absolutely clear in writing that architects present builders with a defined scope of work they are responsible for executing and that our responsibility is on the side of design vs. technological monitoring.

The greatest gift that architects can give their clients is to communicate from the “get go” until the paint’s dry so that their learning curve for the process can be overcome early thus preventing unwarranted expectations.

Our standard approach when negotiating fees is to present either a list of tasks with associated hours, or to quote a percentage of construction cost based on our firm’s experience. Invariably, though, our clients end up comparing our fees against other firms with supposedly lower fees. How do we get around this?

—*unsigned*

Michael Strogoff responds: First, dispel the misconception that an architect’s fees can be easily compared to those paid to other firms by highlighting the distinct features of your project (e.g. numerous public spaces, uses of new technology,

extensive site investigations).

Second, relate any extra efforts included in your scope that will benefit your client. For example, to address a tight construction budget, convey the time your team allocated for analyzing how to minimize new construction or reuse equipment.

Finally, differentiate between your fee for basic services (those typically included in an architect’s initial scope) and expanded services (such as programming, computer renderings, and special subconsulting disciplines). Also, discuss how each expanded service reduces your client’s exposure. For example, expanded C.A. responsibilities enable earlier observation of construction defects; additional agency reviews facilitate earlier approvals; more exhaustive surveys of existing conditions uncover unknowns and reduce costly change orders.

If your client is still relying on fee comparisons, reinforce the benefits that you uniquely bring to the job. Your firm might offer more personal service, or focus exclusively on your client’s building type. Also, give your client a rationale to justify your fees to others to overcome what is often the final obstacle to reaching agreement. ■

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; fax 212/512-4256; or e-mail: rivy@mcgraw-hill.com. Submissions may be edited for space and clarity.*



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CIRCLE 19 ON INQUIRY CARD



PULSE RECORD readers were asked: Is themed retail architecture real architecture?

YES: 62%

NO: 38%

Yes: "Of course! Some of the greatest architecture in the world is 'themed retail' architecture. Consider the Grand Bazaar in Istanbul—the first shopping center in the world. The structure is an incredibly ornate, stylishly 'themed' retail marketplace.

"Architecture must be brought out of the elite realm of the academic and into the real world where people live and function. Life is filled with mundane environments. People seek color, light, fun, excitement, and enjoyment. They want to be entertained and to see other people being entertained. Architecture can help to create such an atmosphere.

"It would be interesting to know just how many renowned architects take their families to theme parks to enjoy a 'themed retail environment.'" —Katie Carney, Baltimore, Maryland

Yes: "The responsibility of real architecture is to provide function, structural integrity, and beauty, and, lest we forget, to do all this to the satisfaction of the client/consumer. Themed retail architecture may be seen as Postmodernism promoting and running away with itself, yet it remains an architectural style. A client or consumer who finds such design usable and attractive has been successfully served."

—Miles Battle, Washington, D.C.

Yes: "Just a few years ago, I would have said no, but as I grow professionally, I respect any building that gets built. I'm not sure whether being 'real' has anything to do with a client's lack of taste."

—Ty Holcolmb, Fort Worth, Texas

No: "Themed architecture buildings are merely fantasy sets like those in Hollywood. They do not provide a timeless environment that enhances the quality of life.

"Themed architecture certainly makes a lot of business sense for the developer and those who can afford a quick fix for their appetites. But those are temporary phenomena and should not be considered equal to a viable environment where all pieces fit together seamlessly.

"Yes, themed architecture may be a niche for design professionals, but at what cost? Everyone is trying to outdo each other by building bigger and more outrageous monuments to themselves or to developers. The 1980's mentality all over again? Yes. Architecture? Nah."

—Rick Hsu, Taiwan Seattle, Washington

No: "Themed retail architecture can be mere escapist fantasy or exemplary design. If the objective is to sell the product, what better advertisement than the building itself? How exciting it would be if the building celebrated the people, processes, and technology that went into making the product.

"Buildings for the Olivetti company exhibited the same care, precision, attention to detail, and design innovation embodied in their office machinery. Architect Hans Hollein's jewelry shop in Vienna is a precious stone unto itself: Reflective, polished surfaces and well-crafted showcases invite onlookers to admire work by skilled artisans. Any other 'theme' reveals a lack of confidence in the product."

—Dave G. Hampton, Winston-Salem, North Carolina

This Month's Question:

Should faculty members at architectural schools be licensed?

Fewer than half of the nation's 4,000 full-time and part-time faculty hold architectural licenses, according to the National Architectural Accrediting Board, Inc. One school, Montana State University, has for a decade required all architectural faculty, except historians, to be licensed. Many educators, however, disagree, believing that diversity makes a faculty stronger.

Do you believe that most or all faculty at architectural schools should be licensed?

Yes No

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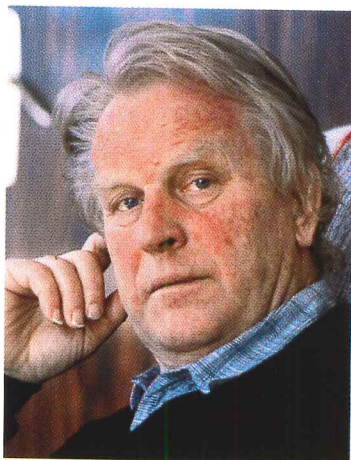
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PRITZKER WINNER SVERRE FEHN OFFERS INSIGHTS FOR YOUNG ARCHITECTS



At 72, Norwegian architect Sverre Fehn, the 1997 laureate of the Pritzker Architecture Prize, has no thoughts of retiring anytime soon.

In fact, he says, he's still learning his craft. How does Fehn define his work? What words of wisdom does he offer young architects? Is he optimistic about the future of architecture? RECORD spoke at length with Fehn. Here are highlights from that conversation.

RECORD: The jury was especially impressed that you steadily pursued your vision of Modernism without being influenced by trends. Do you think the Modernist label is accurate?

Fehn: I was always called a



Modernist, but when I started to represent my work in Europe and the U.S., then I was called a Norwegian (laughs). My architecture was very Scandinavian. I tried to run away from it all my life, but didn't succeed.

I find it very mysterious, my architecture. It is filled with death and mysticism, the archetypes of light and darkness. Here the whole winter is dark, and when you're a child you need a big imagination to manage the darkness. Life is not so regular as in the south, where you have the same sun coming and going, and not so different in winter and summer. I am always fascinated by light and shadow, and precisely manipulating those forms. The contrasts, the enormity.

I think sometimes I have a deal with the climate, the nature, and the topography. It is important to get a dialogue between nature and creative life. Building is a brutal confrontation of culture on nature, and in that confrontation you can find balance and beauty. It's curious to say it, but at the same time the dialogue between the past and the present also has to be manifested.

RECORD: What do you say to young architects who are struggling to make a living and a reputation?

Fehn: There are so many philosophical streams affecting young people—Minimalism, Postmodernism, Deconstruction. It can seem overwhelming, but it's good for them. In a way, it's harder than one or two influences.

I do see a big difference in the way I was a young architect and the students I see now. They are too wound up in materialism, so they have to have a good job to keep all their cars and TVs. In my day I had a drawing table and worked.

It's important for young ones to travel a lot, especially to places like North Africa, to learn how few things

THREE FINALISTS NAMED FOR MOMA EXPANSION The architect for the expansion and renovation of the Museum of Modern Art in Manhattan will be Yoshio Taniguchi of Tokyo, Jacques Herzog and Pierre de Meuron of Basel, Switzerland, or Bernard Tschumi of New York City. They are the three finalists following a month-long sketch exercise in which 10 architects from around the world were invited to compete for the chance to design a bigger and presumably better MoMA [RECORD, March 1997, page 32].

"The architects chosen by the museum's trustees for the next stage of the competition demonstrated a remarkable sensitivity to art, a deep understanding of our mission, and a compelling vision of the future," said Museum Director Glenn D. Lowry.

The finalists are now participating in a competition leading to preliminary architectural designs for the new museum. The winner will be announced by the end of the year.

The sketches and related material of all 10 competitors are on view at the museum through July 8.

you need to have a pleasant life. Or consider a Japanese house without furniture. As a teacher I always took students to Spain and Morocco, where architecture isn't primitive but simple. It is an important lesson to appreciate the way one lives simply.

RECORD: Are you optimistic about the future of architecture?

Fehn: Architecture could always mean more than it does today. People seem always to search for space and are not satisfied. But that so many people are traveling to really enjoy a space or a room—that is encouraging. That they are seeking out to experience something grand and important.

RECORD: You've been an architect and teacher for 50 years. What do you know now that you

didn't when you began?

Fehn: The importance of the story. You can't just make a construction. Before you make a room or a space around it, you must have a story. The material is your letters. You write with brick, stone, iron, and glass.

RECORD: Any temptation to slow down at this stage of your life?

Fehn: I can't when I have so much to do. The Copenhagen project [the enlargement of the National Theatre of Copenhagen] is a big job. I won't be retiring in Spain any time soon. *Julie Moline*

Sverre Fehn's Glacier Museum in Fjaerland, Norway, 1989-91 (left) and his Aukrust Museum at Alvdal, Norway, 1994-95 (below).



CALIFORNIA ARCHITECTS IN "DO OR DIE" BATTLE WITH STATE ENGINEERS

"It's do or die time for the architectural profession" in the state of California, according to an AIA member spokesperson who opposes a far-reaching constitutional amendment that has qualified for the ballot in the June, 1998 election.

The amendment, initiated by the Professional Engineers in California Government (PECG) and the campaign organization Taxpayers for Efficient Government, states that "engineering, architectural, and similar services [exceeding \$50,000 in state funding]...be furnished at the lowest cost to the taxpayers." It requires that contracts be awarded through a competitive bidding process, and that contractors be held fully responsible for the performance of their contracts.

By eliminating every condition but "lowest cost" in the competition for state contracts, it almost ensures that most projects will be done by the state itself, the AIA California Council (AIACC) claims. Consequently, it has joined forces with the Consulting Engineers and Land Surveyors of California (CELSOC) and the California Chamber of Commerce to form FED UP!, a coalition opposing the amendment.

To raise funds for the fight, AIACC has formed a Political Action Committee (ARC PAC). "The PECG amendment is an outrageous attack on the entire design-professional community and open competition," declared Arthur Gensler, Jr., FAIA, co-chair of the committee. He insists that "the architectural community will not stand by and watch PECG construct the largest taxpayer-funded A/E firm in the world."

ARC PAC is committed to convincing the average voter that "the lowest bid" does not guarantee public safety or the lowest final project cost, much less the quality of design that Californians of the future deserve. The other co-chair of ARC PAC, Robert L. Newsom III, AIA, senior vice president of DMJM,

asserted that, "it's do or die time" and added "It is essential to our survival that we defeat this initiative."

The AIACC is focused on protecting Qualification-Based Selection (QBS) processes that currently advance design as a public value. As a constitutional amendment, the PECG measure will override the QBS statute of 1990 that mandates the selection of architects and engineers based on qualifications rather than price.

Speaking to RECORD on behalf of PECG, Bruce Banning, executive director, argues that state employees hope the Government Cost Savings and Taxpayer Protection Amendment, as it's called, will stop over-priced, no-bid contracts granted to political campaign contributors who gain "undue political influence."

Banning responded to criticism about the "broad sweep" of the measure which appears to impact an extremely large field of projects by saying that he does not expect the measure to affect such a broad field. "Currently, 80 percent of engineering design work is executed by state employees, while 20 percent is contracted out. We are opening the 80 percent to outside contractors if they can compete; likewise they may lose their current 20 percent if they cannot cut costs," he explained.

To criticism of a "stacked deck" formula that appears to eliminate overhead expenses from the calculation of state design costs when entering competitive bidding, he replied that "comparable costs are fairly measured." He further invited private sector design professionals to propose amendments to the measure to improve its effectiveness.

ARC PAC hopes to raise more than \$1 million for FED UP! to fight the amendment. There is a possibility that the election could come as soon as November, 1997.

Lian Hurst Mann



AMERICAN AIR MUSEUM IN BRITAIN TO OPEN ON AUGUST 1

Sir Norman Foster & Partners' \$18-million American Air Museum on the grounds of the Imperial War Museum at Duxford Airfield near Cambridge, England, will open August 1, with Queen Elizabeth officiating at the ceremony.

Twenty-one vintage and contemporary American combat planes will be housed in the museum located on the site of a World War II U.S. Army Air Force fighter base. The building's curved form resembles the nose cone of an aircraft, its tapered end partially covered with grass. Working with structural engineers at Ove Arup & Partners and concrete specialists, the architect designed a toroidal roof form in concrete, a shape akin to the curve of a donut wedge; steel struts transfer roof loads across a glazed band, which wraps around the edge of the

building, to a ring beam and inclined concrete columns.

The concrete structure not only provides room for the planes, but acts as a thermal insulator, reducing the level of dehumidification required to maintain the exhibits.

At its front end, the roof spans nearly 300 feet over a glazed and arched curtainwall, built, claim the architects, with the largest single-glazed laminated panels currently manufactured. Once inside, visitors will be able to view the aircraft up close from a raised walkway.

The museum is funded by a \$10-million grant from Britain's National Heritage Lottery Fund, together with private donations. According to the American Air Museum in Britain Campaign, \$1 million is still needed to complete the project.



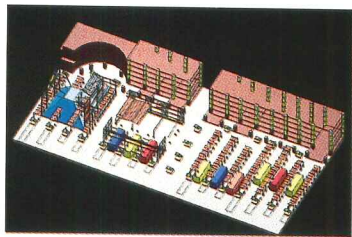
COLUMBIA STUDENTS WORK WITH HARLEM ACTIVISTS TO DESIGN ARTS CORRIDOR

Artists and activists in East Harlem, one of New York City's poorest and most beleaguered neighborhoods, have tapped into the design talents of students at Columbia University's Graduate Schools of Architecture, Planning, and Preservation to help them develop their vision of an urban arts corridor.

The grassroots effort to shape development in "El Barrio," a predominantly Latino and African-American neighborhood, using arts-related activities and institutions is led by two artists: Fernando Salicrup, executive director of the Puerto Rican Workshop, and by Algernon Miller, a member of the Harlem Gateway Committee. Both men and their community groups are dedicated to the propagation of local art, culture, and education in the urban environment.

The southern tip of the area chosen for the arts corridor has already begun to change under Salicrup's 25-year-old campaign: A gallery and artists' housing has opened, several galleries are in the works, and a major building previously slated to become a shelter for homeless men will open soon as a center for the Latino arts. "We want to show people that this can work," says Salicrup. "We need the leadership to come from people who are here."

Salicrup and Miller envision the proposed arts corridor as an extension of Fifth Avenue's "Museum



108th St. and Park Ave. Community Plaza by student Ariel Bromberg

Mile" to the north, adding museums and monuments celebrating technology, Latino culture, jazz music, and the civil rights struggle.

In their designs, several of the Columbia students have attempted to break down the scale of the area's public housing towers and massive urban blocks by creating raised, private outdoor plazas and making new pathways through and around buildings. One of Salicrup and Miller's favorite projects was created by a student who sought to link the Latino and African-American cultures in celebration, creating a canopy-enclosed parade route through the neighborhoods along Central Park.

Grahame Shane, adjunct professor of architecture at Columbia, says the optimistic and energetic vision of the community artists inspired his graduate students. "What we did was to make it possible to visualize their concept built out along the corridor," explained Shane. "They will continue to take it forward." *Virginia Kent Dorris*

U. OF HOUSTON ARCHITECTURE SCHOOL GETS \$7 MILLION DONATION Gerald Hines, founder and chairman of Hines, the international real estate firm, has donated \$7 million to the College of Architecture at the University of Houston.

One of the largest contributions ever to be awarded to a U.S. architecture school, the developer's gift will provide a permanent endowment for the college, fund programs and fellowships, and increase resources for research and design exploration. It will also help to fund interdisciplinary urban design studios, where innovative ideas for public spaces, institutional facilities, housing, and transportation will be investigated.

"This gift," said Dean Bruce Webb of the newly renamed Gerald D. Hines College of Architecture, "will help us become one of the preeminent architectural schools in the nation."

ARCHITECTURAL PRESS ROUNDUP

LIFE, NOT DEATH

The New York Times, April 10, 1997 Does architecture make a difference? Thirty-six homeless AIDS patients will soon be moving into new 400-sq-ft studio apartments with private baths, sparkling appliances, and furniture and amenities donated by the likes of Ethan Allen and Ralph Lauren. The light-filled, six-story, 33,458-sq-ft structure on the Lower East Side was designed by architect Alan Wanzenberg of Johnson/Wanzenberg. His partner, Jed Johnson, who died in the crash of TWA Flight 800 last July, designed the interiors. As *Times* writer Julie V. Iovine explains, the facility is "something new: a daytime treatment center with fully furnished efficiency apartments that offer round-the-clock supervision, along with medical care." The nonprofit organization behind the project is Housing Works. A woman, seeing her new home for the first time, remarked, "I've lived in 18 different places and they all reminded me of jail. Here it feels like life, not death."

BEEFING IN BERLIN

The Wall Street Journal, March 21, 1997 American architects in Berlin are not a happy lot. Despite an abundance of work, they are chafing because of strict building rules imposed by the city's conservative politicians. As a result, they say, creativity has been severely restricted. Berlin is a "missed opportunity," believes Daniel Libeskind, architect of the city's new Jewish Museum. "Completely uninteresting," says I.M. Pei of the \$2.5 billion worth of buildings at Potsdamer Platz. Frank Gehry comments, "Post-War Berlin is quite impressive. Post-Wall Berlin is not."

GO WEST YOUNG ARCHITECT

The Los Angeles Times, March 27, 1997 Architectural firms are "scrambling for experienced designers and raiding rivals for hard-to-find talent," writes columnist Jesus Sanchez. Adding to this competitive frenzy are the Hollywood studios and high-tech firms. The movie companies "will pay whatever they have to pay to get people to work for them," says David Brotman of RTKL Associates. As for the techie firms, "they pay top dollar for architects with valuable computer skills," says Sanchez.

GO EAST YOUNG ARCHITECT

Platform, The University of Texas at Austin, Winter 1996-97 According to Jeffrey Utterback, class of '86, Poland is not a bad place to be if you are a young architect with get-up-and-go. Utterback, who has made a career in Poland, says: "Architects here have been treated as artists and sort of god-like. The problem is that the architects believe that they are god-like and are in turn not responsible service providers."

HUXTABLE BOOK GETS PANNED

The New York Times Book Review, April 6, 1997 Revered architecture critic Ada Louise Huxtable's book *The Unreal America: Architecture and Illusion* got a bad review from critic Witold Rybczynski. After paying his due by reminding readers of Huxtable's considerable contribution to the historic preservation movement, he calls her book "poorly argued" and "brimming with inconsistencies." And that's just the warm-up. Rybczynski goes on: "Make-believe has always played a role in our surroundings and the relationship between reality and illusion has always been blurred; Pennsylvania Station [a building Huxtable fought in vain to save] was simultaneously a surrogate Baths of Caracalla and a real place. She is more interested in using words like 'unreal' and 'nostalgic' to deprecate architects whose work she dislikes."



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20 DESIGNS WIN 1996 GSA BIENNIAL DESIGN AWARDS

Kohn Pedersen Fox Associates of New York City was the winner of two U.S. General Services Administration (GSA) 1996 biennial design awards. In all, 20 projects of 140 submitted to the GSA were recognized for excellence in the categories of architecture, art, engineering, graphic design, landscape architecture, interior design, historic preservation, and building designs in progress. The winners were selected by a nine-member jury, which was chaired by architect Cesar Pelli of Cesar Pelli & Associates, New Haven, Conn.



Receiving honor awards were:

- Kohn Pedersen Fox Associates for the design of the U.S. Courthouse at Foley Square, New York City.
- Diana K. Moore for the sculpture "Justice" at the Martin Luther King, Jr. Federal Courthouse, Newark, N.J.
- Dworsky Associates for the design of the U.S. Port of Entry, Calexico, Calif.
- Pei Cobb Freed & Partners for the design in progress for the U.S. Courthouse in Boston.
- Hardy Holzman Pfeiffer Associates for the design in progress for the Evo A. DeConcini Federal Building and U.S. Courthouse, Tucson, Ariz.
- Waggoner & Ball Architects

for historic preservation of the U.S. Customs House, New Orleans.

- Skidmore, Owings & Merrill for historic preservation of the U.S. Court of Appeals, San Francisco.

The projects winning citations were:

- Clyde Lynds for the sculpture "America Song" at the Federal Office Building, New York City.

- John Valadez for the mural "A Day in El Paso del Norte" at the Federal Building, El Paso, Texas.

- Douglas Hollis for the landscape-sculpture "Watersongs" at the Vincent E. McKelvey Federal Building, Menlo Park, Calif.

- Leers Weinzapfel Associates Architects, Inc. for the Harold D. Donohue Federal Building and U.S. Courthouse, Worcester, Mass.

- Kohn Pedersen Fox Associates for design of the U.S. Courthouse, Minneapolis, Minn.

- Kaplan McLaughlin Diaz for the Federal Building, Oakland, Calif.

- MBT Architecture for design of the Vincent E. McKelvey Federal Building, Menlo Park, Calif.

- Martha Schwartz, Inc., for landscape design at the U.S. Courthouse, Minneapolis.

- Quinn Evans/Architects for restoration of the roof and upper facades of the Old Executive Office Building, Washington, D.C.

- John Milner Associates, Inc., for conservation and restoration of "The Expanding Universe" sculptural fountain at the State Department Building, Washington, D.C.

- Southern California Edison for an energy conservation project at the Chet Holifield Federal Building, Laguna Niguel, Calif.

- RAW Architecture for interior design of the Little Aviators Child Care Center at the Hawthorne Federal Building, Lawndale, Calif.

- Joel Boches and David Hooper of GSA's Office of Graphic Design for design of Art-in-Architecture program brochures, for the U.S. General Services Administration, Washington, D.C.



The biennial awards program was conceived by GSA in 1990 to encourage and recognize innovation in federal buildings and to honor noteworthy achievements in preservation and renovation of historic structures.

GSA Honor Award winners include The U.S. Courthouse, Foley Square, New York City, by Kohn, Pedersen Fox Associates (left), and the U.S. Court of Appeals, San Francisco, California, by Skidmore, Owings & Merrill (above).

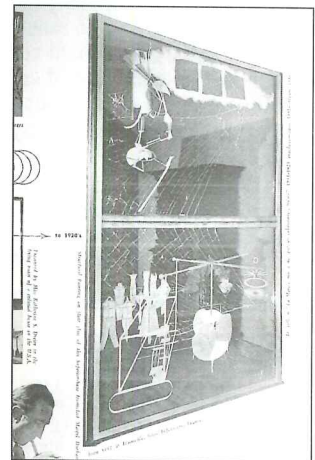
REVIEW OF DUCHAMP MASTERPIECE IN RECORD 60 YEARS

AGO The recent publication of Calvin Tomkins's *Duchamp: A Biography* (Henry Holt and Company, 1996), credits ARCHITECTURAL RECORD with helping to establish the reputation of the influential Dadaist artist Marcel Duchamp in an article 60 years ago this month.

Written by Viennese-born architect/sculptor Frederick Kiesler, the 1937 review of Duchamp's "The Bride Stripped Bare by Her Bachelors, Even (The Large Glass)" of 1915-23, distills the tectonic nature of the glass-and-wire work through a description of the artist's conceptual process and construction technique. Duchamp's "structural painting," as he called it, is about joinery and the use of transparency and opacity to create "a spatial balance."

Kiesler deemed the glass work "nothing short of being the masterpiece of the first quarter of 20th-century painting." In his book, Tomkins claims Duchamp "had a more lasting and far-reaching effect on the art of our time than either Picasso or Matisse." Of Kiesler's contribution in RECORD, the author says, it is the "first important essay on 'The Glass' in English."

Abby Bussel



RAINFOREST ACTION NETWORK PETITIONS ARCHITECTS TO SAVE REDWOOD FORESTS

In a bid to secure protection for ancient redwood forests, the Rainforest Action Network (RAN) is urging architects, builders, and consumers to boycott old-growth redwood lumber. "This is a last resort for citizens to kill the market before the loggers kill the old growth," said RAN campaign director



Christopher Hatch.

The group sent out a mailing to 1,200 California architects representing nearly 1,000 firms, plus contractors, interior designers, and lumberyards nationwide, asking recipients to sign a pledge card asserting that they won't buy old-growth redwood products. RAN also took out a full-page advertisement in *The New York Times* asserting, "Of all the uses of an ancient redwood, it still works best as a tree."

Within six weeks, pledges were returned by 120 architects and 60 landscape architects, 400 building professionals, and more than 1,000 "concerned citizens," according to RAN spokesperson Celia Alario.

Besides RAN, the old-growth redwood campaign is being supported by a coalition of environmental groups, including Sierra Club, Greenpeace U.S.A., and the San Francisco Bay Area



Coalition for Headwaters, a group seeking to save The Headwaters Forest, a 3,000-acre privately held grove of virgin redwood.

The view after thousands of old-growth redwoods become lumber.

DESIGNERS AT MONTEREY CONFERENCE IMAGINE CITIES OF THE FUTURE Counting 1000 days until the year 2000, futurists at the thirteenth Monterey Design Conference challenged fellow architects to imagine their role in designing the future. At the heart of the spirited weekend of debate were these questions: What is the future of our urban environment and who will design it?

The focal debate pitted visions of cultural diversity and democratic action against the tradition-bound stance of New Urbanism. John Kaliski, AIA, envisioned a practice of "city design" that embraces "the complexity of everyday life," celebrates the diversity of value systems, and engages public conflict in the political process that ultimately designs the physical environment. New Urbanist Peter Katz predicted a popular focus on stability and common cultural values aimed at "true, authentic life," proposing that architects may be disappointed to find that future cities will look like past cities.

Barton Phelps, FAIA, harmonized the divergent voices in a rejoinder to reconceptualize architecture as part of the urban landscape, a physical world defined more by measures of time than place, and acted upon by many designers, some of whom will be architects. *Lian Hurst Mann*

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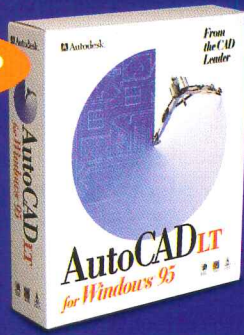
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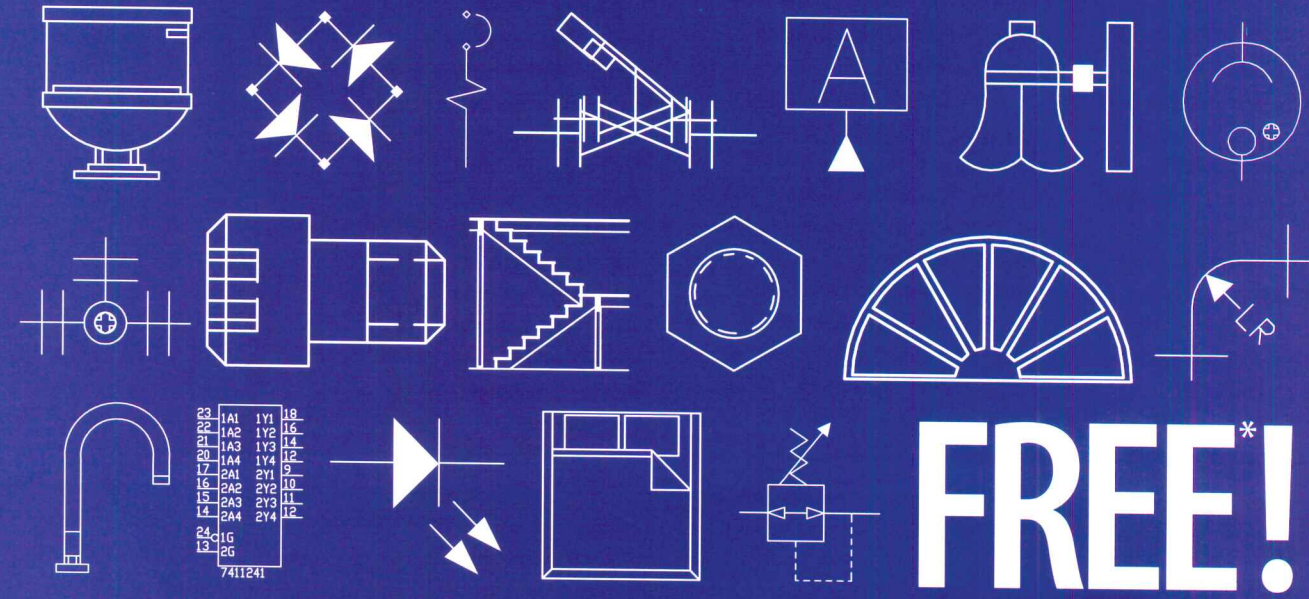
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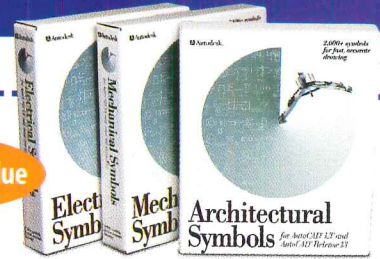
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DESIGN COMPETITIONS TO COMMEMORATE AFRICAN BURIAL SITE IN MANHATTAN

The U.S. General Services Administration (GSA) is sponsoring two separate national design competitions to commemorate the site of the African Burial Ground, an 18th-century cemetery in lower Manhattan discovered by archeologists in 1991. The first competition is for a commission to design an outdoor memorial at the site. The second is for the development of a nearby Interpretive Center.

The African Burial Ground, a National Historic Landmark, was discovered at the planned site of a federal office building. About 400 tombs were removed and the human remains and artifacts sent for study to Howard University in Washington, D.C. Both slaves and freemen were buried on the site between the years 1712 and 1792. When the examinations are concluded, the remains will be reinterred on the burial site.

For the first competition, GSA is seeking to commission an individual or team to develop, design, fabricate, and install a memorial that will acknowledge the African Burial Ground, "as a sacred place for commemorative and contemplative activities," according to Margaret King Jorde, project executive. The Interpretive Center will be located at a nearby federal office building, and offer exhibits based on the anthropological research underway at Howard University.

A pre-bid conference is being organized "to facilitate the partnering of design professionals who possess an expertise, but may be in search of partnering with other professionals in order to fulfill the necessary project requirements," said Jorde. For information on the competitions, contact her office at 212/264-8164, or GSA Public Affairs at 212/264-0424.

COUNT THE WINDOWS "Kuala Lumpur today, tomorrow the world," according to Jim Belmont, president of Sol-R-Veil, the shade maker. Considering that the company landed the Petronas Towers contract for \$10 million, his hubris is understandable. In total, there are 32,000 4-ft by 12 1/2-ft exterior windows and 32,000 interior sunscreen units to cover them, for the two 88-story towers, which at 1,483 ft are the tallest buildings in the world. Two-and-a-half year shading project will entail 24,000 hours of fabrication work and 1.5 million hours of labor for installation. Sol-R-Veil created a fine weave fiberglass of three different colors in a diagonal direction, a combination of light, dark, and intermediate weave, to cover the 1/2-in.-thick green glass. The new textile offers a shading coefficient of 0.41. After all that work, though, the shades are intended to be "imperceptible" from outside.



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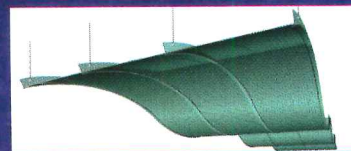
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NEWS BRIEFS

Massive Hong Kong project to Pelli

Cesar Pelli & Associates of New Haven, Connecticut, has been selected to design a 3.2-million-sq-ft mass transit hub in Hong Kong. The mixed-use complex will integrate the city's central subway station with a new air terminal station for express service to Foster & Partners's new Chek Lap Kok Airport. Phase one will include a 1,312-ft-tall office tower, a 689-ft-tall tower, and a four-story retail podium with a public roof garden. A hotel and apartments are to be added in subsequent phases. The construction schedule and the cost have not been finalized.

New Center for the Built

Environment (CBE) A new industry/university cooperative research facility, the Center for the Built Environment's mission "is to improve the design and operation of buildings to assure high perfor-

mance and quality for their tenants and owners." Located on the campus of the University of California at Berkeley, the center was established by the university with the National Science Foundation and more than 10 industry partners from commercial, government, design, and construction sectors. CBE will, among other issues, address new technologies for increasing workplace productivity and the reduction of energy use, indoor air quality research, and standards and codes affecting the industry.

Architect for new Philadelphia arts center announced

From a field of four, Rafael Viñoly Architects, New York City, with The Hillier Group, Philadelphia, was awarded the commission to design the \$203-million Regional Performing Arts Center in Philadelphia. The project will combine the city's existing Academy of Music with a new concert hall for the Philadelphia Orchestra and a

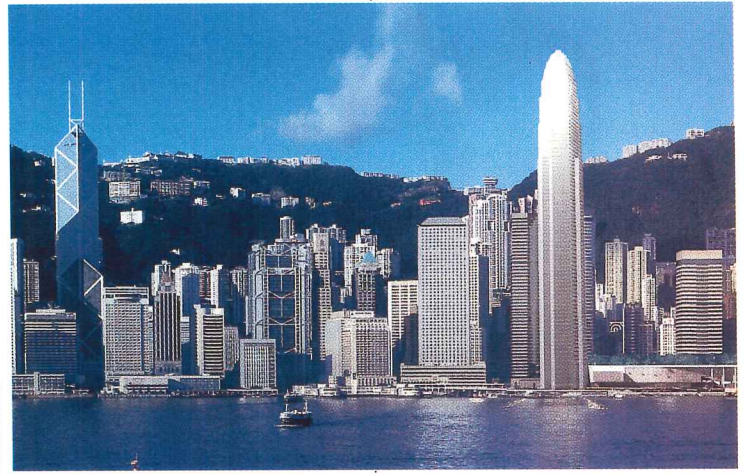
multi-use theater, both housed in a new structure. Other finalists were Barton Myers Associates, Inc., Beverly Hills, California; Pei Cobb Freed & Partners, New York City; and Cesar Pelli & Associates New Haven, Connecticut. The center is to be funded by public and private sources.

AIA's first leadership Institute

Twenty-three architects gathered in Washington, D.C., recently to attend

the AIA's first Leadership Institute. The four-day Institute was established to increase practitioners' involvement and effectiveness in the community-at-large. Through a series of presentations and work sessions, the participants addressed the role of the architect in national politics, business, local government, and community groups.

Hong Kong with new 1,312-ft tower planned by Cesar Pelli inserted.



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More New Urbanism in Turkey

A 1,150-acre site, located 40 minutes west of Istanbul, is slated to become Turkey's largest neo-traditional community, according to its designer, CHK Architects and Planners of Silver Spring, Maryland. Over the next 20 years, developer Korkmaz Yigit and Gultas, A.S., intends to construct 14,000 residences, four-million sq ft of office space, 90,000 sq ft of retail space, and parks and open spaces. The site plan weaves existing squatter settlements into the new town, which is known as Ispartakule.

Paris Prize winners named

Thomas T. H. Pen, a Syracuse University graduate now working with Michael Graves Architects in New York City, is the winner of the 1996 Paris Prize in Public Architecture, an annual competition sponsored by the Van Alen Institute of New York City and open to recent and prospective graduates of U.S. architecture programs. Ran Oron, a

graduate of Cooper Union now working in New York City received the second place award, and Tracey E. Ford, who is completing her final year at Georgia Tech University, took third place. The competition brief called for the design of a temporary information center for a site in downtown Manhattan.

AIA government affairs award to Arizona chapter, again

For the second consecutive year, AIA Arizona has been honored with the AIA Government Affairs Award, a national award given annually to acknowledge efforts that raise architects' level of involvement in practice-related government issues. In 1996, the Arizona chapter coordinated efforts to support its state's Contract Indemnification Bill, which deletes the "hold harmless and indemnification" clause from architectural and engineering contracts with public agencies. The bill, which goes into effect June 1998, ensures that practitioners will be responsible



only for their own negligence—the only category of negligence for which they can acquire insurance.

New dual campus for Bothell, Washington A new campus bringing together two commuter-oriented Washington State institutions—the University of Washington and Cascadia Community College Collocation Campus—is being planned for the town of Bothell by Mahlum & Nordfors McKinley Gordon, Seattle, in association with

Plan for phase one of a new joint campus at Bothell, Washington.

Simon Martin-Vegue Winkelstein Moris, San Francisco, and Cardwell/Thomas & Associates of Seattle. The master plan calls for a 1.2-million-sq-ft campus that can accommodate 10,000 students. Phase one, for 2,000 students, has 255,000 sq ft in three major buildings. Estimated cost of the entire project is \$71.4 million. ■

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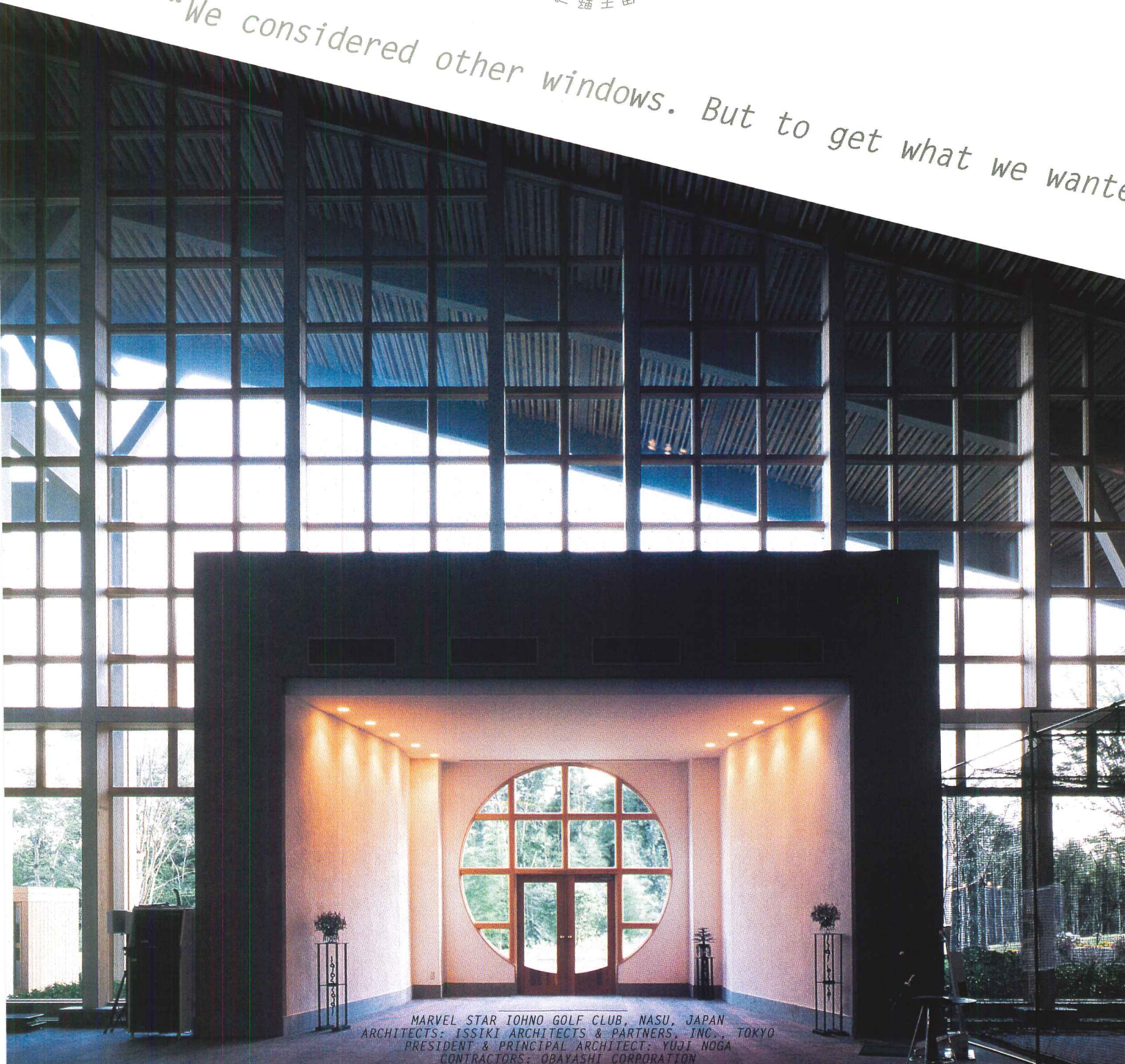
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PRESIDENT & PRINCIPAL ARCHITECT: YUJI NOGA
CONTRACTORS: OBAYASHI CORPORATION
IOHNO PROJECT MANAGER: KAZUO SAITOH

architecture

American
firm award

Institute of interiors

urban design

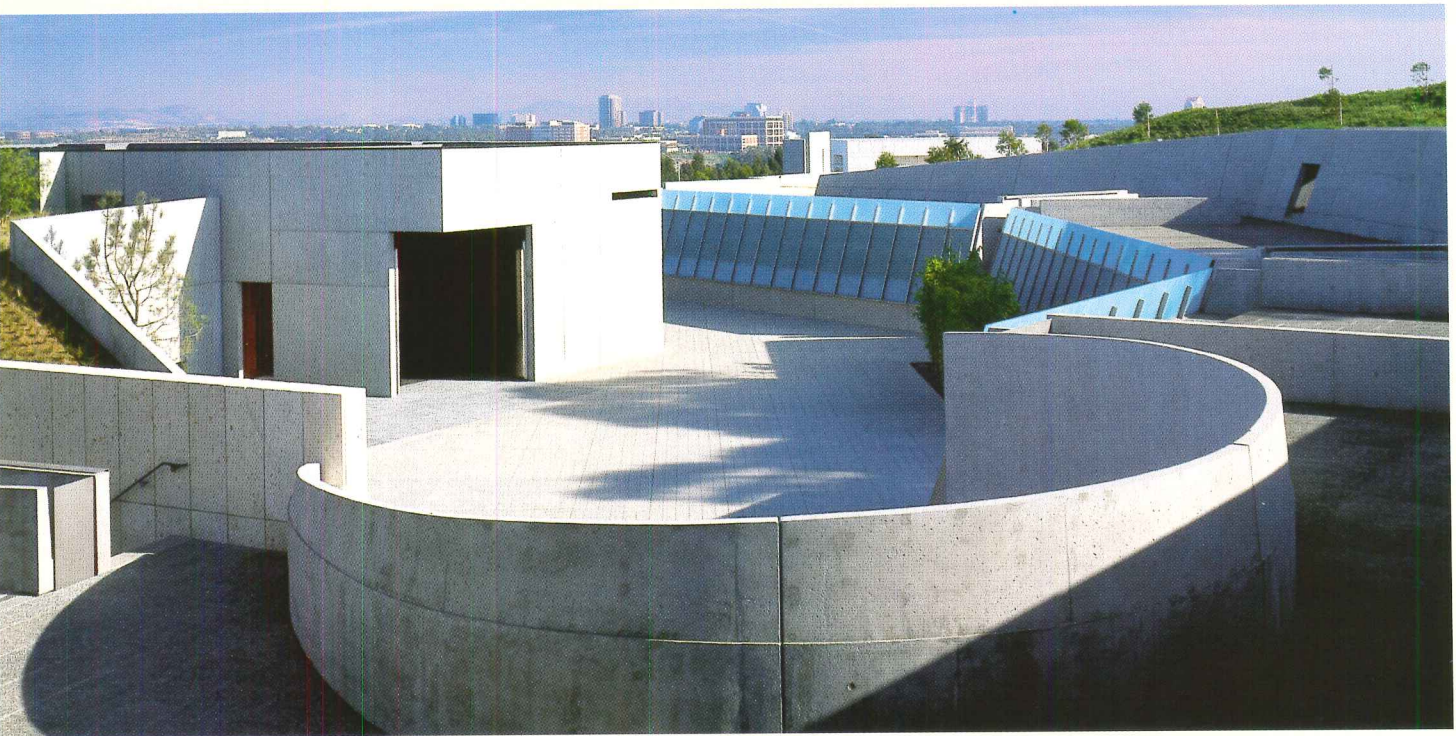
Architects

25 year award

1997 Honors & Awards

If there is a prevailing “ism” in architecture today, it would be hard to detect in this year’s AIA Honor Awards. It’s not just today’s lack of a prevailing style or aesthetic; the judges followed recent AIA guidelines, choosing to reflect a less-elite client makeup and focus more on community concerns. The awarded projects indeed represent a wide range, but there remains considerable debate about whether this is the best path for this most-visible of American design-awards programs. Some argue the approach risks diluting the value and stature of the awards; others say it is still too insular an approach. This year, ARCHITECTURAL RECORD

presents the awards in the context of this debate. An interview with architecture jury chair Malcolm Holzman sheds light on how this year’s winners were picked. The issues AIA juries have regarded as important have changed over time, Margaret McCurry shows in her commentary. Michael Sorkin views the choices as not setting a high-enough standard, and critic David Dillon comments on the public role of architecture. While these are hardly the final nor the definitive views, they do widen the debate about what architecture’s agenda should be as the profession continues to define for itself a more essential cultural and economic role. James S. Russell



1

1. Architecture (page 70)

Memorial Hall, Venturi, Scott Brown and Associates; Bruner/Cott Associates; Robert G. Neiley. *The Neurosciences Institute*, Tod Williams, Billie Tsien and Associates; Joseph Wong Design Associates. *Paul Cummins Library* and *Schulman Residence*, Steven Ehrlich Architects. *Bellevue Regional Library*, Zimmer Gunsul Frasca Partnership. *Nancy Lee & Perry R. Bass Center for Molecular & Structural Biology*, Kallmann McKinnell & Wood Architects. *Boyd Lighting Headquarters*, Brayton & Hughes Design Studio. *Guest House*, Bohlin Cywinski Jackson/James Cutler Architects. *Manville Hall Student Apartments*, David Baker Associates; Crosby Helmich Architects. *Laureola Oaks*, Seidel/Holzman. *Arlington National Cemetery Facility Maintenance Complex*, KressCox Associates. *Lasater Residence*, Lake/Flato Architects. *Delta & Pinelands Company Guest House*, Walter Chatham, AIA.

2. Interiors (page 82)

New Victory Theater, Hardy Holzman Pfeiffer Associates. *Dillingham Hall*, Hardy Holzman

Pfeiffer Associates. *Henri Beaufour Institute*, Williams & Dynerman Architects. *Tokyo International Forum*, Rafael Viñoly Architects. *Root Residence*, Pasannella + Klein Stolzman + Berg Architects. *Bow Truss Studios*, Steven Ehrlich Architects. *Bottega Veneta*, Francois deMenil, Architect; Bergmeyer Associates. *Praxair Distribution*, Herbert Lewis Kruse Blunck Architecture. *Delano Hotel*, Phillippe Starck, Designer; PMG Architects. *Meyocks and Priebe Advertising*, Herbert Lewis Kruse Blunck Architecture.

3. Urban Design (page 86)

Parco San Giuliano, Comunitas. *Lafayette Courts*, CHK Architects and Planners. *Kakaako Makai Area Development Strategy*, ELS/Elbasani & Logan Architects. *Tribeca Bridge*, Skidmore, Owings & Merrill. *Saigon South Master Plan*, Skidmore, Owings & Merrill

4. Firm Award (page 90)

R.M. Kliment and Frances Halsband, Architects

5. 25 Year Award (page 94)

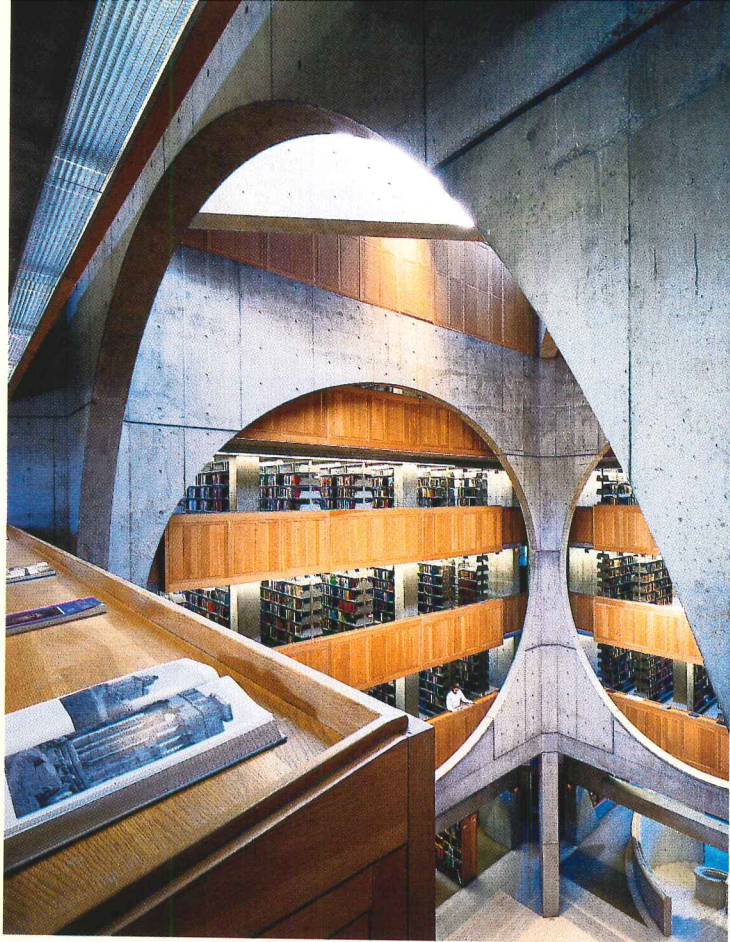
Exeter Library, Louis I. Kahn, Architect

wards

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Tribeca Bridge, Skidmore, Owings & Merrill

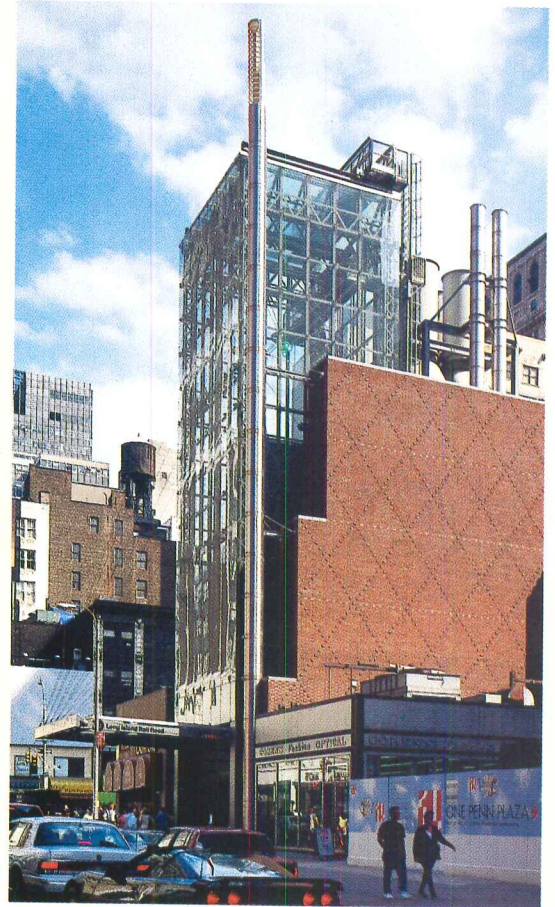




Exeter Library, Louis I. Kahn, Architect

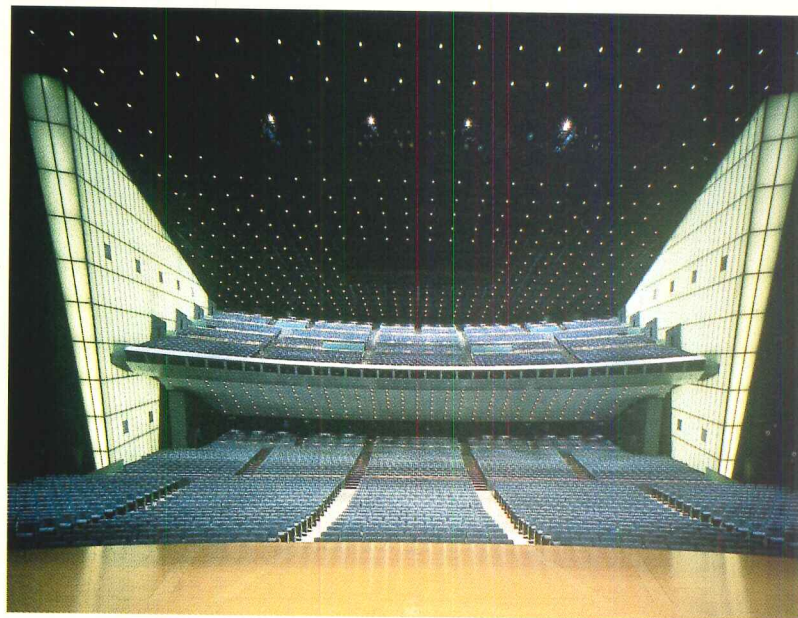
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4



Long Island Railroad entrance, R.M. Klimont and Frances Halsband, Architects

Tokyo International Forum, Rafael Viñoly Architects



2

Jurors

Architecture/25 Year Award

Malcolm Holzman, FAIA (chair), Hardy Holzman Pfeiffer; F. Michael Ayles, Assoc. AIA, Antinozzi Associates, Stratford Conn.; Dana Cuff, The Getty Research Center, Santa Monica; Joan E. Goody, FAIA, Goody, Clancy & Associates, Boston; Susan Henshaw Jones, President and Director, National Building Museum, Washington, D.C.; Aaron E. Johnson, Howard University, Washington, D.C.; Robert L. Thompson, Thompson Vaivoda and Associates, Portland, Ore.; Anne G. Tyng, FAIA, Philadelphia; Robert "Buzz" Yudell, FAIA, Moore Ruble Yudell, Santa Monica, Calif.

Interiors Margaret McCurry, FAIA (chair), Tigerman McCurry Architects, Chicago; James R. Biber, AIA, Pentagram Architectural Services, New York City; Morrison Cousins, Vice President Design, Tupperware, Orlando; Susan

Grant Lewin, Susan Grant Lewin Associates, New York City; Toshiko Mori, AIA, Graduate School of Design, Harvard University, Cambridge, Mass.

Urban Design Robert M. Beckley, FAIA (chair), College of Architecture & Urban Planning, University of Michigan, Ann Arbor; Thomas R. Aidala, FAIA, San Francisco; Harvey H. Kaiser, AIA, Syracuse, N. Y.; Patricia Zingsheim, AIA, City of Des Moines, Iowa

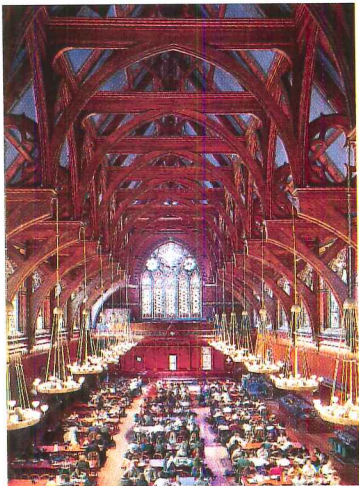
Firm Award David Childs, FAIA (chair), Skidmore, Owings & Merrill, New York City; William Turnbull, Jr., FAIA, William Turnbull Associates, San Francisco; Ed Uhlir, FAIA, Chicago; Frank Benest, city manager, Brea, Calif.; Darrell A. Fitzgerald, FAIA, Houston, Tex.; Melanie Hartwig-Davis, Assoc. AIA, Cheverly, Md.; Mildred Friedman, Hon. AIA, New York City

PHOTOGRAPHY: © MATT WARGO (RIGHT); STEVE ROSENTHAL (BELOW);



Restoration and Renovation of Memorial Hall
 Cambridge, Massachusetts
Owner: Harvard University
Architects: Venturi, Scott Brown and Associates in association with Bruner/Cott and Associates and Robert G. Neiley Architects

Restoration of this 1874 Ruskinian Gothic Ware and Brunt structure (left) was accompanied by a small addition and the conversion of the basement to informal dining (top). [RECORD, July 1996, pages 94-99.]



PHOTOGRAPHY: © MICHAEL MORAN (RIGHT AND OPPOSITE); LUCA VIGNELLI (HOLZMAN)

The Neurosciences Institute
 San Diego, California
Owner: The Neurosciences Research Foundation
Architects: Tod Williams, Billie Tsien and Associates in association with Joseph Wong Design Associates



“People tackled complicated projects on modest budgets and still did things that were quite lovely,” explains **MALCOLM HOLZMAN**, Honor Awards jury chairman. “The architects and clients had to do creative thinking to get something that was going to be award-winning.”

Three buildings for the study of the brain are arranged around a central plaza and gathering space that faces the Pacific Ocean.

"The sophistication of this building is firmly elusive to conventional photography.... It's a testament to the suppleness of this design that it seems to evade adding up when reduced." —Michael Sorkin



What goes on in the minds of jury members? Why are some projects selected for honors, and others rejected? And can honor awards say something about the current state of architecture? Malcolm Holzman, FAIA, chair of the jury for the architecture section of the 1997 AIA Honor Awards, shed some light on the process during a conversation with Virginia Kent Dorris, excerpts of which follow.

Other panel members were: F. Michael Ayles, Assoc. AIA, Antinozzi Associates, Stratford Conn.; Dana Cuff, The Getty Research Center, Santa Monica; Joan E. Goody, FAIA, Goody, Clancy & Associates, Boston; Susan Henshaw Jones, President and Director, National Building Museum, Washington, D.C.; Aaron E. Johnson, Howard University, Washington, D.C.; Robert L. Thompson, Thompson Vaivoda and Associates, Portland, Ore.; Anne G. Tyng, FAIA, Philadelphia; Robert

Malcolm Holzman is a principal with Hardy Holzman Pfeiffer, in New York City.

Yudell, FAIA, Moore Ruble Yudell, Santa Monica, Calif.

Architectural Record: What was the jury like? What was it looking for?

Malcolm Holzman: We had an unusual jury, I think, in that it was well-mixed. There were people from all over the country, from the West Coast and the East Coast. We had a diversity of ages. The jury was half women and half men. I thought it was as diverse a grouping of people as you might get as a cross-section of architects. I think most of the jurors were meeting three or four people for the first time, so it wasn't a group of people who already knew each other and would always get together. Because of that, there was no predisposition to any type of work.

Record: What was the jury's greatest challenge?

Holzman: The one area that the jury had considerable trouble with was evaluating projects related to restoration. Usually you could tell what a new architect had done, but who should be getting the award? One of the projects that was nominated that didn't receive an award was the

The project displays a “sensitivity to placemaking in chaotic urban circumstances.” —David Dillon

Paul Cummins Library

Santa Monica, California

Owner: Crossroads School

Architect: Steven Erlich Architects

A midblock parking lot is the “campus” for this inner-city middle and secondary school. Classrooms open onto this gathering space (below). The glazed, wood-framed upper level draws light into the library.



Octagon, the architects' building in Washington. Now it was a lovely building when it was built, and it is still a lovely building, and it's very nice that someone restored it, but the notion that it is in the same category as a new building, or the reuse of a very modest structure in some new way, was very difficult for this jury to come to grips with.

In a restoration it is unclear whether you are rewarding archeology. In other words, if you haven't disrupted someone else's architecture—you haven't ruined someone else's building—why is that meritorious? Because you have good behavior? In relation to some of the struggles that people were going through about architecture, we couldn't compare those kinds of projects against new work. So we didn't. We essentially excluded most of those. I think there is only one older project, and it is Memorial Hall at Harvard [Venturi, Scott Brown and Associates, with Bruner/Cott and Associates and restoration architect Robert Neiley]. That is in fact the only older building that received an award.

Record: Your own firm won two awards in the interiors cate-

gory, both for restoration [New Victory theater, New York City and Dillingham Hall, Honolulu]. How did that make you feel?

Holzman: I loved it. They are terrific projects. It's sort of outrageous, but terrific fun. It also shows that one firm can do diverse work. It's sort of in keeping with these other awards.

Record: How did the Harvard project sneak in?

Holzman: There was a lot of politicking for it. Some of the members of the jury thought it deserved an award because of how well it was done. A very modest addition was made to a rather big building, and it was done in a commodious way. Also, the bottom level of Memorial Hall was redesigned. There was enough of the current architect's work versus the original architect's work to see what the current architect had actually done. The jury saw the work as more than caretaking, and they thought that was meritorious. Older buildings should be recognized, but how they relate to the awards program, I think, needs to be sorted out by the AIA. I don't think they should be in the same category as certain new



Schulman Residence

Brentwood, California

Owner: Tom and Miriam Schulman

Architect: Steven Ehrlich Architects

Set in a large canyon lot, this house takes cues from early California Modernism. The plan was in part organized around large, existing specimen trees.

Bellevue Regional Library

Bellevue, Washington

Owner: King County Library System

Architect: Zimmer Gunsul Frasca Partnership

Erected to link this suburban city's commercial core to increasingly dense residential areas, the project's overhanging roofs, skylit stack areas, and public-art gallery welcome patrons.



buildings. Maybe some historic structure belong in the interiors category, because frequently that is what they are really about.

Record: What did the winning projects have in common?

Holzman: A lot of modest projects received awards. These were not necessarily big, gigantic projects. Modesty and commodity were things that were apparent. People tackled rather complicated projects on modest budgets and still did things that were quite lovely. The architects and clients had to do creative thinking to get something that was going to be award-winning.

Record: Which projects did you like best?

Holzman: There was a student-housing project done at Berkeley for the University of California [Manville Hall by David Baker Associates with Crosby Helmich Architects]. Obviously, it was not done with a large budget, but nonetheless, it was a project that exhibited excellence in design. It was the type of project almost any architect in America can imagine having. It is in an urban setting, and responded to it.

There was also an affordable-housing project—again a very low-budget project—about the shaping of development in San Carlos, Calif., called Laureola Oaks [by Seidel/Holzman, San Francisco]. It uses geometry and shapes—all the standard mix you've seen in every development housing project—and has gone at it in a unique way. Someone didn't give up thinking about design, even though they had a modest budget and a rather confined site. Another one that was great was a guest house built in Mississippi for the Delta & Pinelands Company [Walter Chatham, architect]. This is a very unusual kind of residence. It uses corrugated metal and makes it all into something quite snappy. It was thoughtful. It wasn't a parody of what an "industrial" house could be on an "industrial" site, and it wasn't a parody of what a Southern house could be, but in some ways, it was all of that and a whole lot more. It was a modest project also—not very big, not very expensive, but quite terrific.

Another project that I thought was very nice was in Washington, in the Arlington National Cemetery [KressCox Associates]. It had to do

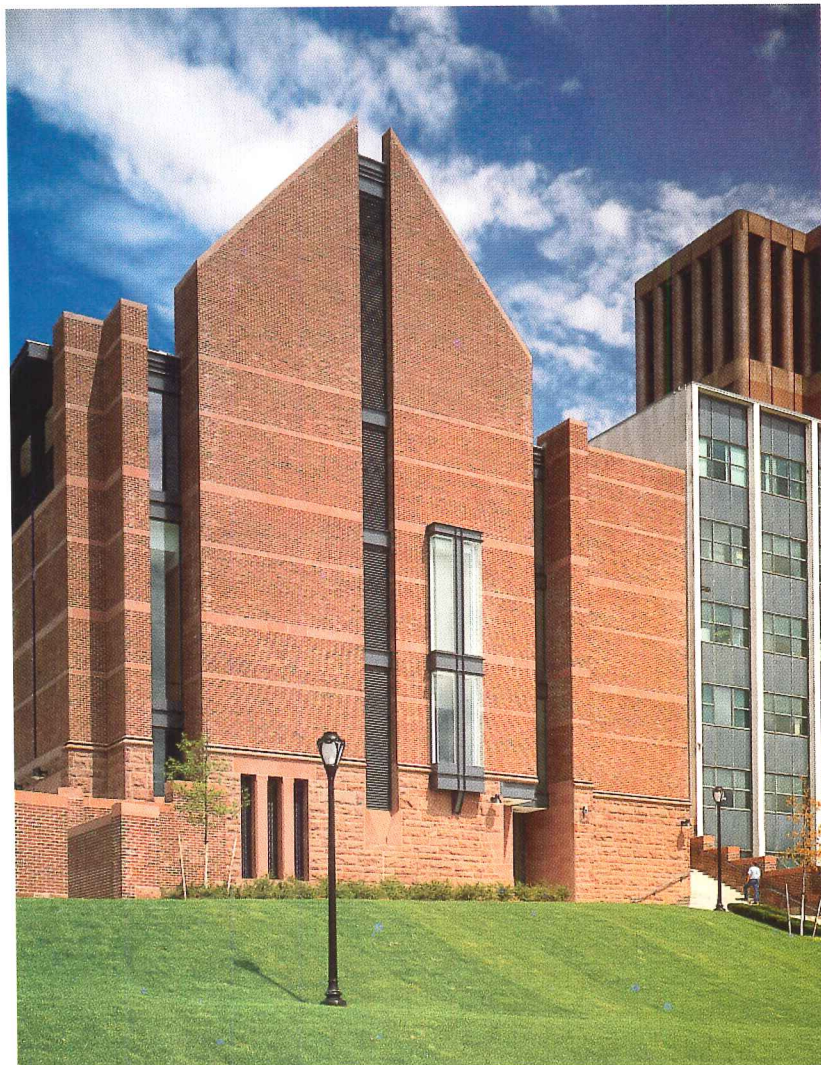
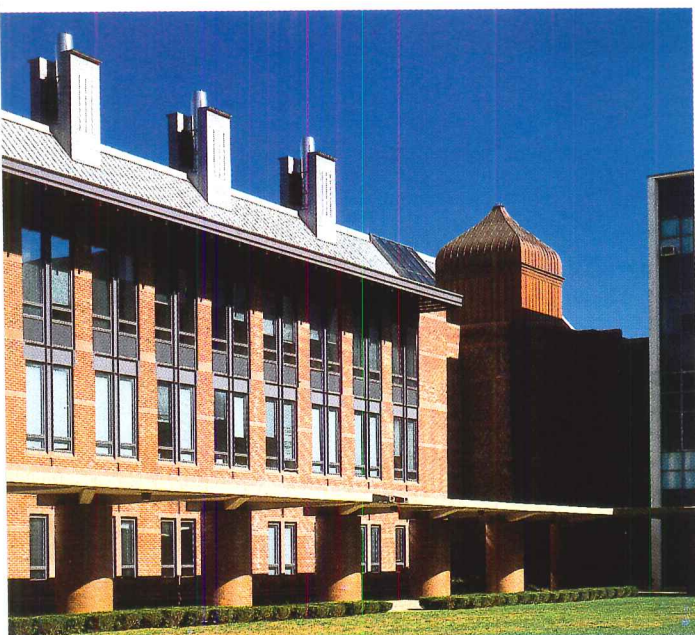
**Nancy Lee & Perry R. Bass Center for
Molecular & Structural Biology**

New Haven, Connecticut

Owner: Yale University

Architect: Kallmann McKinnell &
Wood Architects

This \$25.2-million facility accommodates research laboratories, offices, and teaching space. Entrances, internal stairs, sheltered passages, and a bridge connection unite the facility with related nearby buildings [RECORD, March 1995, pages 84-85].



with making a building for administrative offices and a maintenance shop. This is the kind of building that architects are frequently asked to build in lots of locations, and they end up just looking miserable. This exhibited a lot of expertise and care in how it was put together, how it was sited. It takes its cues from being in a cemetery area. It's a decorous building, a calming building.

Actually, there was a second building that had some old parts in it: the Boyd Lighting Headquarters, in San Francisco [Brayton & Hughes Design Studio]. This was a terrific project. The shell of the building, a little two-story, volumetric industrial building, was reused, but it was reclad. It was about light. It placed little blue pieces of glass on the new facade. The inside was dealt with in a rather direct, interesting way.

Those were some of my favorites. There were a lot of other ones, but these sort of represented to me, in a way, situations that I think any architect in America can imagine themselves being in. I think the winners are exemplary because they show that if you have the ability and the

desire, you can make something truly wonderful out of any project.

Record: Was there any specific aspect of the projects that the jury focused on? Were they looking at detail, or scale, or context?

Holzman: They were looking for all of those things. I think in some ways, they were not looking for projects that were going to drastically change the direction of architecture. I don't think we actually saw any. I don't think that there were any that pretended to do that. They weren't looking for a style leader, or something that was going to be the hot thing for next year. You wouldn't find what to crib in these designs for your next project. You would have to think about what you are looking at, and figure out how to do it in your own project.

Record: Are this year's Honor Awards different in that respect? Could you see in other years that a specific style was "in?"

Holzman: Yes. There were very few large-scale, blockbuster kind of building projects this year. They were submitted, but they were not chosen. (*text continues*)

Guest House

Medina, Washington

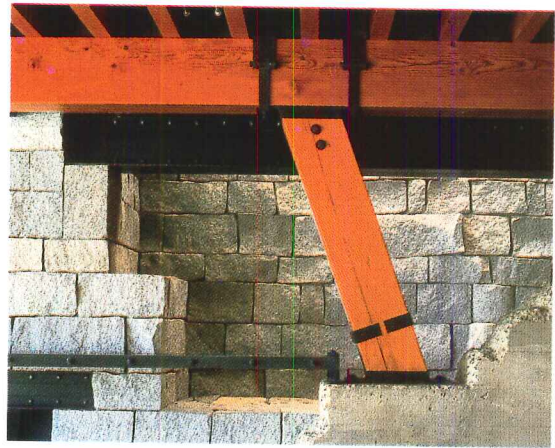
Owner: Anonymous

Architects: Bohlin Cywinski

Jackson/James Cutler Architects

[RECORD November 1994, pages 84-87]

Forming a gateway to a site containing a buried garage and main residence under construction, the house's concrete walls slip into the hillside, while glazed, braced, timber-framed elements open to views of lake and mountains.



HONOR AWARDS ARCHITECTURE



Manville Hall Student Apartments Berkeley, California

Owner: University of California

Architect: David Baker Associates in
association with Crosby Helmich
Architects

The architects used large and small gestures to break down the massing of this campus residential project to fit into a vibrant commercial street. A garage and commercial space are topped by 132 apartments.





"Laureola Oaks has the intimacy and connectedness of an established neighborhood. . ." —David Dillon

Laureola Oaks

San Carlos, California

Owner: Mid-Peninsula Housing Coalition

Architect: Seidel/Holzman

The architect formed 16 units of below-market-rate housing around a courtyard in a neighborhood containing a mix of housing, industrial, and retail uses. The non-profit developer financed the project with grants, federal tax credits, and a state low-interest loan.



Record: There was also some discussion of the 25-Year Award.
Holzman: It came up in conversation. It may bear some examination by the AIA. I think the purpose of the award now is to show that a building has passed the test of time. This year Kahn's library at Exeter Academy was chosen [see story at end of this awards section], and I think

"I DON'T THINK WE ARE GOING TO SEE A GIVEN STYLE TAKE HOLD."

it's a fine building, but Kahn's buildings have won before. The eight or ten other projects nominated caused us to ask what its purpose really was. Mr. Kahn was riding what I would call a cycle of current popularity—not ill deserved, well-deserved. On the other hand, there are some other architects who had a kind of practice 25 years ago that the profession is not now in sync with. I'm not sure if these buildings will be considered again, so you may have the finest example of an architect's

work, and yet because it is not in sync with current thinking, the jury won't consider giving it a 25-year award.

Maybe the award should be more than about passing the test of time. Maybe it is also representative of the architect's work and that architect's contribution to architecture. If it is the best example of the architect's work, maybe it should receive an award just for being that. In some ways, 50 years would be better, because it would be more startling that anybody ever made *that* building. The 25-year Award tends to be conservative, historically, rather than outlandish, as some of the architecture awards have been.

Record: Which ones do you think have been outlandish? None of the buildings selected this year were challenging gravity, trying to take off; none of them pretended they had electrostatic roofs and were hovering over the ground. They weren't outlandish in that way. I think they were challenging what you can get out of a dollar bill. I think that not every architect really does that. ■



**Arlington National Cemetery
Facility Maintenance Complex**

Arlington, Virginia

Owner: U.S. Army Corps of Engineers

Architect: KressCox Associates

A series of hip-roof pavilions wrapped around a courtyard fit the 46,000 sq ft of delivery, storage, and maintenance areas into the nation's chief memorial cemetery.

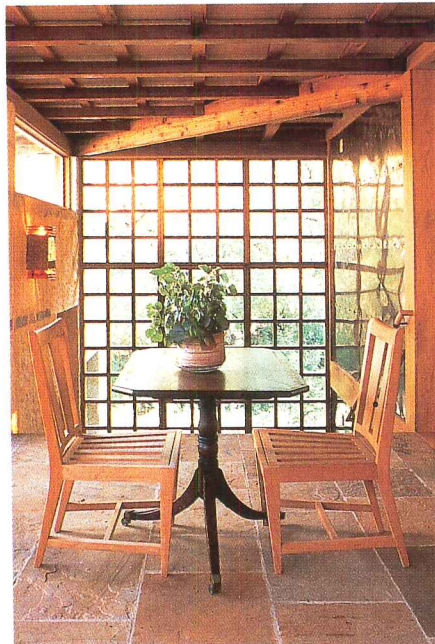
Lasater Residence

Fort Worth, Texas

Owner: Mr. and Mrs. Garland Lasater

Architect: Lake/Flato Architects

A series of pavilions face onto courtyards, shielding the house from hot Texas summers while drawing in breezes.



“Today’s Modernism is less optimistic and has a less-idealistic agenda for social change,” says **MARGARET McCURRY** in her awards comments. “But architects are still searching for a moral and ethical means to practice and for practice methods that contribute to societal advancement.”



**Delta & Pinelands Company
Guest House**
Scott, Mississippi
Owner: The Delta & Pinelands
 Company
Architect: Walter Chatham, AIA

Recognizing its Mississippi location, the 2,000 sq ft house is raised on pilings so flood waters pass underneath. The plan permits cross ventilation, and deep overhangs shade corrugated-metal walls.

“... the rural projects of Lake/Flato Architects and Walter Chatham ... articulate the vernacular with clarity and modesty ... reminding us of our own deep roots.” —Margaret McCurry



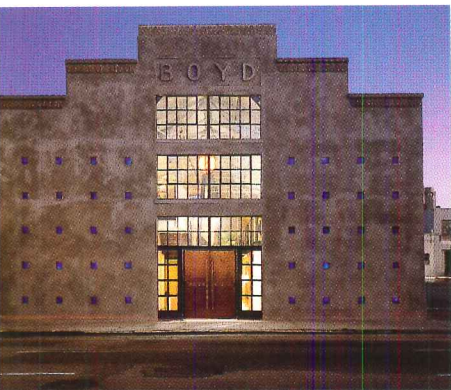
I worked with Robert Campbell, FAIA, on a retrospective look at AIA’s Honor Awards for the 1988 convention in New York City. As we were preparing our presentation, Campbell made the following observation: “One would like to know the politics of starting the award at just the time when Modernism and traditionalism were locked in a death embrace. One side or the other, surely, saw the awards program as a way of certifying its legitimacy.” While ideological divides are not so deep today, a look back at the 48-year history of the AIA Honor Awards shows an evolution in what the profession and the AIA thought that they should represent.

The first AIA awards, in 1949, restricted entries to residences and schools, and the winners were clearly of the Modernist camp. Eight—almost half the winners—were located in California, just as six of the 13

Margaret I. McCurry, FAIA, is a principal of Tigerman McCurry Architects in Chicago. She also chaired this year’s interiors awards jury.

current architecture winners are. The early California projects were divided between what has come to be known as Bay Area Regionalism (represented by William Wurster and Joseph Esherick), the neo-Miesian Case-Study Houses (sponsored by John Entenza’s Los Angeles-based *Arts & Architecture* magazine), and the neo-Corbusian influences that surfaced in the work of Rudolph Schindler and Richard Neutra.

In 1949, virtually all of the honored houses possessed an economy of scale that doesn’t seem to be a concern of the Schulman residence, a current winner. Modernism having come full circle, it seems that the baby boomers who grew up in modest split-levels and ranches now commission neo-Neutra residences twice the size of their precursors. It falls to a guest house in Washington State to remind us of the more diminutive size of those early West Coast residences that economically expressed their structure in the wood and stone of the region. Even in the guest house, though, our current ambivalence is signaled in the eccentrically disposed external column, tripping and tipping over a rock foundation.



Boyd Lighting

San Francisco, California

Owner: Boyd Lighting

Architect: Brayton & Hughes Design Studio

From blue-glass lites punched through seismic-reinforcing panels (left) to a canted wall that is light diffuser by day, light fixture by night (below right), the project expresses the owner's products.



Just as jury proclivities have changed over time, so have award criteria. The early awards were by building type and reflected convention themes. When the AIA board added hospitals as a category in 1951, nine took home prizes, undoubtedly more that year than in the entire rest of the program's history. In recent years, the program has widened to consider not only "design advancement," but to recognize "qualities of resolution," including exemplary responses to technical requirements, social progress, environmental progress, and historic preservation. In 1997, Laureola Oaks, an affordable-housing community, exemplifies the kind of entry these criteria are designed to attract. In scale and character it also harkens back to the earliest Bay region winners.

In the first 10 years of the Honor Awards program, California projects dominated the awards, garnering 40 percent. Over the history of the awards, California's share has held to a still-impressive 23 percent. What is it about the place that has appealed to dozens of diverse juries? Clinging to the edge of the continent in more ways than one, the state has

promised a freedom of expression and a potential for self-reinvention precluded by the confining historicist attitudes of the opposite coast. Its fast-growing urban centers have attracted a liberally educated, open-minded, esthetically inclined clientele, who in turn have drawn architects of high caliber. Even jurors from more conservative climes have singled

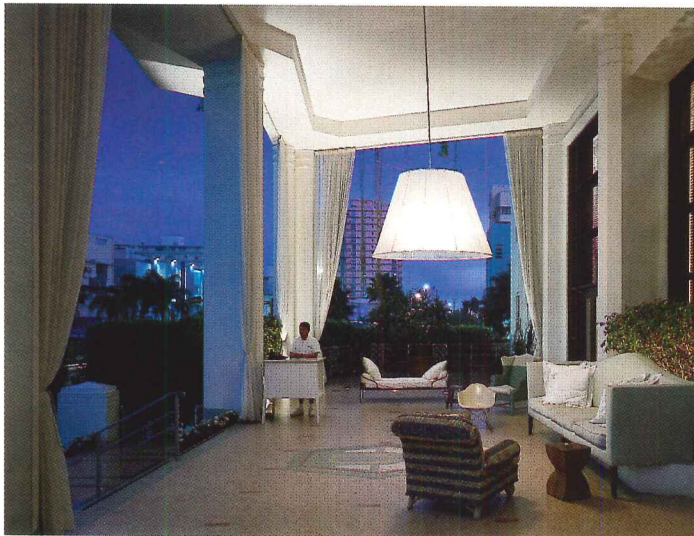
"AN INDUSTRIAL ESTHETIC HAS BEEN COMPELLING SINCE THE BEGINNING."

out as enviable an architectural production that sat precariously on the stylistic cutting edge, and which has become so much a part of the psyche of the American avante garde.

Those first 10 years brought forth an interesting mix of old and then-new talent. Neutra won the first of his seven Honor Awards in 1951, at the age of 58; he garnered three more in the following year. Rudolph won his first of four awards in 1950 at the age of 32. In 1952, Skidmore,

Delano Hotel*Miami Beach, Florida***Owner:** Ian Schrager Hotels**Designer/Architect:** Phillipe Starck,
Designer; PMG Architects, Architect

Among the most ambitious renovations in the city's Art Deco landmark district, the 1947 tower (Robert Swartburg, original architect) has been evocatively transformed by means of breeze-rustled curtains (below), stark white rooms, and furnishings ranging from "too big" to "too small."

**Meyocks & Priebe Advertising**
*West Des Moines, Iowa***Owner:** Meyocks & Priebe Advertising
Architect: Herbert Lewis Kruse Blunck
Architecture

For an agency specializing in agribusiness clients, the architect adapted materials commonly found on farms—such as corrugated metal from feed bins and translucent fiberglass roofing—to make meeting rooms, paste-up areas, and work space for creative personnel.

Owings & Merrill (SOM) landed its first award for Lever House. To date it has collected 33 awards, more than double the number of any other firm, but it has also been among the nation's largest firms.

Ludwig Mies van der Rohe served on the 1955 jury, which handed both Eero Saarinen and SOM double honors. The following year, Saarinen chaired the jury that gave Philip Johnson his first Honor Award at age 50. Mies never submitted any of his own work to be juried. Neither in fact did Louis I. Kahn, this year's 25-Year-Award winner. (Kahn's firm entered the Kimball Art Museum the year Kahn died in 1974. It won, as did Yale's British Art Center in 1978.)

The phenomenon of "threepeats" began in 1951 when California-based Maynard Lyndon (father of Donlyn) won his third award in as many years for his own home. Designers catch a wave for a variety of reasons and are able to ride it to multiple awards. A jury may be looking for, and feels it has found, an emerging talent. Sometimes it is recognizing someone who is clearly at a creative peak. Victor Lundy had

received three awards by 1960. Taft Architects, of Texas, had a run of three in the 1980's, when Postmodernism was riding high. As juries began to reward resolution rather than innovation, William Rawn's multifaceted Massachusetts firm recently won three years in a row for both its urban design and social-cause-oriented projects cast in a historicist style.

As the 60's began, Modernism was firmly entrenched. Every major Modern architect won again and again for Fortune 500 corporate headquarters, campus buildings, office towers and airport terminals, factories and hotels. Occasionally a prefabricated tract appears on the list, but projects dealing with social causes are few and far between.

In 1967 Moore/Lyndon/Turnbull/Whitaker's Sea Ranch surfaced as the expression of a regional esthetic. It is mirrored today in the work of Lake/Flato Architects and Walter Chatham, two winners whose rural projects, like those of Mockbee/Coker, modestly articulate a vernacular, and remind us of our own deep roots. The imagery of Sea Ranch became so compelling that Moore and Turnbull (*continued on page 262*)



New Victory Theater

New York City

Owner: The New 42nd Street, Inc.

Architect: Hardy Holzman Pfeiffer Associates

Once abandoned, restoration of this 1900 J.B. McElfatrick & Sons Broadway theater (for live childrens' programming) was key to revival of famed 42nd Street [RECORD, February 1996, pages 67-71].



Dillingham Hall

Honolulu, Hawaii

Owner: Punahou School

Architect: Hardy Holzman Pfeiffer Associates

The architect reconfigured an existing theater (above) and added 7,000 sq ft to the 1929 Bertram Goodhue structure. The new seating arrangement improves sightlines and acoustics; painted metal arches support new theater technology.



“The buildings seem very much like their photographs: crisp, well-composed, no mess anywhere,” observes **MICHAEL SORKIN** in his assessment of the awards. “Perhaps in the wake of the decorative excesses of Postmodernity, the AIA is simply trying to lower the temperature.”

PHOTOGRAPHY: © ELLIOT KAUFFMAN (LEFT); DAVID FRANZEN (RIGHT)



Henri Beaufour Institute, USA
 Washington, D.C.
Owner: The Henri Beaufour Institute
Architect: Williams & Dynerman Architects

The architect applied a palette of neutral materials and panels and scrims of perforated aluminum to break down hierarchical office relationships and bring exterior light and views to the interior.



“Once you walk in [to the Tokyo Forum], you feel it would be impossible to walk out. You are transfixed by this monumental urban interior that unfolds compositionally, much like a city street.” —the Jury



Tokyo International Forum
 Tokyo, Japan
Owner: Tokyo Metropolitan Government
Architect: Rafael Vinöly Architects

A 750-ft-long truss-supported skylight is the key unifying element of this colossal \$1.5-billion combined performing-arts and convention center.

Here’s the nightmare. Vincent Scully has been taken ill. I find myself at the lectern in the front of a darkened auditorium as pairs of slides flash on the screen. The pressure is on for a lecture both witty and deep. I don’t recognize most of the buildings. Crouched over a loupe, staring at pairs of slides of the 1997 AIA award-winners, I’m having a similar feeling. The pressure’s a little more attenuated but it’s still the job of an old-style CIA Kremlinologist, trying to come to sweeping generalizations from satellite photography. This is a risky business at best: after years of analyzing the May Day guest list atop Lenin’s tomb, they still missed the collapse of Communism.

Certainly one of the striking things about the *representation* of the awarded work is the classic depopulated quality of the photographs. This seems to be one of the stable characteristics of architectural photog-

Michael Sorkin is a New York City-based architect and critic, and is a contributing editor to RECORD.

raphy, the perennial assumption that the most essential image of a building is one in which the inanimate is foregrounded. This is not trivial, however familiar the lament. As architecture is increasingly mediated by the mechanics of publicity, such standard tropes of observation increasingly come to stand for architecture itself. The risk is that the values of the photograph more and more double back to inform the character of building, arguing against an episodic and changeable architecture and for more finite and graspable forms.

A striking case in point among the winners is the very extensively published Neurosciences Institute by Tod Williams and Billie Tsien. Seeing it published in one or two photographs over and over, I could not form a picture of it until I saw a set of drawings. The sophistication of this building is firmly elusive to conventional photography, at least to the kind of conventional photography which seeks to capture the work in a single view. The camera—with its established routines of framing and its preference for the iconic—circumvents the parti, the real fundamentals of



Praxair Distribution
Ankeny, Iowa
Owner: Praxair, Inc.
Architect: Herbert Lewis Kruse Blunck
Architecture

One-third of an existing warehouse was converted to office, conference, and training operations, but the architect expressed the industrial nature of the operation in the remodeled space.

Root House
Ormond Beach, Florida
Owner: Chapman J. Root, II
Architect: Pasanella + Klein Stolzman
+ Berg Architects

Reworking an existing ocean-front residence, the architect introduced a three-story space as an extension of the water view into the house. A cantilevered wood bridge crosses the space, supported by aluminum- and copper-mesh screens.



order. But this is a building which resists summary, and it's a testament to the design's suppleness that it seems to evade adding up when reduced.

Still, there does seem to be some territory for generalization: looking at the pairs of photographs the AIA has supplied, I can only observe that the group of projects selected is very clean indeed. The build-

“EVEN THE LOW-COST HOUSING IS SUBURBAN.”

ings seem very much like their photographs: crisp, well-composed, no mess anywhere, nothing challenging to easy comprehension. The impression is very mild—very *MOR* as they say in the music business. Perhaps in the wake of the decorative excesses of Postmodernity, the AIA is simply trying to lower the temperature. They've succeeded: the awarded work is consistent if very slightly hybrid in feeling—almost all of it comfortable under the unmodified rubric of “modern architecture.” The

historic creeps in either in the several fine renovations premiated or in structures—such as a guest house in Mississippi or a little housing project, and several buildings described as the legatees of “California modernity”—which directly riff familiar forms. It's all very fastidious, inflected rather than inspired.

Looking at this work, I was struck with the impression that all of it seemed to be from one place, somewhere kempt and peaceful and very upper-middle class, a world of fine homes and guest houses (for, among others, Bill Gates), of prestige universities, of mammoth (and truly spectacular in this case) convention centers, of ad agencies, of expensive boutiques and glamorous hotels, of public libraries in good neighborhoods. Even the low-cost housing is suburban. To be sure, there's an indecipherable redo of a Pruitt-Igoe style public-housing project in Baltimore but it's a token, another historic renovation, urban public housing being something from a bygone era. Taken all together and despite claims to the contrary, this is a collection of buildings which seem



Bow Truss Studios/Game Show Network
 Culver City, California
Owner: Sony Pictures Entertainment
Architect: Steven Erlich Architects

The architect popped up a clerestory, transforming California's canonical industrial building type, the bowstring-trussed masonry warehouse, into a startup business' new home [RECORD, February 1995, pages 78-81].

Bottega Veneta

Boston, Massachusetts

Owner: Bottega Veneta

Architect: Francois deMenil Architect in association with Bergmeyer Associates

Architectural elements create a serene setting for contemplation and purchase of this retailer's luxury leather goods and accessories [RECORD, May 1996, pages 108-109].



to share a sense of place. Perhaps this is inevitable in a global environment in which regionality is so malleable it seems like affectation.

The big-scale, from-scratch urbanism is much the same. The two schemes awarded are both in fairly exotic situations—Honolulu and Ho Chi Minh City—and seem like big, decent, if not particularly innovative projects. Not to overplay the CIA metaphor, but it does seem that if Skidmore, Owings & Merrill is directing the urban future of Vietnam, creating a glamorous haven for multinationals, it may be that we won the war after all. What's most striking about the urbanity of the winners taken as a whole, though, is that most are projects for communities of modest, suburban, scale. There's a kind of arcadia here, a place that seems far away from the real problems of cities, a place where things work, where density is low and cleanliness high, where things are easy and the weather is always warm. It's the New Urbanism, I suppose. And this gives me a little chill: one movement's arcadia is another's gated community.

Which brings me back to the question of the people missing

from these images. Although humans never appear, plant life often does. The subjectivity of plants—visible in the perfect arrangements of flowers (never food) on the dining-room table, the elegant oak in the foreground, the garland of leaves surrounding the long shot—comes to stand in for human subjectivity in this sunny universe. Certainly, over the past decade or so, architects have come to be more and more sensitized to questions of the environment and of ecology. What these representations suggest to me is that the environment (something which continues to be represented as essentially outside human ecology) has become a surrogate for human occupation, which—unlike the well-disciplined plant—has the effect of messing up architecture.

Reading through this photography, most of the winners do seem to be fine buildings, some exciting. But—as an inveterate New Yorker—I'm left with the feeling that these projects—taken all together—are celebrations of a place where I spend very little time, a place which may not even exist. Except, of course, in the magazines. ■

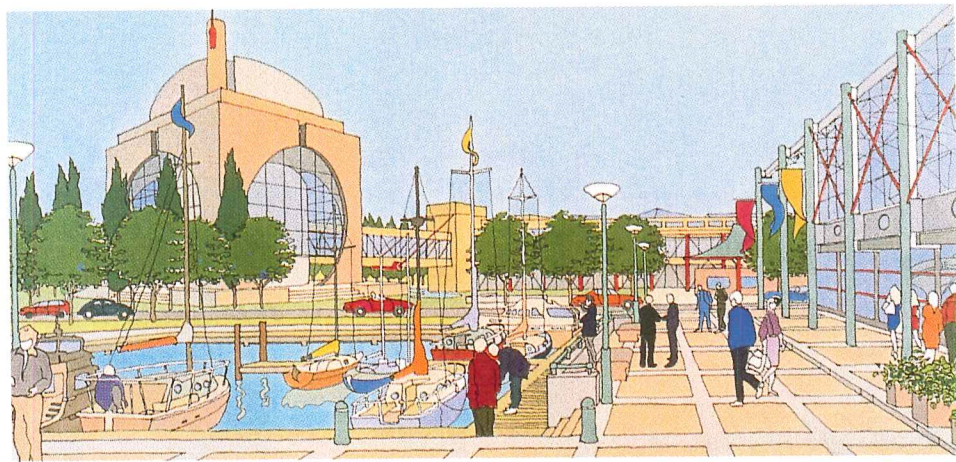
Parco San Giuliano

Mestre-Venice, Italy

Owner: City of Venice

Architect: *Comunitas Architecture, Planning, Urban Design*

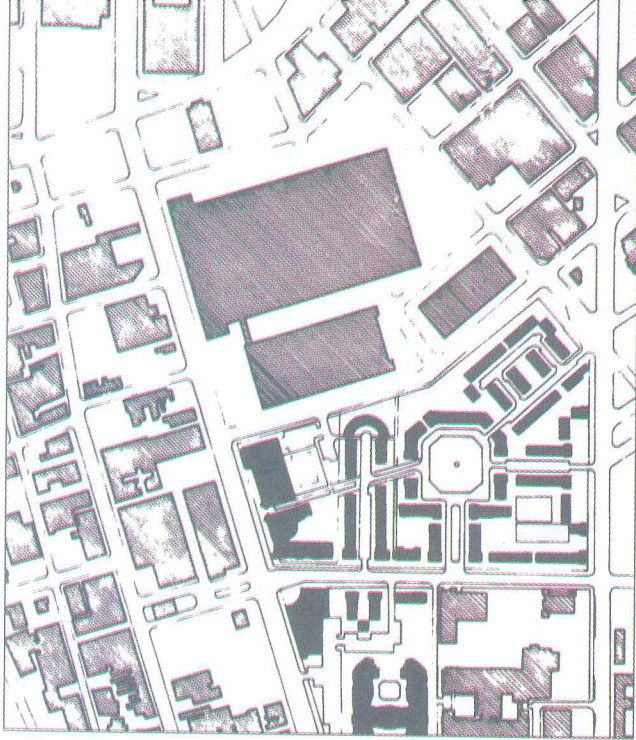
Straddling the road and train connection to Venice at the mainland lagoon edge (below), this park will bring new amenity to overlooked, industrial Mestre, including an intermodal transportation center and aquarium (right).



“... Venice’s boldest urban gesture in a century, proposing nothing less than a reuniting of the romantic but moribund city of canals with its ugly but thriving industrial sibling, Mestre” —David Dillon



“Urban design, an award category added only in 1994, is often filled with plodding pedestrian malls and pointless streetscaping schemes,” critic **DAVID DILLON** writes in his assessment of the awards. “Not this year. From Saigon to Chicago the Big Plan is making a comeback.”



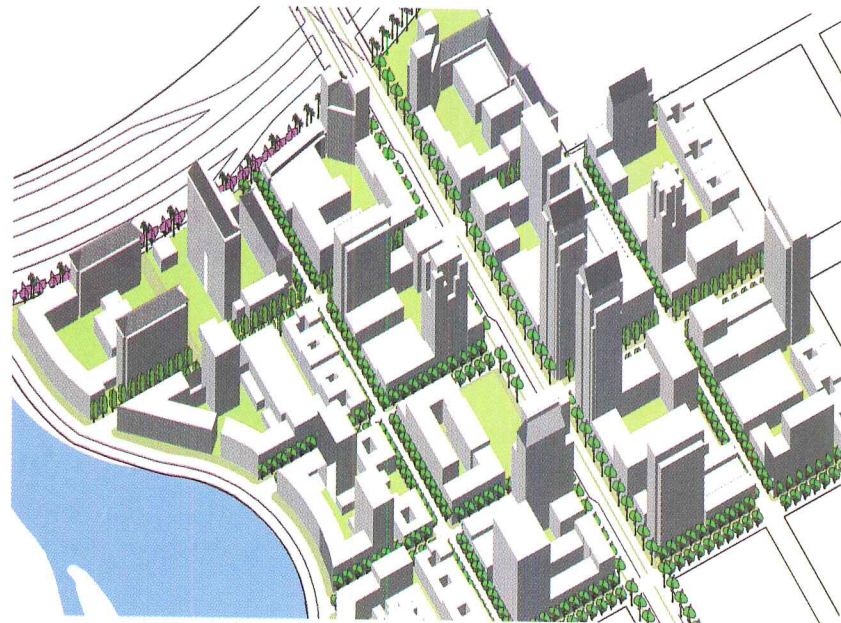
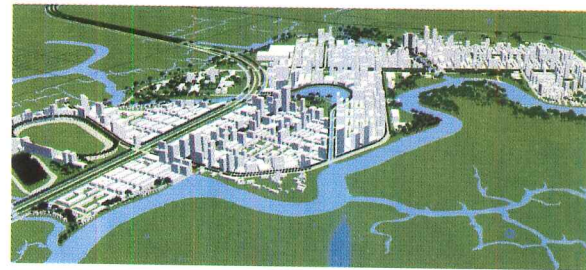
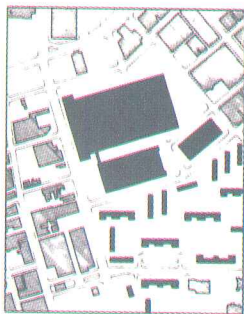
New Lafayette Courts

Baltimore, Maryland

Owner: Housing Authority of Baltimore

Architect: CHK Architects & Planners

The design team re-integrated a 21-acre public housing project with the fabric of the city by replacing isolated towers (prior site plan, right) with a mix of row houses and mid-rise apartments arranged around streets and squares (above).



Saigon South Master Plan

Ho Chi Minh City, Vietnam

Owner: Central Trading & Development Corporation, Phu My Hung Corporation

Architect/Urban Designer: Skidmore, Owings & Merrill

To provide a pattern for sustainable growth, this scheme develops distinct waterway-surrounded neighborhoods (city center, above). It is intended to protect this tidal region's water quality and hydrology, while ultimately housing up to one million people.

The 1997 American Institute of Architects Honor Awards range from a guest house for the nation's wealthiest entrepreneur, Bill Gates, to a public-housing project for some of its neediest citizens. Such a spread suggests either a remarkably inclusive agenda at the AIA, or none at all. Many of this year's architecture awards went to designs for institutions and corporations, or to private clients with elegant tastes and plenty of money to spend. There were no forays into the vast hinterland of shopping centers, parking garages, and drive-in banks where so much of contemporary practice resides. Nor did social value get many votes unless dressed up in architecture with a capital A.

The notable exception was urban design, an award category added only in 1994, and often filled with plodding pedestrian malls and pointless streetscaping schemes. Not this year. From Saigon to Chicago,

David Dillon, of Amherst, Mass. is the architectural critic for the Dallas Morning News and a contributing editor of RECORD.

the Big Plan is making a comeback. The Regional Plan Association recently published its plan for New York, New Jersey, and Connecticut, featuring new rail lines, a dozen greenbelts, and numerous regional downtowns. The new plan for Washington, D.C., is similarly aggressive about removing freeways and reclaiming waterfronts. Chicago is about to update the 1909 Burnham Plan. Even Dallas, Tex., where planning has historically been viewed as a burr under the saddle of progress, has adopted a long-range capital-improvements program that includes a light-rail system, a new airport, and a river-reclamation scheme. These are not tepid policy documents, but bold physical plans for rebuilding and reconnecting fragmented cities.

An unfortunate legacy of urban renewal has been a distrust of big ideas. Since the 1960's, any plan that encompasses more than a few blocks, or that carries the imprimatur of a government agency is automatically suspect. Concerns about traffic, scale, and views routinely coalesce into intractable opposition to any proposal that is not commu-



“The plan for the Kakaako Makai area is almost a tropical version of Parco San Giuliano, reconnecting Honolulu to its industrial waterfront, while introducing new uses . . .”

—David Dillon



Kakaako Makai Area Development Strategy

Honolulu, Hawaii

Owner: Hawaii Community Development Authority

Architect: ELS/Elbasani & Logan

Extending an existing park and drawing a park-like promenade upland, transforms this redevelopment of a low-scale superblock layout into a mixed-use, pedestrian-oriented neighborhood of much higher density.

nity-driven. These collective fears—sometimes justified, sometimes merely neurotic—have fueled the preservation movement, Postmodernism, and now the New Urbanism. At the same time, more and more cities with exquisite streets and neighborhoods are falling apart for lack of a larger civic vision. Look no further than where our nation’s capital has been (and still is).

This year’s urban-design awards suggest that the larger vision is returning, although the fact that the three boldest planning efforts are outside the continental U.S. suggests that vision is more welcome abroad than here. The awards range from a footbridge in New York City’s Tribeca neighborhood—a small intervention with major urban consequences, to master plans for Venice, Honolulu, and South Saigon. In addition to being conceptually daring, the plans display a sensitivity to issues that 60’s urban renewers ignored: ecology, conservation, indigenous culture, the value of what is as well as what might be.

“We tried to be inclusive rather than exclusive,” explained jury

chair Robert Beckley of the University of Michigan, “to show the range of work being done but to be socially relevant as well.”

Parco San Giuliano (Comunitas, Boston) is Venice’s boldest urban gesture in a century, proposing nothing less than a reuniting of the romantic but moribund city of canals and cathedrals with Mestre, its ugly but thriving industrial sibling. The park is the link between two worlds and the catalyst for transforming the region’s transportation, ecology, and cultural life.

The plan for the Kakaako Makai area (ELS/Elbasani & Logan Architects of Berkeley, Calif.) is almost a tropical version of Parco San Giuliano, reconnecting Honolulu to its industrial waterfront, while introducing new uses (housing, offices, retail) that will make it a destination for residents and tourists.

The plan for Saigon South (Skidmore, Owings & Merrill, San Francisco) looks at first glance like an Eastern version of the firm’s 1980’s work at London’s Canary Wharf with skyscrapers and megablocks push-

Tribeca Bridge

New York City

Owner: Battery Park City Authority

Architect: Skidmore, Owings & Merrill

The arching form of this bowstring-truss bridge offers a gateway to lower Manhattan for traffic on highwaylike West Street. Scaled-down metal details beckon students and neighborhood residents to use this pedestrian overpass.



ing to the water's edge. Yet, in among the towers are canals, gardens, and pedestrian ways that reveal a sophisticated balancing of aggressive Western capitalism and Asian delicacy.

A few of the architecture winners display a similar sensitivity to placemaking in chaotic urban circumstances. The Paul Cummins Library, in Santa Monica, Calif. (Steven Ehrlich Architects, Santa Monica) converts a warehouse alley, near a freeway into a large outdoor room for the students and faculty of a private school. At Laureola Oaks, in San Carlos, Calif., Seidel/Holzman Architects, San Francisco, transformed an abandoned construction yard—likewise sandwiched between freeways and warehouses—into a 16-unit affordable-housing project.

Laureola Oaks has the intimacy and connectedness of an established neighborhood, although the proliferation of porches and white picket fences suggests, as does most New Urbanism, that the only way to create community these days is through nostalgia. Instead of

striving to be ideal objects in space, both projects accept edges as part of the urban condition and try to work with them.

The impoverishment of American public life is inescapable. We can't seem to create public places, don't know how to enjoy them, and in many cases are terrified of them. The Honor Awards are one way to reassert the value of the public realm without diminishing the "art of design." The AIA has honored ballparks and arenas in the past—responding to the current entertainment craze in American cities—but few airports, courthouses, post offices, or train stations. (Do we even talk about train stations anymore except as dangerous places?) Such projects are more likely to turn up in the intermittent GSA and Presidential Design Awards. All the more reason for the AIA to seize the opportunity to reassert the importance of civic planning and design and to celebrate its successes. ■

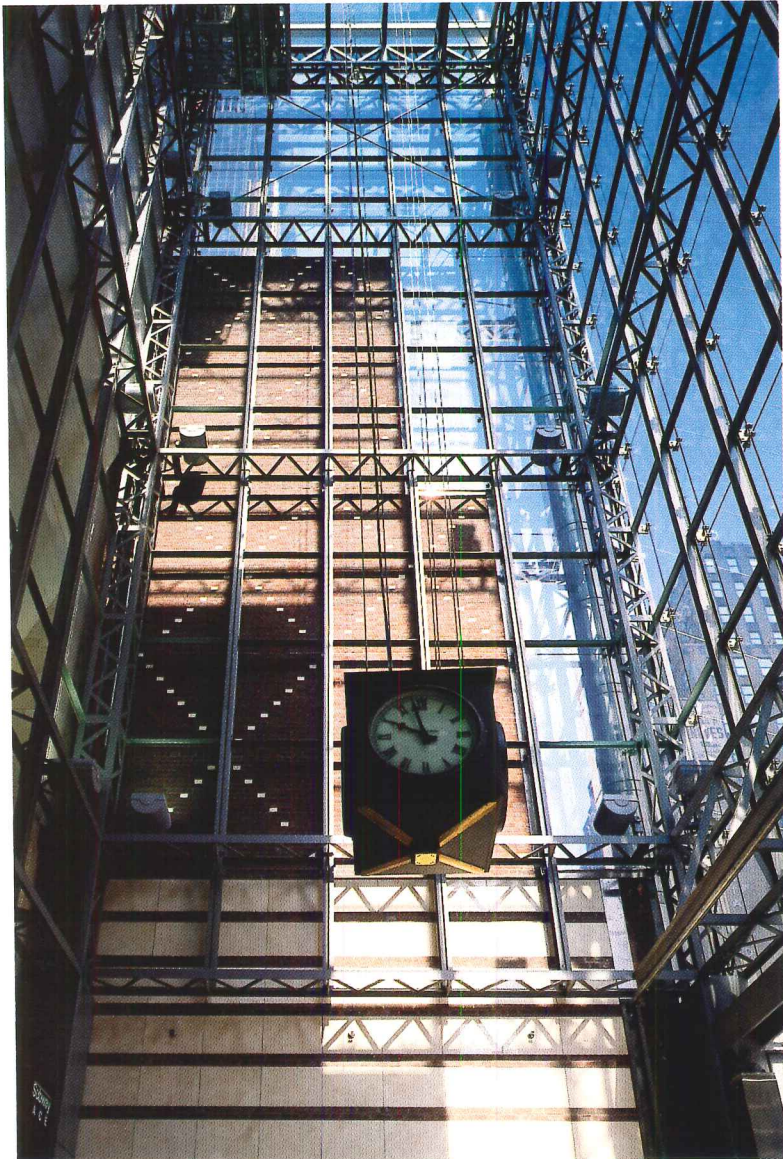
R.M. Kliment & Frances Halsband Architects



Founding partners
Frances Halsband and
Robert Kliment (center
rear above) named
three new partners this

year. From left to right:
Michael A. Nieminen,
Richard McElhiney, and
Alejandro Diez. The
broad range of the

firm's built work
includes (from left) an
entrance to a railroad
station and two com-
puter centers.



In contrast to the curling vinyl wallcovering and dingy light fixtures of the aging office building where the firm of R. M. Kliment & Frances Halsband Architects has its offices, their glass and oak-paneled entrance door stands out. It's not a design statement; its recessed panels are a little shallower, its stiles drawn a little deeper than a wood door selected from a catalog. In a world that seems little interested in the way things are made (indeed, the firm's building is simply the commercial-maintenance norm), this humble door stands for a design mode increasingly seen as quaint. Kliment/Halsband is this year's AIA firm-award winner, and the selection of these avatars of the telling detail over numerous practitioners of the bravura gesture brings into focus some of today's practice dilemmas.

The firm offers what many clients say they want—a self-effacing design approach focused on the problems at hand. And yet they are not household names. A 1983 computer-science building for New York City's Columbia University successfully slips under the massive Mitchell/Giurgola building to which it attaches, while acknowledging the historic McKim Mead & White context of the larger campus (opposite bottom right). Another computer center for Princeton University, in New Jersey, draws together fragmented pedestrian patterns, addresses a future quadrangle, and recognizes internal changes of function through a subtle orchestration of brick patterns and fenestration (below). The work has evolved, however. A tower over a subterranean stair for the Long Island Railroad terminal at New York City's Pennsylvania station is a sleekly detailed beacon for commuters that—though tiny—enlivens its context of massively drab office towers (opposite bottom left). Still, a continuum readily can be seen in the firm's work underway (following pages), where, for example, a landmark post office is lightly touched and an addition to a collegiate-Gothic landmark building is assertive but not assaulting.

Kliment/Halsband is a generalist firm facing a future that many experts say will be dominated by specialists. The firm has lost jobs because they lack depth of experience in a type. "We're very good at dealing with complex sites and client issues and programs," says Frances Halsband, FAIA. The Columbia project led to other computer-science commissions, but the firm, says Robert Kliment, FAIA, doesn't have the temperament to specialize. "We never perfected the rote answer," adds Halsband. "There's a tremendous variety even within the problem of the computer-science building."

The 30-person firm is able to take on larger work since three long-term associates became partners: Alejandro Diez, AIA; Richard McElhiney, AIA; and Michael A. Nieminen, AIA. Projects range today from a 900-sq-ft visitor building for catalog merchant White Flower Farm to the post office conversion, budgeted at \$217 million.

Rather than an overarching design signature there is what Kliment calls "a singular vision or cultural point of view around which people gather and contribute." He continues, "Building is the consequence of things around it," paraphrasing mentor Romaldo Giurgola.

In a world bombarded by powerful but fragmented images, is there room for a firm that thinks on the level of a site inflection or a door-stile thickness? The general public, even more than architects or the architectural press, gravitates to architectural spectacle, whether that be in dramatic form-making or in the growing fantasy-design realm. "We're all trying to get away from the building as 'just another pretty face,'" comments Kliment. But the struggle to do that, adds Halsband, "reflects broad issues in the culture. There's no common ground on styles for us to agree on what is good. The more diffuse design styles and debates become, the farther you get from common ground. How does that make good cities, or respond to clients?" Well she might ask. *James S. Russell*



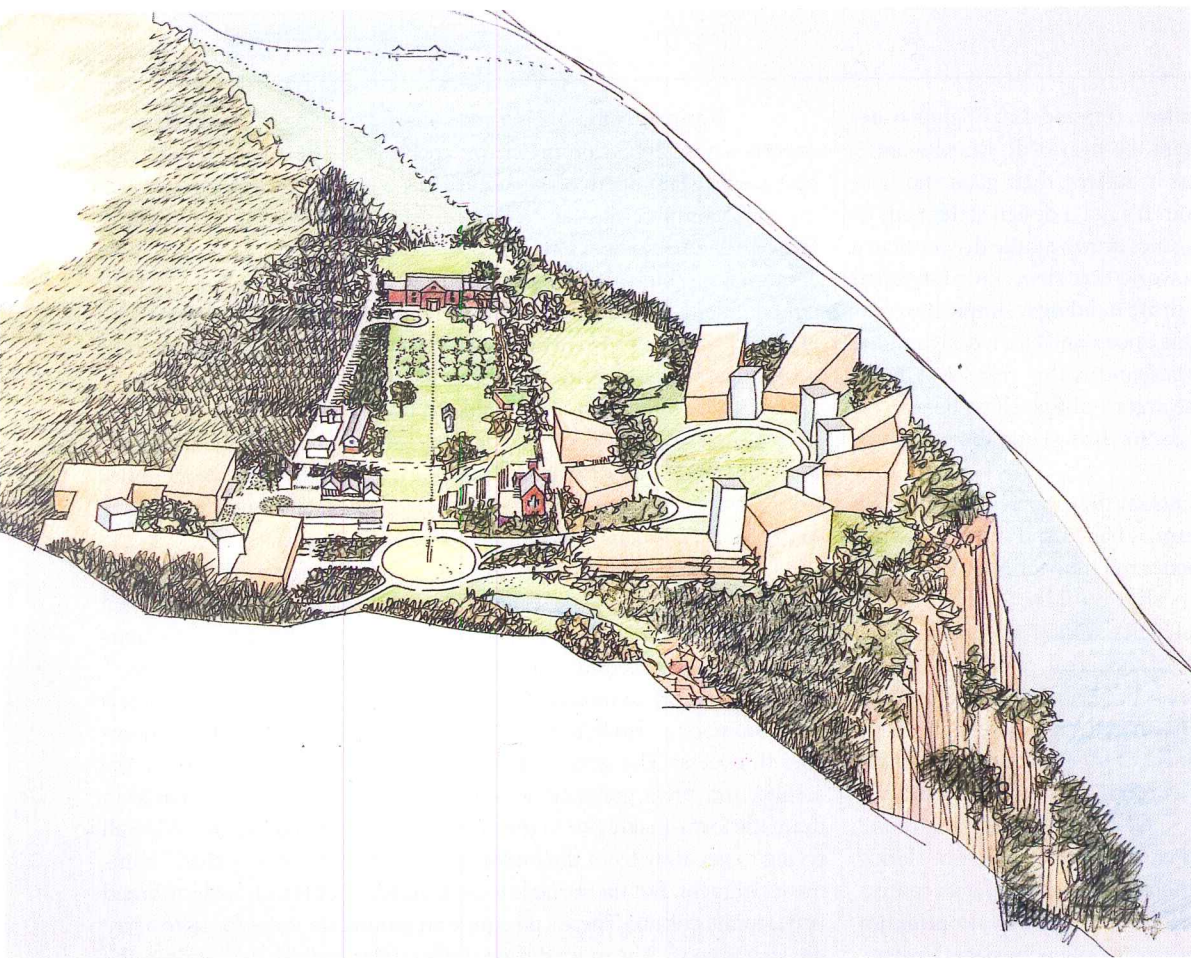
**Lamont-Doherty Earth Observatory
Master Plan**

Palisades, New York

Owner: Columbia University

The existing campus has unsympathetic and inadequate recent buildings bumped up against historic structures in an Olmsted brothers' landscape. The master plan unites the campus through a walkable center and gathering places.

"A continuum readily can be seen in the firm's new work, where a landmark post office is lightly touched and an addition to a collegiate-Gothic building is assertive but not assaulting." —James S. Russell



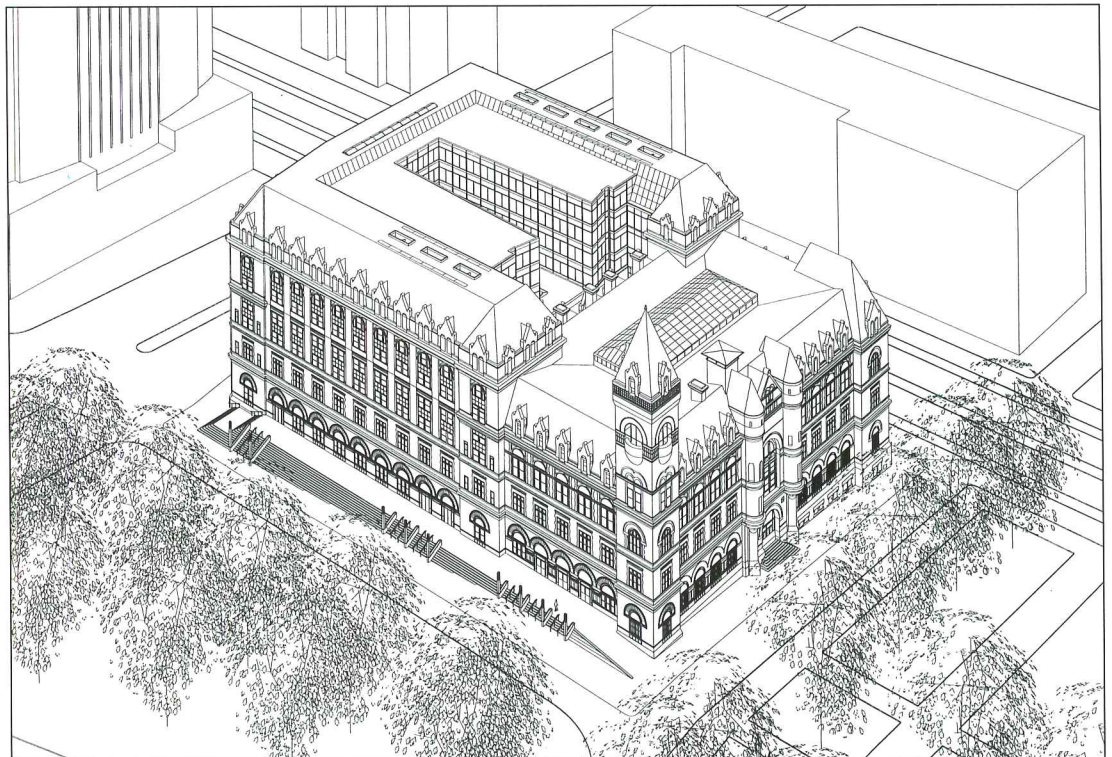
United States Courthouse

Brooklyn, New York

Associated Architect: Wank Adams
Slavin Associates

Owner: General Services
Administration

The Brooklyn General Post Office building is being reconfigured for bankruptcy courts, offices of the U.S. Attorney, U.S. Trustee, U.S. Representative, and Post Office retail facilities. Renovation and adaptive reuse of an 1892 building and a 1933 extension are augmented by 95,000 sq ft of new space wrapping a courtyard.

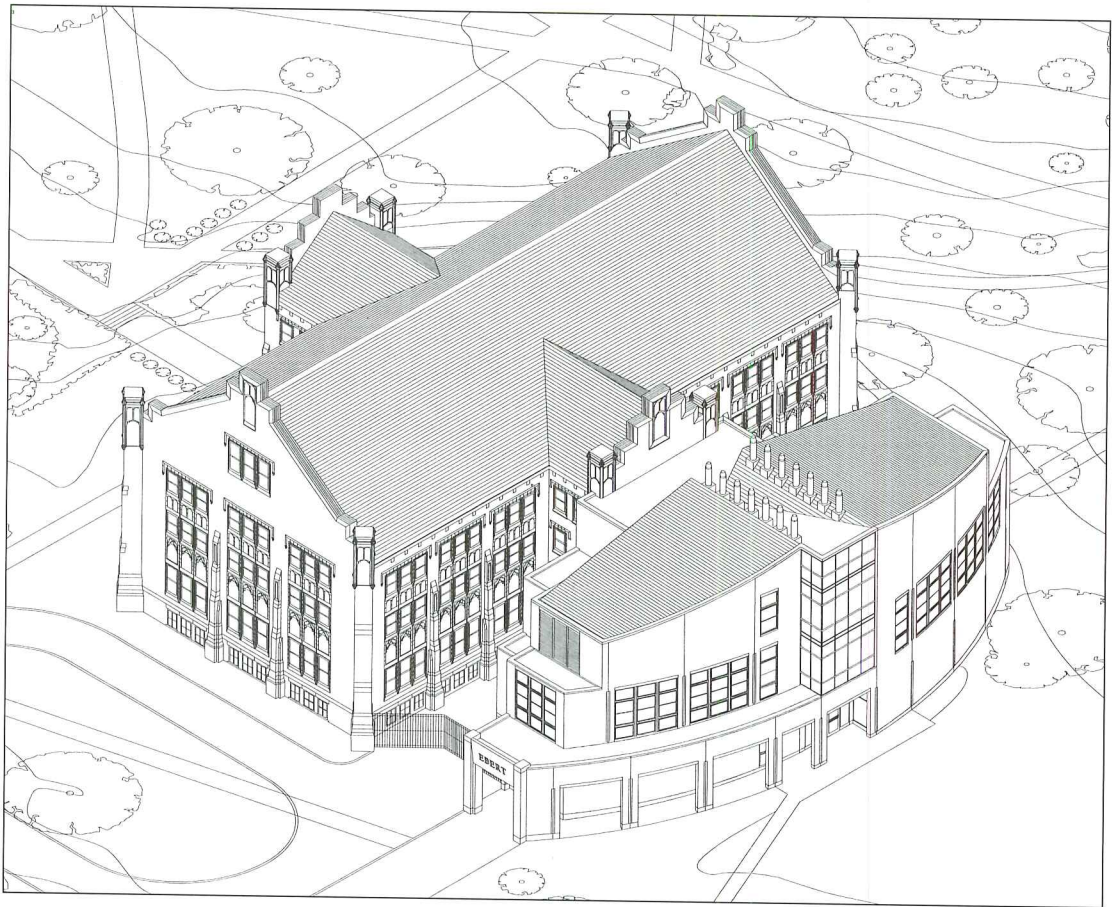


Severance Art Building Restoration and Addition

Wooster, Ohio

Owner: The College of Wooster

A former physical-education building (1911) is being converted into art studio space. A 17,000-sq-ft addition containing galleries, lecture hall, and seminar room allows the departments of art history and studio art to be united in one structure. The addition, while extending the axis and formal organization of the existing building, is scaled to the playing fields it faces.



Primary School 54

Bronx, New York

Owner: New York City School Construction Authority

The massing of this 82,000-sq-ft school on a tight urban site is narrow to admit light to surrounding apartment buildings. It steps down at its southern end to let direct sun hit the playground.



The richness of Louis Kahn's Exeter Library stands the test of time.

The beginning of the 1970's was not an easy moment for architecture in America. All the more remarkable the authority, the serenity, and the confidence that Exeter Library, at Phillips Exeter Academy in Exeter, N.H., still exudes. It is one of Louis I. Kahn's masterpieces, and is this year's 25-Year-Award winner. From 1967 to 1972, its period of design and construction, the country struggled to digest the racial and cultural upheavals of the 1960's; the Vietnam War and Watergate took their toll in lives and in America's faith in its institutions. Architecture was simply not high on the national agenda.

Exeter, on the other hand, seems to exist out of time. Kahn single-handedly reinvented the idea of facade by the subtlety with which the glazing and wood-clad insets were proportioned and the brick detailed. Among the genuine strokes of genius was the undercutting of what might have been an off-putting monumentality by carving away the building's mass with re-entrant corners (below).

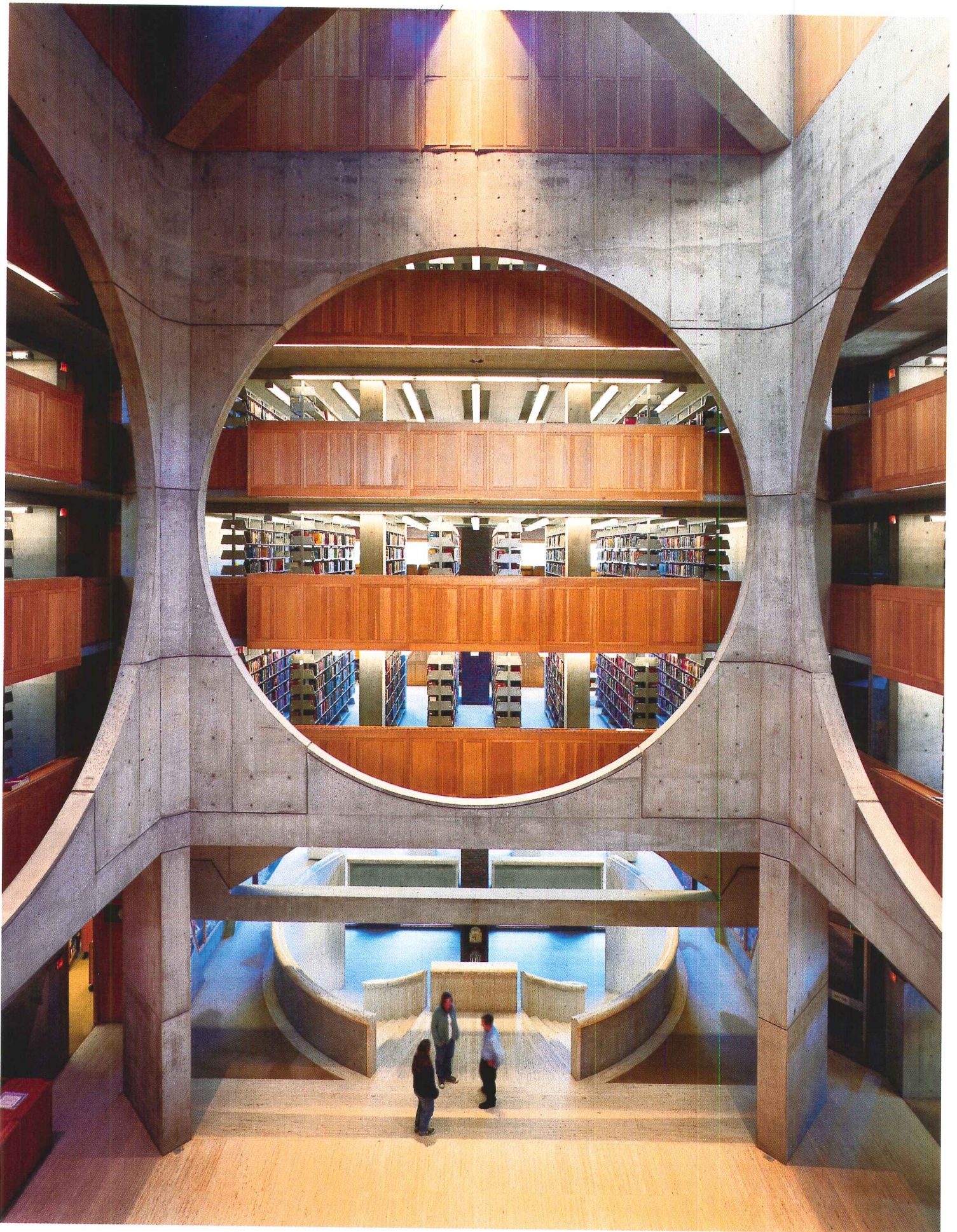
The last years prior to Kahn's 1974 death brought forth a handful of masterpieces: Forth Worth's Kimball Art Museum; the arts complex in Fort Wayne, Ind.; the vast government center in Dacca, Bangladesh; and the Indian Institute of Management in Ahmedabad.

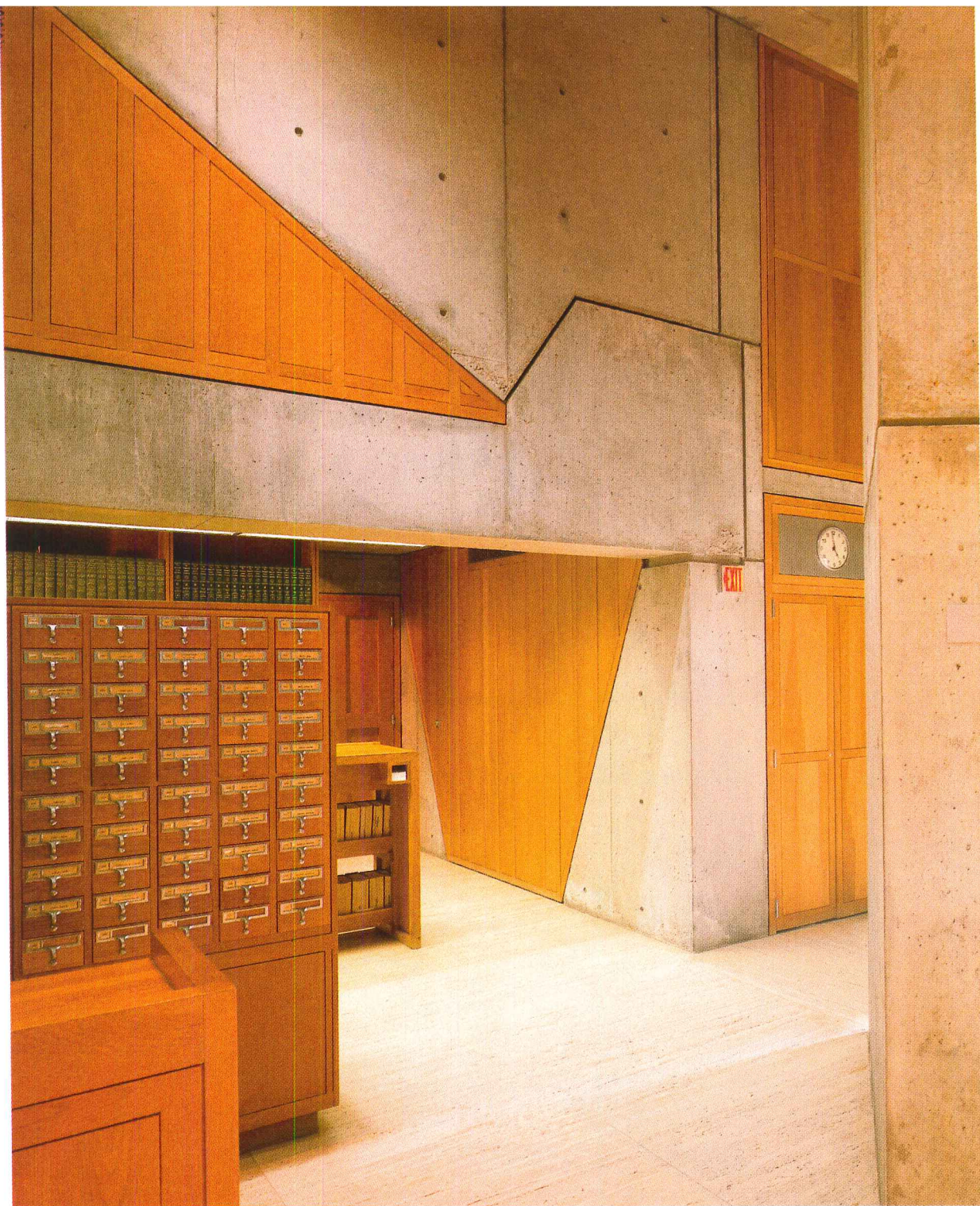
For the rest of American architecture, it was a strangely transitional moment. Most of the mainstream was pouring out vast new battered-concrete college campuses and corporate headquarters set in pampered landscapes, when not dabbling in the occasional urban-renewal housing scheme or inner-city daycare center. Charles Moore was beginning to move beyond houses; Richard Meier was perfecting his signature style on New York's eastern Long Island, and Venturi, Scott Brown, and Izenour penned *Learning From Las Vegas*. (That firm's built oeuvre had then rarely gotten larger than houses, either.)

The era saw John Portman's San Francisco Hyatt Regency—among the first of the atrium hotels, Arthur Erickson's building-as-bridge

The center of Exeter Library (opposite) is a space that eloquently unites Kahn's desire to recognize knowledge, institutions, and gathering places.







Kahn's language of materials included "structural" cast concrete contrasted with oak paneling as a membrane that clads changeable services (left) and built-ins (below).

for a university in Alberta, John Andrews's Harvard Graduate School of Design, Paul Rudolph's theatrical essays in concrete for the State Services Building in Boston and the Burroughs-Wellcome headquarters in North Carolina. Gene Summers of C.F. Murphy realized Mies van der Rohe's vision in McCormick Place in Chicago; Gunnar Birkerts opened the Federal Reserve Bank in Minneapolis.

Exeter is the third Kahn building to win a 25-year award, but architects, including Wright; Mies; Eero Saarinen; and Skidmore, Owings & Merrill have also garnered this honor three or more times, fueling criticism that too few architects are represented on the list. Yes, Exeter is a safe choice, but it is one that is hard to argue with. Its richness of conception and execution seem more compelling rather than diminished by time. *James S. Russell*



ANALYSIS: In Singapore, Stirling and Wilford's TEMASEK POLYTECHNIC serves as a valedictory to a prolific career.



The central plaza (left) is a popular hub for students. A covered area below one of the classroom blocks (opposite) offers a cool place to relax.

Not everyone exits with such a grand performance. But James Stirling was no ordinary architect and it seems only fitting that the hard-to-label British designer finish his career with an entire campus of buildings in a country that is reinventing itself at warp speed. Given a 75-acre greenfield site and an expansive program of educational, administrative, recreational, and residential facilities at Temasek Polytechnic in Singapore, Stirling and his long-time partner Michael Wilford were able to address most of the key issues that have informed their work since the early 1960's, while at the same time explore new approaches and forms. As a result, Temasek seems to both sum up a prolific career and show where it was going at its untimely end. (Stirling died in 1992 at the age of 66.)

Singapore's third polytechnic, Temasek is a veritable "city of learning" for 11,400 students, 1,000 academic staff, and 500 support staff. (A fourth polytechnic, designed by Gwathmey Siegel & Associates, is now under construction.) Divided into four schools—business, engineering, design, and information technology and applied science—Temasek offers hands-on, practical education to the people who will be technicians and middle-level managers in Singapore's export- and information-driven economy. After passing their "O" levels (the equivalent of high school in the United States), students in Singapore have three educational options: trade school, polytechnic, or junior college and then university. The three-year course of study offered by the large polytechnics is becoming increasingly popular and now attracts about 40 percent of the country's O-level graduates.

Set between the Bedok reservoir and the rapidly growing Tampines new town on the eastern end of Singapore island, Temasek offered Stirling and Wilford a clean slate on which to write. Nothing here

by Clifford Pearson

is more than 10 years old. The mid-rise, government-built housing blocks and the six-lane Tampines Avenue One facing the school on the north provide an essentially generic modern context. To the south is the reservoir. Before being selected as the Temasek site, the property had been used by the Singapore Housing Development Board for stockpiling sand needed for construction. "It offered us a marvelous opportunity to deal freely with some of the issues of architecture and urbanism that we had been working with," says Wilford.

These issues included clearly expressing a project's organization, its various functions, and its circulation. Stirling and Wilford dealt with these issues by breaking large compositions into smaller components, creating strong building forms, using striking (sometimes even electric) colors within building envelopes that are neutral in hue, and contrasting solids with voids and building mass with building membrane. Not every project the architects worked on addressed each of these issues, and over the years the superficial "style" of projects changed and evolved depending on the context and demands of the program, says Wilford.

The techno-Modernism of the Leicester University Engineering Building of 1963, for example, was replaced in the 1980's by the idiosyncratic brand of Postmodernism that marked the Neue Staatsgalerie in Stuttgart, Germany, and the Performing Arts Center at Cornell University [RECORD, October 1989, pages 98-107]. But the last project that Stirling saw completed, the sprawling B. Braun manufacturing complex in Melsungen, Germany [RECORD, October 1992, pages 74-83], seemed to announce a return to the firm's Modernist roots. The design of Temasek Polytechnic reinforces that impression. Wilford states, however, "We never moved away from 'true Modernism.' We were just waiting (*text continues*)

Project: Temasek Polytechnic, Singapore

Architect: James Stirling Michael Wilford and Associates—James Stirling, Michael Wilford, principals; Laurence Bain, Paul Barke, Russell Bevington, John Bowmer, Mark Bunting, Chris Chong, John Dorman, Frances Dunne, Christopher Dyson, Liam Hennessy, Charlie Hussey, Andrew Pryke, Peter Ray, Leandro Rotondi, Charlie

Sutherland, Kit Wallace, Karen Waloschek, Gareth Wilkins

Associate Architect: DP Architects Pte

Engineers: Ove Arup & Partners (structural/mechanical/electrical); Ewbank Preece Engineers (mechanical/electrical)

Consultants: PDAA (landscape); Arup Acoustics (acoustics)

Project Manager: Public Works Department, Singapore

Most students arrive by bus and walk across the copper-roofed pedestrian bridge (right in photo) to school. Stairs and a driveway lead from the street to the plaza level; a 600-seat auditorium and a

250-seat multipurpose theater are tucked below. A pyramidal skylight brings daylight into the lobby between the two halls. The great horseshoe is on axis with the Tampines town center.



Administration

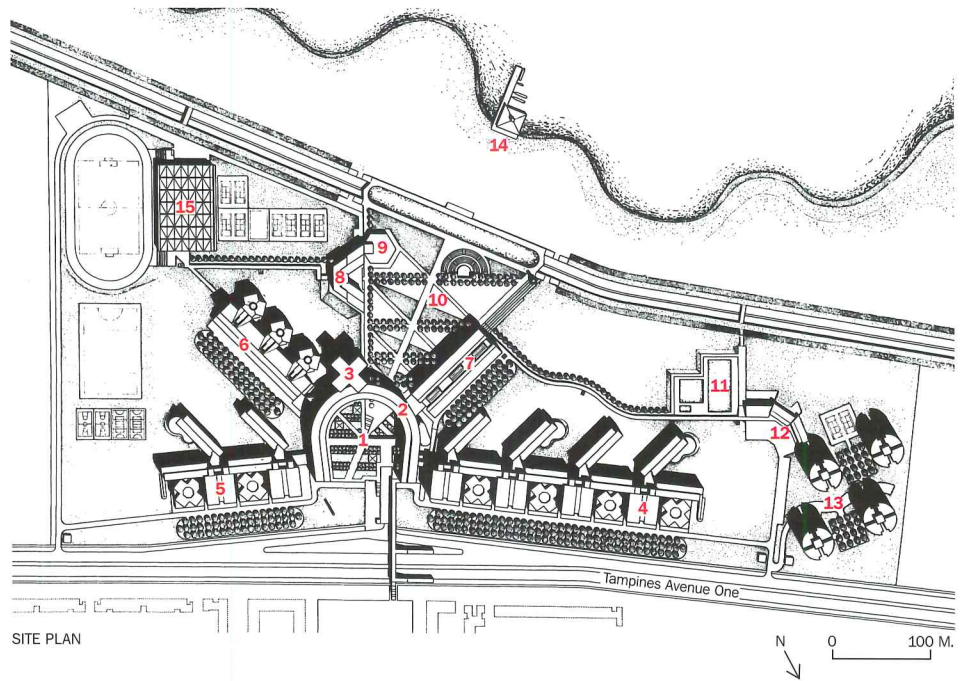


TEMASEK
POLYTECHNIC

Welcome • 欢迎 • Selamat Datang • நல்வரவு



Seen from the north, the campus stretches out for nearly a kilometer (opposite). Classroom blocks are memorable forms on the landscape (below).



- | | | | |
|--------------------------|--|-----------------------|--|
| 1. Plaza | 5. School of Information Technology and Applied Sciences | 7. School of Design | 12. Faculty club |
| 2. Administration | 6. School of Business | 8. Student center | 13. Staff housing (three towers built) |
| 3. Library tower | | 9. Main canteen | 14. Boat house (unbuilt) |
| 4. School of Engineering | | 10. Triangular garden | 15. Sports hall |
| | | 11. Swimming | |

for the right opportunity,” to use it again. Like Melsungen, Temasek offered an expansive program and a context-free site that allowed the architects to use a Modern vocabulary, says Wilford.

Responding to a tropical climate

What is new at Temasek is a strong response to the local climate. Rain and heat are constants in Singapore, just three degrees latitude above the equator. By carving a five-meter (16.5-ft) wide arcade within a horseshoe-shaped central administration building and connecting all buildings with

Although DP’s primary responsibilities were for construction documentation and supervision, the Singapore-based firm was involved from the very beginning of the project and sent a team of architects to Stirling/Wilford’s office in London for schematic design.

The architects, however, didn’t want to turn their concern for climate into an architectural fetish. “The buildings don’t sport louvers all over the place to screen the sun,” says Wilford. “We thought we’d be a little more subtle in the way we express our response to the tropics.”

Responding to the local culture was more problematic. Not only

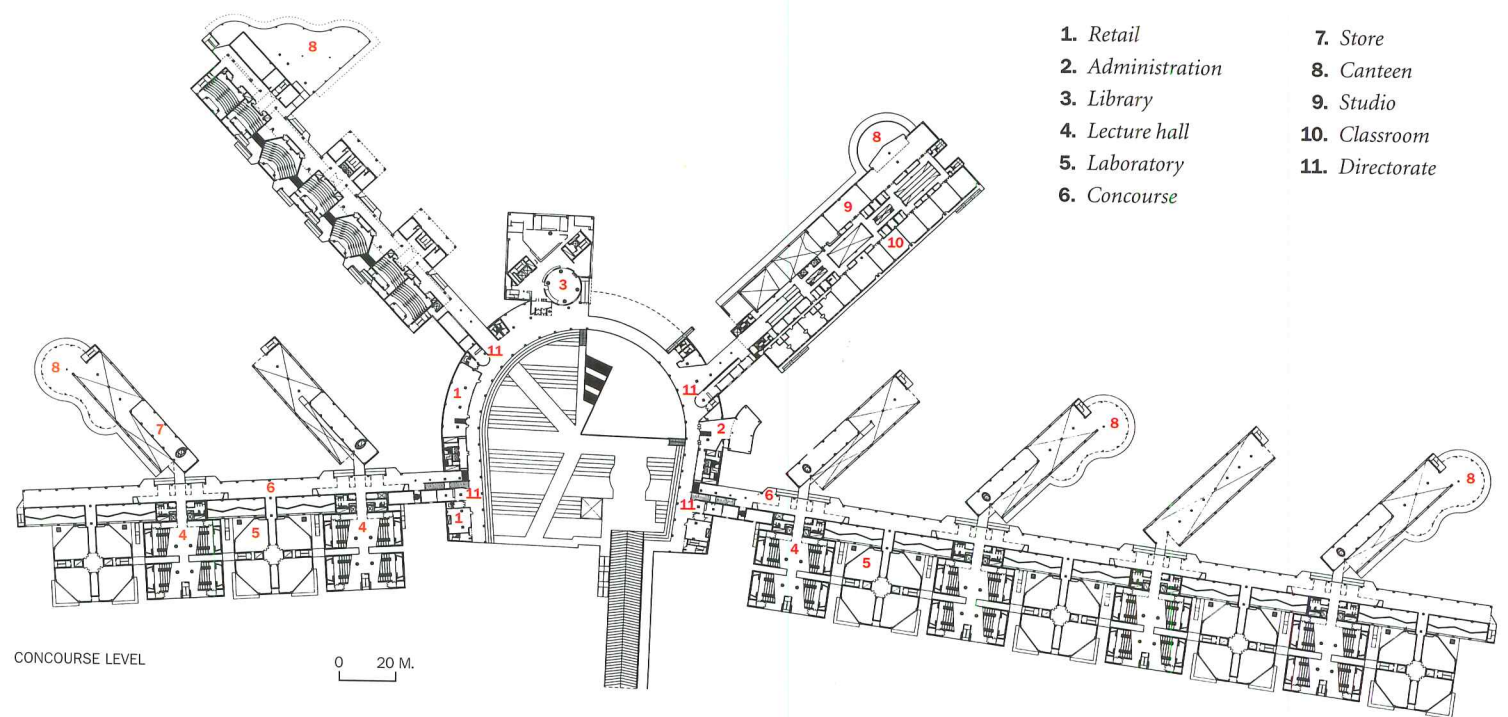
WITH 57 LECTURE HALLS AND A KIT-OF-PARTS APPROACH, “THE BIGGEST CHALLENGE WAS THAT OF REPETITION,” SAYS WILFORD.

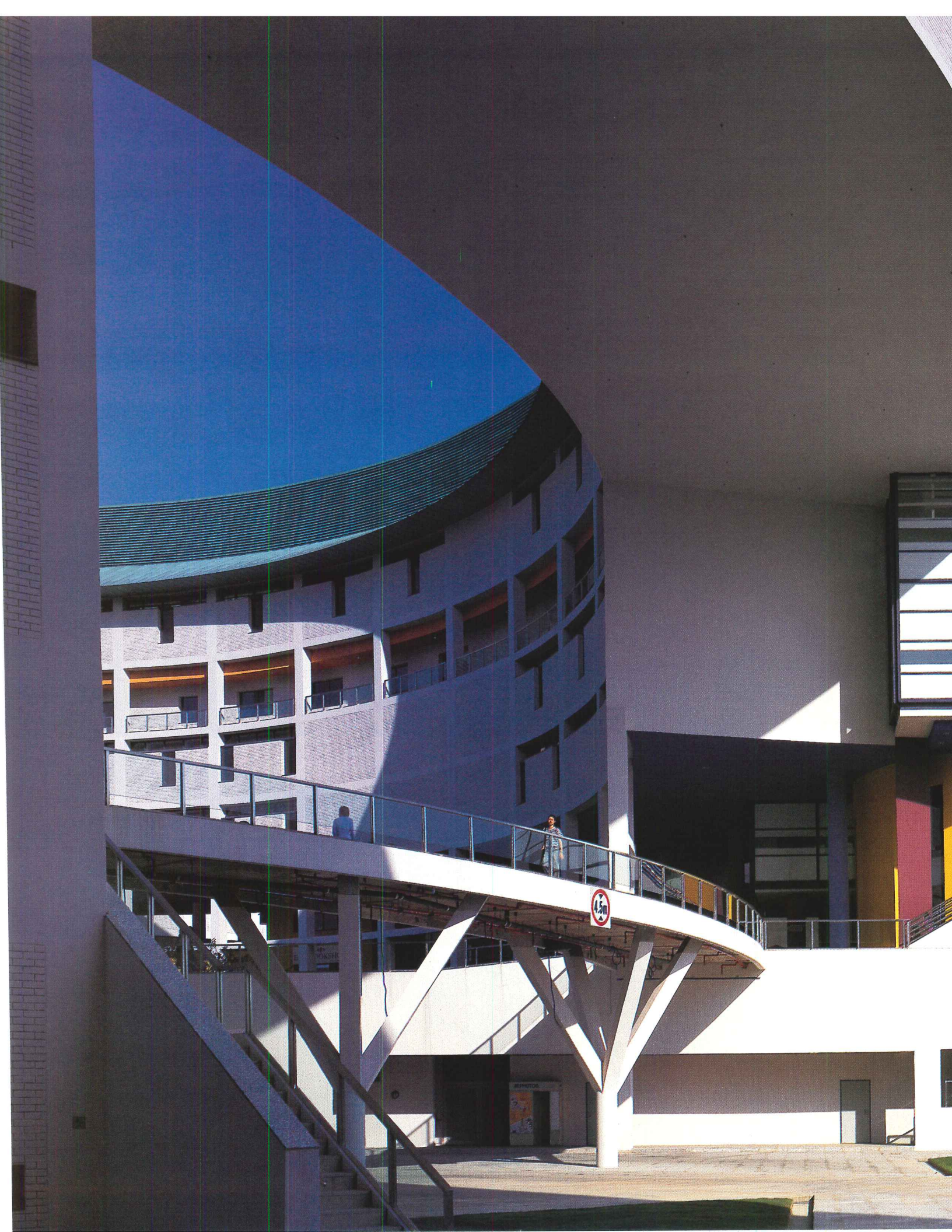
covered pathways, the architects created protected outdoor spaces that also reinforce one of the firm’s favorite themes—circulation. Covered canteens open to views of and breezes from the reservoir provide another kind of indoor-outdoor space, as do the concourses lined by brightly colored columns that run through each of the campus’s four schools. The strong sun helped shape the buildings’ fenestration, limiting glazing in most rooms to a band of clerestory windows and a vertical strip (or two) of glass. Curtain-wall glazing is used sparingly, most prominently on the library tower, but also on a portion of the design school.

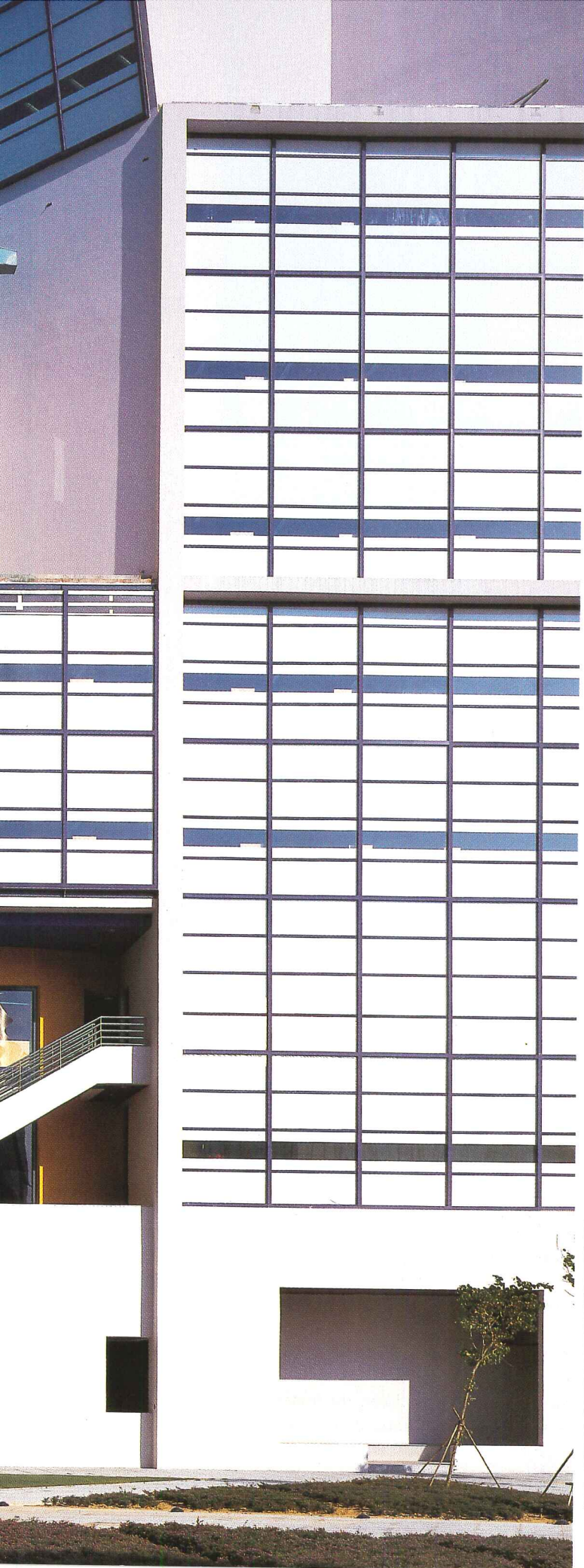
The local associate firm, DP Architects, as well as the client’s building committee kept the issue of climate at the forefront of discussion throughout the project, says Toh Sze Chong, a DP associate who worked on Temasek. “We had to explain the concept of horizontal rain,” says Peter Creamer, an engineer who works for Temasek as its building manager.

was there little architectural context nearby, but “the students have a global, modern outlook,” says Wilford. Discussions with the client led the architects to understand the role of snacking as a social activity and see there was little demand for overtly Chinese or Singaporean elements. In the end, Stirling/Wilford realized that the local culture was a youth culture and that by creating a colorful, engaging environment with plenty of places for students to gather and, especially, to eat, the firm was meeting the needs of the users. Conversations with Temasek students confirm the validity of this approach. Jasper Leung, a second-year student studying information technology, says he spends most of his spare time at the various canteens and that he likes the way the buildings seem “young.”

Despite its size, Temasek is an easy place to get around and to understand on an organizational level. A great horseshoe-shaped administration building is the central hub from which each of the four schools





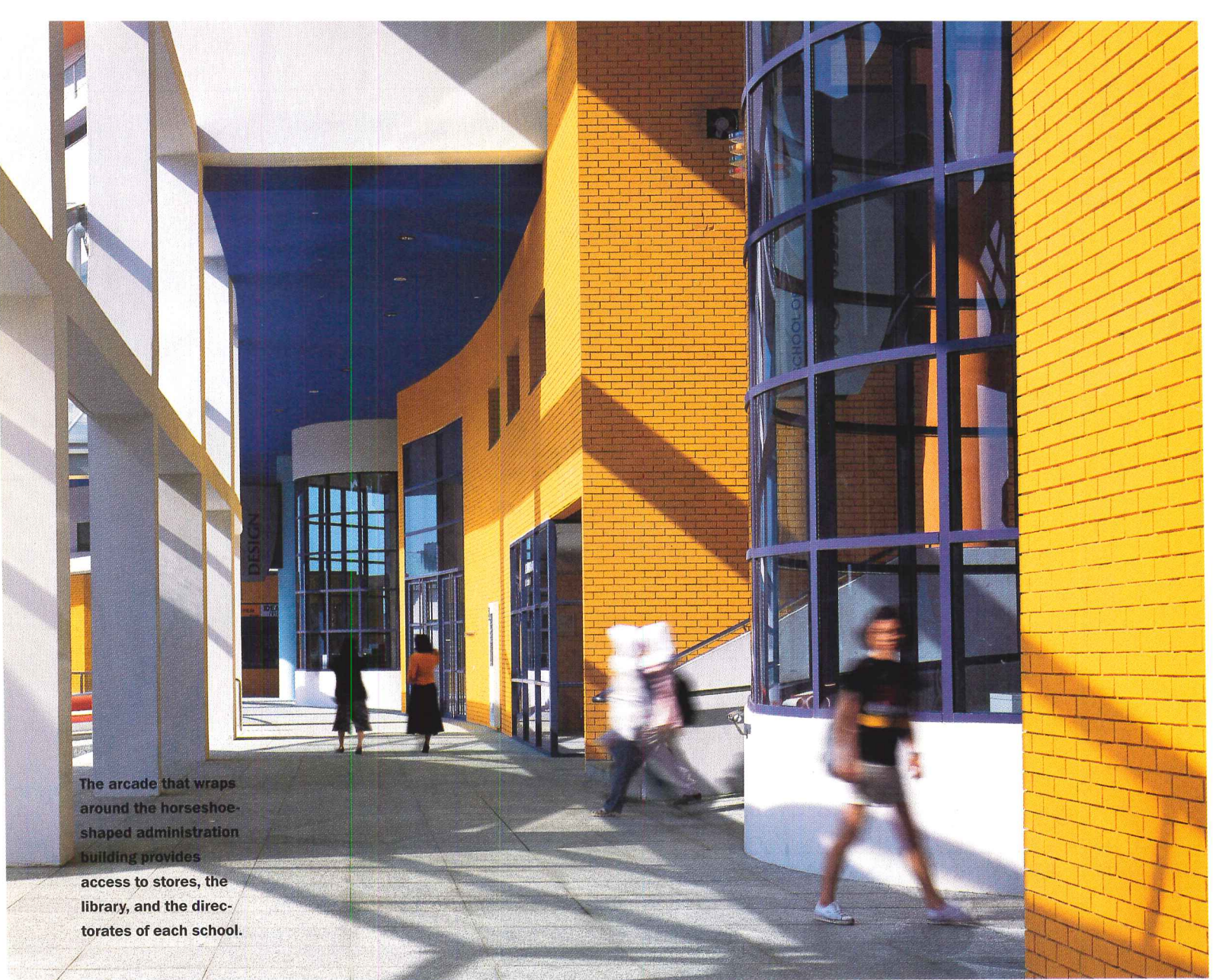


extends as a straight-lined spoke. A two-story-high arcade wraps around the horseshoe providing access to stores, the 11-story library tower, and the “directorate” or administrative offices of each of the four schools. Upper floors of the horseshoe house administrative offices. Held within the arms of the horseshoe is a landscaped plaza at the concourse level and two large auditoria tucked below. “We wanted a focal point for the entire campus, a place where all of the students could mingle,” explains Lily Teo, Temasek’s director of finance, development and estates, who was the project director for the client during design and construction.

Good connections: the library tower meets the horseshoe (left) and a classroom block meets a school spine (above).

Using a kit of repetitive parts, Stirling/Wilford designed each of the schools as a series of blocks attached to a tall, covered concourse. Two-story lecture halls are stacked to form one kind of block, while laboratories with classrooms above comprise another kind. More classrooms and faculty offices are housed in wings that angle from the school spine. Each school has its own curvilinear canteen spreading out toward the rolling landscape. Expansion can be accommodated by simply extending a particular school’s spine and adding more lecture, laboratory, or classroom blocks as needed.

A consistent vocabulary and a uniform pale lilac color for exterior surfaces holds the entire composition together visually. Only within the general building shell do the architects inject bright colors and carve away a variety of spaces. And while all four schools have many of the same parts, each has its own set of particulars. For example, the design school is the only one with a central skylit spine and the business school dispenses with the blocks of labs because the curriculum doesn’t call for them. And while the colors used for the eye-catching columns on the concourse level of each school are the same, the sequence of colors is different for each.



The arcade that wraps around the horseshoe-shaped administration building provides access to stores, the library, and the directorates of each school.

“The biggest challenge was that of repetition,” states Wilford. For example, there are 57 lecture halls, each with the same basic design, though varying sizes. “If you’re not careful, such repetition can produce an institutional, characterless feeling.” Providing enough variation and articulating each school architecturally helped deal with this issue.

Breaking the problem of scale down to size

“Another problem was handling the issue of scale,” explains Wilford. The architects’ response was to make the organization of the campus as easy to understand as possible and to “break each school into its component parts and articulate them architecturally.” By placing more intensively used spaces close to the main concourses and more privately used spaces higher up, using a range of colors to identify different kinds of floors, and offering plenty of views outdoors to help orient people, the architects provided plenty of wayfinding cues.

Although Temasek stretches for nearly a kilometer (0.62 miles) along Tampines Avenue One, no part of each school is more than a five-minute walk from the central administration building. And since students can go to classes, lectures, and labs, visit their professors’ offices, and eat

their meals all within the confines of their individual schools, there is little need to dash from one place to another. “I expected a crush of people moving around between classes,” says Creamer. “But it doesn’t happen because the circulation is really quite efficient.”

All of the buildings are poured-in-place, concrete-frame structures with brick-panel infill walls, as is typical in Asia. Because they are repeated so often, floors are precast-concrete slabs. Steel is used primarily to support the pre-patinated copper roofs found on all buildings on campus. The architects and engineers purposefully kept the structural system simple so the large project could move forward quickly.

Indeed, speed was a critical demand of the project. After being hired in November 1990, Stirling/Wilford had only a few months for schematic design and then only about six months for design development. By November 1991, the plans were approved. Construction began in April 1992 and the entire campus—including all four schools, the central administration building, the student center, all the athletic facilities, three towers of staff housing, and the faculty club—was completed by August 1995. “The most difficult aspect of the project was the fast-track process,” states Temasek’s Teo. (*text continues*)

Temasek Polytechnic was established in 1990, but operated out of temporary facilities until the fall of 1995 when its Stirling/Wilford-designed campus opened its doors. With the Singapore economy relying less on manufacturing and more on high technology and information services, the need for polytechnical schools has grown rapidly in the last decade. Even before the new Temasek complex was completed, another giant polytechnic (designed by Gwathmey Siegel & Associates) was begun.

Reflecting his position as both educator and executive, Dr. N. Varapasad, the school's principal and chief executive officer, was a strong leader with whom the architects could work. "He was a

fantastic client," remembers Michael Wilford. "He was always challenging us and telling us to go ahead." Wilford explains that Varapasad "was concerned with issues such as maintenance and cost, but he was also very interested in the architectural design."

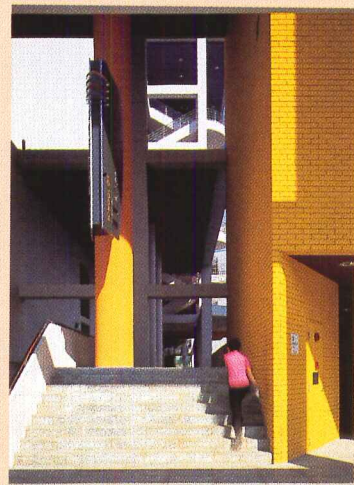
Although Varapasad wielded enormous authority in setting the school's program and direction, another key player was a building committee that included the chief architect and planner of Singapore's Urban Redevelopment Authority, the state's Housing Development Board, and the directors of the four schools that comprise Temasek.

While the two polytechnics that had been built before Temasek were designed by local architects and

grew piecemeal over time, Singapore decided to take a different approach for the next two schools.

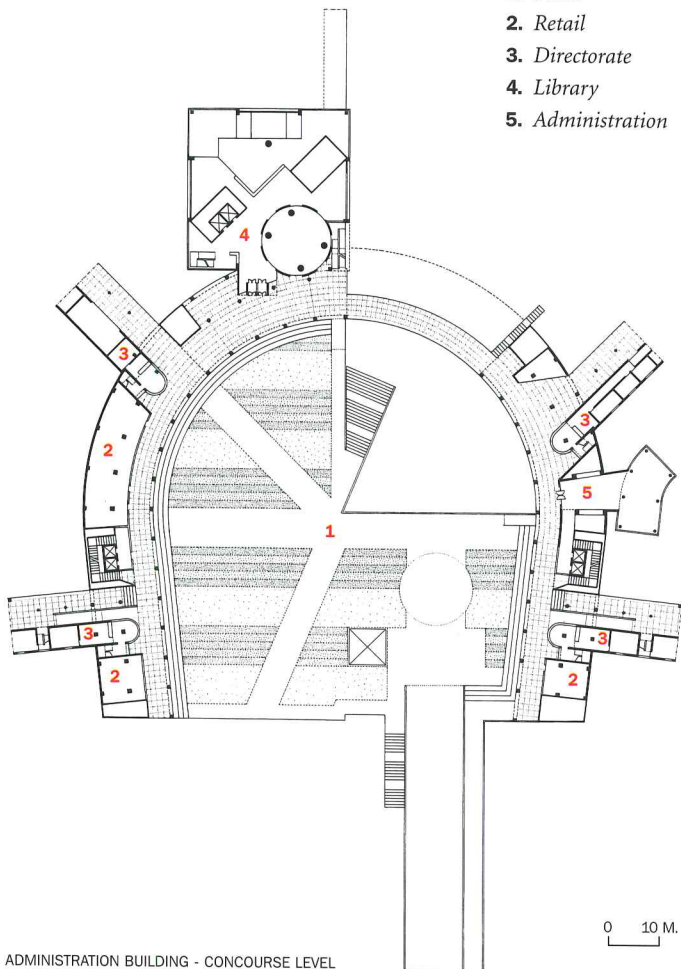
"We wanted a joint venture between a local firm and a world-renowned architect," explains Lily Teo, Temasek's director of finance, development, and estates, who was heavily involved in the building project. "We put together a short list of international architects and looked at their track record with educational institutions."

Even though it was building an entire campus all at once, Temasek was always thinking of expansion, says Teo. Indeed, the first addition—a new laboratory block for the engineering school—is already under way.



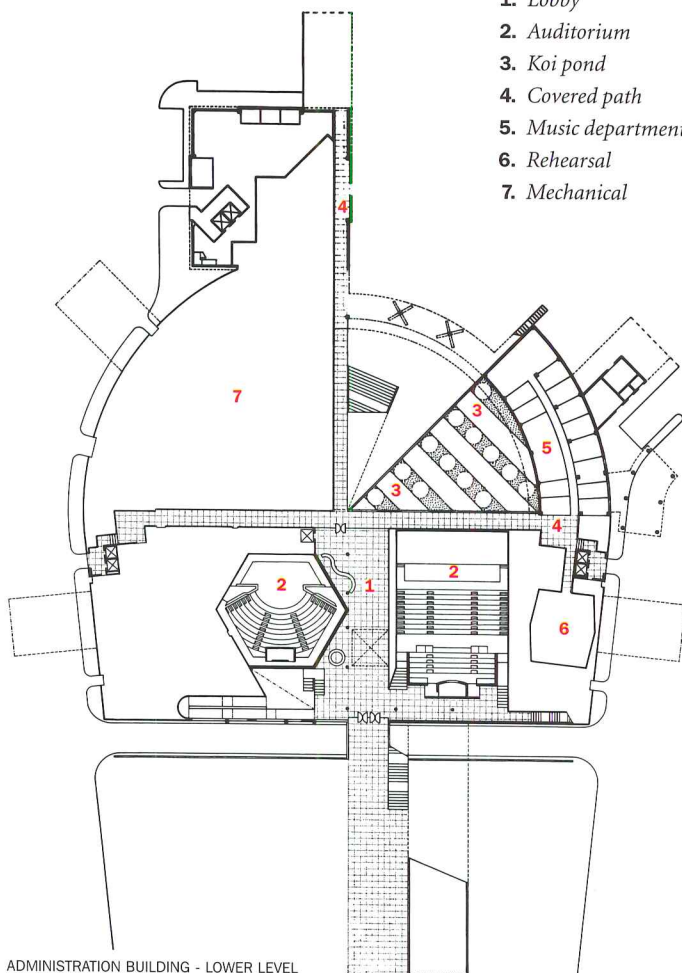
The concourse of each school extends from the central administration horseshoe.

1. Plaza
2. Retail
3. Directorate
4. Library
5. Administration

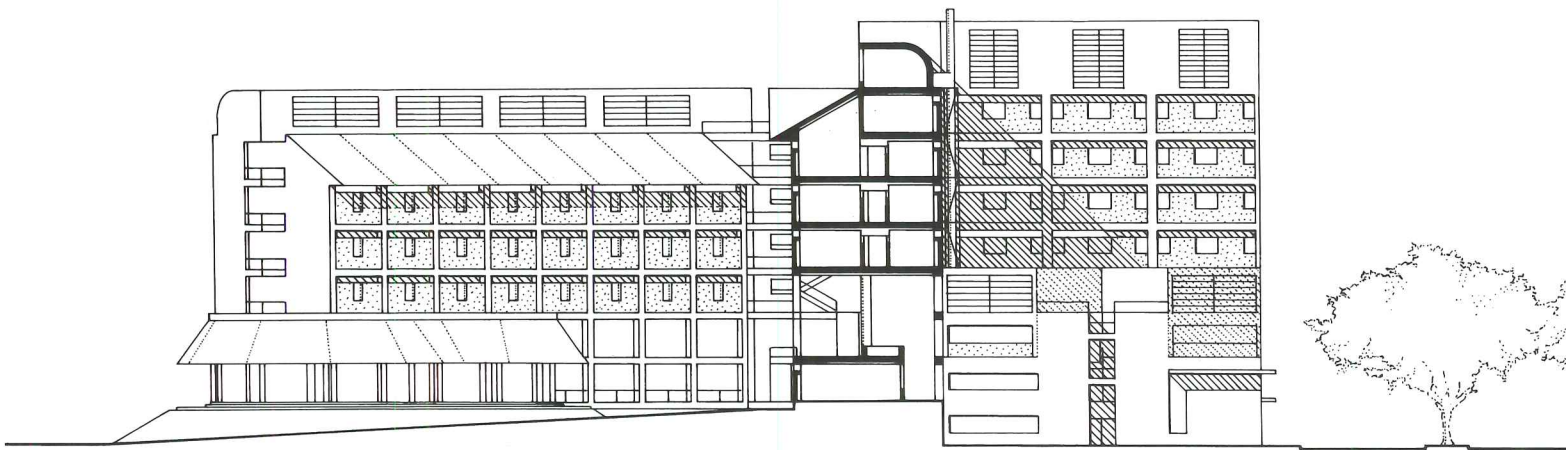


ADMINISTRATION BUILDING - CONCOURSE LEVEL

1. Lobby
2. Auditorium
3. Koi pond
4. Covered path
5. Music department
6. Rehearsal
7. Mechanical



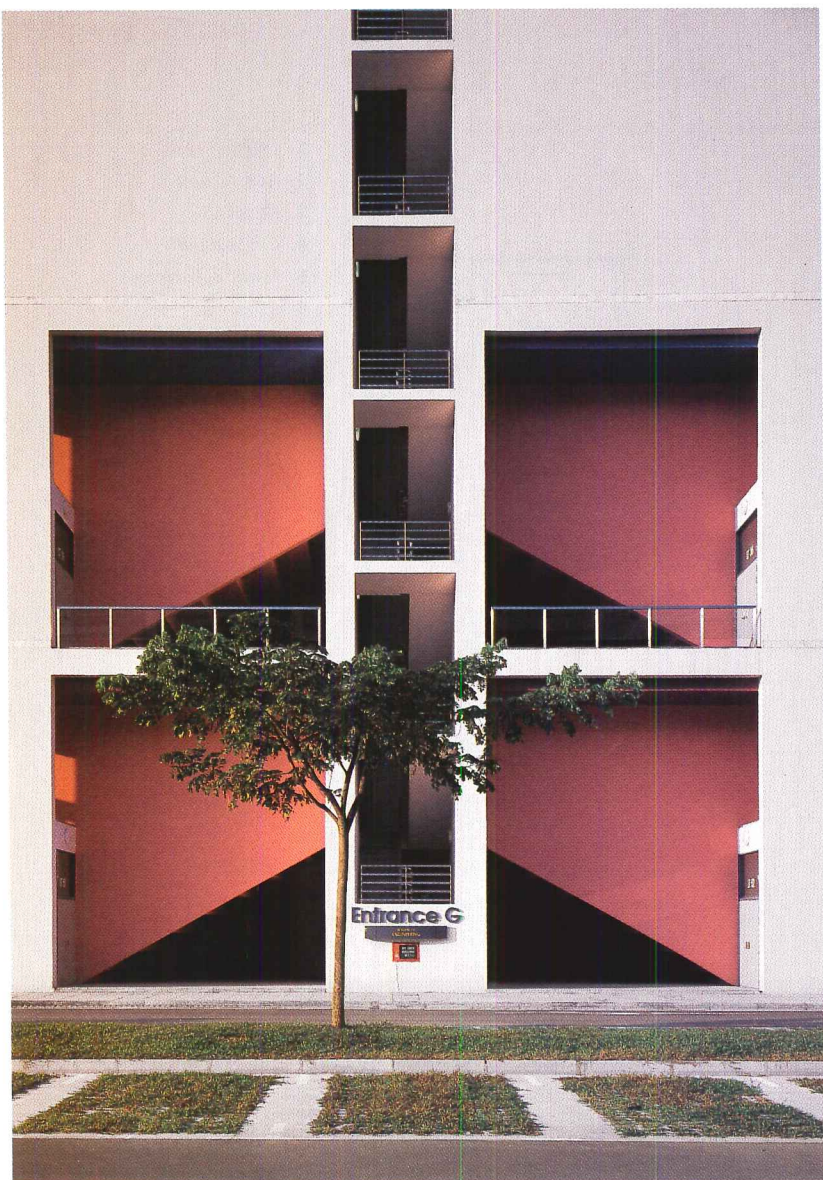
ADMINISTRATION BUILDING - LOWER LEVEL

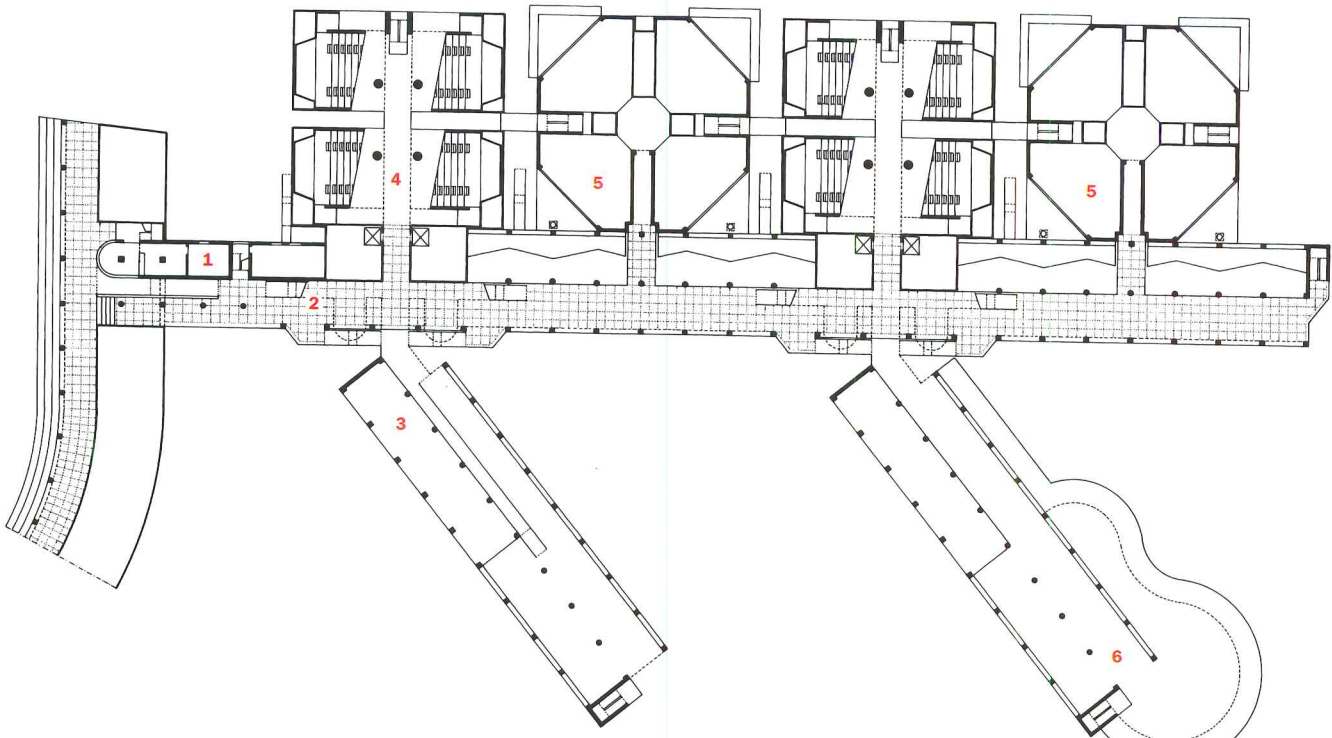


SCHOOL OF INFORMATION TECHNOLOGY AND APPLIED SCIENCE - SECTION

Paired two-story-high lecture halls are stacked in blocks off each school's spine (below left and right).

School of Information Technology and Applied Science (opposite) shows the key elements of each school.





SCHOOL OF INFORMATION TECHNOLOGY AND APPLIED SCIENCE - CONCOURSE LEVEL

0 20 M.



- 1. Directorate
- 2. Concourse
- 3. Storage
- 4. Lecture hall
- 5. Laboratory
- 6. Canteen
- 7. Project room
- 8. Store

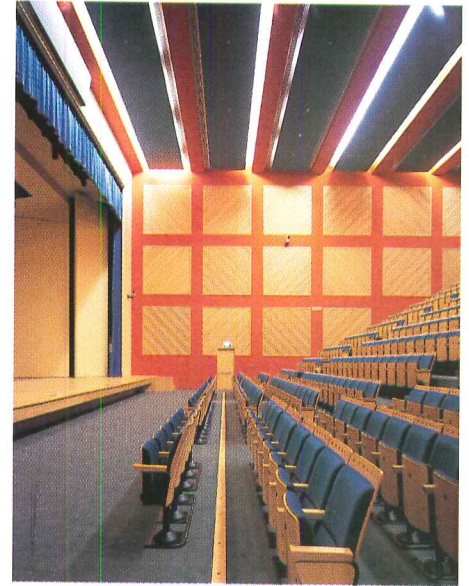
SCHOOL OF INFORMATION TECHNOLOGY AND APPLIED SCIENCE - GARDEN LEVEL



The first floor of the library has an exhibit area behind a curved yellow wall. The library is organized by floor into three collections (business, science, and design).



The ends of the 600-seat auditorium (below) are shear walls supporting the plaza above. Each school has at least one canteen (left) offering views to the reservoir.



Stirling/Wilford dealt with the time pressure by setting up teams of designers in their office to work on different buildings simultaneously. This allowed the architects to move forward on the design of the entire campus all at once. Another aspect of this full-frontal assault on the project was the deployment of a small army of designers. At one point, there were about 60 people working on the project—about 15 in Stirling and Wilford’s office and 45 at DP Architects.

Understanding the limitations of the budget and schedule was an essential part of the project. “Poured concrete is the easiest and cheapest way to build in Singapore and we just accepted that,” explains Wilford. Standardized designs and uniform approaches were employed for most of the common components—such as laboratories, lecture halls, classrooms, stairs, and windows—so decisions didn’t have to be made at every turn. But the most public spaces and elements—the promenade around the horseshoe, the concourses in each of the schools, the canteens, and the main auditoria—received more lavish attention. Bright colors, eccentric shapes, and high-grade materials draw attention to these places, effectively using the less expensive materials and more standardized designs of the rest of the project as quiet foils.

To reduce energy consumption, almost all of the main circulation areas—whether corridors, concourses, or stairs—are protected from the sun but naturally ventilated. Lecture halls, laboratories, classrooms, offices, and stores, though, are air-conditioned. A central chilled-water plant supplies all of the buildings, which have their own air handling units under their roofs and provide forced air into interior spaces.

Conceived as a grand design in a tropical landscape, Temasek Polytechnic exhibits a range of strategies in dealing with outdoor spaces. On the north, where it faces Tampines Avenue One and the rapidly growing new town of Tampines, the campus presents an urban edge of parking

lots shaded by rows of trees. Beyond this, the school greets visitors and students with its great horseshoe plaza, a gesture that is both formal and welcoming. The patterned plaza, which combines paved and green areas, was meant to be seen from above—from the administration building—as well as enjoyed on the ground, says Wilford.

An enormous “window” cut through the administration building offers views of the triangular garden and the reservoir beyond, connecting the front of the campus to the back. The most formal of all the outdoor spaces, the triangular garden slices through the landscape with a series of open and shaded areas. Between the various buildings, plantings are dense (or will be when they mature), but get more open and grassy the farther they are from the built world. “We developed a hierarchy of landscaping to reinforce how the open space is to be used,” explains Wilford. At one end of the hierarchy are the formal gardens and central plaza, while at the other end is the rolling parkland near the reservoir. Some pieces of the landscaping scheme, however, work better on paper than they do in reality. The triangular garden, for example, provides too little shade in the hot climate for anyone to use and ends up being more a geometric conceit than a pleasant feature.

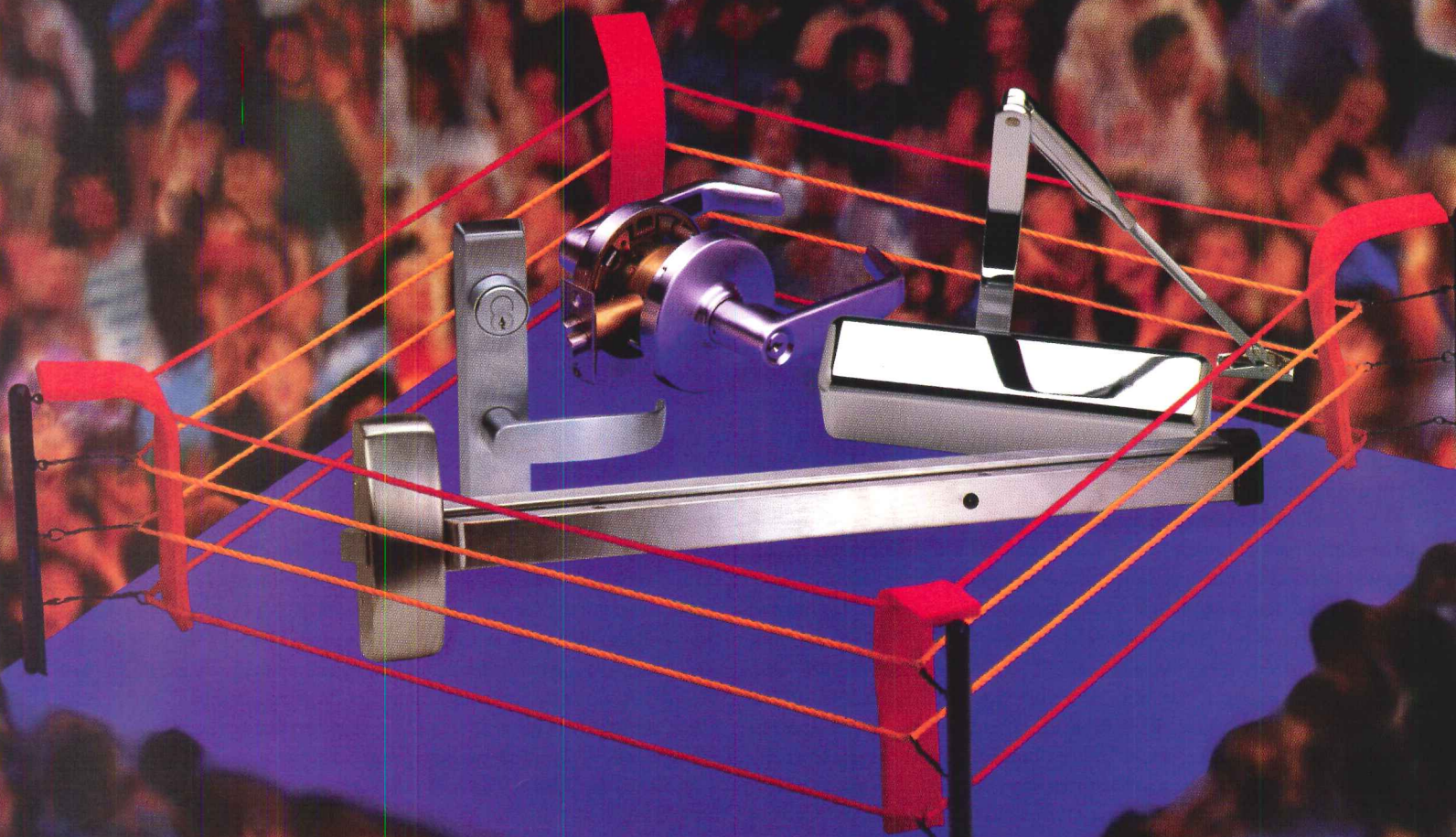
James Stirling didn’t live to see Temasek completed, but he was involved in the project throughout the design phase and into working drawings, says Wilford. “He was there all the way.” ■

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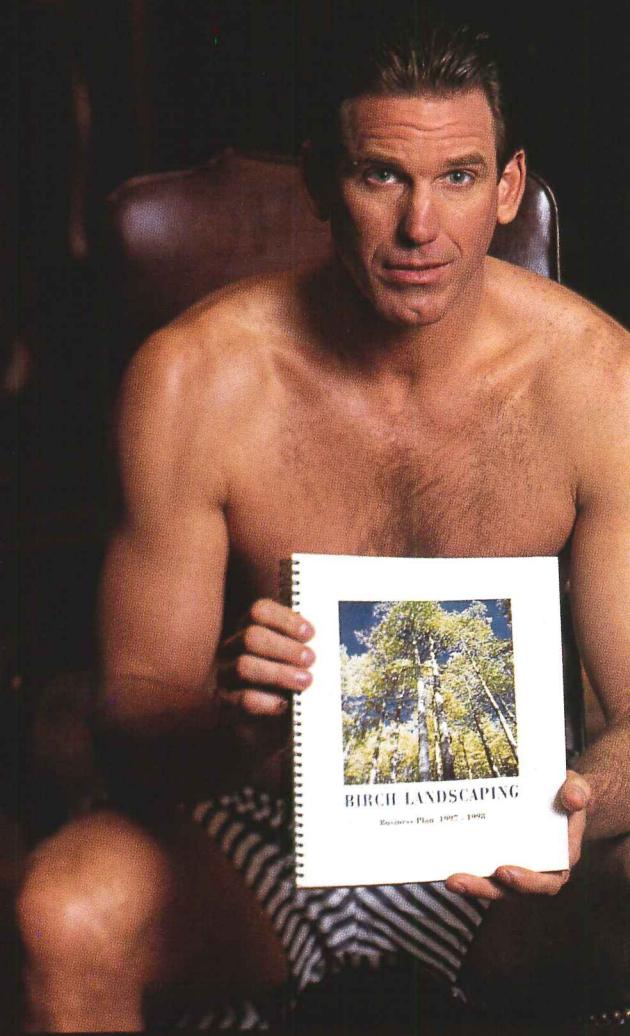
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Saving the Soul of Architectural Education

FOUR CRITICAL CHALLENGES FACE TODAY'S ARCHITECTURE SCHOOLS

by Lee D. Mitgang

An emotional, often-painful clash is taking place at architectural schools across the country amid growing doubts over whether the traditional educational environment is preparing students for a rapidly changing world outside. A number of schools have made valiant progress in connecting what they teach to the diverse communities they serve. And at its best, the design studio is getting long overdue recognition on some campuses as a model of excellent learning.

Still, at the very moment when the profession badly needs more flexible, worldly, empathetic, and diverse graduates, too many schools remain wedded to shopworn traditions and curricula that glorify a single model of architect-as-designer, give short shrift to liberal studies, offer only brief nods to non-Western history and theory, neglect the rich potential of computer technology, and stress competition far more than teamwork.

Visits to numerous campuses, discussions with scores of students, educators, regulators, and practitioners, as well as an examination of a dozen accreditation reports prepared during the 1996 academic year, have convinced me that while the focus of the debate over architectural education has often been on the bitter divisions between schools and the world of practice, the more alarming gap is the one dividing both schools and the profession from the needs of the public which architecture could so effectively address.

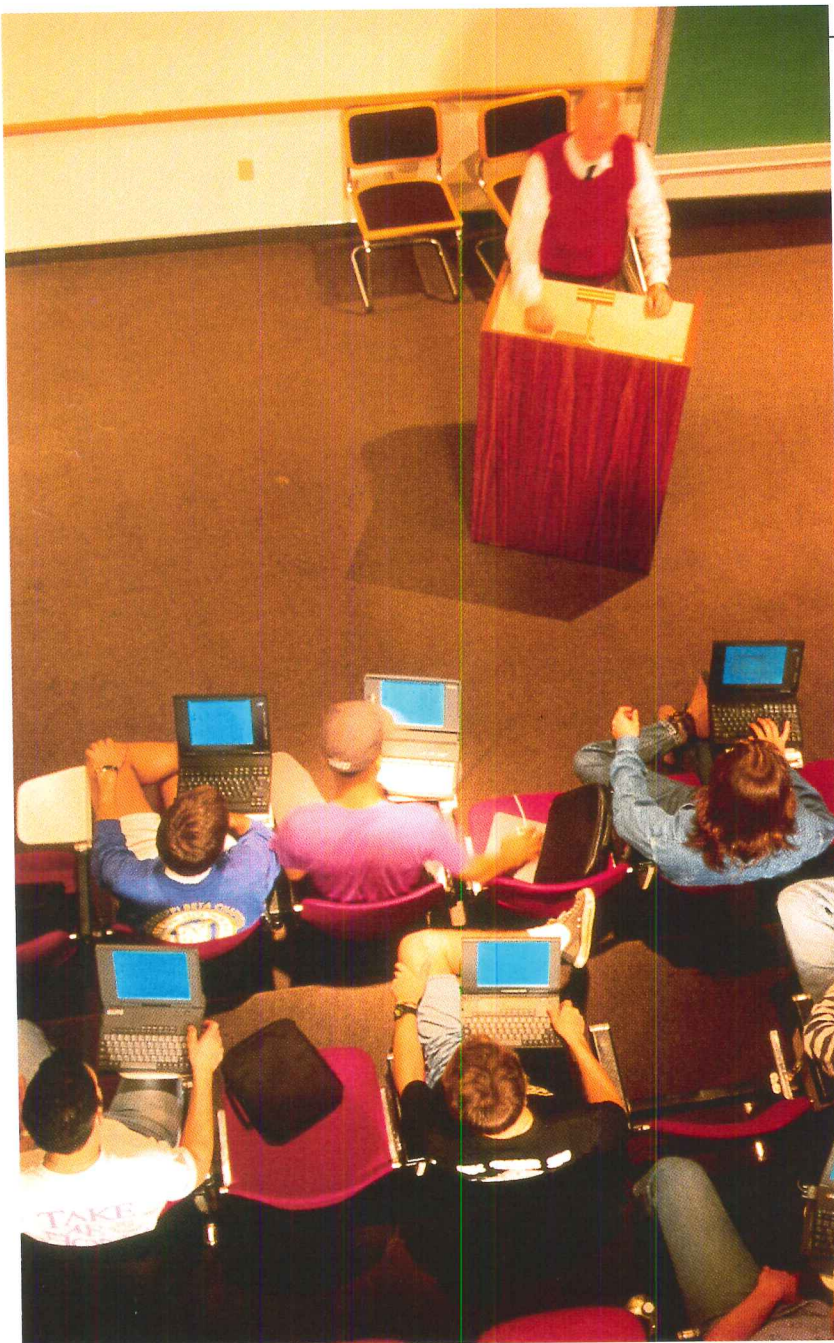
The time has come for educators and practicing architects to close ranks around addressing four of architecture education's toughest challenges, each essential to the goals of leading the profession to a future of greater relevance and responsibility.

Use computers to connect students to a world of viewpoints

If there's a single symbol of the clash between past and future in architecture education, it's the computer.

The struggle, or at least one aspect of it, plays out each day at student Wes Harp's studio workstation at Mississippi State University's School of Architecture. Recently, Wes was designing an observation

Lee Mitgang was a senior fellow at The Carnegie Foundation for the Advancement of Teaching from 1992 to April, 1997. He is co-author with the late Ernest L. Boyer of the 1996 Carnegie Foundation report Building Community: A New Future for Architecture Education and Practice.

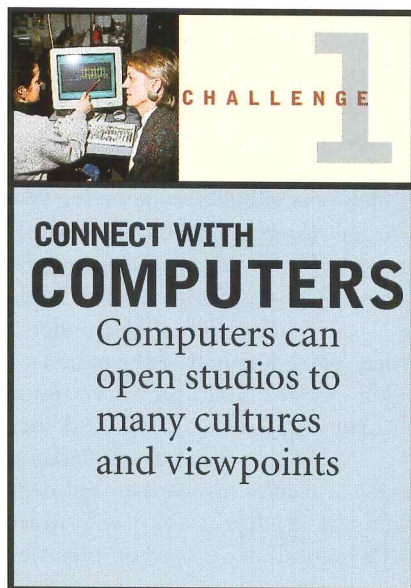


tower, cafe, and dock at a site on the Tennessee-Tombigbee Waterway, using Form.Z CAD software on his laptop, which the school requires every second-year student to buy. But Wes also had, nearby, a cardboard model that he says gives him a feel for the site he can't get on a computer screen. So even at Mississippi State, a national leader in high-tech design, faculty and students cling to the drawings and models that generations of students have lovingly crafted and that, for many, still come closer than computers can to revealing architecture's deeper meanings and textures.

Schools may be right to grumble that, too often, the profession is turning graduates into "CAD jockeys." Students and faculty are also right to insist that computers are an enrichment tool, not a replacement for traditional studio drafting and modeling. They're right to be skeptical that computers, by themselves, can turn "bad" designers into "good" ones. It's also true that the purchase, maintenance, and updating of computer hardware and software, let alone faculty training, are expensive new burdens beyond the means of some schools.

Still, 25 years into the technology age, it borders on educational malpractice that so many faculty members have yet to master computers well enough to teach it comfortably in studio. At many programs, one or two faculty continue to carry much of the burden as "computer gurus." And incredibly, one still hears of students who feel obliged to hand-trace their computer renderings to conceal from some faculty that their work was generated on a computer.

A few schools such as Mississippi State University, Texas A&M, the University of Southern California, the New Jersey Institute of Technology, and M.I.T. have advanced the frontiers of visualization technology, and have moved aggressively to incorporate computers into design education. Roughly a dozen schools require students to purchase CAD-capable laptops. Mississippi State has sought to strengthen its own pool of computer expertise by introducing, this year, a master's



25 YEARS INTO THE TECHNOLOGY AGE, IT BORDERS ON EDUCATIONAL MALPRACTICE THAT SO MANY FACULTY HAVE YET TO MASTER COMPUTERS...

degree in digital design, which has made graduate students available to help undergraduates with their computer struggles. And individual faculty have produced impressive research exploring how computers are changing the products and processes of design.

What deserves even more attention is how computers, as tools of global communication and information-gathering, can open studios to many cultures and viewpoints, and over time, even help transform the teacher-student relationship. At Carnegie-Mellon University, students are using web home pages to display their work. And a few schools have begun "online juries," in which students display their projects on web sites to be critiqued by architecture experts and faculty around the world.

At Ball State University, for example, David Mackey, who teaches a fourth-year electronic design studio, says his students use the Internet to identify and contact "remote critics"—architects around the world who are experts in the knowledge area of projects in which they're working. Students display their designs on their own home pages, and "remote critics" from as far away as Italy send critiques by e-mail. One result: Mackey's own role as sole authority over student work has been transformed.

"Suddenly," says Mackey, "there are more than fifteen critics in the studio. As a teacher, I become a facilitator and fellow learner, rather than the only expert. We can now run a global design studio, which also has implications from a cultural point of view. The student is no longer presented with a single linear path to design."

Such changes aren't just cosmetic. Last spring, students in Mackey's class entered a competition sponsored by the Association of Collegiate Schools of Architecture (ACSA) to design a "hotel of the future," and his students won two of the six prizes.

It's time—indeed, past time—for more schools and faculty to join the computer revolution with both feet. Along with their impact on making design a more integrative process, computers, as tools of information, communication and analysis, can open studios as never before to the concerns and perspectives of communities around the world.

End apartheid in architecture schools

Martin Moeller, executive director of ACSA, recalls a recent "architecture career day" at a public school on Capitol Hill in Washington, D.C. "The student body at the school was mixed, but the program drew an overwhelmingly white crowd. A good mix of boys and girls, but in terms of race, it was astonishing," Moeller said.

The race record of architecture education is a continuing disgrace, and if anything, things seem to be worsening. In 1992, there were 2,172 African-American architectural students, 5.9 percent of the national total. By 1996, the number had actually dropped to 2,018, or 5.4 percent. Just 3.2 percent of all architecture faculty—123—were African-American. Of those, 40 in the entire nation were tenured. Put bluntly, it's hard to imagine that this profession can ever lay claim to leadership in shaping the built environment when it remains so unreflective of late 20th-century America.

Over the years, individual faculty, many now graying veterans of the civil rights era, have carried on lonely battles to make their schools more welcoming to minority students. Lately, the thinking seems to be

that a more inclusive curriculum is key: adding non-Western perspectives, promoting scholarship aimed at documenting how persons of color have shaped architecture here and abroad, and offering more studios that connect architecture to community concerns.

Many such efforts have been documented by Sherry Ahrentzen of the University of Wisconsin-Milwaukee in a new ACSA publication, *Doing Diversity*. Kathryn Anthony, for example, teaches "Gender and Race in Contemporary Architecture" at the University of Illinois. "The American City Since 1940: Class, Race, Gender, Culture, Space," is taught by Thomas Dutton at Miami University in Ohio. "Asian-American and African-American Environments" is offered at California Polytechnic State University-San Luis Obispo by

Christopher Yip and Brad Grant (who has since moved on to historically black Hampton University).

Nonetheless, with only tepid support from the profession, and with recent anti-affirmative action federal court rulings clouding the picture even further, schools of architecture are throwing a party to which few in the minority community are likely to come any time soon. In the short run, the number of African-American students will probably remain tiny and concentrated mainly in historically black institutions and a handful of urban public institutions.

Says Prof. Ahrentzen: "Unless there's a concerted effort—more than just one or two committed people in a department—I see things continuing to dwindle. Why should it be any different?"

What can be done to reverse this pattern of ineffectiveness? On campuses, the first steps must be taken by university administrators who have an obligation to provide resources for faculty and student recruitment. Presidents, provosts, and deans also have to ensure that campus rewards and priorities work for, and not against, the goal of diversity.

"I've given every dean on campus a blank check to hire minority faculty," said Dr. Derek Hodgson, provost of Mississippi State, a school that seems as sincere as any in wanting to issue a welcome to people of color. But his school also illustrates how tough the obstacles can be. Not only is it hard to find African-American faculty for the architecture program, says Hodgson, it's even harder to find persons of color willing to relocate to Mississippi.

Even when the will is there, the goal of diversity often collides



EVEN WHEN THE WILL IS THERE, THE GOAL OF DIVERSITY OFTEN COLLIDES WITH OTHER PRIORITIES IN COMPETING FOR SCARCE RESOURCES.

with other priorities in competing for scarce resources. Said Dr. Melvin Ray, Mississippi State's vice president for research: "Let's say that as a dean, I have to decide whether to spend money to send a faculty member to a conference, or spend money recruiting for African-American students in Jackson, or make a generous offer to recruit an African-American faculty member. That's a tough decision. Which decision is going to get the greatest support from faculty and others internally?"

Beyond campuses, the challenge is to change the remote image of architecture in African-American communities—and few people understand this better than Rodner Wright. In 1994, Wright held the shocking distinction of being the only licensed African-American architect living in Mississippi. Last August, he left to become dean of Florida A&M's architecture program.

The architecture profession has no real presence in most African-American communities, Wright says. And in such communities, there's little sense that residents have any influence over the long-range planning of their built environment. Lacking political or economic power, African-American communities tend to view the

built environment as a fact of life beyond their influence, controlled by government or outside developers and profiteers.

"The nature of the profession promotes the idea that it's mainly about signature architecture by signature architects, as opposed to urban planning and development of the total community," says Wright. "So if you're a young kid thinking about being in a profession in your community, you don't necessarily see where architects might fit in."

All of which points to a desperate need for members of the profession and schools of architecture to step up their efforts to ensure that knowledge of the built environment, and architecture's role in shaping it, is a basic part of elementary and secondary education. The American Architectural Foundation, among others, has been trying for years to expose younger students to architecture, but those efforts, to date, have only scratched the surface of the problem.

The failure to raise the status of architecture in the African-American community is especially short-sighted. In years to come, notes Wright, America's population, and hence the potential client base for architects, will include many more persons of color.

If schools and the profession have been unmoved by their better angels to make diversity a top priority, perhaps they'll awaken to the profits to be made, and new markets to be tapped, in bringing more minority youngsters into the architecture field.

Make excellent teaching a top priority

Among those who blame architecture schools for being lost in the blue yonder of theory and design, and deaf to the day-to-day concerns of the profession, architecture teachers make tempting targets.

Such critics often wonder out loud whether it makes sense that fewer than half of the nation's 4,000 full- and part-time faculty hold architectural licenses, according to data kept by the National Architectural Accrediting Board, Inc.

Those alert for even darker conspiracies note that large numbers of faculty earned their last degrees from nine elite universities, most of which are labeled, with widely varying degrees of accuracy, as "theoretical" as opposed to "practice-oriented." An unscientific count

does, indeed, indicate that in 1996, roughly 40 percent of the nation's architecture faculty earned their last academic or professional degrees from a small cluster of Ivy or elite schools. From there, it's only a small leap to imagining that these elite-trained teachers, like the science-fiction "pod people" from "Invasion of The Body Snatchers," are a monolithic force spreading their dreamy, impractical ideas to schools around the country.

One antidote being discussed lately in some professional and regulatory circles is to require that most or all faculty, especially those teaching design, be licensed architects. One school, Montana State University, actually took that step more than a decade ago for virtually all faculty except historians. Clark Llewellyn, the school's director, claims that the resulting strong professional orientation of his program has meant that more than 90 percent of graduates over the last 10 years have found jobs in the architecture field—far more than at most schools.

Critics are right, in one sense, to focus on faculty. Too often, in discussions about how to improve education, the quality of teaching is shockingly neglected. Still, the near-McCarthyite preoccupation with

the professional or academic backgrounds of faculty badly misses the point, and could create greater mischief by arbitrarily eliminating many able studio teachers, eroding the already-weak research capabilities of architecture faculties, and endangering the diversity of faculty, which is one of architecture education's greatest strengths. Above all, it ignores the reality that while the profession may be the most important constituent of architecture schools, it is not the only one. Many students will never design buildings, and so faculty have to be equipped to educate for a variety of careers.

"I don't think a faculty member who teaches design should have to be licensed," said Gregory Hunt, dean of Catholic University's School of Architecture and Planning. "I've seen faculty who have never built a room who are outstanding as teachers."

"The profession is thinking narrowly," agreed Kent Hubbell, chair of the architecture department at Cornell University, one of the Ivy League schools which graduates a large number of future architecture teachers. "In the end, the good school is a mixture of all of the above—practitioners and scholars."


The focus for renewing teaching should be on creating a more capacious academic and scholarly climate on campus that encourages professional faculty to have a better balance of backgrounds, including practical experience and Ph.D's. It's up to administrators to establish a harmonious atmosphere in which diverse faculty can coexist and learn from each other's strengths and experiences, rather than becoming factionalized. Schools like the University of Oregon have helped set the stage for more collegiality by requiring faculty to teach both studio and lecture courses.

Schools also should get more serious about supporting teaching ability—rewarding excellent teachers with tenure and promotions, and remedying it where weak. In a comprehensive survey in 1994 conducted by The Carnegie Foundation for the Advancement of Teaching, nearly 60 percent of architecture faculty agreed that their schools would benefit from sustained teacher training.

"Teachers should have a professional understanding of what they teach. But the fundamental issue is, here's the range of stuff we need to teach. Is the faculty qualified to teach it?" said Jerry Finrow, the dean of the University of Washington's architecture program.

Finrow added that a key is placing the right faculty in appropriate studio levels. For example, lively teaching skills may be more important than licensure as a qualification for teaching beginning studios. "In beginning studios, faculty should be extremely good at instilling enthusiasm and helping students make the transition to young designers. A stiff guy in a beginning studio is a disaster."

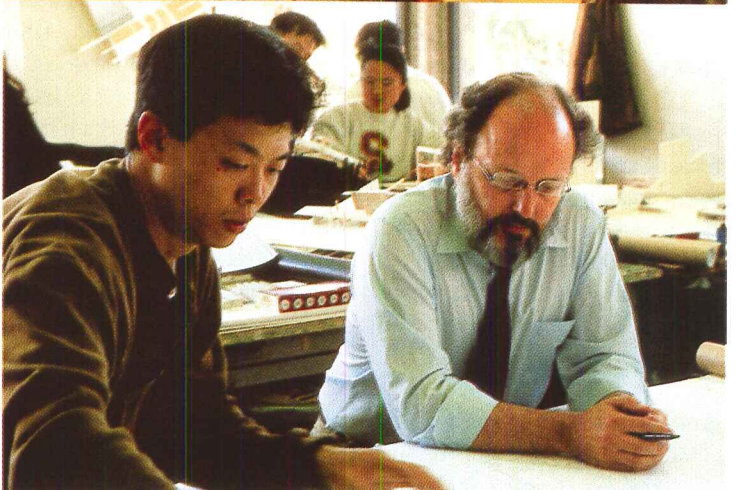
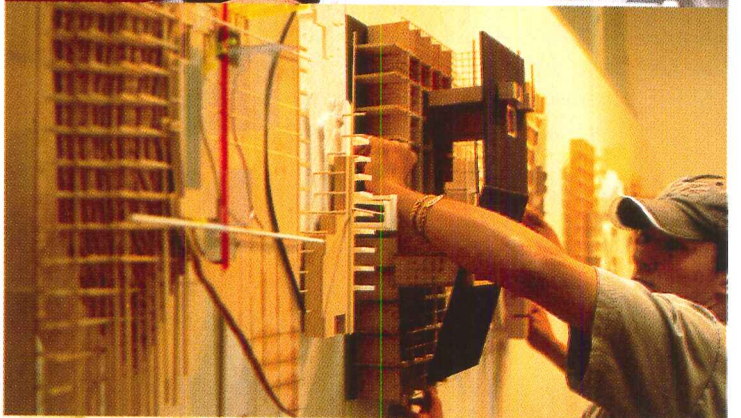
Finally, and most essentially, teachers must serve as models for connecting learning to the larger purposes of the profession and communities. A program that encourages faculty to be community activists is Arizona State University. One member of the faculty is the



CHALLENGE

STRESS EXCELLENCE IN TEACHING

Too often, in discussions about how to improve education, the quality of teaching is shockingly neglected.



architectural critic at *The Arizona Republic*. Several others are involved in television programs about architecture, while others serve on commissions that shape projects both on and off campus.

To renew architecture schools, then, the answer lies not in meat-axe solutions aimed at banishing unlicensed faculty, but in a more rational approach. The keys are to ensure that teachers can really teach, that teachers are appropriately placed in their areas of strength, and that what is taught is firmly grounded in the notion of service to the profession and the public.

Connect learning to life

The most essential challenge is to change the content and culture of studios to prepare graduates to practice competently, as well as to lead the profession to a broader definition of its ideals.

Here, there's reason for optimism. A growing list of schools and individual faculty have lately done inspiring work in connecting studios to community concerns, and in producing meaningful research from those experiences.

The Southern California Institute of Architecture (SCI-ARC) in Los Angeles, for example, now requires all students to work on community-based projects developed by its newly formed City Practice + Research Center (CPR). Besides giving students the experience of direct involvement with a variety of community-design problems, the goal is to develop a community clearinghouse for design research. The CPR curriculum has students designing public housing for people with AIDS, teaching high school workshops in collaboration with the Esperanza Housing group in an impoverished Los Angeles neighborhood, and designing a meditative garden at the Veterans Administration Hospital in West Los Angeles.

At the New Jersey Institute of Technology in Newark, Professor Leslie Kanes Weisman's "service learning studios" offer as clear an example as any of how community-oriented design studios can transform the outlook of both future architects and clients. Her studios have had students designing housing for AIDS children in Newark. They have also worked on designing sustainable buildings for

"Did you meet your own criteria? Was this a valuable educational experience for you?"

Jason Kliwinski, a student in the Grail studio in 1994 who now works in a Newark firm specializing in historic preservation, said his experience in Weisman's studio is still paying dividends: "The research we did then is still valuable to me. We had to learn how to present our ideas to groups, how to speak publicly, and how to meet with real rather than theoretical clients."

The clients of Weisman's studios, for their part, say the experience changed their attitudes about architects: "The design work the students did on housing for us was excellent, very creative," says Peg Linnehan, a member of the Grail Community. "I never worked with an architect before, and all I had was the stereotype of someone who is very technical, and that I would have to understand the lingo. I did not expect that an architect would be interested in learning what we were about."

Says Prof. Weisman, "Students need to see the optimism in communities, the intelligence in communities, and the desire to solve their problems. Architecture students can play an important role in this: providing models of what could be."

Diana LeFevre, who took Weisman's AIDS studio and is now in private practice in Hunterdon County, N.J., said the experience was crucial to her professional outlook. "The day we went to see the kids with AIDS was probably the most difficult and powerful day I've had in architecture," she said. "It was the best way to end my



CONNECT LEARNING TO LIFE

Schools and individual faculty are doing inspiring work in connecting studios to community.

... PREPARE GRADUATES TO PRACTICE COMPETENTLY AND LEAD THE PROFESSION TO A BROADER DEFINITION OF ITS IDEALS.

the Grail Community, a Christian society in Cornwall-on-Hudson, N.Y., dedicated to empowering women globally and promoting environmental justice.

From the first day of class, students learn that Weisman's studios are dramatically different. Instead of students simply claiming work space, Weisman challenges them to think together as a team about how available studio space ought to be used to fit functions.

"I sit everybody down and tell them we are doing a 'design research collaborative.' We need conference space. We need a model-making area. We need community space. So I ask them to measure the room and come back with a floor plan. We make decisions by consensus, and then we look for good, refined ideas. We come up with a composite and proceed to build it. Only after we determine who in the class is going to do what, do students claim space. Students learn that cooperation doesn't have to stifle individual creativity. At the epicenter of this is a sharing of power."

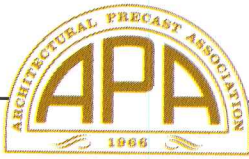
As projects proceed, work and research are evaluated by the group as a whole in terms of its value in solving the problems of the client. Weisman also calls upon students to evaluate their own work:

school career. If I could find a job that would bring me half as much fulfillment, that's what I'm seeking in my professional life."

Four challenges and more

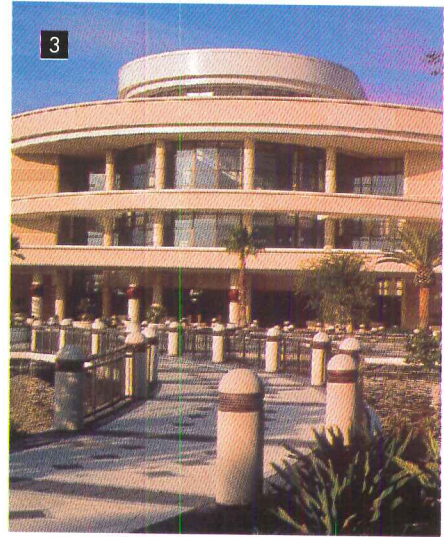
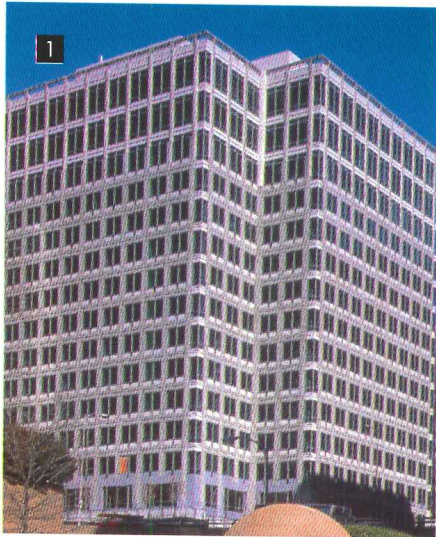
These four challenges—using computers to open studios to a world of different viewpoints, increasing racial and ethnic diversity, putting greater value on teaching, and connecting learning to life and community needs—are certainly not the only ones facing architecture schools. But they are among the most nettlesome and, in several cases, the most chronically neglected. Yet each holds the promise of helping to create a profession more accessible and empathetic to a far broader public and clientele. Above all, each challenge offers schools the opportunity to lead the way in affirming that the spirit of competent service to communities, as well as to clients, must define the soul of architecture if the profession is to thrive in the years ahead.

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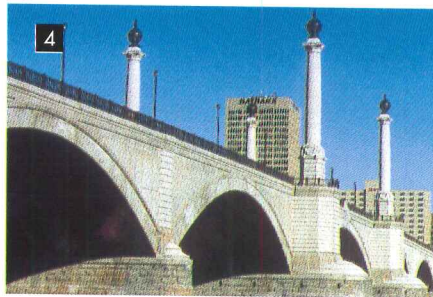
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FEATURES

Crescent City on the edge

AS PEOPLE FLEE NEW ORLEANS FOR THE SUBURBS, THEY ARE ABANDONING
A RICH ARCHITECTURAL AND CULTURAL HERITAGE. IN THE WAKE OF THE EXODUS,
THE CRESCENT CITY IS BECOMING A PLACE TO LOVE AND MOURN. **By Charles D. Linn, AIA**



It is late March of this year, and the Mississippi River is rushing by flood walls and levees at an elevation that is many feet higher than the French Quarter. Yet most people here don't seem too concerned about it. Native New Orleanians are hardy stock, having survived yellow fever epidemics, catastrophic fires, and enemy attack. Meanwhile, invading cultures seem to have been conquered by assimilation. The city's architectural legacy, wrought by the collision of people from five continents over time, is unique to the U.S. Further, it is linked more closely to its Caribbean roots than its upland neighbors. One cannot help but notice these influences when observing even the city's poorest neighborhoods. They sport raised cottages, camelback doubles, Spanish patios, and sleeping porches; they are the vestiges of a multicultural past.

When a building is torn down from the middle of a block in the older part of town, the remaining party walls tell the story of that building. They bear the scars of rows of empty joist pockets, rusty broken anchor bolts and iron tie rods, arched windows and doorways that have been filled in with brick, and room-sized squares of plaster that show where interior walls were finished. One of the things architects find moving about New Orleans is that they need not go out of their way to observe these archeological remnants of the past, since many of the fossils here have not been washed away or covered by silt.

At the heart of it all is urban form: Buildings were tightly packed together on land that was extremely hard to come by when the city was a 18th-century village built on an island surrounded by swamps, and the system of underground canals and modern pumping equipment that would drain those bogs were more than 100 years in the future. Lacking lighting and mechanical systems, the small houses and commercial buildings were built with high ceilings and floor-to-ceiling windows to take advantage of daylight and natural ventilation. Shutters were added for privacy, to modulate the light and breezes, and guard windows from the occasional hurricane. Balconies and porches were places to stay cool or for summer sleeping. People lounged on low, settee-shaped stoops in front of the entries to their shotgun houses or Creole cottages, and participated in the life of the street. When housing and commercial space became scarce and valuable in the French Quarter, people simply built on top of their single-story buildings. The upper stories of buildings in the city reflect this evolution—often they are built of different materials or architectural trim that clearly differ from that used on the lower levels.

Part of the reason that so much of New Orleans—not just the French Quarter—has survived is that people here have always been comfortable with the past, and were reluctant to obliterate it. “New Orleans



once had a very aristocratic society—people who were established in the community and had lived here and been civic leaders for generations,” says local architect Errol Barron, Jr., FAIA. “It was in their interest to work against the new. These people, as do most people who live here now, valued a way of living over change. They valued life’s comforts. New Orleans is a perfect example of a most livable alternative to the Anglo-suburban way of life you see in most other places in the States, where everyone has a house that is isolated by a big plot of land.” Another reason

THE THINGS THAT HELPED SAVE NEW ORLEANS' ARCHITECTURE IN THE PAST CONSPIRE TO THREATEN IT NOW.

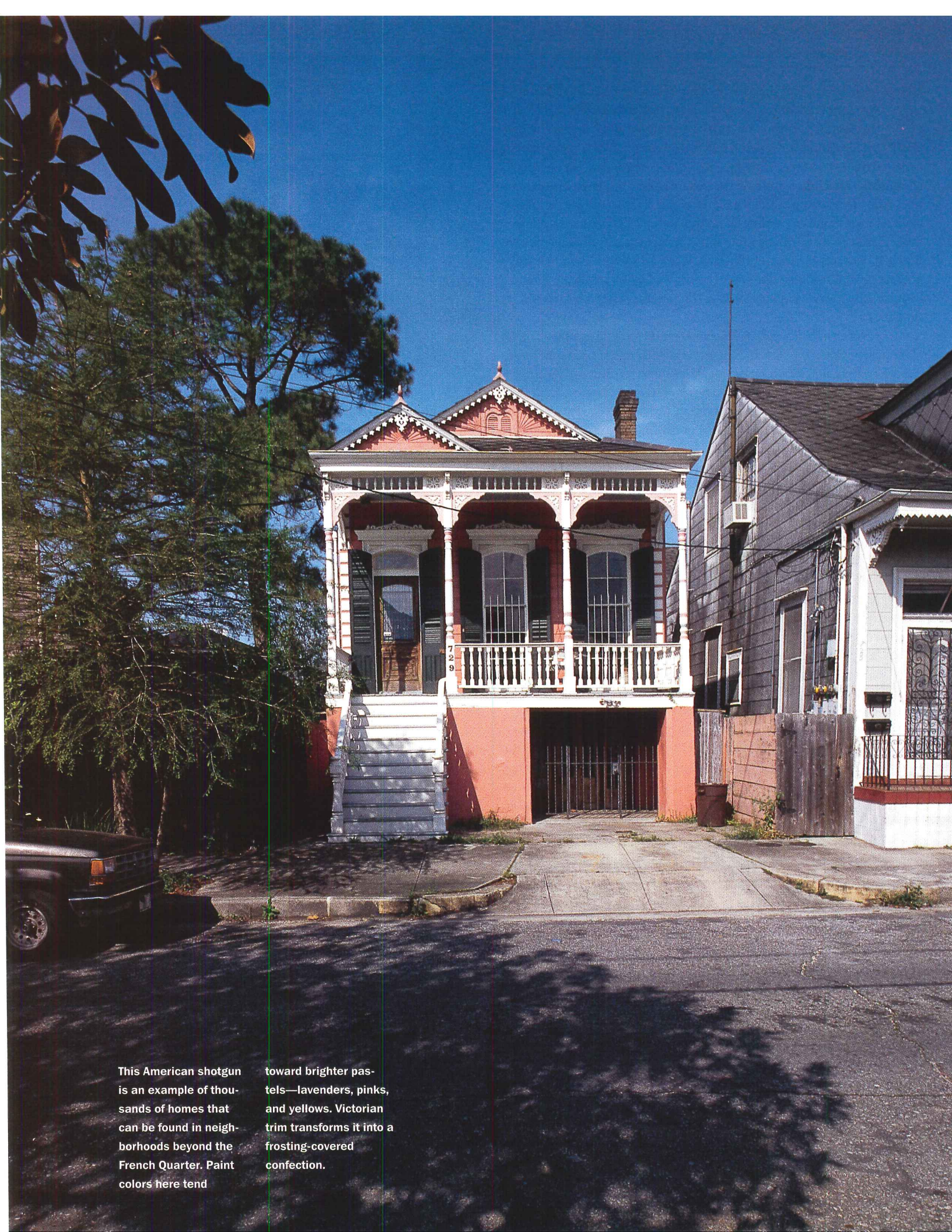
many buildings have survived is that times were sometimes hard in New Orleans even before the oil bust of the 1980's, and fewer buildings have been demolished to make room for the new than they have in other cities. “What you learn when you look at things here in New Orleans is that economics has a crucial influence on architecture,” says social historian Randy Delehanty, the author of a soon-to-be published city guide, and the introductory essay in photographer Richard Sexton's book, *Elegance and Decadence*. “Buildings are built when cities are expanding, and New Orleans has been in a serious population decline. That's why there isn't a lot of contemporary and Modern design here.”

But what has helped save New Orleans and its architecture in the past is also part of a set of larger complex social problems that conspire to threaten it now. Since 1980 the population of Orleans Parish has declined by 72,000 to 476,625, as those who were once employed by businesses such as the oil industry left to work elsewhere. Some who had jobs moved from Orleans Parish to St. Tammany Parish, on the middle-class “North Shore” of Lake Pontchartrain. The parish was the fastest growing parish in Louisiana between 1990 and 1996, increasing its population by 23.5 percent. Tourism is healthy here—despite the mid-construction abandonment of Harrah's huge casino near the foot of Canal Street. Last year, 2,000,000 convention delegates visited the city, and between 1984

and 1994, the number of people employed in the services sector increased by 6,000 to almost 121,000. But this is not enough to offset the loss of jobs in other areas: The number of people employed in construction, manufacturing, and retail services declined by 16,000 over the same period. While there were 29,000 hotel rooms in the metropolitan area, according to the 1990

A boarded-up department store (top right) and several cottages (left) in the Central City district are examples of the kind of buildings threatened by neglect.





This American shotgun is an example of thousands of homes that can be found in neighborhoods beyond the French Quarter. Paint colors here tend

toward brighter pastels—lavenders, pinks, and yellows. Victorian trim transforms it into a frosting-covered confection.

census, there were 37,338 vacant housing units, almost 16,000 of which were built before 1939. Many of them, if they were in good condition, would bring premium prices in any other city.

It is hard to pin the flight of jobs and people from the city on any one cause. Some say fear of rising crime is to blame—in 1994, there were 389 murders here, and the following year, Mayor Marc Morial suspended, reprimanded, or fired 74 police officers for incompetence or corruption. Whatever the cause, while the loss of population and subsequent decline of many neighborhoods away from the French Quarter cannot be reversed just by preserving New Orleans' buildings, it is also a fact the city will not attract jobs and people if its districts lie in ruins.

Fortunately, the preservation movement is very healthy here. Since 1988, the city's Preservation Resource Center (PRC) has improved 625 houses, six schools, two community centers, and a courthouse through their programs, with a total investment estimated at \$11 million. During their Christmas in October program, teams of volunteers repair the residences of low-income elderly or handicapped homeowners. The Center's executive director Patricia Gay is one of the city's most enthusiastic backers, but she is realistic about how much preservation can do to save the city. "To bring back the neighborhoods you have to bring back the businesses. And to bring back both, people need jobs. But meanwhile, houses and commercial buildings are threatened."

"Demolition by neglect is against the law," says Gay, "but these laws are not enforced." And, although demands for repairs and fines can

UNFORTUNATELY, NEW ORLEANS CANNOT SURVIVE SIMPLY, "AS A MUSEUM TO A WAY OF LIFE THAT IS OBSOLETE." —ERROL BARRON, JR.

be levied against property owners and collected through civil suits, Gay says such actions are seldom taken. Considering the sheer number of properties involved, this is not surprising. Determining exactly who a piece of property belongs to can be a daunting task, considering that often mortgage foreclosures, liens, estate squabbles, and absentee owners may be involved. But the City does regularly condemn and demolish houses, about 300 per year, at a cost of \$450,000. The math is fairly easy: At \$1,500 per house, bulldozers are a lot more efficient at dealing with the problem of blight than hammers and paintbrushes. And even if the owner of a building wants to repair the property, the demand for inner-city housing is low, and financing for improvements in some districts is difficult to find. "The thinking is, 'Why improve property that isn't worth much in terms of dollars?'" says Gay.

The PRC has addressed both problems. Its Operation Comeback helps building owners find lending institutions that will make package loans for the purchase and renovation of homes, helps potential homebuyers find property, and gives workshops on renovation. The organization also has a facade donation program, which gives building owners the opportunity to grant an easement to their facade to the PRC in exchange for a tax break. The owner must maintain the facade, but cannot change its appearance. The PRC is also actively lobbying for the new federal Historic Homeowner Assistance Act, which would allow a 20 percent tax credit for the cost of renovations to historic homes meeting certain guidelines. The cost of the renovation would have to exceed the value of the property. "It would provide a real incentive to people who want to fix up their homes, and for others to return to the city," says Gay.

Those who live in poorer neighborhoods, where abandoned buildings are problematic, are understandably frustrated. One group, called All Congregations Together (ACT), is an ecumenical organization made up of 61 church congregations, including Catholics, Baptists, Jews,



and other denominations, whose goal is to fight crime and to make New Orleans livable again. In the last few years, the group has had great success in organizing neighborhood watches and community policing, and has placed much pressure on local politicians, bureaucrats, and police to address housing issues in the city. But as well meaning as they may be, the group may well be working toward their goal of improving the quality of life in the city at the cost of still more of New Orleans' precious building stock.

In a letter published in the November 18, 1996 *Times-Picayune*, a reader from the preservation community who had been working with ACT to find a way to save the city's houses, wrote that he had learned in a meeting with the organization of their new slogan: "Demolish 1,000 Houses." ACT's letter to the paper responding to his concerns stated, "Vacant, abandoned, and vandalized housing diminishes the quality of life and victimizes all who live around them. We believe that historical preservation is not an absolute or uni-

versal value. This must be weighed against other values, including the right to live safely in one's home or neighborhood."

The loss of a such a great architectural heritage in a great American City is frustrating and maddening. But New Orleans cannot survive, "as a museum to a way of life that is obsolete," says architect Barron. Saving the neighborhoods and the buildings requires bringing back jobs, industry, and the vitality that once drove this bustling city. Architectural design and planning can only go so far in remedying what are essentially social and economic problems. One should also not forget the successes that have occurred here (see sidebar next page). When access to the riverfront was limited by industrial buildings, warehouses, and shipping activity, it was the combined planning effort by the local designers, the city, and public that resulted in the park, aquarium, and the Riverwalk that occupy this space today. And with tourism's emergence as the city's largest industry since then, it is not hard to imagine what the city would be like had these efforts not been made.

Maybe it is simply impossible for outsiders to completely understand all of the contradictions embodied in the attitudes that New Orleanians have toward their built environment. A block away from the Riverwalk, the Piazza d'Italia, designed by Charles Moore and August Perez, stands neglected. Its fountains are turned off, neon shattered, and its stucco and plywood finishes are crumbling and peeling. Someone has stolen the slab of marble which bore Moore's name from the pedestal in front. Yet, a crew of friendly homeless people are very pleased to call the place home. One of them, an electrical engineer who lost his job when the oil boom crashed, gives a very detailed history of the Piazza to passersby, but Moore's name doesn't ring a bell with him. He appreciates the place for its own sake, not because it is a famous place beloved by architects. The rotting of the Piazza d'Italia doesn't seem to be something he thinks he can change, so he lives with it. What he really wants is a job. ■



CONTEXT

Losing a Way of Life

One might ask why New Orleans' shotguns and Creole cottages went out of fashion. "Air conditioning and television destroyed what we love about New Orleans' older houses," says Randall Delehanty. "A whole way of life developed as a response to the climate and actually shaped the architecture. People sat on their stoops and front porches, to get out of the heat of the house and to

socialize. Their entertainment was watching the life on the street. But that changed with technology. A little bit of that still exists in the Quarter, but in most places it has disappeared. The older sections of the city, where that custom still continues, are still the most attractive places to live if you like that kind of existence. Most Americans don't. They turn on the air conditioning, rent a video and hide in the back room. The fact that people don't observe the sidewalk the way they used to has reduced safety in the city. Houses started changing in certain parts of the city in the 1950's, near Lake Pontchartrain and in pockets uptown. These new houses were based on conventions imported from California that were completely divorced from the traditions of New Orleans' buildings. Some were even built with walls



that had clerestories and no windows that looked out into the gardens or the streets. That style, and the styles of most newer homes, don't relate at all to what is best about this place: the foliage, the gardens, the trees, and the people." ■

Front stoops, some shaped like settees (top left) and some plain, gave New Orleans places to escape from the heat and to socialize.



New Orleans' New Work

Architect Erroll Barron sums up the challenge facing New Orleans' architects by saying, "It's extremely difficult to compete with the 19th-century architecture here because it was so good. You either ignore it and do something Modern or acknowledge it and wind up doing something that's not as good." While two recent projects in the city have a decidedly Modernist appearance—Waggoner & Ball Architects' Port of New Orleans Building (left middle), and Phase II of the Aquarium of the Americas, a joint venture by AOA² Architects, Billes & Manning Architects, and Eskew & Filson Architects (left bottom),—both continue the tradition of using open arcades to provide shady, cool walkways. A residential addition by Peter Trapolin Architects (right middle) avoids the Modern, however, and is almost indiscernibly tucked into an existing house. Tulane faculty members Malcolm Heard and Scott Bernhard collaborated on a studio for photographer Richard Sexton (right bottom) which sits upon a flat-roofed room previously added to a shotgun house. Traditional elements such as screens, a tiny gallery, and shutters are used. ■



Through the Viewfinder

Born in 1915, Ezra Stoller is the godfather of architectural photography. He began his career in 1939 and his first commission for this magazine was in 1940. Frank Lloyd Wright, Eero Saarinen, and Marcel Breuer's photographer of choice, Stoller continued to document important new works of architecture into the 1980's.

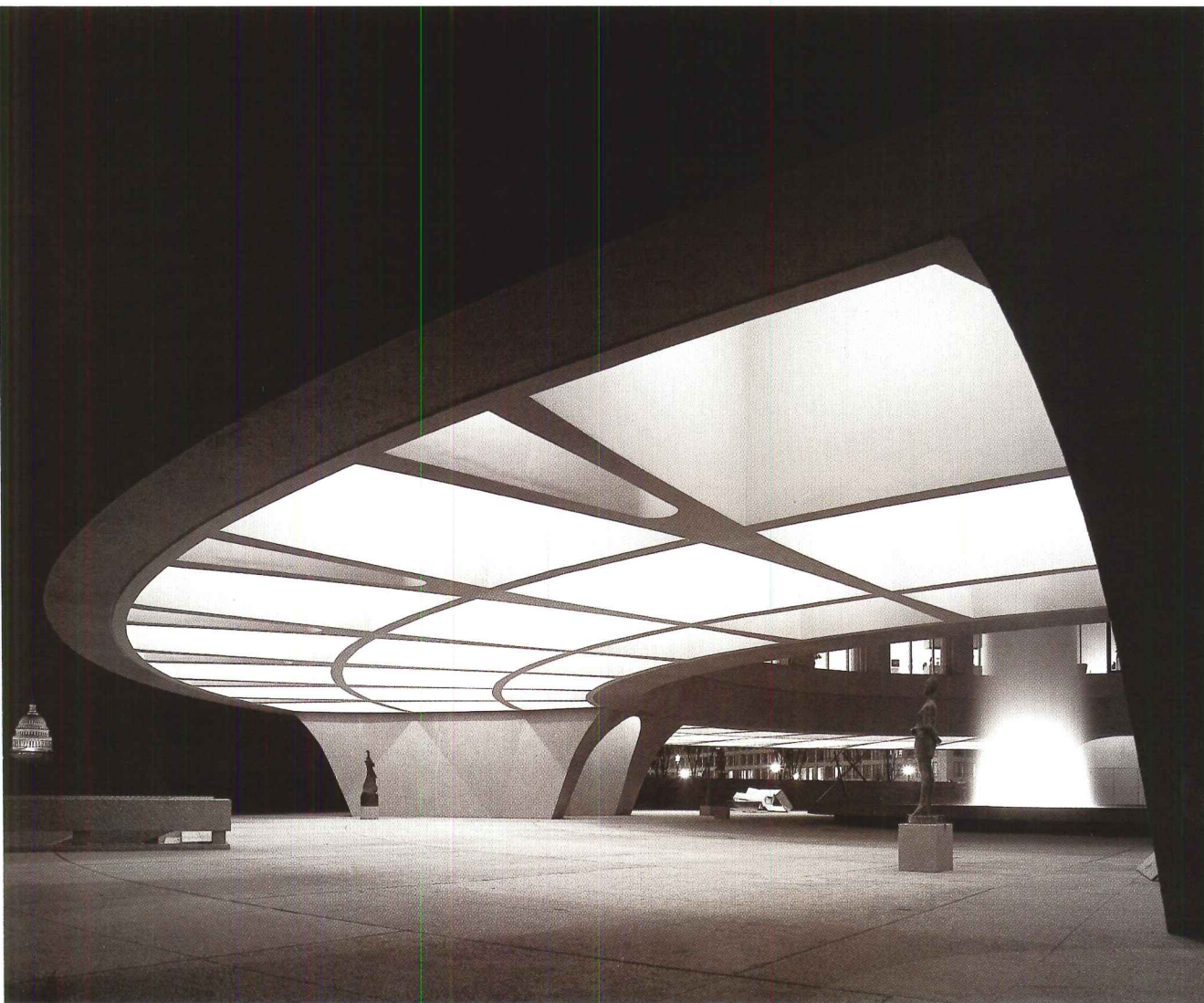
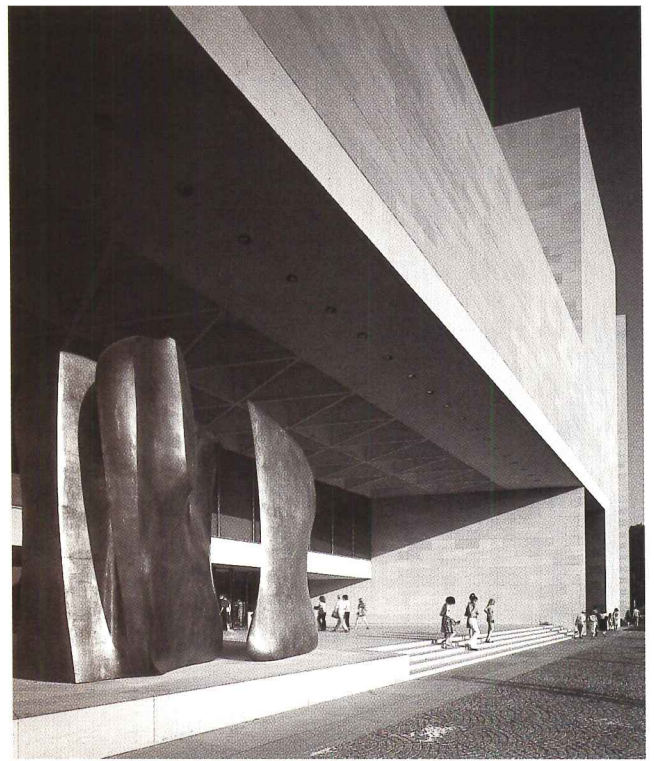


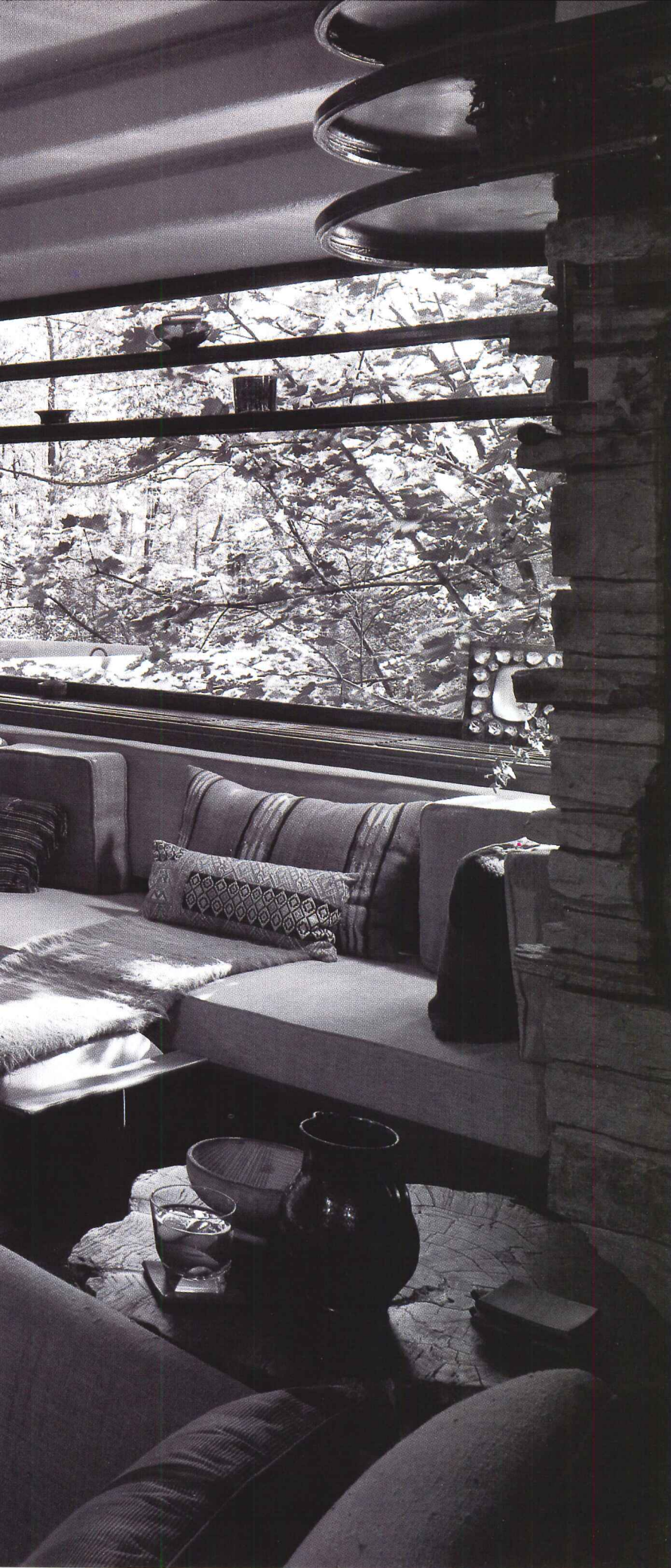
Previous page: TWA Terminal, Idlewild Airport (now JFK), New York, Eero Saarinen, photographed 1962

Right: East Wing, National Gallery of Art, Washington, D.C., I.M. Pei & Partners, 1978

Below: Hirshhorn Museum, Washington, D.C., Gordon Bunshaft/Skidmore, Owings & Merrill, 1974

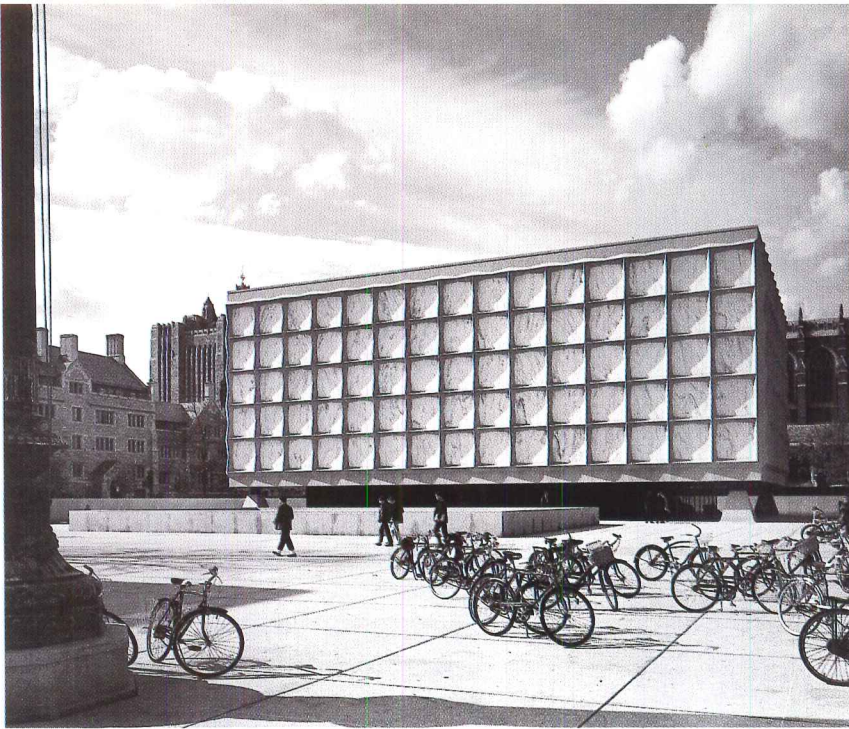
Far right: Healy Guest House (Cocoon House), Siesta Key, Florida, Paul Rudolph, 1950





Left: Fallingwater,
Bear Run,
Pennsylvania, Frank
Lloyd Wright, 1963

Above: Robert R.
McMath Solar
Telescope, Kitt Peak,
Arizona, Myron
Goldsmith/Skidmore,
Owings & Merrill, 1962



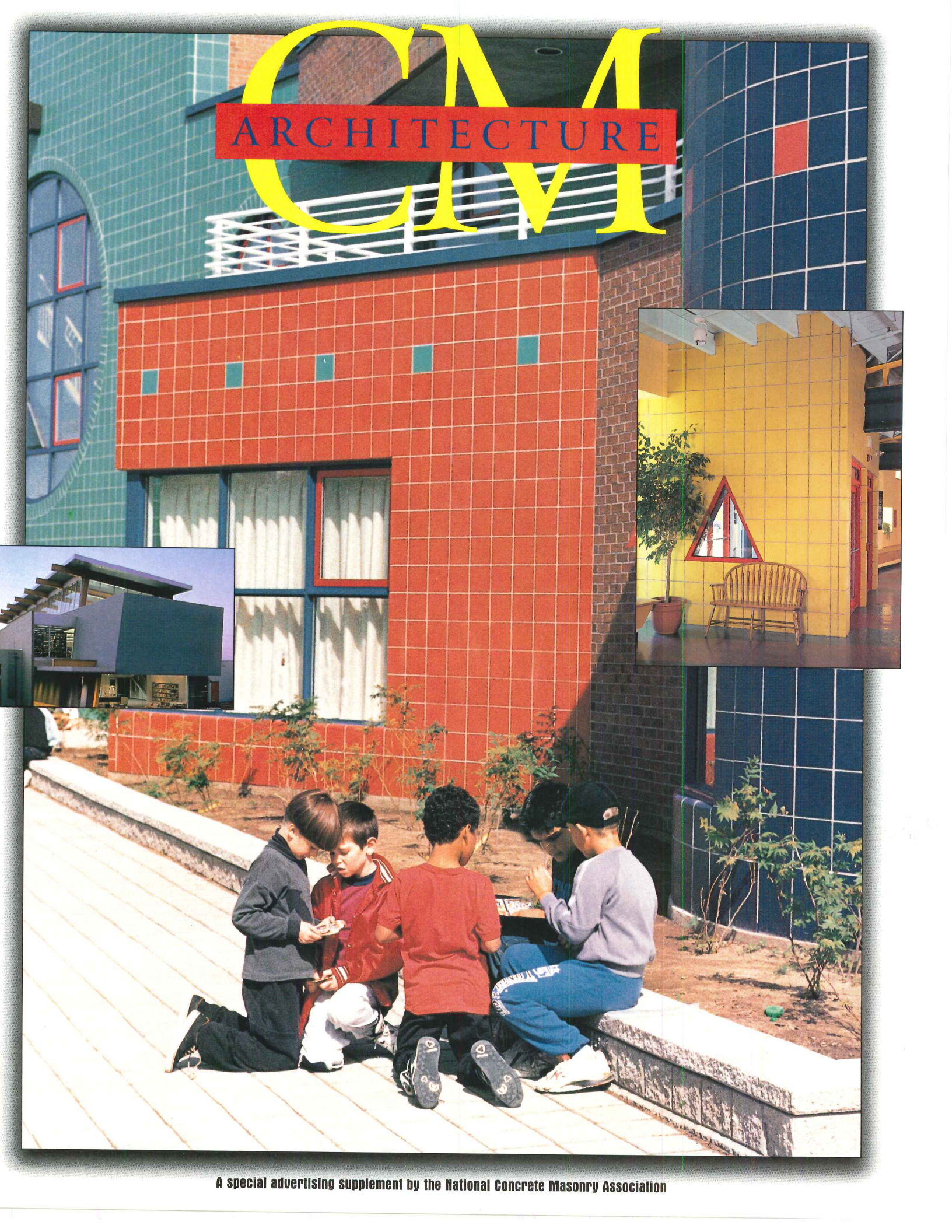
Left: Beinecke Rare Book and Manuscript Library, Yale University, New Haven, Connecticut, Gordon Bunshaft/Skidmore, Owings & Merrill, 1963

Below: The Salk Institute for Biological Research, La Jolla, California, Louis Kahn, 1977

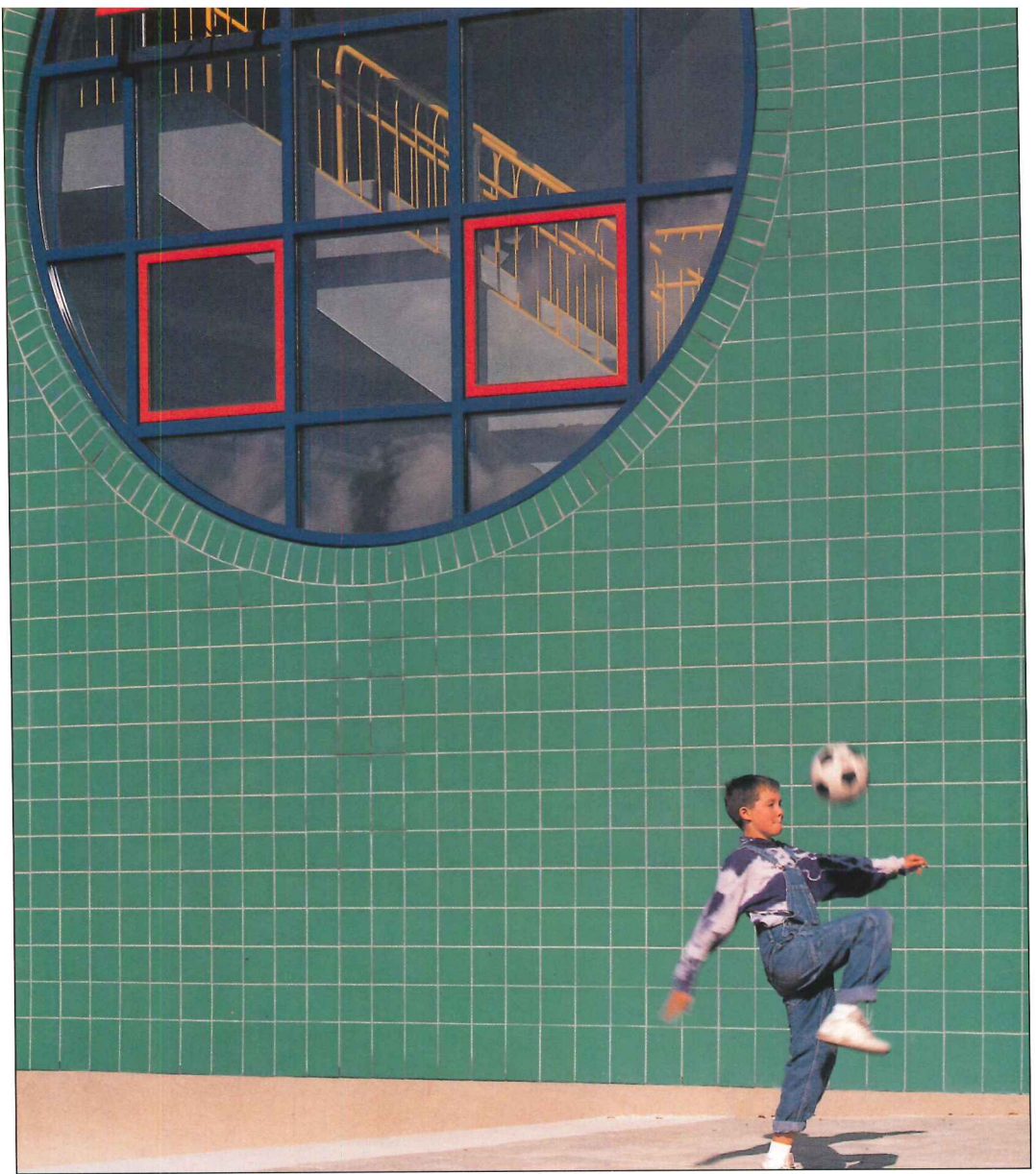


CMA

ARCHITECTURE



A special advertising supplement by the National Concrete Masonry Association



Above: Glazed concrete masonry units have a high-quality, durable finish that is relatively impervious to Canadian frost.

On the Cover: A cheerful facade greets school children as they arrive for class in Ottawa, Canada. Glazed masonry units in bright colors capture the school's educational philosophies, breaking out of the institutional mold.

Concrete Masonry... Educational Facilities Demand Durability

Amid a great deal of fine construction achieved with concrete masonry, some projects stand out as exceptional examples of architectural creativity. The construction projects highlighted here are all superb instances in which concrete masonry has been used by designers to achieve high quality and overall beauty, making every one of these structures community landmarks. These projects can all claim to be among the best designs in their class.

Churchill Public School, Ottawa, Canada

Having reached an age where it was in dire need of a facelift, the Churchill Public School in Ottawa, Canada, turned to concrete masonry. Located in the city, the new school was built up rather than out, spanning three stories on a small, urban site.

The best thing about this school, says architect Tony Griffiths, a partner with Griffiths Rankin Cook Architects in

Ottawa, is that it doesn't look like a school. "We wanted it to be a place that would invigorate students, not look like an institution," he says.

The design intent was to provide new facilities for the alternative school which addressed the compact nature of the site, maximized playground space and was ecologically sound. It was also considered particularly important to respond to the structural informality and spontaneous nature of the learning process by providing gathering spaces, both inside and out.

The products' durability, sound absorption and fireproof qualities are major benefits. "We specified concrete masonry because we enjoyed the available colors," says Griffiths. These materials were able to contribute both to the design's strong cubic forms, as well as sweeping curves. Also, he adds, the quality of the finish on

the glazed units is very impervious to frost, an important consideration in Canada.

Vibrant blues, greens and reds contribute to the school's bright exterior in a striking combination with red-brown brick. For the interior, Griffiths selected a scored block. With a line down the middle, these units appear square-shaped. The interior block is painted. "It's very tough," says Griffith, "and will stand up to endless wear."

Lehman College, Bronx, New York

In 1994, the Bronx's Lehman College was scheduled to get a new physical education building. With the new facility located at the northern end of College Walk, sculptor Jackie Ferrara designed a covered concrete masonry walkway as a pergola to the building. The concrete masonry structure straddles the sidewalk's 10-foot width, stands 11-feet high and runs 107 feet long.

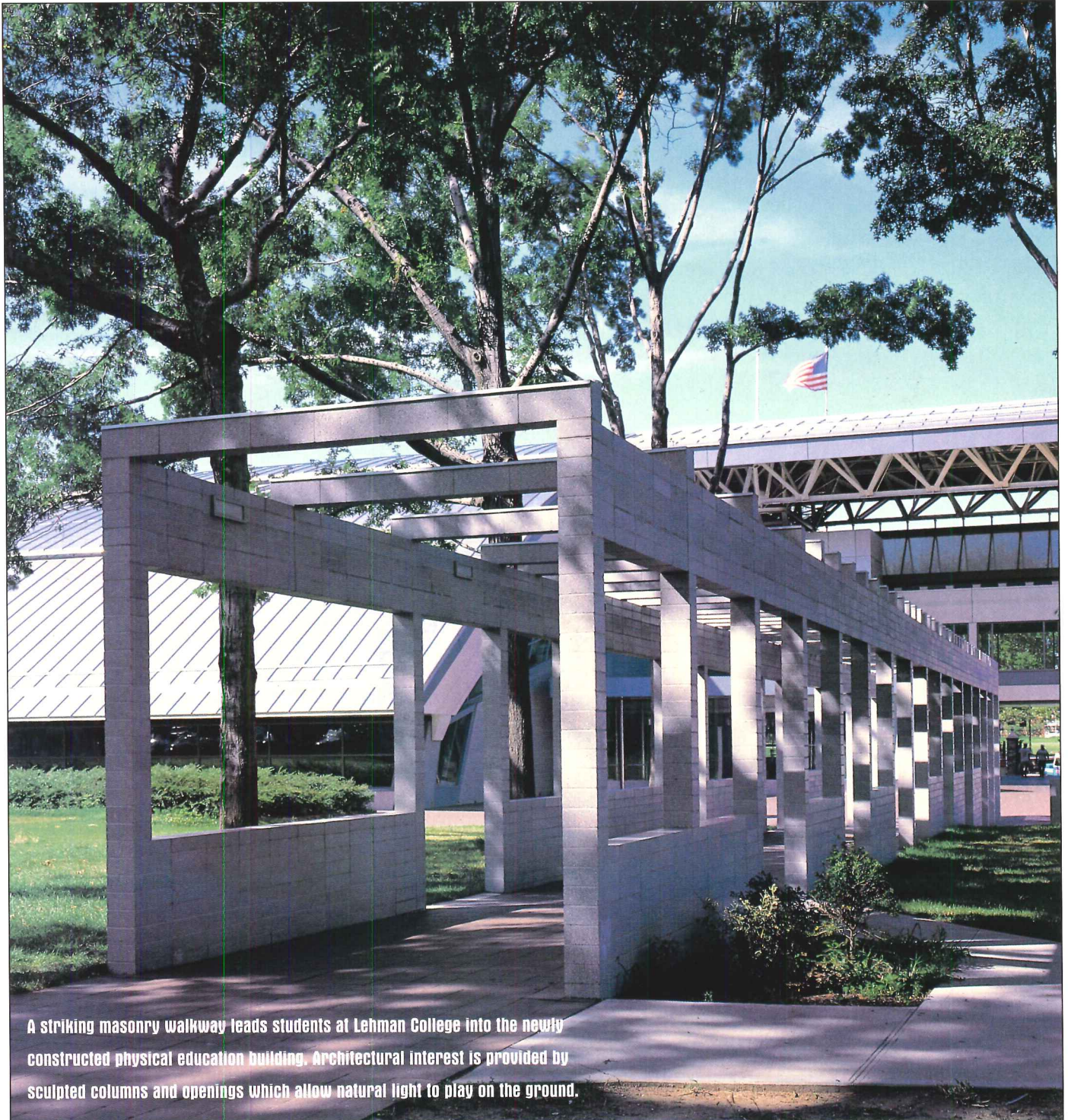
Below: Inside the gymnasium complex, concrete masonry walls are highly functional because of their low maintenance. At the same time, the block units lend textural contrast to the vast space.



Photo by Hayman Studio of Commercial Photography, Inc.

The walkway, Ferrara says, is an “experience of slats; windows and doorways; walls and columns; sunlight and shadows, with incremental roof spaces offset by openings in the walls. Sunlight streams through these openings, making dramatic shadow plays on the walls and floor.”

Working within a limited budget, the gymnasium’s project manager suggested Ferrara use block for cost effectiveness. It was also an easy product to work with, she says. Using concrete masonry in the walkway structure provided a continuation of the materials used inside the building itself.



A striking masonry walkway leads students at Lehman College into the newly constructed physical education building. Architectural interest is provided by sculpted columns and openings which allow natural light to play on the ground.



“I’m an artist,” says Ferrara. “I like architectural features that can be entered, climbed or walked through. In this project, the slatted top does wonderful things with light, changing as the sun moves.”

Ferrara used a gray, split-face unit. Having never worked with block before, she was artistically intrigued by the material’s shape and size. “I would love to use block again,” says Ferrara. “I think this is one of my best pieces.”

Susan P. Byrnes Health Education Center, York, Pennsylvania

Visually exciting for the children who learn there, the architectural goal for the Susan P. Byrnes Health Education Center’s facade was an animated, memorable frontage. Colored, glazed masonry units achieved this effect superbly.

At a cost of \$1.2 million, the 20,000-square-foot York, PA, structure provides a facility where school-age children can learn about health issues via hands-on, elaborate

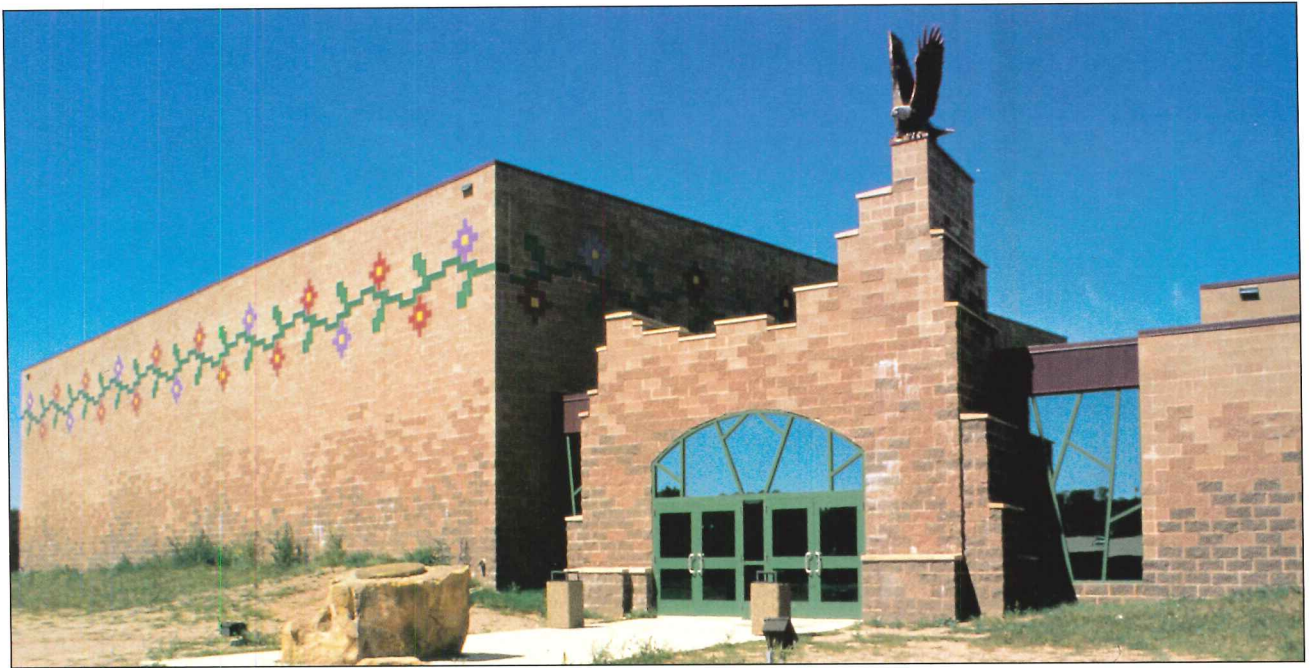
exhibits. Located on a main thoroughfare, the building is highly visible, a unique landmark as a consequence of its multi-colored exterior. Aside from glazed concrete masonry units at the entrance, a banding effect was achieved by combining split-face units with glazed concrete brick.

“We used a glazed masonry product at the entrance for its durability and colorful qualities,” says Todd Grove, associate with Murphy and Dittenhafer, Inc., York, PA. “Since the facility was geared toward the education of young children, the use of color was important,” he says. In addition, the client wanted a maintenance-free exterior. “Concrete masonry meets that criteria,” says Grove. “Its durability and longevity were welcome benefits as well.”

Grove likes to use concrete masonry. “We specify it a lot. It’s an appropriate material for many of the buildings we’re designing. It’s also economical and can achieve a broad range of interesting textures, colors and effects,” he says.

Brightly colored masonry units welcome visitors to this York, PA, health education center. A banding effect was achieved through the combination of split-face units and glazed brick.

Lower Photo by Erik Rusley, Rusley Design



Lac Courte Oreilles Ojibwe School Renovation, Hayward, Wisconsin

Aesthetically designed to embody the symbolism of nature and the colors of the Ojibwe culture, this school's renovation required bringing the existing building into compliance with safety codes and upgrading the facility by adding a new gymnasium and cafeteria. Natural materials and traditional tribal symbols are an integral part of the total design.

The school is one piece of a masterplan for the entire tribal area, a part of a series of circles which constitute the masterplan's overall scheme. The circle's perimeter is

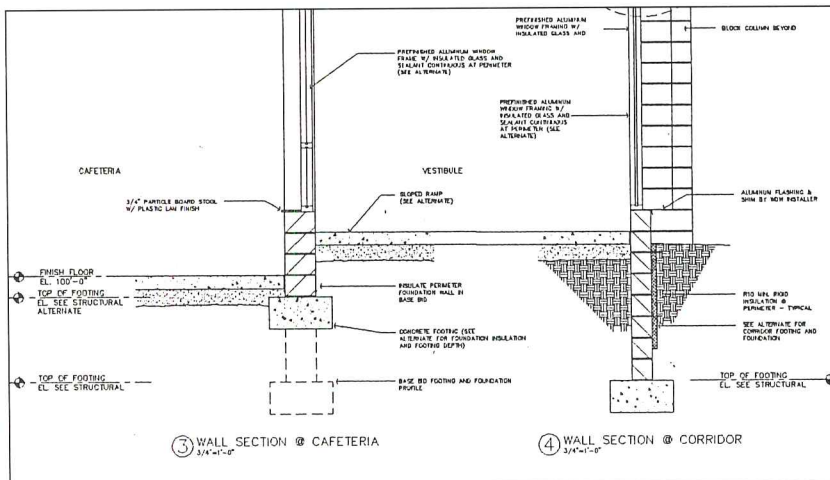
the site for the school and all of its buildings are located on this perimeter.

Architect Dean Dovolis of Dovolis Johnson & Ruggieri, Inc., Minneapolis, MN, selected natural-colored concrete masonry in a mix of split-face and smooth units. This arrangement gives the illusion of moving up the exterior walls from darker to lighter hues, symbolizing nature's blossoming from the prairie. Colored masonry banding in a floral arrangement captures the traditional Ojibwe floral beading pattern sewn by the elders. Its colored garland appears to hold the building together.

This is a powerful example of masonry's versatility. Used here as an art form, concrete masonry units serve a practical construction function, but add unique architectural interest at the same time.

On the interior, concrete block walls are decorated with designs using the colors of the Great Circle, ensuring a continuity of theme inside and out. The four colors represent the four compass directions and further symbolize the earth, sky, water and fire. Atriums were added, allowing the natural environment inside, connecting nature to life at the circle's rim where tradition and future meet.

Above: The main entry and gymnasium addition move from dark split-face block to a lighter mix of smooth and split-face units. The structure meets the sky in a glazed banding pattern modeled after traditional Ojibwe beadwork.



Paul Cummins Library at Crossroads School, Santa Monica, CA

Winner of a 1997 National AIA Design Award, the Paul Cummins Library is located at a progressive secondary school in Santa Monica, CA, with a quintessential Southern California urban campus. The new 10,500-square-foot library is wedged between a bordering street and the campus alley, rising from the alley to create an urban edge and strong public presence.

Approximately 5,000 square feet of concrete masonry adorns the structure, giving it strong curb appeal.

The architectural palette was developed from a program mandating inexpensive, durable materials. Architect Steven Ehrlich, principal of Steven Ehrlich Architects, Santa Monica, CA, says he likes the durable quality of concrete masonry material. "It has an ageless quality and I appreciate its texture and scale," he says.

The zero lot line condition here means

that the library building is sandwiched up against other buildings. For this reason, concrete masonry material was well suited, says Ehrlich, explaining that since the block is finished on both sides, it can be built right up against an existing structure and has fireproofing requirements built into the very nature of the material.

On one property line, the block acts as a mass that holds the service elements of the building, including the elevator, stairway and bathrooms. Black, combed block with small fluted lines etched in it was selected for its textural qualities. "We used a rake joint to fully express the nature of the material. This is a set in the joint that reveals a shadow line," Ehrlich says. On the inside, an exposed masonry wall in green units with a custom green grout was chosen to "create a monolithic wall, subtly expressed," he adds.

Ehrlich says he specifies block a great deal, attracted to what he terms its "primitive" or timeless quality.



Left: An architectural "wedge" rises out of a campus alley to house the Paul Cummins Library. Construction of this project included approximately 5,000 square feet of concrete masonry.

Photography by Erhard Pfeiffer

Looking Ahead...

Concrete Masonry in Residential.
Be sure to look for our next issue in the coming months.

Private Residence, Leesburg, Virginia

Eight-thousand square feet of house in Leesburg, VA, is testimony to the visual attraction of concrete masonry's split-face block.

"We used a lot of smooth precast in the home's construction and needed a rougher block as a contrast," says LaRock. Two different size units were combined to establish a subtlety of scale between the base and body of the house. Block also gave the architect a means for raising the basement elevation. The foundation wall is a combination of poured concrete and block units.

Helping to break up the monotony of a

large expanse of landscaping an outdoor patio was covered with unit concrete pavers in gray and white.



Right: In a white, split face which achieved the owner's desire for a rusticated appearance, concrete masonry units grace a spectacular Leesburg, VA, home.

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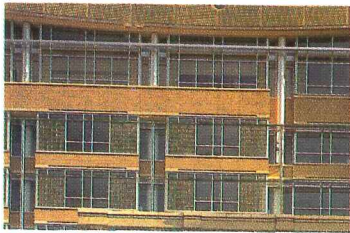
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HEALTHCARE FACILITIES

Whither the Hospital?

THE ROLE OF THE HOSPITAL IS BEING EATEN AWAY BY SPECIALIZED FACILITIES AND CLINICS, BUT AMBULATORY-CARE WINGS AND EVEN REPLACEMENT HOSPITALS ARE STILL BEING BUILT.

by Clifford Pearson



1

Boston, Massachusetts

Three architectural firms work together to create a state-of-the-art ambulatory-care clinic that's also a good urban neighbor.



2

Sharon, Connecticut

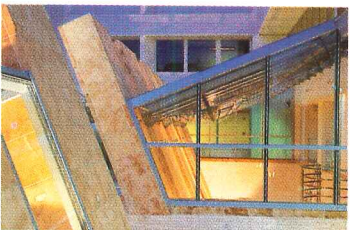
Perkins & Will brings a rural hospital into the new era of outpatient care, giving it a whole new front and an array of renovated spaces.



3

Altoona, Pennsylvania

A seven-story drum and a four-story concourse act as a hinge connecting a new outpatient-care facility with a traditional 1970's hospital.



4

Berkeley, California

Given the lower two floors of an existing hospital and a loading dock, Rochlin Baran & Balbona found a way of bringing the sun into a cancer clinic.

With so much change happening in the way healthcare is paid for and provided, it is no wonder the industry seems to be going in several different—and sometimes contradictory—directions at the same time. Hospital construction is down significantly from its peak earlier in the decade, but other kinds of healthcare facilities (including neighborhood clinics, specialty-care facilities, and long-term-care centers) are being built faster than ever before. Giant healthcare companies are closing many hospitals as they acquire or merge with other providers, but some of these companies are also building large replacement hospitals and ambulatory-care wings. The result is that while the field as a whole remains relatively strong, there is a great deal of change happening just below the surface.

Spending on healthcare construction is clearly going in two directions, according to figures compiled by the F.W. Dodge division of The McGraw-Hill Companies. After reaching \$6.784 billion in 1992, the value of construction contract awards for hospitals decreased every year, hitting \$5.281 billion last year. The amount of hospital construction followed a similar path during this period, going from 37.0 million sq ft in 1992 to just 23.1 million sq ft in 1996. But the building of “other” healthcare facilities (all those neighborhood care centers, specialty clinics, and nursing homes) rose significantly, moving from \$4.076 billion (39.8 million sq ft) in 1992 to \$5.570 billion (52.7 million sq ft) last year. So while the grand total for all health facilities was nearly constant—\$10.851 billion in 1996 compared with \$10.860 in 1992—the types of buildings being constructed have changed dramatically.

Don't expect the winds of change to die down any time soon. “The pace of change in the healthcare industry will only get faster in the next few years,” states Wanda F. Jones, a healthcare consultant and the president of the New Century Healthcare Institute, a nonprofit research group. Rather than being at the start of a new era, Jones sees the industry still “at the tail end of the old system.” According to Jones, “we still have too many [medical] specialists” who emphasize the kind of expensive care found at large regional hospitals and not enough primary-care physicians for the neighborhood clinics needed to bring preventive medicine to a broader population. And we still have the wrong kinds of facilities—meaning large hospitals that grew piecemeal over the years with too many beds and floorplans that require too much staff. As a result, the shake-out in healthcare that has set off a wave of mergers, consolidations, and closings over the last several years will continue, says Jones.

As experts have been saying for years, the future lies with ambu-



latory care rather than inpatient facilities, small community-based health-care centers rather than large centralized hospitals, patient-friendly environments with plenty of daylight and residential touches rather than cold-looking institutions designed for the convenience of doctors.

While some architects fear that the healthcare industry's drive for cost-efficiencies will push quality design out of the picture, Don Blair, AIA, a principal at Perkins & Will's New York City office, believes just the opposite. "By the year 2000, all healthcare providers will be low-cost providers," says Blair. "So consumer decisions will be based on: 1. the quality of care, which is difficult for the typical person to judge, and 2. the quality of service, which is much easier to discern." Since the attractiveness of facilities is a key aspect of the perceived level of service, the design of the physical environment will be increasingly important, asserts Blair.

Can architects show that good design pays off?

But it is also incumbent on architects to show how design can address the issues facing healthcare providers. For example, if architecture can reduce the number of employees needed to run a hospital, all kinds of opportunities can arise. The annual cost of one full-time staff person with benefits is between \$50,000 and \$60,000, which is equivalent to the debt service on \$1 million worth of borrowing, notes Blair. So reducing a hospital's long-term operating costs can loosen up dollars for construction.

One part of the hospital that architects are redesigning for more efficiency is the patient floor. By organizing patient rooms into a continuous ring, rather than in discreet wings of a cruciform plan, architects allow fewer nurses to watch over more patients, says Blair. And by rationalizing circulation, new hospitals often need less security staff.

The Three Bridges LifeCare Community (below) in Santa Rosa, Calif., designed by SMP, offers a range of care on a 69-acre site.

In an effort to demonstrate the impact of design, the Center for Health Design is set to launch a three-year study with the Picker Institute in Boston that will measure the

Instead of renovating two existing campuses, Baptist Memorial in North Little Rock, Ark., hired HKS to design a replacement hospital.

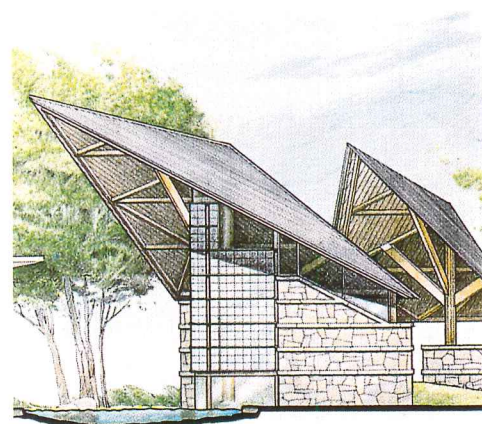
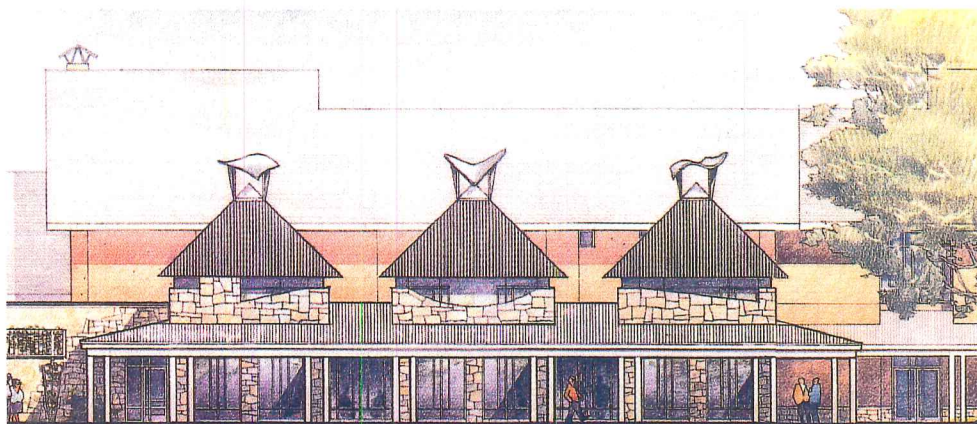
influence of the physical environment on patient satisfaction and wellbeing, states Wayne Ruga, the president and CEO of the Center. The study will look at the design of acute-care, ambulatory-care, and long-term-care facilities "through the eyes of the patient." The Center has also started working with the Joint

Commission on the Accreditation of Healthcare Organizations to establish standards for incorporating the quality of facility design in the process of accrediting hospitals. The goal of both of these projects is to provide empirical evidence of the benefits of good design on patient care.

For many years, the most important advances in medical technology were large pieces of equipment—magnetic resonance imaging equipment, for example—that required large, specialized spaces. "Today, the important advances—like electronic data networks—are all small," says Morris Stein, AIA, president of the Stein-Cox Group architects and president of the AIA's Academy of Architecture for Health. Although they occupy little space, these new computer technologies may have a big impact on healthcare facilities—decentralizing functions within hospitals and even decentralizing hospitals themselves. Hand-held computers and portable diagnostic equipment, for example, are enabling doctors and nurses to bring more care to the patient room, reducing the need to wheel patients around the hospital. Instead of taking the patient to a special room for tests, the tests come to the patient. Electronic data networks are also reducing the need for large filing systems at nursing stations.

To accommodate this new equipment, patient rooms will have to get bigger. But this increase should be more than offset by decreases in other parts of the hospital, such as fewer or smaller diagnostic rooms and smaller nursing stations. Stein also envisions entirely new ways of organizing medical care. For example, some hospitals are thinking of putting all minimally invasive procedures together, rather than sticking to the traditional organization by department (cardiology, radiology, urology, etc.), says Stein. Ultimately, the electronic storage and sharing of information and records might allow more functions to happen outside the hospital.

With insurers and managed-care providers trying to reduce expensive hospital stays and establish beachheads in a large number of communities, there will be a growing emphasis on satellite, rather than hub, facilities. More people will receive care at these less costly neighborhood clinics and only the very sick will go to the big regional hospitals. "You'll see more small projects and probably fewer big hospitals being built," states Ruga. Community-based, many of these clinics will be placed where people already go—like the shopping center, community center, or workplace, says Ruga. Primary healthcare facilities might even be used as drawing cards by developers of new residential communities, says Stein.



A small mental health center (right) in Zumarraga, Spain, was designed by architect José A. Pizarro Asenjo for the Basque Government Ministry of Health.



So is the large hospital project a thing of the past? Hardly. In fact, a new wave of replacement hospitals is gathering momentum as mergers and consolidations force healthcare providers to examine their facility needs. After inheriting disparate and often outdated facilities, many of these providers are finding it is less expensive in the long run to build entirely new campuses. “We’re doing a lot of replacement hospitals,” states Perkins & Will’s Blair. “It’s often cheaper than trying to change old buildings. If the chassis is wrong, it’s better to start fresh.”

A replacement hospital grows in Arkansas

That’s exactly what happened in North Little Rock, Ark., where the Baptist Memorial Medical Center decided to start from scratch instead of tinker with its old facilities. The advantages of this approach, says Jones, who worked as a consultant on the project, include an easier-to-reach location, greater efficiencies, and the latest technology. The \$95-million project, designed by HKS of Dallas, will have just 110 beds—half the number as the old hospital—but will be an integrated campus where all patient rooms look onto a “village green,” and a “medical village” will offer retail services such as an optical store, pharmacy, and hearing-aids outlet, as well as cottages for the families of patients. A cluster testing area will reduce the need to move patients to different departments for various tests, and patient rooms will be flexible enough to let more diagnostic and treatment procedures to happen at bedside.

Perkins & Will has two replacement hospitals under construction—Veterans Memorial Medical Center in Meriden, Conn., and Greenwich Hospital in Greenwich, Conn.—and a third in design. In 1992, Greenwich Hospital was on the verge of renovating its existing facilities and adding a new outpatient center, when it decided to reevaluate its master plan. Examining its future market under a managed-care model, the hospital determined that most of its existing facilities were unable to accommodate new technologies and operational strategies, says Blair. As a result, it decided to build an entirely new facility on its existing campus.

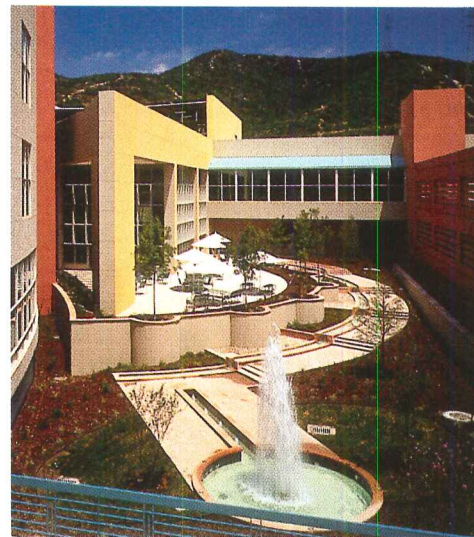
Not every hospital, though, has the chance to start with a clean slate. So to keep up with changes in the medical field, many hospitals are undergoing major renovations and adding new facilities. Ambulatory- and specialty-care (such as cancer and women’s health) centers are at the top of the list of facilities being added to existing institutions. (See following stories in this Building Types Study.) Some hospitals are even considering building long-term-care facilities adjacent to their campuses. For example, Baptist Memorial in North Little Rock has set aside land that might be used in the future for such a facility, reports Jones. An aging population is creating the need for facilities that combine the residential and the medical. In Santa Rosa, Calif., Stone Marraccini Patterson (SMP)

Architecture is designing the Three Bridges LifeCare Community, which will provide a continuum of care, from independent living to an Alzheimer’s group home and a skilled-nursing center (opposite below).

Although there is a compelling need for mental-health clinics, says Jones, healthcare and insurance plans in the U.S. are hesitant to cover extensive therapies. Some other countries, though, are doing more to build mental-health facilities. One small project in Zumarraga, Spain, designed by José A. Pizarro Asenjo, is a 3,500-sq-ft mental-health clinic that brings a sense of poetry to a once-dreary building type (above).

As architecture becomes a more global profession, more U.S. firms are working abroad. After putting up hordes of highrise office buildings, shopping centers, and hotels in the last decade, a number of developing countries are now looking for American expertise in building modern healthcare systems. “In the last two or three years, we’ve gotten more inquiries from abroad,” says James Pine, AIA, the national director of healthcare for Henningson, Durham & Richardson (HDR), a large Omaha, Nebraska-based firm that has worked on healthcare projects in Mexico, South America, the Middle East, and England. “There’s a larger middle class now in some of these developing countries, so there’s growing demand for healthcare,” notes Pine. Last year, HDR completed construction of a \$20-million hospital in Monterrey, Mexico (below).

With the healthcare field continuing to evolve, architects will have to think in terms of smaller, neighborhood-based facilities, and buildings for an aging population. But the hospital isn’t dead yet and its future may be brightest south of the border and across the ocean. ■



Designed by HDR, Centro Medico Integral Hospital Santa Engracia (left) is a 118,000-sq-ft, 50-bed facility for women and children in Monterrey, Mexico. The Omaha, Nebraska, architecture firm is working on other healthcare projects abroad.

1

Shapiro Clinical Center Boston, Massachusetts

A NEW AMBULATORY-CARE CENTER ENCOMPASSES AN OLD BUILDING ON SITE AND BECOMES A HUB FOR A LARGE REGIONAL HOSPITAL COMPLEX.

by Clifford Pearson

Project: Carl J. Shapiro Clinical Center
Beth Israel Deaconess Medical Center,
Boston, Massachusetts

Architect: Rothman Partners—Martha L. Rothman, FAIA, project director; Patricia DeLauri, AIA, Terry Kenyon, AIA, Alan Lewis, AIA, Scott McQuide, AIA, Mimi Moncier, Margery Morgan, Joseph Morog, AIA, Derek Noble, Alan Peterson, Elliot Paul Rothman, AIA, David Schmidt, C. Day Thomson, AIA, Vera Van Middlesworth, design team

Consulting Architects: Chan Krieger & Associates—Alex Krieger, AIA, Morgan Fleisig, Tom Sieniewicz, AIA; Solomon + Bauer Architects—Stuart B. Solomon, FAIA, Susan T. Erickson, John Martin, Mary O’Looney

Consultants: Lloy Hack Associates (interiors); Child Associates (landscape design)

Engineers: LeMessurier Consultants (structural); Lottero + Mason Associates (electrical); Vanesse Hangen Brustlin, Inc. (civil)

Contractors: Macomber Construction (exterior building shell); Beacon Construction (interior fit-out); Kiewit Eastern (subgrade parking structure)

Statistics

Size: 695,800 sq ft (including parking)

Key components: New ambulatory-care center with five levels of parking below and street terrace

Design challenges: Incorporate facade of old college building and make new building fit into its neighborhood. Create new image for a large hospital.

Built during a time of incredible change in the healthcare industry, the new Shapiro Clinical Center bridges different eras both literally and figuratively. When it was begun, the 695,000-sq-ft, \$170-million facility was to bring together Beth Israel Hospital’s dispersed ambulatory-care and clinical-education functions. Shortly after the building was completed, Beth Israel merged with two of its neighbors—Deaconess and Mt. Auburn hospitals. Since all of these institutions—like most healthcare providers today—are emphasizing outpatient care, the Shapiro Center became even more important after the consolidation. And its location at the intersection of the Beth Israel and Deaconess campuses is more fortuitous now than ever before.

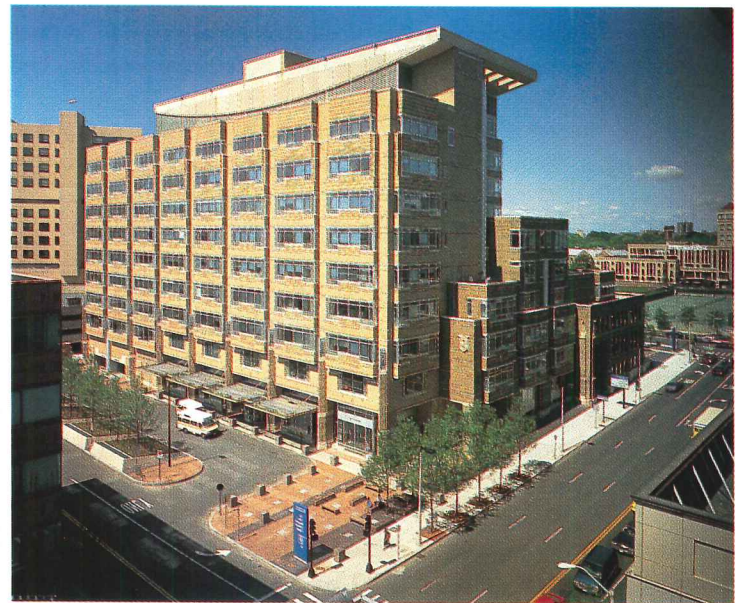
“This building was created in recognition of the growing predominance of ambulatory care,” says Dr. Mitchell Rabkin, who had been the head of Beth Israel and is now the chief executive officer of CareGroup, the new parent corporation of the three merged hospitals. According to Rabkin, nearly 65 percent of all surgeries today do not require patients to spend a night at the hospital.

The driving idea behind the design of the Shapiro Center, says Rabkin, was to make visiting the facility as easy and pleasant for the patient as possible. “We wanted to

create a seamless experience for patients to get here and get care,” states Francis J. Sullivan, vice president of facilities planning and engineering for Beth Israel-Deaconess Hospital. “It used to be that patients would have to go to a lot of different facilities for ambulatory-care treatment,” remembers Sullivan. “That wasn’t the best way of providing care and we decided to change it.”

That meant not only consolidating ambulatory care into one building, but providing five floors of

underground parking and designing the building so that patient flow is direct and easy. Rather than bring all patients to a central reception area and make them wait there, the design lets people move directly from their cars to the departments where they will be treated. “The idea was to create the experience of going to a doctor’s office rather than a hospital,” explains Martha Rothman, FAIA, the principal-in-charge for Rothman Partners, one of the three architectural firms involved in the project.

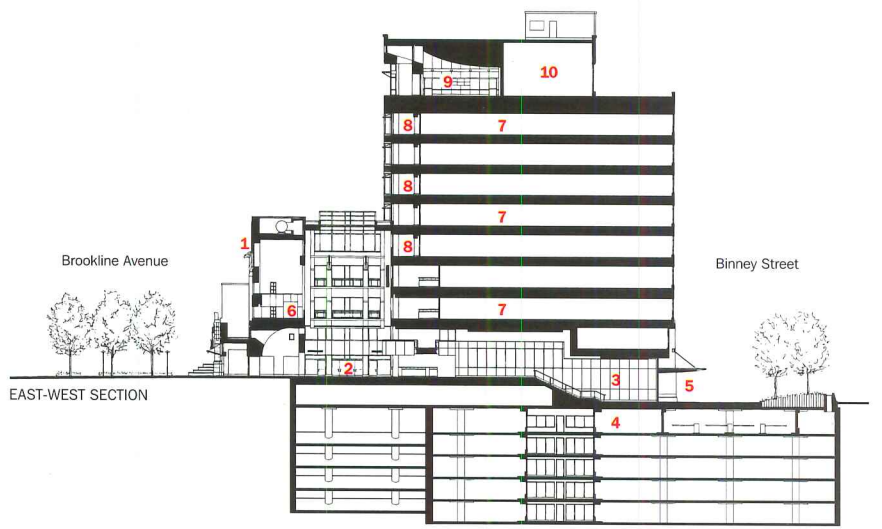


Vehicular access to the clinic is from Binney Street on the east side of the site (above).

Pedestrians enter from Brookline Avenue (opposite), where a sidewalk cafe, trees,

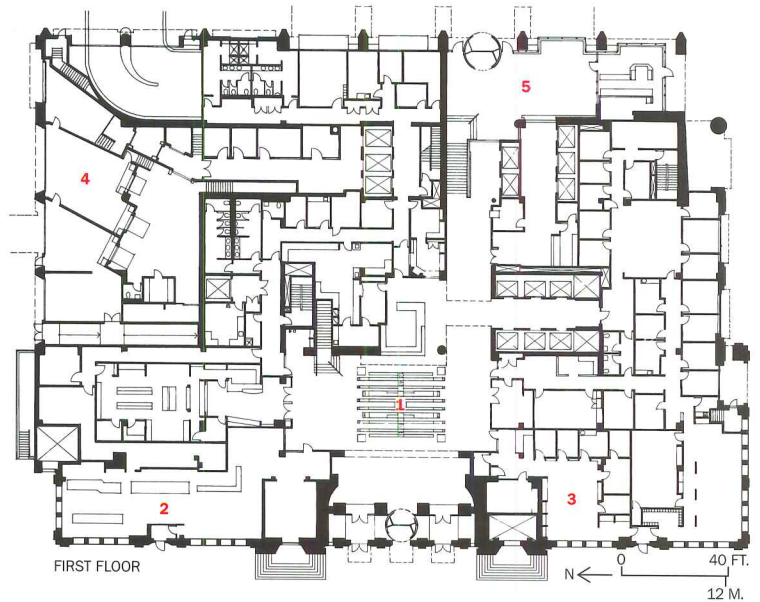
and the facade of the old Massachusetts College of Art create a strong street presence.

- 1. Existing building
- 2. Atrium
- 3. Lower atrium
- 4. Parking
- 5. Drop-off
- 6. Family lounge
- 7. Outpatient suite
- 8. Public corridor
- 9. Boardroom
- 10. Mechanical





1. Atrium
2. Café
3. Patient & family learning center
4. Loading dock
5. Lower atrium



The decentralization of functions within the hospital is being driven by two forces: a concern for the needs of the patient and new technologies that allow information and diagnostic capabilities to be widely distributed, says Alex Krieger, AIA, the principal-in-charge for Chan Krieger & Associates.

Once patients arrive at the proper department, they check in at a reception desk, then can sit in a small waiting area before moving just a few steps to procedure rooms and exam rooms. Although floors are 30,000 sq ft, they don't feel overwhelming because each one is divided into easily recognizable suites or departments and each department is clearly organized into three zones—public waiting areas, support and procedure rooms, and

private exam rooms.

By placing waiting rooms and the corridor connecting various departments on each floor on the west edge of the building, the architects were able to open all these spaces to daylight and views. Exam rooms wrap around the north and east edges of the building, allowing all of them to have views and sunlight as well.

While visitors walk to departments by way of the curtain-walled corridor on the west side of the new tower, doctors and staff have continuous access to all departments by way of an interior corridor on the east side of the building. Because no partitions separate departments on this side of the building, exam rooms can be used by adjacent departments depending on work

loads at any particular time. This sharing is also encouraged by having most exam rooms identical in layout and size (128 sq ft), pushing them close to the goal of developing “universal” examination and patient rooms. Specialized equipment and instruments can be brought into the exam rooms on carts if needed.

“Pods” of four exam rooms form the basic planning module in each department, a scheme that is expressed in the brick, glass, and glass-block bays projecting from the building's east and south facades.

Even in the exam rooms and support areas, the level of finishes and materials is high: carpeting, steamed-beech cabinetwork, and

attractive chairs and furniture. “There's no back-of-the-house here in terms of quality,” states Rothman.

Surgery takes place on the third floor, where a bridge to the inpatient hospital allows doctors and staff to move from one facility to another. This connection also makes it easy to move patients to the inpatient wing, if complications arise and an overnight stay is needed.

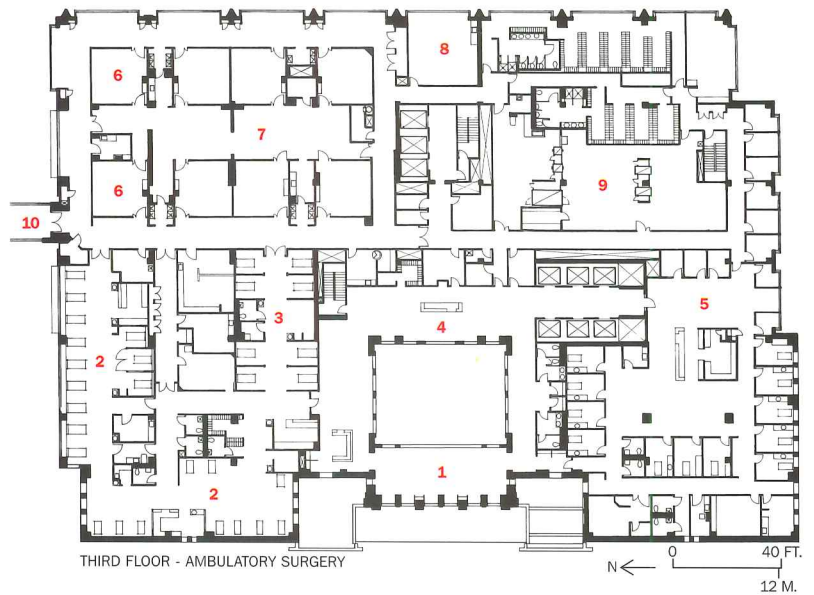
An L-shaped recovery area wraps around two sides of the building, offering patients views outdoors and the chance to see sunlight as they awake from surgery.

For family members waiting for patients, a lounge area offers comfortable chairs, desks, electrical

Arched windows of the old MCA building overlook the atrium (top left), where a skylight and clerestories (right) bring in light and waiting areas wrap around upper levels (opposite).



- 1. Family lounge
- 2. Recovery
- 3. Pre-op holding
- 4. Reception
- 5. Pre-op testing
- 6. Operating
- 7. Clean core
- 8. Staff lounge
- 9. CPD
- 10. Bridge to inpatient surgery



Daylight plays an important role in orienting visitors and creating a less-stressful environment in exam rooms (below), the post-op recovery area (bottom), and public corridors (opposite).



outlets, and phone jacks for laptop computers (popular features with Boston-area residents).

One of the challenges of the project was incorporating part of an existing landmark—the old Massachusetts College of Art (MCA) building—in the design of the new facility. In the end, the architects used the old four-story structure as an entry pavilion along Brookline Avenue and created a five-story skylit atrium behind it that acts as the central orienting space for the whole project. The upper floors of the MCA building now provide visitors with waiting areas graced by Gothic windows on one side and views of the atrium on the other.

Integrating pedestrian access from Brookline Avenue on the west and Longwood Avenue on the

south, as well as drop-off visitors from Binney Street on the east, the atrium serves as the Shapiro Center's hub. Reinforcing this role are a pharmacy, a Starbucks cafe, and a small restaurant all feeding into the tall space. And in good weather, there's a landscaped terrace on Brookline Avenue with tables and trees.

While hospitals are often disruptive elements in a city's urban fabric, the Shapiro Clinical Center works hard to be a good neighbor. In addition to the sidewalk cafe that brings life to the long facade on Brookline Avenue, the building borrows the brick-and-bays architecture found in the Boston area. Three different kinds of brick, including a glazed product, work with glass block and glazing to create textured facades. While the facade treatments vary to reflect different functions of spaces inside, a unified palette of materials keeps them coordinated on the outside.

A steel-frame structure, the \$170-million Shapiro Center was designed to support as many as nine extra floors that can be added in the future. With its sweeping roof and its prominent location, the building is already a landmark. "This was such a prized site," says Rothman. "We knew we had the chance to establish an image for the hospital of the '90's." ■

Manufacturers' Sources

Brick: *Sioux City (Fine Arts Velour and Doeskin)*

Glazed brick: *Ceramitec*

Elastomeric roofing: *Carlisle*

Aluminum windows: *Wausau Metals*

Historic replacement windows:

Custom Window Corp.

Low-E coated glass: *Viracon*

Skylights: *United Skys*

Entrance doors: *Vistawall and Kawneer*

Wood doors: *Eggers (European steamed-beech veneer)*

Sliding/breakaway ICU doors: *Horton*

Automatic revolving doors: *Besam (Entrematic)*

Interior all-glass doors: *ACI*

Locksets: *Schlage*

Hinges: *Stanley*

Exit devices: *Von Duprin*

Acoustical ceiling: *Celotex (Chase Celotone)*

Operable partitions: *Modernfold*

Paint: *Polomyx*

Plastic laminate: *Formica*

Countertops: *Surell*

Floor tile: *American Olean*

Resilient flooring: *Armstrong (Medintech and Stonetex)*

Carpet: *Interface*

Raised flooring: *Tate*

Office furniture and tables: *Haworth*

Reception chairs: *David Edward*

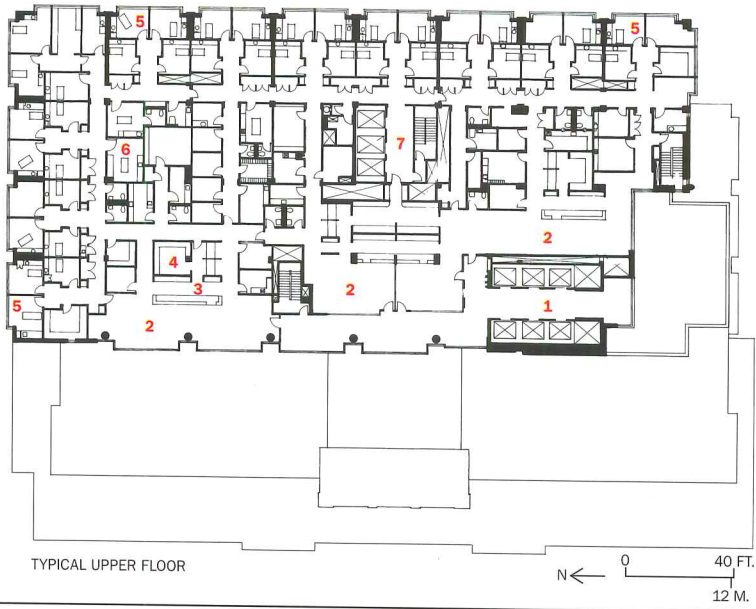
Task chairs: *Herman Miller*

Interior ambient lighting: *Litecontrol, Winona, Visa*

Downlights: *Staff*

Wall sconces: *Baldinger*





- 1. Patient elevators
- 2. Practice suite
- 3. Reception
- 4. Work
- 5. Examination
- 6. Procedure
- 7. Staff elevators



2 Sharon Hospital Sharon, Connecticut

IN RURAL CONNECTICUT, PERKINS & WILL GIVES A HOSPITAL A NEW OUTPATIENT FOCUS WITH A MODERN ADDITION AND A MAJOR RENOVATION.

by Andrea Oppenheimer Dean

Project: Sharon Hospital Addition and Renovation

Sharon, Connecticut

Architect: Perkins & Will—Donald Blair, AIA, principal-in-charge; Lisa Gould, AIA, project designer; Tom Lurcott, AIA, project director; Polly Carpenter, Carlo Panfillo, project architects; Tama Duffy, Neil Frankel, interiors principals; Richard Brennan, Barry Shapiro, Mimi Garza, project team

Engineers: Selnick/Harwood (structural); van Zelm, Heywood, Shadford (mechanical/electrical/plumbing); Rollett Engineering Associates (civil)

General Contractor: O & G Industries

Statistics

Size: 60,000 sq ft

Key components: New two-story entry wing to an existing rural hospital, new courtyard between old building and new, reorganized circulation along a glazed perimeter corridor, consolidated outpatient services on one floor, new operating suite, 32 redesigned patient rooms, new cafeteria and kitchen in basement.

Design challenges: Convert a hospital with an inpatient focus to one that emphasizes outpatient care. Create a new, coherent image for a facility that grew piecemeal over the years, and provide a master plan for future changes.

Fifty or 60 years ago, a community's first hospital signaled a new affluence and sophistication. The hospital was designed and constructed as a civic symbol like the town hall or local high school. But since the 1960's, most new community hospitals have looked like nothing special. In designing an addition for Sharon Hospital—a small facility in rural, northwestern Connecticut—Perkins & Will sought to “bring back the conviction that these are civic facilities and should represent the quality of the community and the quality of the care,” states Don Blair, AIA, the principal-in-charge of the project.

The idea of reviving the stature of the community hospital is taking hold nationwide, a result, in part, of the competition among hospitals to market themselves for survival. The design of Sharon Hospital's addition reflects a trend among hospitals not only to compete by appealing to new and older patients while cutting costs, but also to shift their emphasis from acute inpatient care to outpatient care.

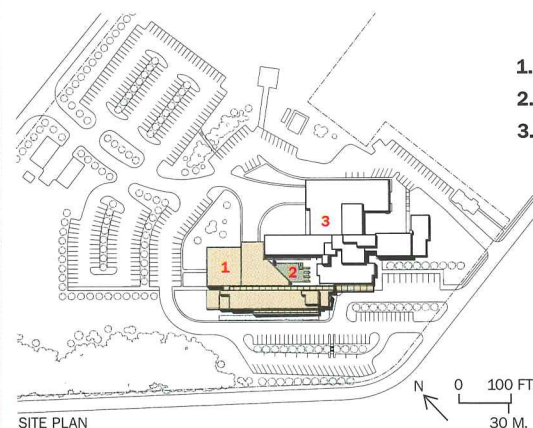
In an attempt to overlay

Andrea Oppenheimer Dean is a contributing editor of *RECORD* and an editor at large of *Preservation* magazine. She is also a fellow of the American Academy in Rome and a former executive editor of *Architecture* magazine.

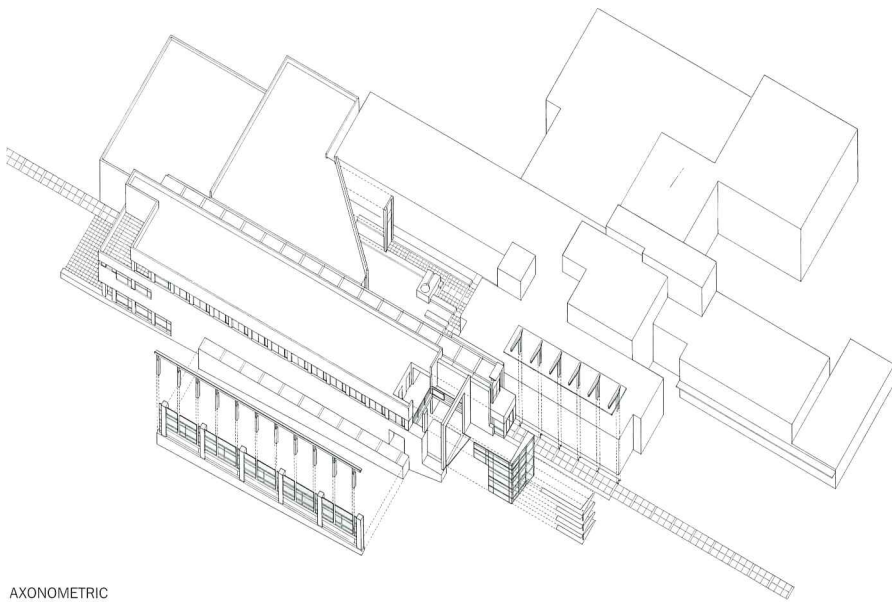
Sharon Hospital's hodgepodge of prosaic postwar additions with a coherent image, Perkins & Will designed the two-story, 60,000-sq-ft addition as an entry wing composed primarily of brick and precast concrete painted white to match the color of the existing wings. It appears as a carved cube embedded in the lush foothills of the Berkshires while reaching outward via a design vocabulary that “reinterprets small-scale New England architecture to fit a Modern vocabulary,” says Lisa Gould, AIA, the project designer. The entry canopy of exposed painted steel is meant to recall the traditional porte cochere; the waiting area in the sun-filled perimeter corridor is a reminder of the ubiquitous New England porch; and the two-story lobby harks back to the family parlor. Wrapping and unifying these elements is a skin of masonry, glaz-

ing, aluminum panels, and sunshades whose esthetic extends into the building's, right down to a system of detailing for the nursing stations, reception desks, and wall protectors. The idea, says Blair, “is to elevate residential architecture to civic function, while giving it a friendly, comforting face.” To convey a feeling of warmth and comfort, there is indirect lighting, ample use of wood, and the occasional green-colored accent wall. The look is more hospitality, in the best sense of the word, than hospital.

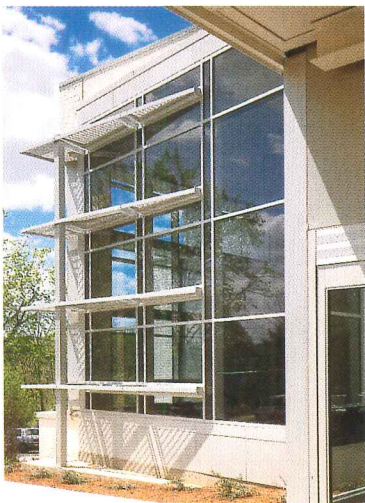
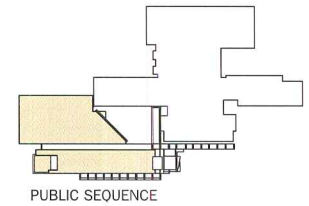
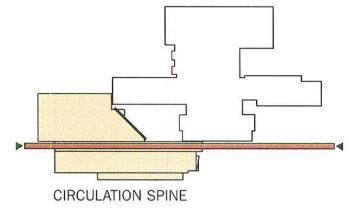
In retooling the hospital for outpatient use, the architects moved the hospital's entrance, which was at the back of the building with the emergency-room entry, to a friendlier front facade location. On the first floor, they created a new circulation system that follows along the glazed perimeter, while a courtyard connects new outpatient spaces



1. Addition
2. Courtyard
3. Existing



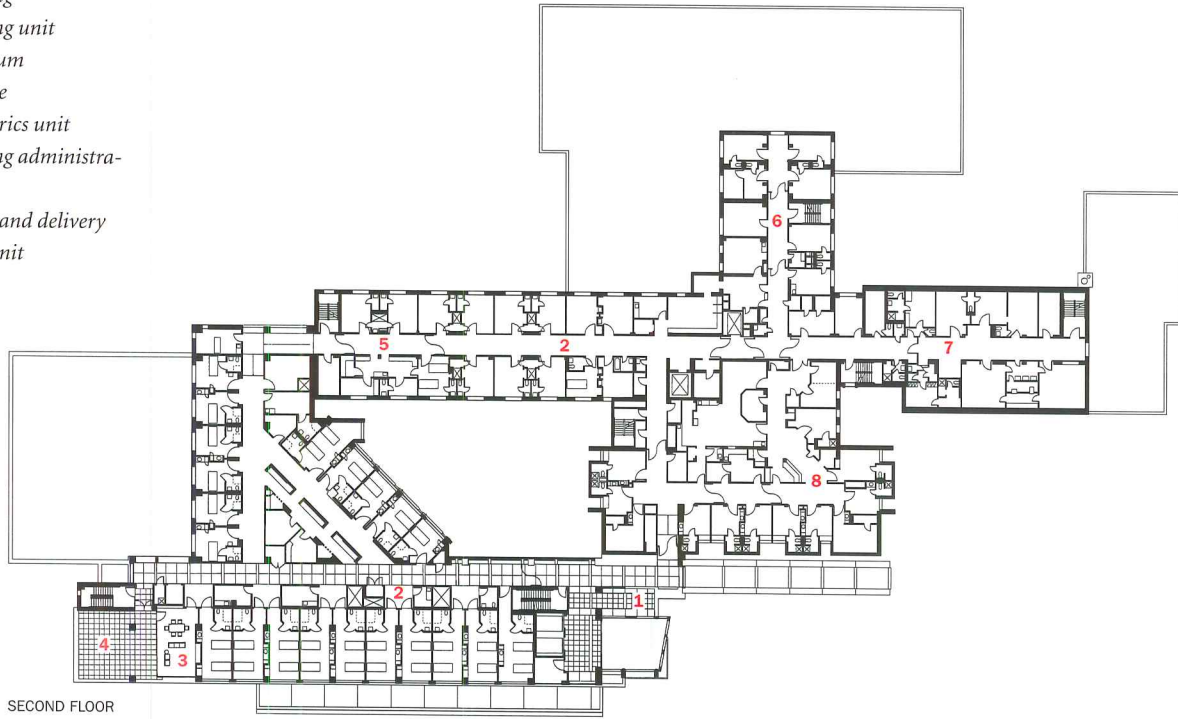
AXONOMETRIC



A system of glazed openings, aluminum panels, and sunshades wraps the addition and unifies the complex (above and left).

The design of the project was conceived as a series of programmatic blocks flanking a circulation spine (diagrams top).

1. Waiting
2. Nursing unit
3. Solarium
4. Terrace
5. Pediatrics unit
6. Nursing administration
7. Labor and delivery
8. O.B. unit

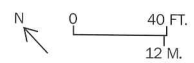


SECOND FLOOR

1. Main entry
2. Lobby
3. Chapel
4. Courtyard
5. Diagnostic testing
6. Physical therapy
7. Surgical suite
8. Recovery
9. Outpatient holding
10. ICU
11. Emergency
12. Radiology
13. Administration



FIRST FLOOR





A solarium with an adjacent terrace (far left) and a corridor (below) bring sunlight and views of the Berkshires inside the hospital. Patient rooms (left) form a continuous ring for easy supervision by nurses.

and existing inpatient services. At almost every point on the way, there are views of the landscape intended to be a calming influence on people in stressful circumstances. Short corridors and clearly marked destinations also help reduce the level of stress.

Because the majority of outpatient visits are for testing, diagnosis, or physical rehabilitation—services that had been scattered in former inpatient areas—the architects consolidated these functions on the first floor. As a result, outpatients are routinely treated without encountering the seriously ill or grievously injured. “It’s a much friendlier environment,” says Blair. The clustering of services has also made the hospital’s operation more efficient. According to facility manager Philip Hathaway, Sharon Hospital has been able to add 58,000 sq ft of space without hiring new full-time staff.

The hospital’s most urgent need was a state-of-the-art operating suite to replace 30-year-old facilities on the third floor. Because rooms used to prepare patients for surgery were on the second level, outpatients, who were already absorbing 70 percent of the operating suite’s capacity when the project was in the planning stage, had to be wheeled from level to level on elevators, Hathaway says.

The inefficiency led hospital

administrators to move all aspects of surgery to the first floor of the new wing. Equally important, says Hathaway, the 10-ft-6-in floor-to-floor heights in the existing structure couldn’t accommodate today’s equipment. To obtain the needed 12-ft floor-to-floor heights, the design and construction team added 18 in. to both the first and second stories, and knit old and new together with pedestrian ramps. On the new first story, they also created areas sufficiently large to accommodate groupings of related services.

On its second floor, the addition has 32 patient rooms that replace the most antiquated ones and are arranged in a continuous ring for efficient staffing. The institution has reduced the number of its patient rooms from 92 to 82, with most rooms now enlarged to accommodate new equipment.

The basement houses a new cafeteria, a kitchen, supply space, and a more efficient mechanical plant that has reduced the hospital’s operating costs, despite a 48 percent expansion of floor space, says Hathaway. An outdoor terrace, which extends from the cafeteria and is made possible by a slope in the site, further deinstitutionalizes the addition and extends it into the landscape.

Because this hospital has a history of adding a new wing every

15 years or so, Perkins & Will envisions future expansion on the north end of their addition’s long axis, into which more modules can be hooked, explains Blair. The scheme is essentially a new master plan that will permit Sharon Hospital to move out of its remaining old spaces over a period of time. ■

Insulated clear anodized aluminum panels: *Leed Himmel*
Curtain wall: *Wausau*
Low-E glass: *Viracon*
Acoustical ceilings: *Armstrong*
Office furniture: *Haworth, Meridian*
Reception furniture: *Kusch, Geiger, ICF, Mueller*
Exterior lighting: *Bega*



3

Altoona Hospital

Altoona, Pennsylvania

A NEW ENTRANCE AND A MAJOR NEW PUBLIC SPACE ARE KEY COMPONENTS IN HAYES LARGE ARCHITECTS' OUTPATIENT-CARE ADDITION.

by **Andrea Oppenheimer Dean**

Project: *Altoona Hospital Outpatient Center, Altoona, Pennsylvania*

Architect: *Hayes Large Architects—Robert E. Wedge, AIA, partner-in-charge; Judy Coutts, AIA, project manager; Christopher J. Dietrich, AIA, project architect (exterior); Grace U. Oh, AIA, project architect (interior); James Schmidt, job captain; Charles Moyer, Grant Walk, construction administration; Carolyn E. DuBois, landscape architect; Kathleen Muffie-Witt, interior designer; Kenneth Kagarise, structural engineer*

Engineers: *H.F. Lenz Co. (m/e/p, outpatient center); Gwin Engineers (m/e/p, parking garage); Schnabel Engineers (geotechnical)*

General Contractor: *H.B. Alexander and Sons*

Statistics

Size: *132,400 sq ft*

Key components: *Seven-story outpatient center with four-story concourse and four-story atrium, plus 352-car parking structure.*

Design challenge: *Add a major new building and parking structure without blocking views from patient rooms in existing hospital. Negotiate steep grade change from front to back of site. Phase construction so new building doesn't disturb operations of existing hospital.*

The atrium is now the stock-in-trade of outpatient hospital additions, and the reasons for its popularity are nowhere more evident than at the Altoona Hospital's new wing. Its atrium, consisting of a glassy four-story concourse edged by a seven-story drum, is an all-purpose device: The concourse is the main point of entry and information, and serves as a waiting space, a circulation spine, and a way-finding device. By admitting daylight and providing views of the central Pennsylvania landscape and the city of Altoona, the atrium brings the exterior world into the 132,400-sq-ft, seven-story outpatient center's public spaces.

While the atrium serves as a horizontal link between a new parking garage and both the addition and the existing inpatient tower, it also makes a vertical connection between the center's public spaces on the first and fourth floor. From there a cafeteria affords views downward, as do a medical library on the fifth floor, a conference room on the sixth, and a surgeons' lounge on the seventh floor.

Hayes Large Architects took the cues for its exterior design from the adjoining 1970's tower, a pre-cast tower that forms an L with the addition. By pulling the atrium's drum and concourse forward, the designers inserted a bit of punctuation. The drum, especially, endows otherwise ordinary facades with

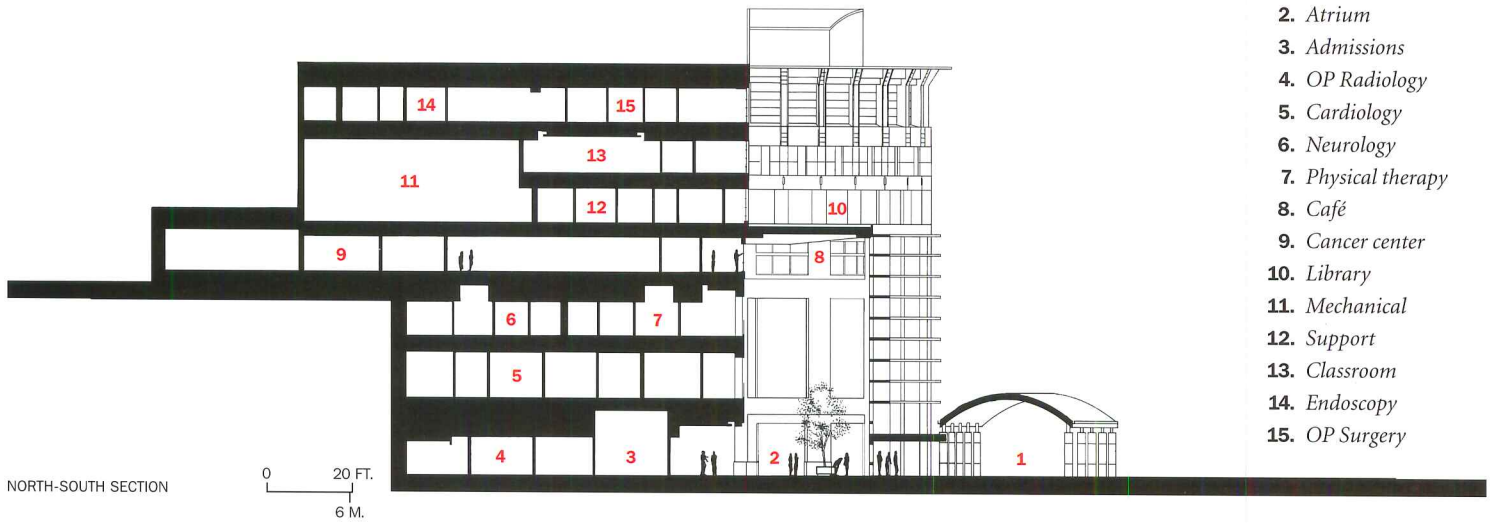
presence and acts as a hinge connecting old and new, the inpatient tower and the outpatient center. The broad canopy adeptly anchors the concourse to the ground, while providing shelter for up to five cars and three lanes of traffic.

Beginning at the entrance canopy, every architectural element is calculated to help make the outpatient visit unthreatening and uncomplicated and to simplify the visitor's route. The single-loaded corridor plan and large floor plate left room to consolidate related services. Just inside the entry is an information desk and reception and admissions staff. Nearby are diagnostic imaging and pre-admissions testing, the only services most first-time outpatients need. Circulation on the lower four floors always loops back to the glassy perimeter corridor, "so it's easy to find your way," says Christopher Dietrich, AIA, who served as project designer, together with Grace Oh, AIA.

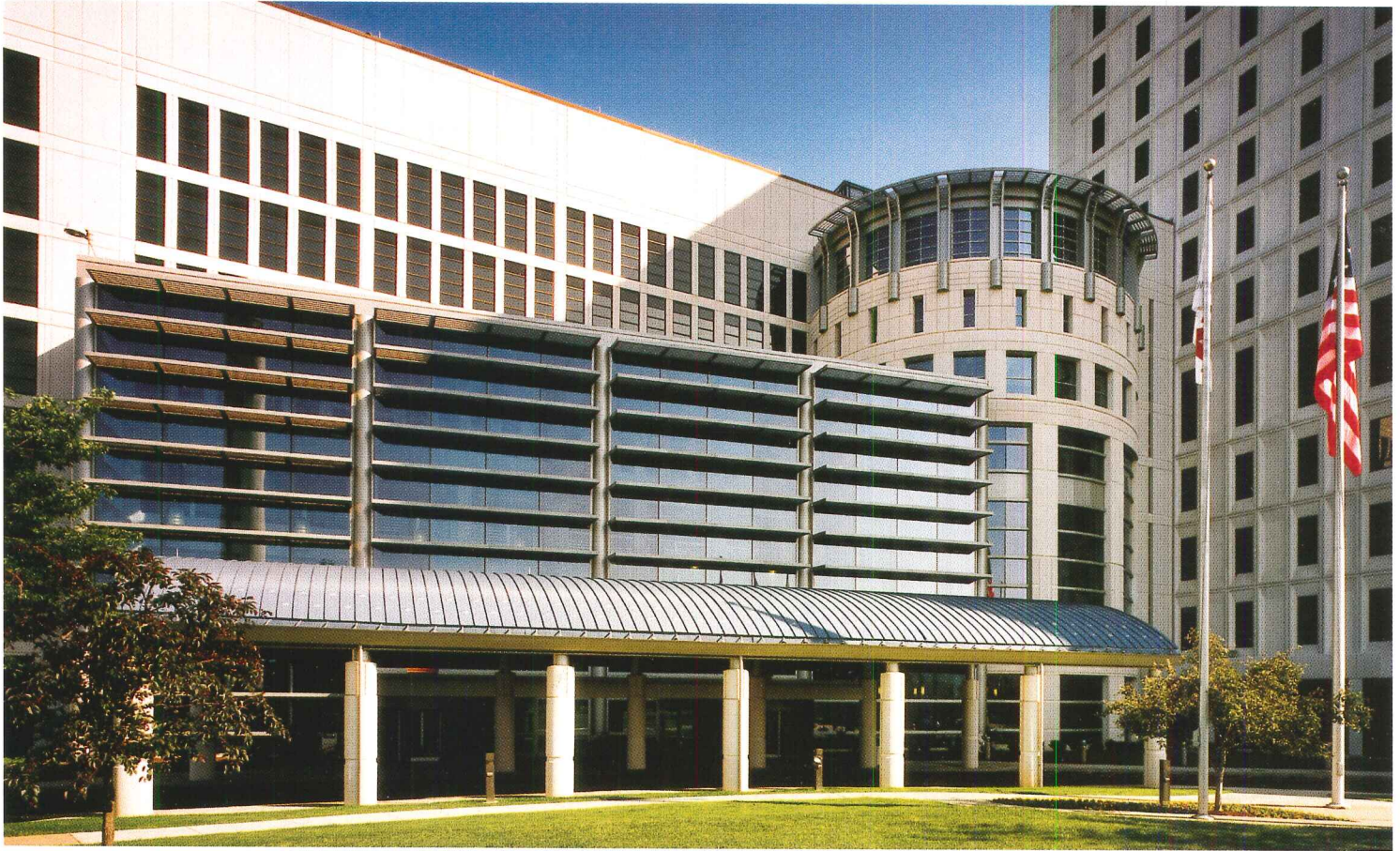
Principal-in-charge Robert Wedge, AIA, believes that the visitor's perception of the outpatient center—its image—is considered very important in today's competitive climate. "The facility needs to look successful to compete for the doctors who bring in the patients," explains Wedge. "And people want to walk through a front door and feel they've got current technology; at the same time, they want a warm

reception." To underscore the message, there is a generous use of wood—poplar for ceilings, red oak for trim—carpeting in deep tones, custom light fixtures, patterned terrazzo flooring, and a coordination of signage and graphics.

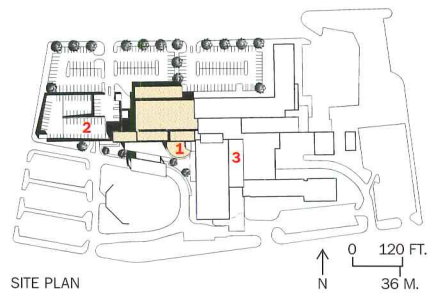
Before the Altoona Hospital addition was completed in 1995, however, a number of complicating factors, many of them common to expansion projects, had to be overcome. Once Wedge and his team fulfilled the contradictory siting requirements of reducing the distances between buildings without blocking views, they found themselves facing a steep grade change between the front and back of the addition. Because site preparation required penetration of alternating layers of very hard rock and friable slate, the team avoided slippage by excavating and building a 45-ft-high and 280-ft-long retaining wall for the garage and the rear of the building by starting at the top of the hill and working their way down. "We cut about an eight-ft bench and poured an eight-ft vertical piece of wall and then bored back into the side of the hill and tied back with long cables and rock anchors," says Wedge. Then they post-tensioned the anchors and stabilized the wall in preparation for the next eight-ft cut. And so on down the slope. The deeper the excavation, the harder the rock became, so that near the



1. Drop-off
2. Atrium
3. Admissions
4. OP Radiology
5. Cardiology
6. Neurology
7. Physical therapy
8. Café
9. Cancer center
10. Library
11. Mechanical
12. Support
13. Classroom
14. Endoscopy
15. OP Surgery

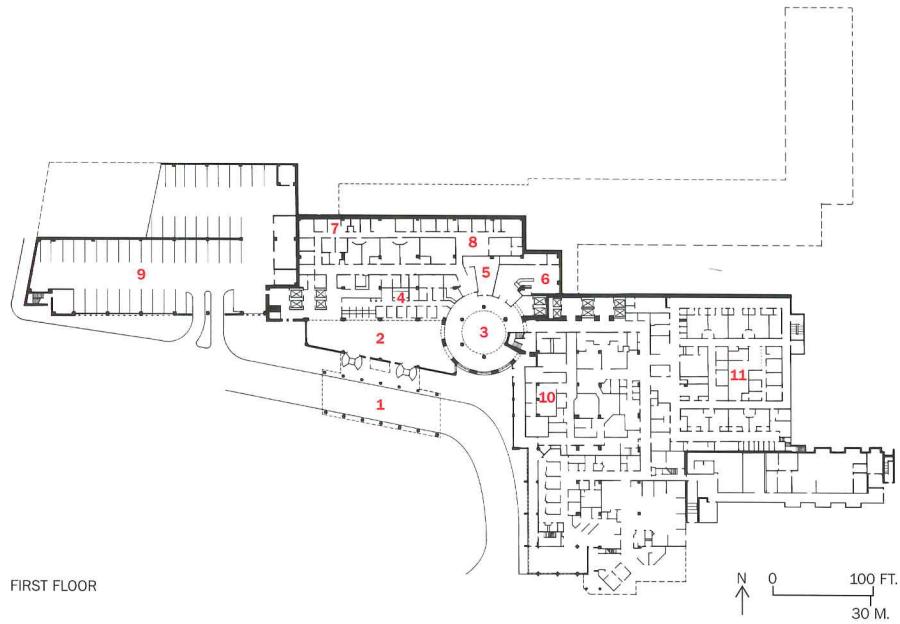


A new concourse and seven-story drum (above and left) are the hinge connecting a new 352-car garage, the outpatient center, and the existing hospital.



1. Outpatient center
2. Parking garage
3. Existing hospital

1. Entry
2. Concourse
3. Atrium
4. Admissions
5. Pharmacy
6. Gift store
7. X ray
8. Testing
9. Parking
10. MRI
11. Existing



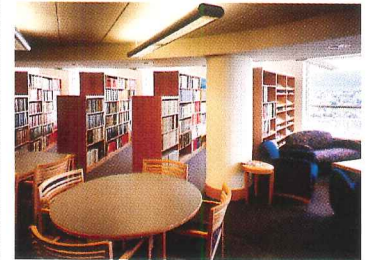
The four-story atrium (above) has a medical library (top right) above it on the fifth floor, an

education conference space on the sixth floor, and a staff lounge on the seventh.

The curtain-walled concourse (opposite) has a café and waiting areas overlooking it.

task's end, workers had to blast the rock, carefully monitoring their progress with vibration meters and expansion-tracking devices.

Then there was the problem of phasing construction to prevent interrupting operations in the existing structure. The staging of electrical services turned out to be "incredibly complicated, involving careful orchestration of 23 different electrical phases," says Wedge. Floor heights posed another conundrum: how to group services efficiently while working with and matching the floor heights in the existing building. For example, the designers carved a two-story mechanical room out of part of the fifth and sixth floors where floor-to-floor heights were too low for some medical equipment. Ideally, they would have placed outpatient surgery suites on the first floor, since these areas need larger floor plates and floors capable of supporting heavy equipment loads. But because inpatient surgical suites were on the seventh floor of the existing tower, they located outpatient surgery on the addition's seventh floor to shorten distances between departments and allow some shared use of staff. To further streamline the process, they moved surgical prep and recovery areas from the fifth to the seventh floor. The need to match the inpatient tower's floor-to-floor heights also



determined the location of the cancer center on the fourth floor, much of which was built on rock and has generous ceiling heights, enabling it to accommodate the equipment used for cancer treatment. Also significant was the fact that the fourth floor had its own entrance at the back of the building, providing privacy for often frail and self-conscious cancer patients. In many hospitals, says Reeves, debilitated cancer patients must wend their way through maze-like basement corridors, where lead-lined rooms for cancer therapy are generally located. "Not here," he says. "From car to treatment areas is about 20 feet." ■

Manufacturers' sources

Precast concrete: *New Enterprise Stone & Lime/Beavertown Cast Stone*

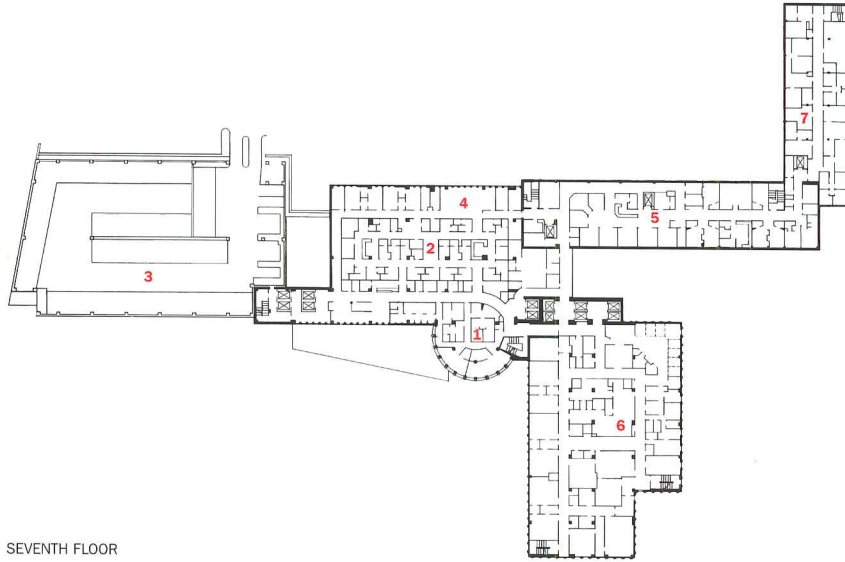
Aluminum composite panels: *Reynolds Metals*

Curtainwall, sunscreens, doors: *Kawneer Co. Inc.*

Glazing: *Viracon*

Standing seam metal roof: *Berridge*

1. Staff
2. OP surgical support
3. Parking (below)
4. Endoscopy
5. Cardiac ICU
6. Existing surgical suite
7. Existing



SEVENTH FLOOR



4

Alta Bates Cancer Center Berkeley, California

ROCHLIN BARAN & BALBONA CONVERTS A LOADING DOCK AND TWO LOWER FLOORS OF A HOSPITAL INTO A PLAZA AND LIGHT-FILLED CANCER CENTER.

by **Andrea Oppenheimer Dean**

Project: *Alta Bates Comprehensive Cancer Center, Berkeley, California*
Architect: *Rochlin Baran & Balbona, Inc.—Joseph A. Balbona, AIA, partner-in-charge; Barbara H. Bouza, AIA, project designer; Art Border, AIA, project director; Kurt Schwarm, AIA, project architect; Gareth Jackson, project manager; Annette Shwe, Carlos Amato, Keong Ng, project team*
Engineers: *Thompson & Labrie (structural); Newcomb Anderson Associates (mechanical); Cohen Associates (electrical)*
Landscape Architect: *Chris Patillo Associates*
General Contractor: *Herrero Brothers*

Statistics

Size: *40,000 sq ft (including 8,500 sq ft of new space).*

Key components: *New plaza and atrium, plus two floors of renovated space.*

Design challenge: *Convert loading dock and two dark floors into a bright, patient-friendly environment. Create a place that is easy to navigate, even for patients who may have undergone disorienting radiation treatments.*

It isn't often that cost-saving devices actually benefit the patient. But the trend among general hospitals and specialty-care centers to create separate outpatient facilities adjacent to inpatient hospitals seems to be a significant exception.

The Alta Bates Comprehensive Cancer Center's outpatient addition, for example, is open 24 hours a day and is equipped to deal with almost every contingency of cancer. It eli-

minates long waits by having medical records on hand and can more easily tailor treatment to patients' schedules than inpatient hospitals can.

Architects Rochlin Baran & Balbona's design also takes the usual prescription for a friendly, easily understandable facility one step further by designing to allay fear. Its plan separates relatively healthy outpatients from very ill inpatients

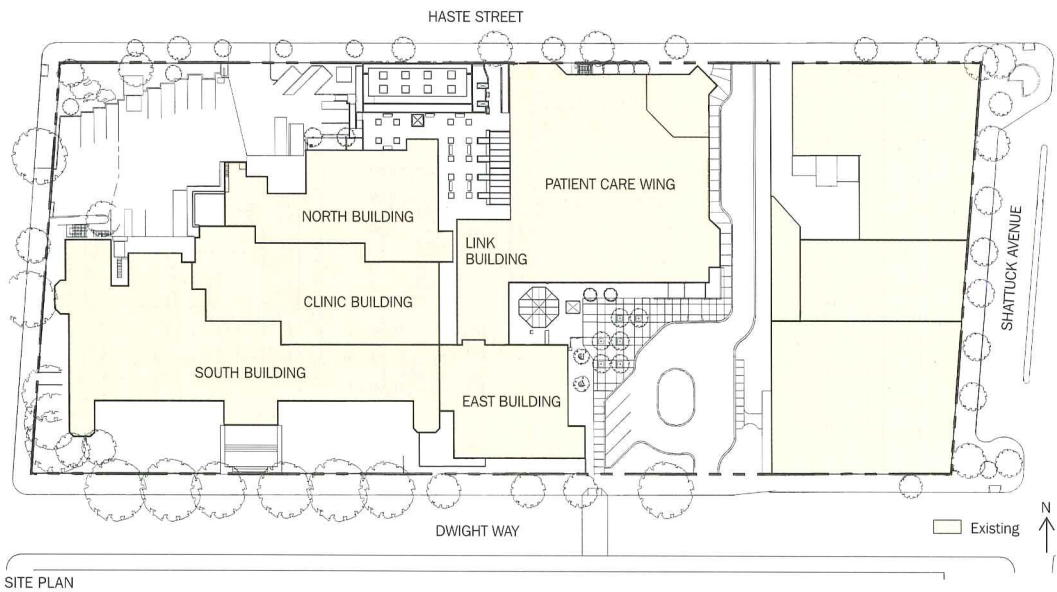


whose condition may trigger fear. It also separates waiting areas for first-time outpatients from those for relative old-timers who may offer unwelcome information.

The architects began with a site that had been a loading and ambulance dock for an adjoining five-story inpatient center, part of Berkeley, California's, Herrick Medical Campus. Most of the 40,000-sq-ft addition is remodeled space that was carved out of the two lower stories of the adjacent building. The first floor formerly housed surgical suites and the basement had radiation therapy. Principal-in-charge Joseph Balbona, AIA, stresses that the design of specialty healthcare facilities, and especially cancer centers, is "equipment driven." Containing the typically large and heavy machinery used in cancer treatment in low-ceilinged old spaces poses problems. Often, as at Alta Bates, it cannot be done.

Because existing ceiling heights were eight ft and the

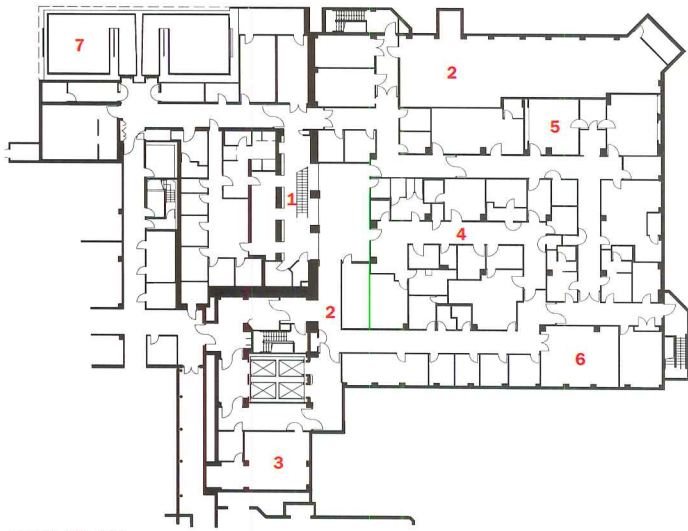




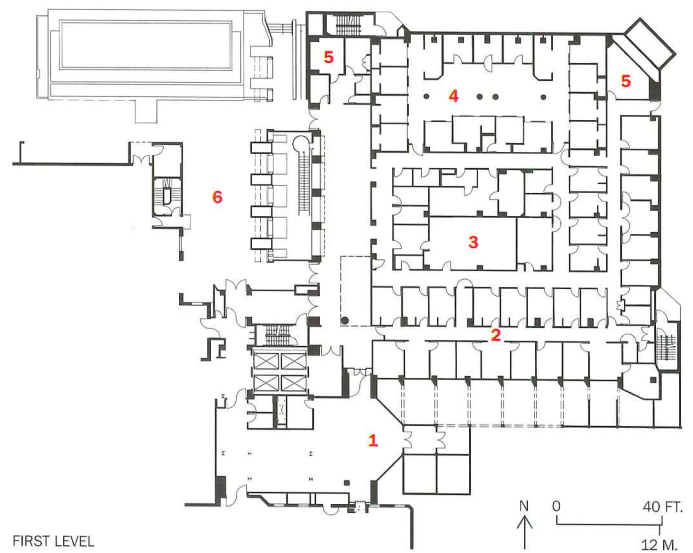
SITE PLAN



The cantilevered Mexican limestone piers call attention to the new plaza and support a skylight that ties back to the existing 1970's hospital (this page and opposite).



BASEMENT LEVEL



FIRST LEVEL

In addition to their role as visual landmarks, the angled piers (right) also serve a more prosaic function of carrying air ducts. South of the skylit atrium is a new entry (opposite) that connects the cancer center with the existing hospital.

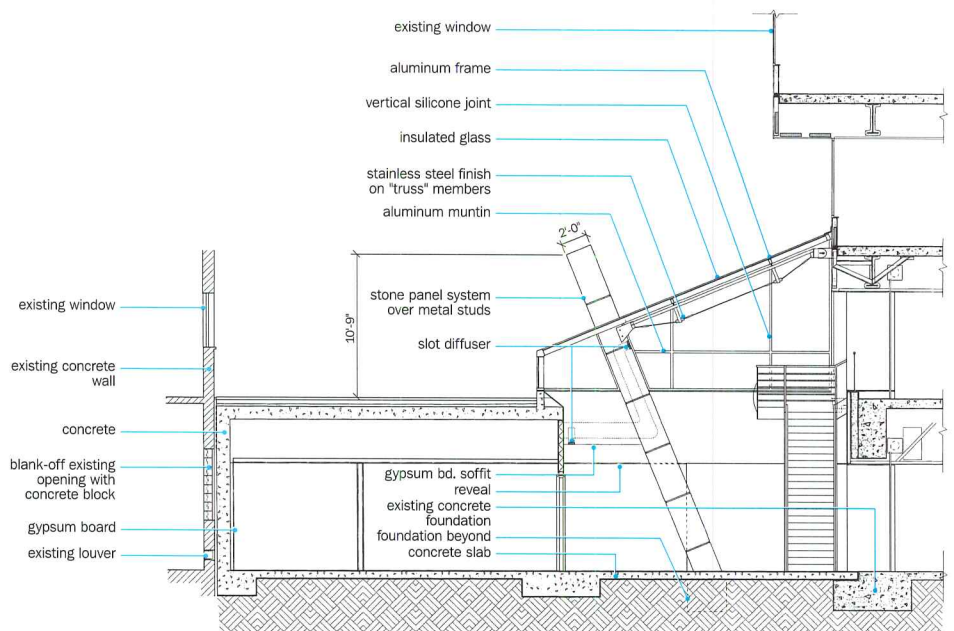


Basement

1. Atrium
2. Systems
3. General services
4. Imaging
5. Surgical oncology
6. Support
7. Radiation oncology

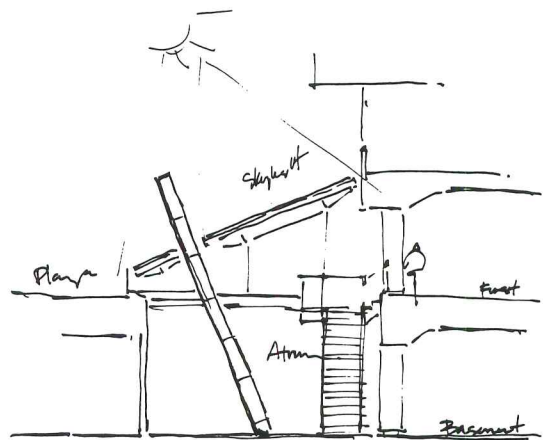
First Level

1. Entry
2. Medical oncology
3. Lab/pharmacy
4. Chemo/infusion
5. General services
6. Plaza



center's planned new radiation therapy area needed to accommodate equipment requiring 17-ft floor-to-floor heights and four-ft-thick walls, the architects provided 8,500 sq ft of new construction to house two vaultlike rooms.

The center's most significant feature, its central skylit public areas, evolved from the team's desire to introduce natural light into basement spaces, explains project designer Barbara Bouza, AIA. The resulting exterior form, as seen from Haste Street on the north, is a low line of canted Mexican limestone piers. They appear to have thrust their way upward, splitting open a newly laid plaza, but put themselves to good use supporting a skylight



that ties back to the existing 1970's precast hospital building. The visible part of the addition is low-key, serving mainly as a bridge between existing buildings

and as a lighted beacon at night. Because the angled piers are designed as part of regular four-ft modules, they lend a sense of order to spaces denied that sense by an existing column grid with no apparent logic, says Bouza. The piers also carry an air distribution system that serves the main interior public spaces.

Mike Fiore, CEO of Salick Health Care, Inc, which operates the Alta Bates center and 10 other comprehensive cancer centers, says, "design was important not just for the patients' sake but for the practitioners"—the physicians and nurses." Most important, he says, was that the design, be "non-institutional, comfortable, with plenty of light and air." Bouza speaks of wanting to connect patients, who tend to become disoriented after some types of treatment, with the

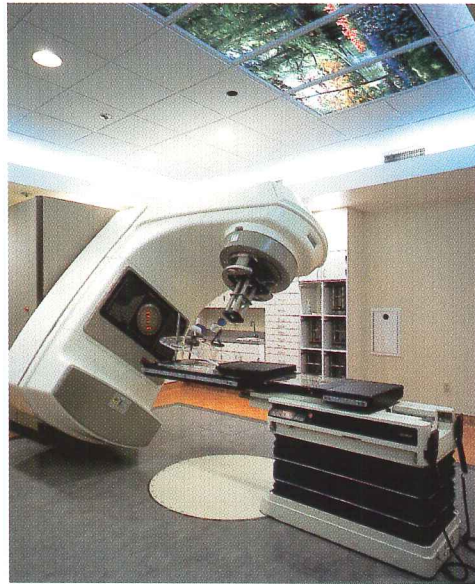
outdoors and with natural light "to pull them back to reality." That's one reason for the atrium.

Another is that it eliminates confusion by acting as the central hub from which diagnostic and treatment areas radiate. Balbona stresses the importance of making things as clear and uncomplicated as possible for cancer patients; their lives, he says, have become baffling and trying enough as it is. Hence the stress on simplifying the circulation. Corridors are few, and daylight flooding the atrium is visible as a landmark from most vantage points.

The designers used Uxmal limestone for the piers and as a paving material because of its warmth and because they could take it inside, says Bouza. Flooring in the clinical areas is linoleum, which is seamless, longer-lived, and warmer in appearance than vinyl, says Bouza.

When remodeling an old building you never know exactly what you'll find, especially because as-built drawings are rare. At Alta Bates, the team was surprised to discover ducts and sprinkler systems above plaster ceilings, which required some redesign. Also, as Balbona and his team corrected deficiencies in the addition's mechanical and electrical services, they found themselves having to replace substandard construction discovered in mechanical spaces in





Although the center's basement location created a challenge to bring in daylight, it was advantageous for imaging equipment (left), which requires heavy shielding. By borrowing sunlight from the atrium and stairwell (below), the architects made renovated space (far left) more attractive.

the existing building. "You cannot know about these problems until you get into the guts of a building," says Bouza.

Problems aside, Fiore speaks of the Alta Bates addition with pride, emphasizing the psychological importance of its non-institutional appearance; its efficiency of plan, "which allows a high patient volume to go in and out without creating the feeling of a frenetic pace; and its technical sophistication, which allows even the very sick to be treated on an outpatient basis." ■

Manufacturers' Sources

Curtain wall and skylights: O'Keefe

Glazing: PPG

Entrance doors: Stanley

Plastic-laminate-faced doors: VT Industries

Locksets: National Guard Products

Acoustical ceilings: Armstrong (Graphis)

Suspension grid: USG (Donn System)

Wall coverings: United Coated Fabrics

Plastic laminate: Nevamar

Linoleum flooring: Forbo

Sheet vinyl flooring and carpeting: Mannington

Stainless-steel railings: Westbay Steel

Interior ambient lighting: Artemide; Leucos

Downlights: Lightolier; Lithonia

Task lighting: Prudential

Exterior lighting: Kim Lighting





Wood Windows and Doors

Offering unique contributions to health, safety, and welfare in architecture

On first review, buildings are defined by their various components — a sweeping stairway, a marble entranceway, a gleaming glass facade. Long-term use may, however, bring a different perspective to the buildings that we originally praised for high design. The users of a building look to see that the various components work together to produce a high-quality environment in which they can satisfactorily and safely live and work. In the language of architects, we might ask, how do the building and its components contribute to the health, safety, and welfare of the users?

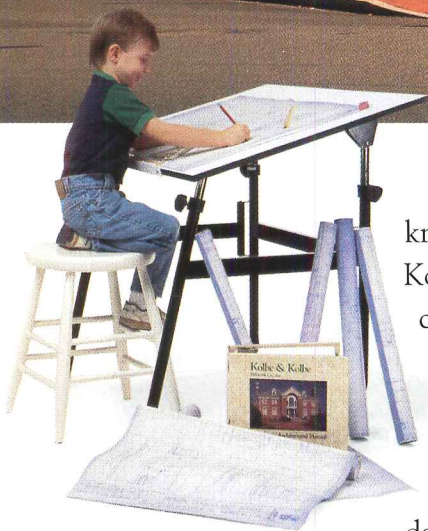
One way to explore the contribution of architectural components to health, safety, and welfare is to examine a specific product or products. With this in mind, the National Wood Window and Door Association (NWWDA) offers this compendium in association with the AIA/ARCHITECTURAL RECORD Continuing Education Series. The intent is to facilitate a deeper understanding of the contribution of wood windows, skylights, and doors to health, safety, and welfare in architecture. This compendium offers a wide range of evidence. Some can be considered “hard evidence” and concerns technical information, say on fire doors or wind load perfor-

mance. Other evidence is scientific, such as the physical reaction to daylight. Still other more subjective evidence springs from the social sciences, such as the healing benefits of windows. These contributions, in turn, are presented visually in the five projects shown here — a hospital, physical rehabilitation center, learning center, a retirement home, and a renovated historic theater. The projects are offered for their exemplary use of wood windows and doors.

Architects can earn two continuing education credits by reading the section, studying the learning objectives and answering the questions on page 205.

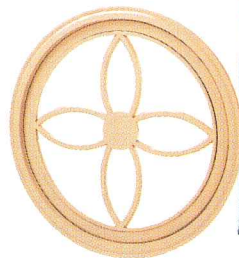
NWWDA is comprised of the country's leading producers of wood sash, frames, window units, skylights, flush doors, stile and rail doors, and sliding and swinging patio door units, as well as producers of the numerous other materials required to manufacture the industry's products. As a professional trade organization, it formulates and promotes high standards of performance for the industry. More information on NWWDA, its standards, testing procedures, and information literature can be obtained from NWWDA, 1400 E. Touhy Ave., Des Plaines, Ill. 60618. (847) 299-5200. Or visit NWWDA's website at <http://www.nwwda.org>.

*Drawing
Up a New
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CIRCLE 62 ON INQUIRY CARD

LEARNING OBJECTIVES

After reading *Wood Windows and Doors: Unique Contributions to Health, Safety, and Welfare in Architecture*, you will be able to:

- Identify the design ramifications of, and at least four health and welfare factors influenced by, wood windows, skylights, and doors.
- Describe the psychological implications of natural light exposure and views to office workers and recovering patients in hospitals.

- Outline: 1) the general regulations behind door safety, 2) the characteristics of three special-function wood doors, and 3) five window performance tests.

Use the preceding learning objectives to focus your study. After reading the article, complete the questions and check your answers (page 205). AIA members may fill out the self-report form and send it in for two AIA Learning Units to Mark Scher, Director, AIA Continuing Education Programs and Products.

UNIQUE CONTRIBUTIONS

Compiling this information was like piecing together a jigsaw puzzle with many different-sized pieces. To provide some structure to our discussion, we've relied upon a definition of health, safety, and welfare offered by AIA. As you read through this, take time to examine each of the pieces, keeping in mind the whole — the contribution of wood windows, skylights and doors to health, safety, and welfare.

HEALTH

AIA defines health as "aspects of architecture that have salutary effects among users of buildings or sites and address environmental issues."

How does the use of wood windows, skylights, and doors relate to environmental issues? Perhaps the most obvious place to start is with wood as a material. Wood is made up of fibrous cells, each of which traps air and creates natural insulating pockets. It's the same principle used in insulated glass systems. It's the trapped air that provides the energy benefits. Tests show that as an insulator, wood is 400 times more efficient than steel and 1,800 times less conductive than aluminum. At the same time, less energy is used in the production of wood windows, skylights, and doors than steel or aluminum ones.

Wood is a natural, renewable resource. A well-managed forest can produce lumber for many generations. Wood window and door manufacturers have become even more environmentally responsive. New technologies designed to recycle wood waste byproducts are now more widely applied. Through fingerjoining and use of composites, for instance, waste lumber is turned into durable components for stiles, rails, muntins and mullions.

Energy consumption in buildings can also be significantly reduced by careful placement of windows and shading devices. Through its ability to collect and transport heat by nonmechanical means, passive solar design can supply small or large amounts of heat and light.

With the rediscovery of passive solar design has come a new interest in daylighting. Scientists now proclaim that daylight is essential to the health, well being, and productivity of individuals. "Light exposure is important to the inner time keeping of humans," says Greg Franta, Boulder, Colo., architect and energy design specialist.

In scientific terms, the human system has evolved under the influence of the sunlight spectrum. As a result, light-sensitive and light-modulated organs are specifically adapted. For instance, light that enters through the retina of the eye affects the functioning of the pineal gland, which in turn influences the timing of our biological clocks or our sleep/wake cycles. Light affects the body's natural regulation of stress and fatigue. Lack of appropriate amounts of natural light can lead to disease, such as Seasonal Affective Disorder. In addition, sunlight is vital to the absorption of calcium and phosphorus from the

diet for the normal mineralization of bone. Full-spectrum light produces significant improvements in physical working capacity by decreasing heart and pulse rate, lowering systolic blood pressure, and increasing oxygen uptake.

SAFETY

AIA defines safety as "aspects of architecture intended to limit or prevent accidental injury or death among users of buildings or sites."

Over the years, the manufacturers of wood doors have responded to consumer demand for fire safety by developing four classifications of fire-resistant doors. In turn, the model building codes have established a fire door rating system (see chart below) for use in protecting door openings in fire resistant-rated wall constructions. As such, all fire doors must meet the requirements of ASTM E-152 and bear certifying labels of an independent testing agency approved by the building official. Installation of fire doors must be in accordance with the National Fire Protection Association's Publications NFPA 80 "Fire Doors and Windows" and NFPA 101 "Life Safety Code."

Fire-resistant doors with 45-, 60-,

FIRE DOOR RATINGS

NWWDA Industry Standard I.S. 1-A, Architectural Wood Flush Doors

Label	Rating	Description	Wall Rating
20-min.	1/3 hr.	For smoke and draft control between rooms or office corridors.	1 hr.
45-minute	3/4 hr.	In corridor and room partitions.	1 hr.
60-minute	1 hr.	In one-hour enclosures in vertical exitways.	1 hr.
90-minute	1 1/2 hr.	In two-hour enclosures in vertical exitways	2 hr.

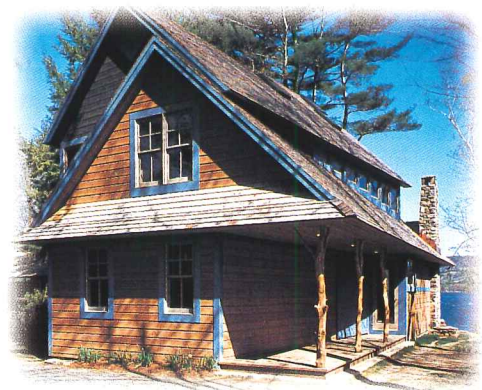
OUR WINDOWS ARE MADE FROM WOOD. AND SOMETIMES,

When architect Bill Becker redesigned this summer retreat in the Berkshire Mountains, the home's setting provided all the inspiration he needed. He used native wood and stone extensively. Fashioned the front porch supports from 8" logs. And for the north end of the home, which looks out over a lake to the mountains beyond, he created a wall of glass using windows and doors with custom-designed

muntins that echo the shape of the surrounding pines. Who did he contact to supply these unique products? Bill Becker's search began and ended with one phone call. To Marvin Windows & Doors.

From Bill's drawings, the company produced three large fixed windows and eight doors, three of which open onto the deck. Marvin's ability to create these custom products inspired similar design elements in the home's interior, including a rustic stairway made from pine logs and branches. Still, as unique as they are, these aren't the only Marvin windows that figured prominently in the design.

To double the home's square footage without violating local zoning codes or overwhelming the surrounding cottages, Bill skewed the second level off the long axis of the first floor by seven degrees to create the illusion of a dormer. Marvin windows which step down in height help further the illusion. And to optimize their energy efficiency, these



THEY'RE EVEN INSPIRED BY IT.



and all the other windows in the home were ordered with low E glass filled with argon; a gas that is 30% more resistant to thermal conductivity than air.

As the owners are fond of saying, there are two things everyone who visits their home comments upon. The first is the view. And the second is the way it's framed.

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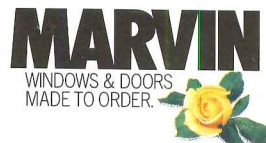
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and 90-minute ratings consist of veneer- or laminate-covered mineral core doors. The core is a noncombustible mineral composition.

Although not widely used, other special function wood doors are available. For acoustical or sound retardant doors, wood veneer covers a core that has a damping compound to prevent the faces from vibrating in unison and must meet special stop, gasketing, and automatic bottom requirements. Lead-lined doors or x-ray doors are manufactured with a continuous lead sheet from edge to edge in the center of the door or between the crossbanding and the core. Electrostatic shield doors have wire mesh either in the center of the core or between the crossbanding and the core. The mesh is grounded with electrical leads through the hinges to the frame.

Wood windows, patio doors, and skylights are rigorously tested for structural performance, resistance to water penetration, air infiltration, forced entry resistance, and the operating force of horizontal and vertical sliding units.

WELFARE

AIA defines welfare as “aspects of architecture that engender positive emotional response among, or enable equal access by users of buildings or sites.” Welfare is defined as the state of happiness, comfort, well being, and prosperity.

Perhaps the most readily apparent welfare benefits of incorporating wood windows, skylights and doors can be seen in retirement homes, hospitals, and health-care facilities. These are traditionally institutional settings with cold, hard surfaces. The warmth, tradition, style, and beauty of wood can go a long way in creating a sense of comfort for the occupants. Seniors, for instance, may find a sense of security, remembering their home with its wood windows and doors. In hospitals, the domesticity of wood can bring a sense of comfort to a hospital room and help speed recovery. In a doctor’s office, wood can have a calming effect.

While various studies have been undertaken to quantify the physical benefits of windows, social scientists readily admit that information on an individual’s unconscious response to windows is harder to verify. For the Environmental Design Research Association (EDRA), a leading researcher in this area, Judith H. Heerwagen, of the

WOOD DOORS ENHANCE EGRESS



When the Martin Theatre opened at Ravinia Park in 1904 it was lauded for its safety features, including the double width, wooden entrance doors. The warm character of the Arts and Crafts building was sensitively renovated by Skidmore, Owings & Merrill.

University of Washington, at Seattle, surveyed research previously conducted on the psychological benefits of windows and windows design and found as the four most significant benefits:

- Access to environmental information.
- Access to sensory change.
- A connection to the world outside.
- Restoration and recovery.

Psychological relief is defined as “an easing, as of pain, discomfort, or oppression” or as “anything that lessens tensions or strain, or offers pleasing change, as to the mind or eye.”

Studies have found that loss of natural information on the time of day or the activity afforded by a view has led to poor recovery of patients in windowless intensive care units in hospitals. Others have found that workers in windowless offices often feel enclosed and shut off from the larger world outside, and that this can hinder productivity. Some researchers see windows as offering a psychological “away time critical to mental activity and reflection.”

Heerwagen does caution, however, that “successful window designs must provide a balance between visual access and visual exposure that is appropriate for the context and for the personal preferences of occupants.” In other words, avoid too much exposure of the occupant within. Design techniques to allow for views as well as privacy may include changes in elevation, set backs, buffers between public and private space and extensive overhangs that produce shadows in the viewing

area to reduce visibility into the space from outside.

When considering the welfare contributions of buildings, the affect of daylighting on well-being must be considered. Daylighting is paramount in allowing for natural changing light patterns — light and darkness, brightness and contrast. And, too, it is the best source of color rendering. When we are surrounded by natural light, there’s an equal balance of each of the colors of the spectrum in our bodies. Under fluorescent light, this balance is tremendously distorted. A cool-white fluorescence gives off a preponderance of yellow and orange natural light. A warm-white fluorescence is even more distorting; in fact, yellow and orange go right off the chart. It has been demonstrated that color perception influences human emotions and physiology.

To conclude our discussion, we turn full circle back to thinking of wood as a material. No one can argue that wood may be considered the most domestic of all materials. As for wood windows and doors, historically, they are what houses are made of. This sense of domesticity can bring a comfortable ambiance to an otherwise institutional setting. Wood is also a material that offers a variety of aesthetics through the different colors of wood, different cuts of woods, and different finishes. Highlighted by the abundance of daylight that enters through the windows, wood can display luminous tonalities.

Skidmore, Owings & Merrill LLP

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A PLACE OF HEALING



Photos: SBA/Steffian Bradley Assoc., Inc.

Beth Israel Hospital and Children's Hospital Medical Care Center Lexington, Mass.

This place of healing was formerly a 57,000-square-foot manufacturing plant. For its transformation into a state-of-art ambulatory health-care and surgery center, SBA/Steffian Bradley Associates Inc., of Boston, literally turned the building in on itself. At the heart is a

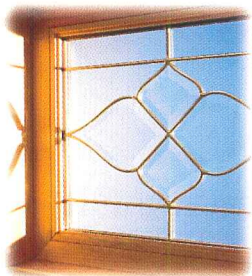
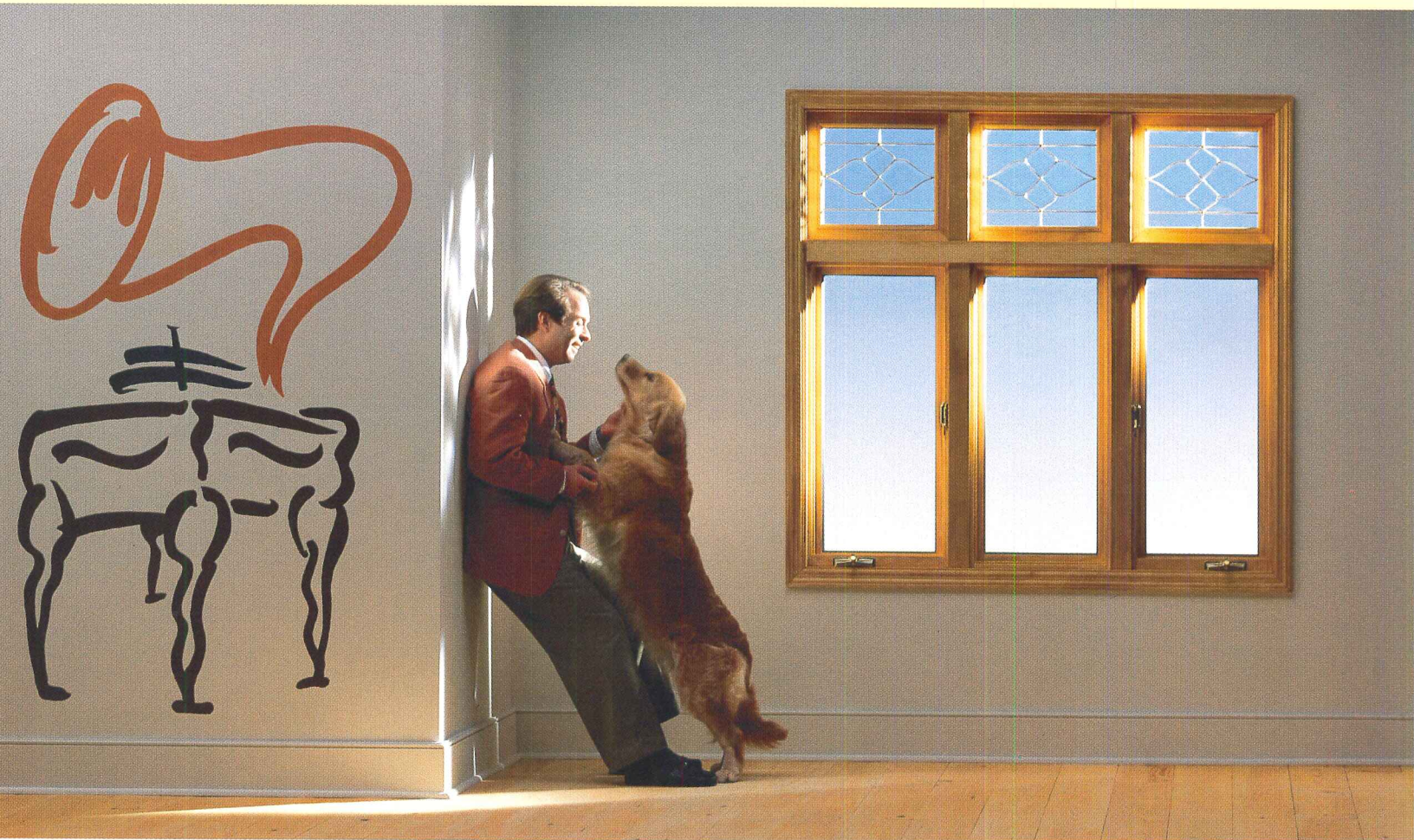
skylit atrium, which, in turn, is surrounded by various medical units, offices, and waiting rooms. The rooms edging the central space actually become part of the atrium through the use of interior windows and windowed doors. The whole system allows for deep penetration of natural light and long views. Add to this the warm palette of oak and cherry wood — doors, windows, railings, and trim — and the building's center is a warm and comfortable place.

Through this design, the architects

have uniquely responded to what are generally thought of as four general benefits of windows. Wayfinding is easy, since patients and staff can orient their movement through the building by the atrium's central position. Patients and staff have access to sensory change, as the natural light levels change in the atrium. From any of the offices, views out to the atrium provide a connection to the world outside, yet, within each office or unit is the possibility of individual healing.

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Sequoia Hospital Acute Care Rehabilitation Unit Redwood City, California

In the renovation of a skilled nursing hospital into a rehabilitation unit for stroke patients, DES Architects + Engineers, of Redwood City, Calif., were guided by the philosophy that the improvement of a patient's condition is a function of the quality of the physical environment. Essential ingredients in the project were the use of natural and

typically noninstitutional materials to create a healing environment, such as the introduction of wood components. According to the architect, colors, finishes, and materials were selected with an eye to making the patients in the 14-bed center feel at ease.

To introduce an enclosed 2,500-square-foot gymnasium, the architect took an existing outdoor courtyard and cantilevered a skylight over it. To support the skylight, four columns from the underground garage were extended up through the first floor space. At

the top, a halo of wood and wood windows was created as a means of unifying the space and marking the most intensive therapeutic areas. While this unique wood halo creates a sense of place by crowning the therapy center, it also allows natural light to enter in and through it, creating a cheerful, warm interior. In fact, natural light was intentionally introduced into the gym to take advantage of its psychological healing aspect. Positioned around the gym are ancillary rooms oriented to provide views of the gym.

Photos: Victoria Visuals

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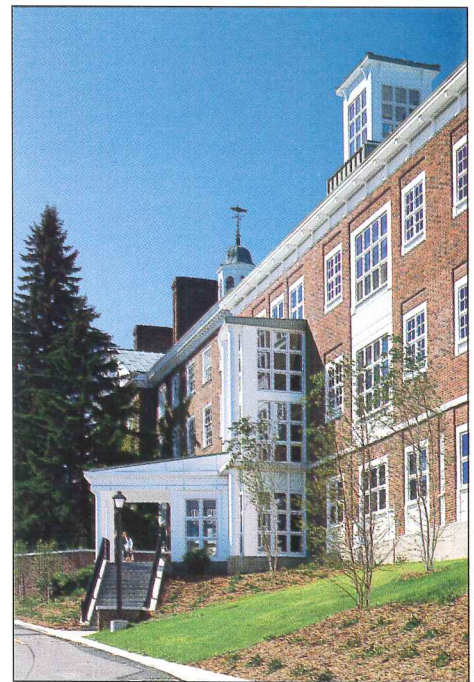
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AN INVITATION TO INQUISITIVE MINDS



Clark Hall, Hartwick College Oneonta, N.Y.

The choice of wood windows and doors was a given for Clark Hall. In its design, the Albany, N.Y., firm of Einhorn Yaffee Prescott sought to provide a contemporary interruption of the campus Neo-Georgian centerpiece building, Bresse Hall, designed by noted American

architect John Russell Pope. Einhorn Yaffee Prescott borrowed the red brick facade, copper roof, and wood windows and doors but offered a far more contemporary fenestration massing.

The abundance of daylight inside, particularly into the full-height atrium. The atrium, in turn, becomes a warm, welcoming entry into this learning resource center. In that space, the walls were painted white, yet the wood window

frames were left their natural color, a scheme that highlights the tactile quality of wood. In addition, as the sun moves across the sky, the tonality of the wood changes, offering great variety over the day. That exposed palette is repeated in special learning spaces, such as the classroom seen here. The window design brings an added benefit of offering views out Clark Hall, which sits upon the crest of a hill overlooking the town of Oneonta.

Photos: Peter Vandervorker

New Tools in Fire Protection

NEW REGULATIONS AND FIRE-RESISTANT MATERIALS
MEAN ARCHITECTS MUST KEEP THEIR STRATEGIES CURRENT

by B.J. Novitski

Few phenomena in the built environment draw our attention like a disastrous fire. The inevitable public outcry for greater governmental protection often results in changes to building codes and a redoubling of research efforts. This means architects must be ever vigilant about new regulations and innovative fire-resistant materials. The pace of new development has been kept high by the alarming destructiveness of fires in this decade. And some attitudes are changing about who should take responsibility for fire protection. Keeping up with all these changes remains an ongoing challenge for architects.

Residential fire sprinklers

One longstanding debate involves the desirability of residential fire sprinklers. No one doubts that they save lives. According to the National Fire Protection Association (NFPA), residential sprinklers could reduce the annual rate of 4500 deaths by fire in the United States by an estimated 59 percent, or by 82 percent if used in combination with smoke detectors. Some resistance to sprinklers lies in their expense, estimated to be about 1 percent of the cost of new construction but higher in existing construction. Also, homeowners may fear that a triggered sprinkler could flood the entire house, but residential sprinklers are designed to operate independently, targeting only the area of fire. Even though many jurisdictions require that installers be specially trained and certified, even the best-installed system will fail if its water supply is cut off for any reason.

To promote public awareness, the NFPA formed a coalition in January with the American Fire Sprinkler Association and the National Fire Sprinkler Association. Their goal is to increase the rate of adoptions of fire sprinkler ordinances for new construction in one- and two-family dwellings. A pilot project in Connecticut will be the first step toward a national campaign.

Residential sprinklers are more common in multifamily occu-



pancies. According to Richard Bukowski, a fire research engineer at the National Institute of Standards and Technology (NIST), there are several reasons for this. “The need in a multi-family occupancy is more urgent,” he explains, “because one person’s fire is a threat to others. And the codes have been successfully accepted because of tradeoffs to the builder that make up for the cost.” If a builder can construct three stories without sprinklers but four stories with them, the additional units on the bonus floor compensate for the cost. Moreover, a multifamily structure is more likely to have a professional superintendent to maintain the systems. Bukowski notes: “Many homeowners never get any equipment serviced until it breaks. But with a sprinkler system, they don’t know that it’s broken until there’s a fire because under ordinary circumstances, it doesn’t do anything.”

Nevertheless, sprinklers in single-family dwellings have been mandated in special cases, for instance in remote wooded areas, where homeowners must share responsibility for their own protection. These regulations enable the local authorities to justify providing fewer fire stations in sparsely populated areas. Bukowski states that such ordinances are already in effect in woodland communities near Denver and Atlanta. A similar strategy is sometimes applied to urban redevelopment projects, such as on waterfronts.

B. J. Novitski is a writer specializing in architectural technology, education, and computers. She lives in Eugene, Oregon, and can be reached at bjn@efn.org

Dubbed the “miracle house,” this building remained standing after the disastrous Laguna, Calif., fire, while its neighbors burned to the ground. But not a miracle at all, say experts. The homeowners simply took the right precautions to protect their property.



Continuing Education This month’s installment of the *Architectural Record/AIA Education Series* looks at *New Tools in Fire Protection*. Use the following learning objectives to focus your study. After reading the article (pages 207-210), complete the questions (page 280) and check your answers (page 282). AIA members may fill out the self-report form in this issue (page 282) and send it in for two AIA Learning Units.

Learning Objectives After reading the article, *New Tools in Fire Protection* and completing the exercises, you will be able to:

1. Explain the flaw in traditional fire-door testing and the impact it’s having on the major codes.
2. Briefly summarize the current state, positive and negative, of at least five fire-protection methods of relevance to specification.
3. List six conclusions for designers learned from large-scale fire disasters.

FIRE-WISE CONSTRUCTION FOR THE WILDLAND/URBAN INTERMIX

A coalition of agencies, including the U.S. Forest Service, the Department of the Interior, the National Association of State Foresters, the National Fire Protection Association, and the U.S. Fire Administration have created a Web site to promote fire safety in the wildland/urban intermix (<http://www.firewise.org/>). This site offers a host of suggestions for protecting a house from wildfire. Here are a few of them.

Choose a "fire-wise" location.

Select a level site over a sloped one; check with local officials about the

availability of hydrants and other fire protection; mark your location so firefighters can find you.

Design fire-wise structures.

Avoid untreated wood-shake roofs; screen the chimney; cover exterior attic and underfloor vents with wire mesh no larger than 1/2 inch. Exterior walls should be of fire-resistant materials from the ground to the roof line. Eaves should be boxed or have minimal overhang. Use thick, tempered safety glass or dual-pane glazing, and minimize the size and number of windows on the side

of the house that would likely be exposed to a fire. Build nonflammable balconies and decks; install smoke detectors; provide ample safety exits.

Stay on guard with fire-wise landscaping and maintenance. Create a 30- to 100-ft firebreak of

paving or bare ground around the structure; keep firewood and flammable vegetation and debris well away from the walls; sweep gutters, eaves, and roof regularly. Landscape materials should be fire-resistant, such as desert succulents and other drought-tolerant plants.



Stucco-clad Arizona resort structures are landscaped with naturally fire-resistant desert succulents to minimize the potential fuel supply that spreads wildfires.

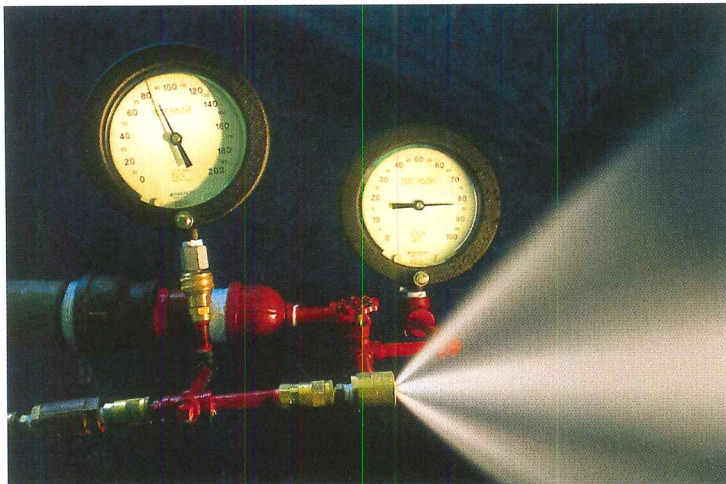
"A developer builds houses closer together," he says, "so the fire trucks have to come in more slowly, but the houses are sprinklered so the trucks don't have to get there as fast. These economic issues tend to drive the single-family sprinkler ordinances more than anything else."

New ICBO action

A recent code change will affect the way architects specify fire-rated doors. Last fall, the International Congress of Building Officials (ICBO) voted to adopt a new test procedure for side-hinged doors (UBC 7-2-1997). In the past, doors were tested under negative pressure, but positive pressures are more typical in real fires. Under such pressure, most existing swinging doors will leak super-heated gases and smoke at a rate high enough to ignite the door and to impede firefighters' vision. Both wood and metal doors will have to be retested with the new procedure.

It may be early next year before the new code is adopted by municipalities and states, according to Jim Berg, a Kansas City, Mo.-based consultant with Berg Marketing Associates, who has been following this issue. He says that the other code-writing groups, Building Officials and Code Administrators (BOCA) and Southern Building Code

Fine-water sprays create small, concentrated, and fast-moving droplets, and can replace halon systems for flammable liquid fires.



Congress International (SBCCI) may adopt the standards in the future. The International Building Code (IBC), currently being drafted in a cooperative effort of all three code groups, proposes fire-test standard NFPA 252, which allows both positive and negative door testing. In the meantime, door manufacturers are rushing to have their products retested and in some cases redesigned. Berg expects that the cost of research and development, plus the added production cost of the new doors, will add about 10 percent to the cost of a metal door and up to 20 percent for wood.

One existing technology that has proven effective in positive-pressure tests are intumescent seals, such as those created for doors by Zero International in New York [ARCHITECTURAL RECORD, October 1995, page 46]. When exposed to heat or fire, the intumescent gaskets begin to expand gradually, filling the gaps between door and frame, and preventing flames and smoke from passing through. More conventional intumescent materials, like those used in fire stops in firewall penetrations, respond to very high temperatures by expanding suddenly and one time only. Such materials would be ineffective as smoke gaskets in doors which may need to open and close repeatedly during a fire emergency while maintaining their gasketing properties. Berg points out that toxic smoke, which is the primary killer in fires, still receives little attention. "Code officials know it's a problem," he says, "but we haven't had a solution. The good news is that intumescent seals might be able to block toxic smoke as well."

New materials

Over the past few years, there has been ongoing discussion about the relative merits of active fire protections, such as sprinklers, and passive protections in the form of noncombustible materials. Although sprinklers are increasingly being demanded in public buildings by codes, insurance companies, and the public, NIST engineer Bukowski points out that they may not be sufficient by themselves in many spaces, such as large atria. Also, they may be necessary but not sufficient for facilities like daycare centers and hospitals with particularly vulnerable populations. Thence the importance, Bukowski says, of recent progress in upholstered furnishings designed to burn more slowly. California now limits the energy release rate from furnishings used in high-risk occupancies. In many cases, this improved fire performance requires only the addition of a bar-

rier fabric placed under the upholstery to keep the filler material from burning. These fabrics are made of highly heat-resistant polymers such as the Nomex nylon used in firefighters' clothing.

Initially, the furnishings industry worried that compliance would make any upholstered furniture prohibitively expensive. "The big breakthrough came," says Bukowski, "when they discovered they could bond the barrier fabric directly to upholstery. The composite fabric is thicker and a little more expensive, but the labor cost doesn't change so the incremental cost is relatively small." So far only a few states require these furnishings. But because they are commonly available and not much higher in cost, Bukowski observes, they are being specified even where not legally required.

Halon substitutes

Another substance that has undergone close scrutiny in recent years is Halon 1301. It has been used in applications where water sprinklers are inappropriate or ineffective, such as in electrical or grease fires, or where the water itself would be destructive. But halons are being phased out because of their damage to the ozone layer. Existing systems are permitted to remain and are even being recycled, but the search is on for substitutes.

Factory Mutual Engineering, a Norwood, Mass.-based property-loss-prevention research and approval organization, has done extensive testing of fine-water spray systems. Unlike conventional water sprinklers, the fine-water spray systems create small, concentrated, and fast-moving droplets. The small droplet size and low water-flow requirements minimize water damage. These are effective against flammable-liquid fires. Senior engineer Richard Ferron predicts that Factory Mutual-approved products for office buildings and light-hazard occupancies (where the quantity or combustibility of contents is low) will be available by the end of the year. Meanwhile, F.M. is still looking for halon replacements that will be effective against electrical fires.

Recent research

Possibly one of the greatest concentrations of fire protection research occurs at NIST's Building and Fire Research Laboratory in Gaithersburg, Md. (For project descriptions, look for their World Wide Web site at <http://www.bfrl.nist.gov>.) Much of their work is in software development, and about a dozen programs are available at low or no cost. These systems simulate the movement and temperature of smoke during a fire, the breakage of glass under high heat, the evacuation of occupants during a fire, and so on. (See <http://www.bfrl.nist.gov/864/fmabbs.html>.) Although designed primarily for researchers and fire-protection consultants, these systems are becoming increasingly "designer friendly." For example, a fire model called CFAST is being modified to accept CAD files as input. The resulting system will be able to "read" a building geometry and display the behavior of a fire in it. NIST researchers are working with computer scientists at the University of California at Berkeley (UCB) to animate the smoke simulation model. Users will be able to "walk" through a building on fire and "watch" the smoke flow along the ceilings.

Another NIST research project concerns the safety of elevators during fires. Although elevators are almost never permitted for emergency egress, they are commonly used by firefighters. NIST researcher John Klote has been looking for ways to make them safer. Any elevator equipment near the fire must be considered too dangerous to use. But often the firefighters' water, not the fire itself, causes electrical shorts in components inside the elevator shaft. Klote is studying the way water flows into elevator hoistways from sprinklers, standing water, and fire hoses. Based on his findings, elevator manufacturers will be able to design

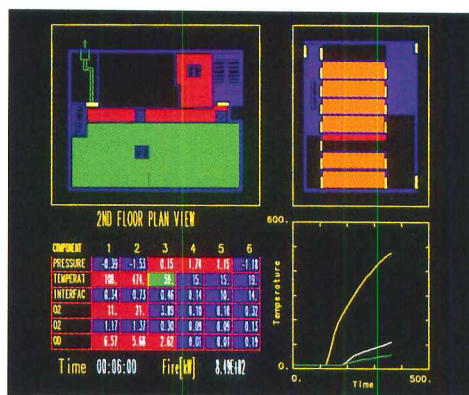
door housings and elevator cars to channel water away from vulnerable components. However, even then it is unlikely that elevators will be approved for egress during a fire. Currently, codes permit elevators only for the very specific case of air-traffic control towers.

Reactions to recent fires

In reaction to disastrous urban fires, public opinion often calls for stronger preventive measures. As important as that may be, one new lesson emerging in the 1990's is that some fires are not preventable. Indeed, wildfires at regular intervals are a normal part of many North American ecosystems. Especially where human settlement abuts wilderness, called the "urban/wildland intermix," fire is inevitable, and people who choose to live there must learn to cope with it. The good news is that known preventive measures, if followed, can help dwellings to survive these fires relatively intact.

Some of these measures were publicized in the aftermath of the terrible fire in Oakland, Calif., in 1991 [ARCHITECTURAL RECORD, December 1993, page 16]. To make a house less vulnerable to fire, homeowners are urged to clear vegetation away from the structure; architects are advised to design enclosed eaves and specify double-glazed windows, and noncombustible roofs and cladding. How and why these design features fend off fire has become better understood in the intervening years. The behavior of glass under intense heat, for example, has been studied by Patrick Pagni, a fire physicist at UCB. He recalls two adjacent houses in Oakland; the one with double-glazing remained intact while the one next door with single-pane windows burned to the ground.

Pagni believes that fire's main entry point into a house in an urban/wildland intermix, assuming the roof is noncombustible, is through the windows. He explains: "The radiation and convection from a burning shrub near a window cause the glass to break, allowing flames into the structure. Because most vegetation burns intensely but quickly, the window doesn't have to stay intact for very long. And if it is double-



Public-domain software developed at NIST includes CFAST and Hazard I, which can simulate generation and movement of smoke and gases through a user-defined building, resulting temperatures, evacuation behavior, and so on.



Researchers at NIST and the University of California at Berkeley are developing a fire simulation software system that creates a virtual walkthrough of a building during a fire, and displays a smoke-distribution model on screen.

paned, the window may outlast the fire.” He suggests that homeowners in all fire-prone areas, even in mild climates, should consider double glazing.

What Pagni has learned about the danger from combustible roofs is less intuitive. In the past, he says, the main concern about wood roofs was the vulnerability of the individual structure. However, his research shows that a greater danger from shake or shingle roofs is their effect on nearby structures. In a fire like the one in Oakland, characterized by dry, high-speed winds, the burning shingles come loose from their fastenings and become airborne burning brands; their aerodynamic shape turns them into efficient fire carriers. “Research shows,” says Pagni, “that for every house with a shake or shingle roof that caught fire in Oakland, there were 60 ignitions downwind.” Treated wood is not much better; it takes a little longer to catch fire but still becomes a dangerous brand. “After analyzing the Oakland fire,” Pagni concludes, “we believe that we need to take a more global view when choosing materials. Ask not only what the effect on the initial house will be, but also ask if that house catches on fire, what the impact on downwind neighbors will be.”

NO LOCATION IS IMMUNE TO FIRE. THE SAFEGUARDS ARE WELL PUBLICIZED, THE MATERIALS ARE AVAILABLE, THE RESEARCH IS ONGOING, AND THE CONSEQUENCES OF IGNORANCE ARE DISASTROUS.

Regardless of any changes to building codes, fire protection ultimately depends on people’s willingness to follow the rules and guidelines.

According to Don Moeller, of the Walnut Creek, Calif. office of the fire protection consulting firm Rolf Jensen Associates, many of the needed safety regulations were in place before the Oakland fires. But only now are they being strictly followed. “Throughout history,” Moeller observes, “such areas have a large fire every few decades. In the intervening period, people’s memories fade and they start feeling relaxed about the requirements until they have another fire. In Oakland, many people did not take the rules seriously about keeping brush away from their houses. The outcome would have been significantly different if more people had worked with the guidelines they already had.”

Whose job is protection?

The need for protecting the wildland/urban intermix is growing more urgent. More homeowners are seeking refuge from urban centers in less developed areas. Decades of fire suppression in wildlands have led to a buildup of underbrush (“fuel”) that would have burned regularly and with minimal damage under natural conditions. Local fire departments are often unable to expand services because of taxpayer revolts, and a conservative political climate prevents major increases in regulation regarding the maintenance of private property. All these factors make the threat of future fires perhaps more severe than it has ever been.

One successful approach to protection has been the introduction of “fuel modification zones.” James Smalley, a senior fire service specialist with the NFPA, describes these as areas surrounding housing developments that are planted with vegetation of varying degrees of fire-resistance and in a pattern that does not sacrifice appearance for safety.

“Imagine, for example,” he says, “a development in a hilly region of Orange County. At the bottom of a ravine where it’s unbuildable, you’ll find dense manzanita and other wild brush. As the ground rises closer to the housing near top of the hill, they’ll thin out the natural vegetation and plant fire-resistant succulents. In some cases, they’ll also require a road downhill from the houses, providing a 40 to 50-foot firebreak. As fire rolls up the canyon, the fuel gets thinner, then the fire hits an asphalt road

instead of an overhanging deck of a wooden house.” These fuel modification zones, Smalley argues, are environmentally sound and may still provide occupants a view of the wildland below. Yet the houses are relatively safe. The severest damage in the 1993 Orange County fire occurred in Laguna, an incorporated area that did not participate in the county’s fuel modification zone program.

Now the federal government has added its voice to the call for a more balanced approach to fire protection. No one disputes that life safety is always of primary importance. However, a new policy proposed last year by the Departments of Agriculture and Interior says that the safety of private property is not necessarily more important than the safety of natural resources. If a fire crew must choose between saving a forest and saving a house, it may choose to save the forest. In a speech to the Wildland/Urban Interface Conference last year, forestry expert Neil Sampson predicted that difficult choices would have to be made as funding for fire protection dwindles and individuals continue to build unsafely in fire-prone areas. “This is a harsh message,” said Sampson, who chaired

the National Commission on Wildfire Disasters, which advised that natural fires should not necessarily be suppressed. “Private land use rights need to be protected, but people who build next to wildlands need to expect wildland fire and take personal responsibility for the way their buildings are constructed, and the way the vegetation is maintained around them.” The full text of Sampson’s presentation is available at <http://www.-firewise.org/pubs/wnn/vol10/no2/>.

This is an important lesson for any architect designing outside urban areas. But no location is immune to fire. The safeguards are well publicized, the materials are available, the research is ongoing, and the consequences of ignorance are disastrous. In special cases, it might be helpful to hire a fire-protection consultant. For example, consultants can engineer custom protection systems for invaluable archives or unusually expensive equipment. Or they can do technical analyses and negotiate with local fire officials to justify unusual design features such as exposed structural members. But even without such special requirements, it may not be suitable for architects to simply “go by the book.” Professionals might well consider preventive measures for their designs that go farther toward safety than the minimum code requirements. ■

Fire Information Sources

- *National Fire Protection Association*
1 Batterymarch Park
PO Box 9101
Quincy, Mass. 02269-9101
800/344-3555, 617/770-3000
http://www.wpi.edu/Academics/Depts/Fire/Nfpa/nfpa_home.html
- *U.S. Fire Administration*
16825 South Seton Avenue
Emmitsburg, Md. 21727
301/447-1000
<http://www.usfa.fema.gov/>
- *Building and Fire Research Laboratory*
National Institute of Standards

and Technology

- Gaithersburg, Md. 20899*
301/975-5900
<http://www.bfrl.nist.gov/>
- *National Fire Sprinkler Association*
P. O. Box 1000
Patterson, N.Y. 12563
914/878-4200
<http://www.nfsa.org/>
- *American Fire Sprinkler Association*
12959 Jupiter Road, Suite 142
Dallas, Texas 75238-3200
214/349-5965
<http://rampages.onramp.net/~smuncy/afsa.html>

AutoCAD 14 on the Way

THE NEW VERSION OF AUTOCAD, ALMOST READY FOR RELEASE,
IS MORE FEATURE-LADEN THAN R13 AND AS FAST AS R12.

by Steven S. Ross

The first new AutoCAD version in three years is due out by June. Autodesk technical and public-relations staff members insist that this time, they'll get it right, and right from the beginning, even though about a quarter of the computer code is new. "The end-user did not see any big advantage in AutoCAD 13," admitted one, "but they certainly will in R14." After wringing out the last "alpha" version before beta testing started March 10, we agree.

Indeed, Release 14 will incorporate as built-ins many of the features that you once had to pay extra for. There's better font management, better control of hatched and shaded areas, more ways to snap new entities to existing ones as you draw, and much more flexibility in handling referenced drawings. You can, for instance, trim a referenced drawing to access the data or entities in one part of it and, as an option, have that trim carry down through multiple layers. This should vastly increase the ease of working with multiple referenced files.

On the imaging side, the functionality of AutoVision, an R13 add-on from Autodesk, is now built in, with photo-realistic rendering and basic raster-image importing as well.

Release 13 ran slowly, especially in Windows. By the fourth major maintenance release, issued in early spring 1996, speed and bug problems had been basically eliminated. But few vendors of add-on software were able to take advantage of the "object"-technology-based hooks Autodesk had built in. By the time problems adding third-party software modules had been solved last year, Autodesk was too close to the next release for many vendors to invest in add-ons specifically for Release 13—or for many customers to bother upgrading from AutoCAD 12. It's not that older add-ons won't work with AutoCAD 14. Older AutoLISP routines will run unchanged. Autodesk says older ADS and ARX add-ons can be recompiled by vendors to work with R14 as well. But vendors of large add-on packages, such as KETIV, Eagle Point, and Autodesk's own Softdesk generally want to take advantage of new features in R14, and avoid providing some things that are now built into AutoCAD itself.

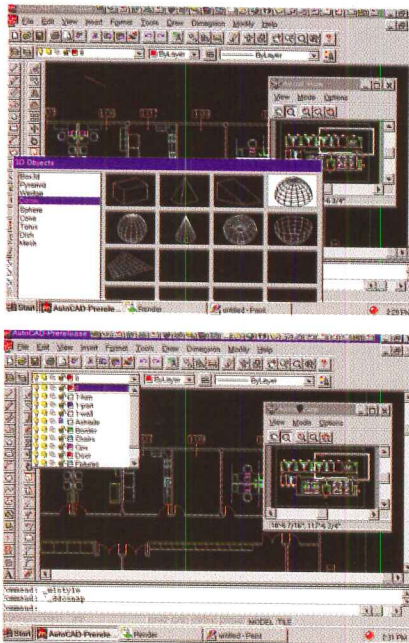
All this works in the same machine you're probably using for older releases of AutoCAD—a Pentium with perhaps 32MB of RAM—without having to boost your machine's performance. In part, this is because code has been refined (there's no need for a big display list in memory, for instance), ARX object files are usually smaller than the blocks of code they replace, and because AutoCAD 14 automatically loads and unloads code as you handle specific tasks.

One big problem for many users: Autodesk seems to be sticking to its statements about making R14 available only on Intel CPUs (or Intel-like CPUs from Cyrix and AMD) running Windows 95 or Windows NT 3.51 or higher. Autodesk says it will continue to sell and support DOS, UNIX, and Windows 3.11 versions of R12 and R13 as long as there is demand. Autodesk, as of early March, was not planning to include R13

and R12 on the same disk as R14. We strongly recommend Windows 95 or Windows NT 4.0 if you do not plan to use a special graphics accelerator board; graphics run slower in NT 3.51 than in NT 4.0. (R14 has a better graphics pipeline.)

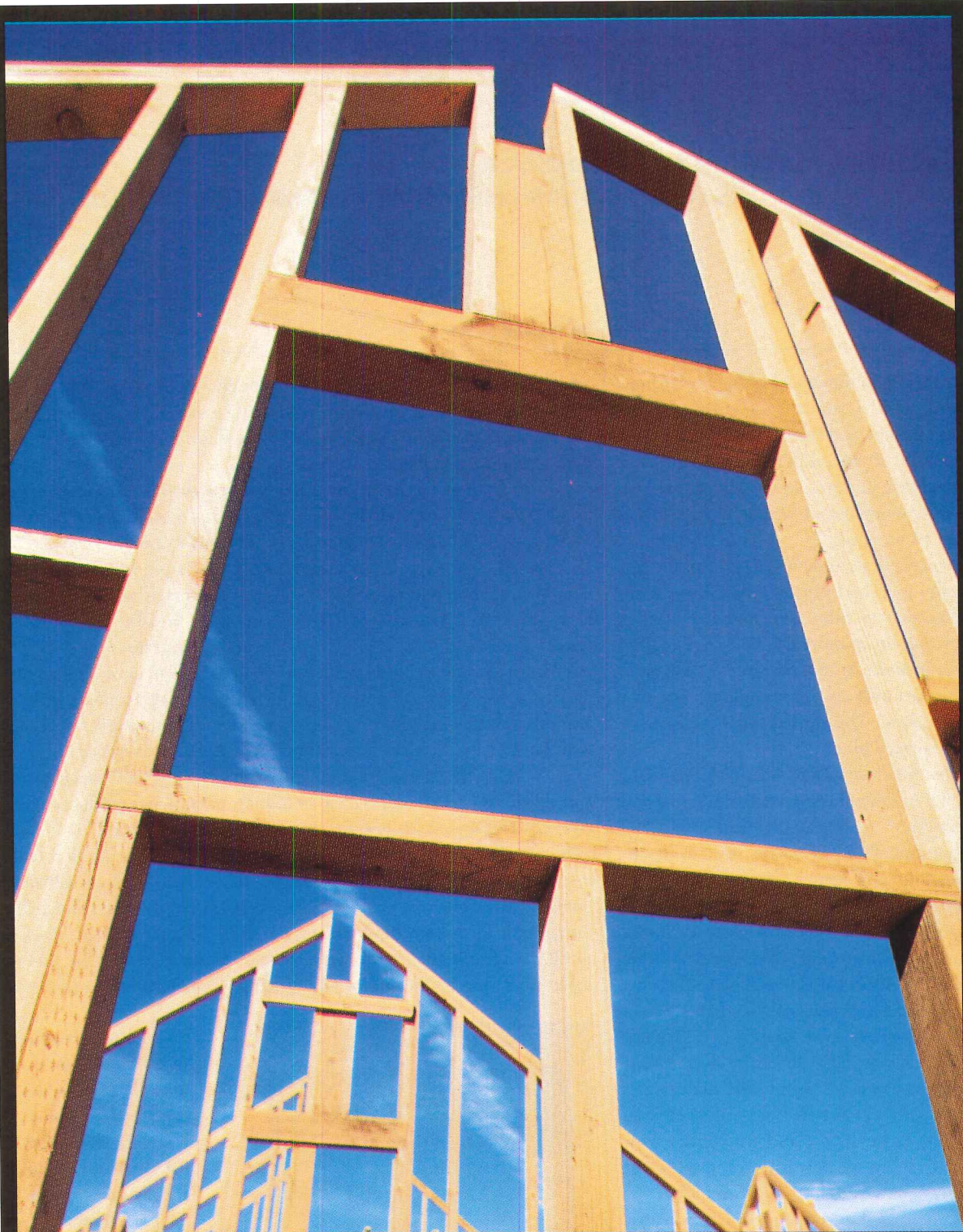
On the other hand, files can cycle between R14 and R13 (or LT 95) and back again with no loss of intelligence (although not all parts of an R14 file may be fully usable in LT or R13). R14 can also write to the R12 format. And we confirm that AutoCAD 14 runs generally faster in Windows 95 than R12 runs in DOS on the same machine if you have at least 32MB of RAM installed (DOS wins with 16MB). There's more graphics overhead in R14, but it is a true 32-bit program, whereas DOS has many more 16-bit bottlenecks. But we note that R14 encourages more file baggage—referenced drawings, underlying data, and rendering. And add-ons or individual drawing habits and design style can affect speed as well. But R14 itself isn't embarrassing where speed is concerned.

R14 will expand upon the Internet publishing tools that became available for R13. This makes it easier to share designs and product details on the World Wide Web, and to build in-the-office "intranets." R14 does have a Microsoft-standard ActiveX Automation interface, so that data from some Microsoft applications can be shared. But like many software vendors, Autodesk was caught short when Microsoft didn't finish its Visual Basic for Applications language on time. Thus, it is likely that not all VBA programming features will be usable in AutoCAD just yet. R14 is expected to ship by the end of July; pricing was not set at press time. ■



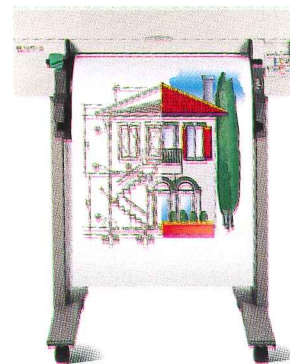
An example of the 3D objects dialog box in AutoCAD 14 pre-release version (top) and the on-screen view including Aerial view window and layer control (bottom). Administering external databases from within AutoCAD itself is easier.

*U.S. suggested retail price. ©1996 Hewlett-Packard Company PE12597



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Stop! Read This Before You Buy!

YOUR NEXT COMPUTER EQUIPMENT UPGRADE MAY BE LESS PAINFUL THAN YOU EXPECT.
HERE'S SOME BASIC ADVICE FOR THE SMALLER OFFICE.

by Steven S. Ross

The rules have changed. As we survey the computer scene, we realize that new software and new, lower prices for high-speed hardware have altered the price-performance balance for architects. Thus, the advice you got just a year ago—when memory and disk drive prices were far higher—may simply not be valid today. This Q&A, for those who don't have full-time systems administrators, attempts to cover the key issues. Although it concentrates on the Windows/DOS world, it also provides some answers for those using UNIX or Macintosh equipment as well.

Q: My office is using mainly DOS computers. Everyone has been telling us to go to Windows, but DOS versions of the CAD software we use are just plain faster. How long can I stick with DOS?

A: If you're simply producing drawings, with little underlying data, and everyone who needs to can read your drawing files, you don't have to give up DOS—yet. But new versions of Windows CAD software have gotten a lot faster in the past year or so. The Windows packages are

ONCE COMPUTER TECHNOLOGY PRICES FALL, THEY NEVER SEEM TO GO BACK UP.

much more feature-laden than DOS, too. They can exchange data and graphics with other software and with the Internet, and handle many drawing tasks more easily. These extra capabilities will become increasingly important as clients come to expect more "object" information in drawings—information your DOS software will never be able to handle.

Q: My machines are mainly equipped with Intel and AMD 486 CPUs. Do I have to upgrade to Pentiums to run the new Windows 95 and NT software?

A: You may want to. A fast 486 (486-DX4-100) works well with Windows 95. But Windows NT really requires a Pentium-class computer. Any computer sold before 1995 will probably not have a "plug and play" BIOS either, so adding equipment to the machine may be more difficult. The upgrade to Pentium may not cost much, either. You may be able to upgrade the basic computer (or even the mother board) for just a few hundred dollars, and reuse existing disk drives, monitor, and other equipment with the faster computer.

Q: What's the difference between Windows 95 and Windows NT? They seem to look alike on the screen, and all the software that people are talking about seems to run on both.

A: Windows NT is more stable, more capable of running an entire network, and easier to administer in a network. It also has more security features, and may eventually replace UNIX for network chores. But Windows 95 is easier to install and runs in smaller computers. The two will probably merge by late 1998.

Q: I'm in the market for some new computers. The dealers and

the ads keep talking about ATX and NLX. What are they talking about?

A: These are new layouts for the motherboards that are the heart of all computers. NLX is meant for smaller, home-style or executive machines. ATX is meant for computers with big cases—the type architects usually have. The change of most importance is where the CPU is placed. A fast Pentium uses 30 watts when it is busy, so it has to be cooled by fan. In the ATX design, the power supply's fan does double-duty so the CPU itself doesn't need a fan of its own. This is a much more reliable. Thus, you should demand ATX in new computers you buy or lease.

Q: Why have prices fallen so fast? A 1-GB hard drive was \$400 a year ago. Now \$250 buys a drive three times as big. And 16MB of RAM was \$500 in January 1996. Now it is under \$100.

A: Three reasons. First, technology has advanced. Memory chips, for instance, held 1 megabit just a few years ago. Now the most common chip can hold 16 megabits, or 2 megabytes. Only 16 of them are needed for a memory module (SIMM or DIMM) that holds 32MB. Technology for hard drives improved as well. Second, the industry can produce more chips and hard drives than customers need, forcing vendors to compete on price. Third, the dollar is strong against foreign currencies now.

Q: How can I anticipate price changes in the future?

A: It is clear that once prices fall in a computer technology, they never seem to rise again, except when something unusual takes place. Memory prices will probably continue to drop. 64-megabit memory chips are being marketed, 256-megabit chips are due soon, and 4-gigabit chips were recently demonstrated (although they are a few years away). The next big price decrease will probably be in large monitors—21-in. diagonally. A good 15-in. monitor, for instance, can be had for under \$400. A 21-in. costs at least three times that. Nevertheless, the average monitor size has been moving up; the 17-inch, suitable for many drafters, can now be bought for under \$700.

Q: What about graphics cards, the things that fit into my computer and let me attach the monitor?

A: The newest cards work best with Windows and other advanced operating systems. The latest version of Windows NT, 4.0, has much faster graphics than earlier versions.

Q: My computers use VESA graphics cards that were state-of-the-art just a few years ago. But the new Pentiums from major vendors don't have VESA slots; they accept only PCI cards.

A: The PCI interface works better with the Pentium (actually, these are correctly called VL cards; VESA is the organization that wrote the standards for VL cards). Thus, you won't find many Pentium computers with slots for VESA cards. Also, PCI graphics cards are only 10 to 20 percent as expensive as older VESA cards of the equivalent speed that they would replace.

Q: Video card vendors talk about 64- versus 128-bit data paths, and different kinds of memory, like WRAM and VRAM. Does it really matter?

A: Only if you are doing fast animation within scenes that require lots of photorealistic rendering. Special RAM types for graphics adapters are no faster, internally, than conventional, less expensive RAM. But they may have two ports instead of one. This allows graphics data to be written to them as they write data to the screen. Think of a subdivision with narrow local streets, but two access roads to the main highway instead of one. Traffic will clear out of the subdivision faster—but traffic is still limited somewhat by the local streets.

Q: I've heard about AGP, too, the Accelerated Graphics Port. Also USB and Firewire. What does this do?

A: These are all new ways for peripherals to interact with your computer. AGP will replace PCI and VESA/VL graphics. USB (it stands for Universal Serial Bus) will replace printer and serial ports. And Firewire will handle video streams from VCRs and new digital disks. All three standards (especially USB) are already in use and will be phased in more widely over the coming year. This will mean that peripherals you buy in the future will use the new standards. You will have to buy inexpensive cards to adapt to the new standards.

Q: My dealer persuaded me to upgrade my three-year-old Pentium 66 MHz machines to the newer 200MHz model. The new machines are faster, but not by much. Am I doing something wrong?

A: The only thing you did wrong was to listen to the dealer. The MHz rating refers to the internal speed of the CPU. That's a measure of raw processing power. But the speed of the "bus," the internal pathway

that ties all the computer's components together, doesn't vary much between the 200MHz Pentium and the 66MHz Pentium machines. In fact, the 200MHz Pentium's bus speed is 66MHz, no faster than a Pentium running at 66MHz.

The table shows the estimated relative performance for CAD. If you do a lot of rendering, the performance of high-end Pentiums will be faster for you than the averages in the table. If you do only straight drafting, the performance gains will be even smaller than indicated in the table. Notice that there is almost no difference in performance between the 66- and 90MHz models.

Q: How come the bus speed on some of the faster Pentiums is slower than the bus speed of less-capable Pentiums?

A: The circuitry necessary for synchronizing data flow through the computer requires that the bus speed be an even fraction of the internal CPU speed. So although Pentiums with faster CPUs do the internal calculations faster, the process is slowed by such bottlenecks as bus speed, memory speed, and disk access.

Q: What about cache memory? I heard that adding cache memory can improve performance.

A: It can, because the Pentium can store some data in super-fast cache memory instead of waiting for slower RAM. CAD software moves a lot of data, so cache is more important for CAD applications than, say, word processing. Intel says a 150MHz Pentium with 512K of external cache is as fast as a 200MHz Pentium with 256K. The table assumes all machines have the same cache size. The chips for 512K of cache memory can cost as little as \$100. "Internal" cache is the cache inside the CPU. MMX Pentiums have more internal cache, so they are slightly faster in most CAD applications than non-MMX Pentiums.

Q: That's for Intel CPUs. What about other, faster CPU families in the future?

A: You may be stuck with Intel and Intel-compatible CPUs (from IBM/Cyrix and AMD). The big alternatives for architects these days are computers based on the SPARC family or the Alpha family. They are *very* different. The SPARC family, used mainly in Sun Microsystems workstations, was designed for the UNIX operating system. Sun developed a version of Windows NT for it, but the version was never marketed. Digital developed the Alpha with the idea that it would be a faster alternative to Intel CPUs like the Pentium. Windows NT 4.0 works with the Alpha, but 5.0 probably won't. Digital has developed software that allows the Alpha to run software meant for Intel CPUs, but there is a speed penalty. AutoCAD 14 will not work with the Alpha running plain NT. It may work with the Alpha running the Intel "translator" software. Previous versions of AutoCAD worked with Sun SPARC computers running UNIX. R14 won't. R14 won't work on the version of NT that runs on the PowerPC CPU, either. Benchmarks are in many ways artificial, because they will vary with specific vendors' computers, the software you use, and even the type of work you do. Also, the speed will appear different as you work in the real world. Processes that you do often, like editing a line, happen very fast on any computer. But rendering takes awhile—accentuating the speed difference.

Q: The PowerPC also is the brain inside the Macintosh. I've been using a Macintosh for years. I like it. Will I have to give it up?

A: Think of the Mac the same way you would DOS computers now—good, even great, for drawing. And there are some great advanced CAD packages that work well on it—ArchiCAD, Architrion, MicroStation, and MiniCAD, for instance. But the Macintosh operating system has not advanced as far as Windows has (though Apple has made some moves to try to regain its advantages), and most vendors develop

PENTIUM CPU versus BUS SPEED

CPU SPEED MHz	BUS SPEED MHz	CPU/BUS RATIO	PERFORMANCE RATIO TO 60MHz
60	60	1	1.00
66	66	1	1.15
75	50	1.5	1.15
90	60	1.5	1.20
100	66	1.5	1.30
120	60	2	1.40
133	66	2	1.50
150*	60	2.5	1.55
166*	66	2.5	1.60
180**	60	3	1.60
200**	66	3	1.70

* PENTIUM OR PENTIUM PRO

** PENTIUM PRO

NOTE: MMX PENTIUMS ARE PERHAPS 3 TO 5 PERCENT FASTER THAN "CONVENTIONAL" PENTIUMS OF THE SAME CPU SPEED FOR THE TYPES OF WORK ARCHITECTS DO.

Notice that a 200 MHz Pentium is not three or four times faster than that old 66 MHz model! In fact, it is only about 50 percent faster. From 60 to 90 MHz and 100 to 200 MHz, there's little practical speed difference for most users.

SOURCES: WEKA PUBLISHING, INTEL

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CIRCLE 76 ON INQUIRY CARD

for Windows first because Windows has 95 percent of the market.

Q: Well, how else do I improve performance, on a tight budget?

A: Adding memory usually helps most. Forget the advice you read in general-audience computer magazines; they're telling you to go for 16 MB of RAM. Architects' needs are different. You'll want at least 32 MB, and probably 64 MB, especially if you are handling large projects or doing rendering.

need to connect them to a phone line, the modem will be easier, simpler, and cheaper. But as network size increases, routers get more attractive.

Q: To avoid a router, my dealer suggested ISDN to one or two computers. What is it?

A: ISDN allows direct connections between your computer and the phone system. The connections are "modem-like," but much faster—typically four times faster. Phone costs are higher, however, typically \$100

ASK FRIENDS FOR THE NAMES OF RELIABLE CONSULTANTS, BUT BEWARE OF THOSE WHO DO MOST OF THE TALKING AND DO NOT LISTEN TO YOUR NEEDS.

Q: Can I add more than 64MB to my two year machine?

A: Maybe not. The chips that control the Pentium motherboard generally could not handle more than 64 MB until about 18 months ago. Various versions of the popular Intel Triton II chipset can handle at least 128 MB, but the older Triton could not. Some Macintosh computers of older vintage could handle more memory, however.

Q: The ads talk about EDO RAM. Is it better than what I have?

A: By one-half percent to a few percent, generally. EDO RAM can move large amounts of data in bursts. This saves some time the system would otherwise use to address separate blocks of memory that might hold all the data that has to be moved. But the movement itself doesn't get any faster. If you have "conventional" DRAM (also called FPM DRAM) in your system, you can add more EDO or DRAM. Brand-new systems use SDRAM, which is even faster, because the memory is more tightly coupled to the speed of the bus. SDRAM memory comes in modules that are not interchangeable with modules in older computers.

Q: A consultant suggested using Novell for my networking software. But the dealer said Windows has networking built-in. Should I pay extra for Novell?

A: It depends. Novell is much faster than Windows NT when you use a network server to run an application. IBM's OS/2 is also faster than Windows for this purpose. But the speed difference narrows when you use the server only to hold data. Architects usually have the server handle data, and run the application (such as CAD software) on "client" computers (the client is the computer you sit in front of).

Q: My office's systems seem to be on the ragged edge; we're running out of network capacity and hard-drive space. Our volume of design work hasn't been increasing as fast as our equipment needs, it seems. Do I invest in a really huge system that might meet my needs for a few years, or do I patch what I've got?

A: There's no single answer. But if you are worried about new CAD software being the "last straw" and forcing an upgrade, don't. AutoCAD 14, for instance, runs at least as fast as AutoCAD 13. And its files are no bigger. In fact, files can be dramatically smaller when drawn with the new ARX-aware add-ons that are also emerging. Files with lots of shading and patterns are also smaller with R14 than R13.

Q: My dealer says I'll need a router to connect computers on my office network to the Internet. What is a router, and how does it differ from a modem?

A: First, routers are *much* more expensive than modems! A single router will connect each individual computer in your network to the outside world or to another network. A modem will connect only one computer at a time to the outside world. Modems are also much slower than routers. If you have a network with five or six computers on it, and

to \$200 a month plus time spent on-line. Your phone company may refuse to provide ISDN service if you are more than three miles from a central phone switching center. If you spring for a router, you might as well get ISDN, too, unless your phone company quotes a very high price.

Q: The new memory modules do not have parity checking. I thought parity checking was necessary to guard against memory errors.

A: Parity checking was important in the early days of computing, when 64 kilobytes of memory chips, on average, made a "soft" error (an error due to the chip itself) every five or six hours. Today, a 16 MB block of memory (256 times more memory) would be expected to fail "by itself" only once every 25 years! Memory is susceptible to errors from "outside" however—from fluctuating power, or from interference due to other equipment inside the computer case. Most computers that are meant to be used as servers have "error detection and correction" codes built in. They do a better job than parity checking. Many desktop computers also have this feature. Look for it.

Q: How do I keep the power from fluctuating?

A: You can equip your computers with uninterruptible power supplies. A UPS, of course, provides some power for an orderly shutdown if the outside electricity fails. But it also helps suppress surges and dips in power. These can affect memory integrity. A good UPS smoothes them either with electronic "filters" or by drawing on a battery—or both.

Q: Can I use power strips?

A: Don't depend on a cheap no-battery "power strip" to suppress surges over the long term. The active filter element inside them wears out, without warning, typically in a few months to a year. Even a full UPS with battery will protect you from only one 6000-amp surge—typical of a lightning strike. It then has to be replaced. A 700-volt-amp UPS, which will be big enough to power your computer and monitor for about five minutes, costs about \$300. The batteries will last three to six years in normal use.

Q: Are there any other costs for UPS use?

A: Sometimes. Some advanced UPS systems can signal your computer to shutdown automatically when power fails. But the signal line usually requires an extra serial (RS-232) port. Serial ports are often used by other peripherals in your office such as plotters. Thus, you may need to buy an extra interface card for \$20 to \$50.

Q: Where do I find help? I want to design buildings, not computer systems. And don't tell me to read a computer book.

A: Ask your friends—not only other architects, but other small business people nearby—for names of reliable consultants. When you first meet prospective consultants in this field, beware of those that do the talking and don't listen. Often, you need someone to be on call for emergencies and to handle maintenance one evening a week. ■

PRINCIPLES AND INTEREST

Soon after Graphisoft began its voyage from a software start-up in Eastern Europe to becoming the sixth largest AEC company in the world*, we realized that a resource more precious than financing and market access - neither of which were plentiful behind the Iron Curtain - were principles by which a business could grow and on which its customers could depend.

The development of our flagship product, ArchiCAD®, has been guided during these past 15 years by five principles (as well as a fair share of pragmatism and expediency). Although we didn't always have names for these principles, they grew and evolved with us as we worked with our clients through ArchiCAD versions 1.0 through 5.0. Today, I would identify them as follows:

- **The Virtual Building**, or the idea that the computer should be used to simulate the construction process rather than automate the drafting process,
- **Intelligent Objects** which carry three-dimensional information for rendering and presentation, drafting symbol information for construction documents, and descriptive information, and which behave according to easily definable rules,
- **Simplicity**, i.e. software that is easy to learn and use without sacrificing power and functionality,
- **Dedication** to the profession of architecture and to the building industry as a whole; inside Graphisoft we say that we never select the best business, but the business at which we can be the best,
- **Professionalism**, a simple reflection of the aspirations of our clientele, we identify ourselves as "technology partners" to our clients more than simply software vendors.

Today, many of these principles are industry buzzwords which can be found in many product brochures. At Graphisoft, they entered our vocabulary only after a decade of research & development.

Now, we can add another principle to the development of ArchiCAD (and, if we are successful, another buzzword to the industry):

- **Teamwork**, the idea that our clients should be able to share what they do without hassle or hierarchy, in the same office or across an Internet network, as part of a large firm or as individuals.

Collaboration is a cornerstone of industry in the "Information Age." Our job at Graphisoft is to develop the necessary software tools for architects and other building professionals to succeed and prosper in this competitive environment.

Gabor Bojar
President and CEO, GRAPHISOFT

* Dataquest figures based on reported 1996 revenues of AEC companies.



ArchiCAD & Artlantis Render were used for the concept design of the Telekomunikacja Polska S.A. building by ArchiCo-Projekt Ltd.

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Of Virtual Buildings and Real Architecture

by David Marlatt, AIA

Enough has been written in the past 24 months about virtual reality, virtual buildings, and virtual firms, that the subject is beginning to appear quite real. The technological hype with which we are virtually surrounded, however, can easily cloud the architect's vision of deeper issues and problems facing the profession, such as the environmental impact of building, housing for a growing and moving population, firm profitability, and relevance of our profession in society over the long term.

These are daunting challenges for which - despite hype and clichés - computers and software are an incontournable part of any reasonable solution. Most architects accept and embrace this fact, but it is still healthy to evaluate technology against some of the core values of architecture as both a profession and a business.

Mass Customization

In his recent book, *Democratic Architecture*, Donald MacDonald, FAIA, proposes four principles to be applied to housing: that it be affordable, easily and inexpensively changeable, minimize damage to the environment, and express the multiplicity of society. These principles transcend computer technology, of course, but there are places where the right software can be extremely helpful.

Daiwa House in Tokyo, Japan, for example, will soon create custom software and building components for their 5,000 person sales force. This software will enable them to work directly with clients to design "custom" houses within a wide range of parameters. By using intelligent building objects in their sales and design process, they will allow people to participate in the design of their homes, an option never before available to them.



Market Square North, STUDIOS Architecture

Architects, in partnership with owners, are in a prime position to assert their central role not only in the initial design of their buildings, but also in their long term programming, maintenance and operation.

In Americus, GA, Habitat for Humanity International rapidly prototypes and optimizes inexpensive houses for its chapters to use in their local communities (Graphisoft has donated more than 200 copies of ArchiCAD to Habitat for Humanity chapters across America). "The difficulty with the type of houses we build is that they tend to be pretty small," says Peter Dalva, Habitat for Humanity's associate director of construction technology. "You tend to do a lot of revisions and alterations, and if I didn't have ArchiCAD I couldn't make as many revisions. It leads to better design."

Effective communication with constituency groups is also a great challenge in the housing community. Arizona architect



Paul Schwam helps design affordable housing in communities along the Mexico/U.S. border: "...the problem is you need to get a lot of information across to a lot of people who don't all necessarily speak the same language. The best way to do that is graphically, and it's also better for the planners to think about it in 3D. I think time is one of the biggest issues. If we're going to solve the border development problem, we're going to have to solve it quickly."

More, More, Faster, Faster

And, we might add to the subtitle above, "Cheaper, Cheaper." As are all professionals, architects are under increasing pressure to deliver more and better client services on a shorter schedule while incurring fewer costs. Redundant processes only waste time and increase the risk of errors. Nevertheless, creativity and imagination - intrinsic to successful architecture - defy systemization and efficiency.

The profession's challenge is to provide an efficient environment for invention and discovery. Like a fast-track project, design must continue throughout the documentation process, and working drawings should start with schematic design, each affecting the other in a dynamic and recursive manner.

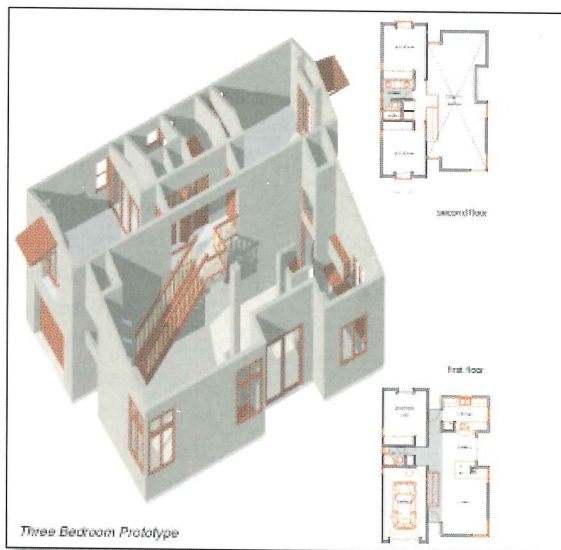
This is possible using integrated CAD software which stores the complete building model in the computer. Access to detailed information early in the design phase helps improve design and avoid errors later. Conversely, when working drawings become by-products of the integrated building model, fundamental design changes can occur with fewer repercussions very late in the process. In addition to the benefit of improved design quality, integrated CAD software reduces needless administration and the re-drawing of redundant details, specifications and other information.

Virtual You, Virtual Me, We get Together Virtually

Today I drove 20 miles to and from work across San Francisco and burned about one gallon of fossil fuel. I also consumed roadways, abraded my car, and wasted about one hour of my life. So did hundreds of thousands of people in the Bay Area.

This evening on the World Wide Web I visited my stockbroker, my travel agent, shopped for a gift, and did some research, and burned practically no fuel. So did hundreds of thousands of people in the Bay Area.

Despite a large and fast-growing population, however, the World Wide Web remains generally a solitary and uninspiring "place." Is it inevitable that the Web not transcend the flat computer screen, or is



Prototype of an Affordable Home in Contra Costa County, CA by MacDonald Architects .

it only that principles of firmness, commodity and delight have never been seriously applied to it? Just like a poorly designed building or city, the lack of architectural thought in most Websites impacts my ability to navigate, interact with others, and accomplish my tasks efficiently or at all.

Improving the architectural character of the Web is an important issue for the opportunities it presents architects and the benefits it may engender for users. The Web will never replace most conventional building, but its potential to archive information, process transactions, and facilitate meetings can also help save a significant amount of the world's natural resources.

Creators and Caretakers of the Built Environment

Because architects using integrated 3D CAD software generate so much valuable building information in the course of delivering architectural services, many new fields and services open themselves. Some ideas for ways in which architects can stay involved with clients and projects beyond the issuance of an occupancy permit are:

- Creation of images, animations and virtual reality scenes for building marketing,
- Management of building spaces and assets,
- Post-occupancy studies and simulation of design changes,
- Analysis and visualization of product performance over the building life cycle,
- Content development for electronic "building owner's manuals" including product data and links to manufacturer Websites

Building owners and managers are also seeking ways to use technology to manage their assets, optimize leasing, and improve their bottom line. Architects, in partnership with owners, are in a prime position to assert their central role not only in the initial design of buildings, but also in their long-term programming, maintenance and operation.

Between now and the new millennium - still a long time in the computer world - it is safe to say that almost all practicing architects will use computers and software for design and drafting. Beyond these foundational tasks, however, how will computers be used to advance the profession, better the environment, and provide people with greater access to architecture?

This is not a question for some future virtual world. Intelligent object technology is available now. Designing in an integrated environment is now. Controlling complete, three-dimensional building data is now. All of these technologies can be put to work today to address real problems and exploit great opportunities.



High-Tech Productivity

Dietzel & Partners
Munich, Germany



Rendered view of the renovated Kreissparkasse designed by Dietzel & Partners.

After taking over Dietz Architects in 1989, Michael Dietzel, owner of the now renamed Architekturbüro Dietzel & Partners in Munich, Germany, saw that the staff was still using pencil and paper tools for all of their planning and design. "Too many operations were being duplicated," explains Dietzel, who immediately set out to acquire computer equipment and software to increase the firm's efficiency. "I found a CAD program back in 1990 that had a graphical user interface, was object-oriented, 3D compatible in every respect, and was nevertheless still affordable. This all sounded like science fiction in those days, but ArchiCAD already had all of these features at that time."

Object orientation and ArchiCAD's scalability impressed him from the start. "The fact that ArchiCAD can be used for larger projects has repeatedly held true for us in practice. I know of no other program which delivers such good results for presentations, layouts and publications."

Today, the 20-person office has five ArchiCAD workstations in their Munich office and another four in their Dresden office. The firm's client base is composed largely of financial institutions, but expanding into insurance companies, commercial and housing developers. A modem and Apple Remote Access link workstations in the two offices and permit data to be stored centrally and accessed by all employees.

Another key benefit of ArchiCAD, according to Dietzel, is the GDL interface: "Simple GDL commands can be used to construct all conceivable 3D elements and store them as parametric objects in a customized library. In addition to knowing the relevant commands, the user merely has to be familiar with sine, cosine and tangent as well as IF/THEN structures. All CAD programs let you construct or use libraries, but these libraries do not let you change the parameters so easily. This is where ArchiCAD wins hands down in terms of productivity."

During a recent renovation project, the Stadt-und Kreissparkasse Plauen Bank in the Vogtland region of Germany, construction was not allowed to interfere with the bank's day-to-day activities, and there was no flexibility in the budget for unforeseen building problems often encountered during renovations. Despite the problems, the firm managed to satisfy and meet all of the client's requirements. ArchiCAD's integrated database allowed the architects to start determining correct dimensions and accurate costs at a very early stage. "This is a distinct competitive advantage that benefits us time and again," comments Dietzel.

The Internet is the next great challenge for Michael Dietzel. Together with another business, he has constructed a page on the Internet which allows readers to view plans relating to a particular building project. His future plans are to integrate a QuickTime® VR model onto his web page allowing clients to take a walk through a future building. This will allow Dietzel to make his work accessible to a wider audience while raising the interest of future clients.

STUDIOS' New Discovery

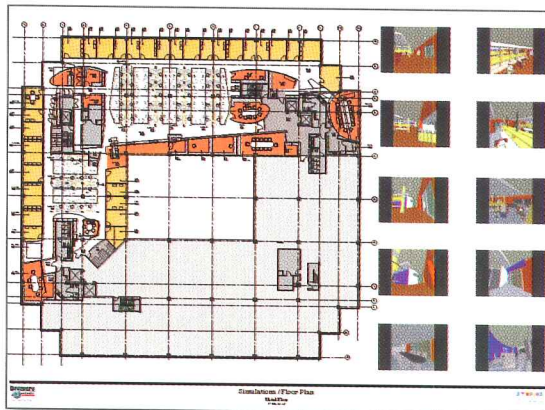
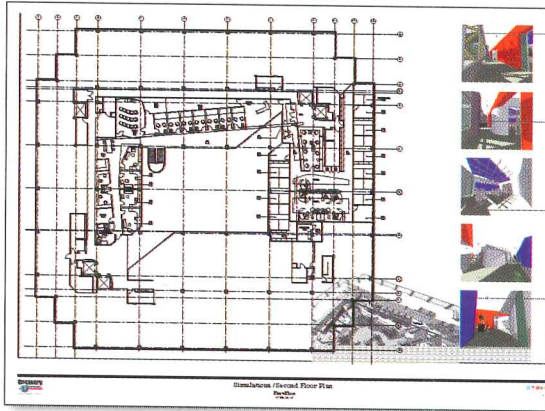
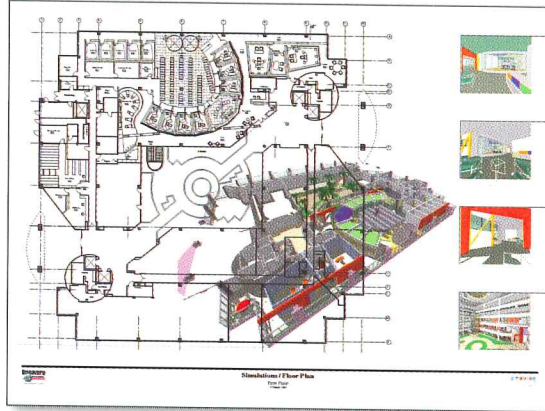
STUDIOS Architecture, Washington D.C.

Using ArchiCAD, Project Architect Scott Williams of STUDIOS Architecture in Washington DC, sat in an unfinished space of Discovery Communications Inc.'s proposed Latin American headquarters facility in Miami, Florida, to design an elaborate three-story atrium staircase for a client presentation a few days later. Once the model of the atrium and stair were completed, STUDIOS generated QuickTime® VR scenes of several alternate designs, presented them to the client on a laptop computer and won approval the next day.

STUDIOS was originally commissioned to design only the 25,000 square foot third floor of the Latin America Television Center. Discovery Communications, Inc., parent company of the Discovery Channel, The Learning Channel and Animal Planet, asked them to re-design two additional floors with the help of viewing the proposed design in 3D with QuickTime VR scenes and animations.

"ArchiCAD was perfect for this type of project because it facilitated quick decisions," said STUDIOS' Principal, Phillip Olson. "The client had already set a launch date to begin new operations at the new center, so the facilities had to be in place on time to house all of the employees. Because the client is technologically oriented, they had a much greater understanding of what it took to make the presentation happen. They were impressed with how quickly the design was generated."

Respecting the client's interest in "green" products, STUDIOS' design centered around the use of recycled materials. STUDIOS found a supply of old growth Heart of Pine recovered from a torn down 1870 cotton mill in Atlanta,



Presentation boards of the Discovery Channel facility shows both floorplan and QuickTime® VRs.

Georgia, and used the recycled timber for stairwells and "docking walls" which supply electricity and network communication lines to modular work stations. ArchiCAD's GDL technology accelerated the design process by allowing complex assemblies to be created. Dozens of alternatives could be explored from a single section of the recycled timber modeled in three dimensions and used as an intelligent object.

In addition to creating the timber library in ArchiCAD, a library of custom Haworth furniture was also created to help the client visualize how the furniture would fit in the new space. STUDIOS was able to model each piece of furniture for simultaneous use in working drawings and perspective views by working from dxf files provided by Haworth and information available in product catalogs.

With a tight project timeline, the design team at STUDIOS appreciated ArchiCAD's ability to generate three-dimensional models automatically from the floor plan and section views allowing them to advance the construction documents, make design studies and prepare client presentations at the same time with relatively little additional work.

"Modeling in 3D gives you and your client a chance to look at a design critically and react to it," said Bill Deegan, Project Architect for the project. Deegan also cites that STUDIOS could shave off critical time by sending QuickTime® VR scenes to the client by e-mail and through an intranet which links STUDIOS' U.S. offices in Washington, San Francisco and New York.



At one level, Graphisoft's ArchiCAD for TeamWork is as simple as ArchiCAD itself. ArchiCAD allows architects to work intelligently; ArchiCAD for TeamWork allows many architects to work intelligently together.

Due to ship in early Summer of 1997, ArchiCAD for TeamWork is a dramatically new method for architects to share the work of designing and drafting on a single building. In fact, sharing work is neither new nor dramatic; it's what architects do every day. What is dramatic and new, however, is that CAD software can now be enlisted to enhance this natural process.

To fully understand and appreciate what ArchiCAD for TeamWork is, we must step back and explain briefly what it is not.

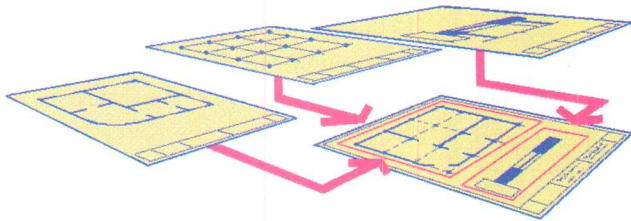
same architectural layer cannot be used by more than one user at a time. Thus, using the layering technique, logical layering schemes for working drawings are often compromised to meet the needs of team members who need to access a certain part of the project.

Neither technique offers the simplicity, reliability, flexibility and efficiency to be optimum solutions for collaborative work among architects.

Graphisoft has developed "ArchiCAD for TeamWork" to allow architects to collaborate on a single 3D project, and work together simply, flexibly and securely. ArchiCAD for TeamWork is intuitive and easy to set up and use, and all building information remains stored in ArchiCAD's object-oriented, compact and integrated 3D project file.

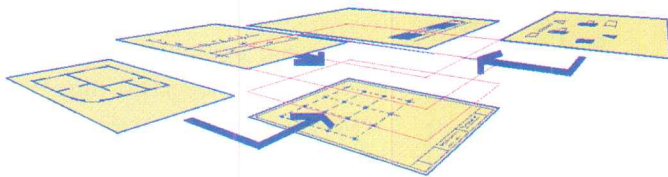
ArchiCAD for TeamWork: A New Method

The most common technique for several architects to work together on the same project is called the "reference file" or Xref. Using the reference file technique, a CAD file which represents a drawing sheet may "refer" to another CAD file which is then incorporated, in whole or in part, in the original CAD file. These "referenced" CAD files may physically reside on other computers across a network.



The Xref concept is simple to understand, but usually requires extensive set-up and management. This makes it unfeasible for smaller projects and too complicated for larger projects where collaborative work is most critical.

The Xref technique is fairly rigid and also requires extensive forethought by a CAD Manager who must decide how working drawings will be organized. This rigidity makes Xrefs cumbersome to use in the schematic or design development phases of a project. A second, less common technique for sharing work uses interlaced "layers" of information where each layer is a different CAD file.






When everyone's work is assembled, the layering technique provides a single integrated file on a server, but because they are separate files, interaction between the layers is minimal. Furthermore, the

Similar in some respects to the document sharing functions in modern operating systems, ArchiCAD for TeamWork offers equal peer-to-peer access to a building project and to object libraries. This allows members of a project team to work on separate parts of the same project, relatively autonomously, and merge their work into a master project file on command.

ArchiCAD for TeamWork uses high level file sharing and is both network neutral and network independent. In order to minimize network traffic and allow team members to work off-line, ArchiCAD for TeamWork does not require a permanent connection with the master project. In addition to minimizing the load across a local network, this has the added benefit of making collaboration feasible across a wide area network (WAN) as well. Access verification, revision logs, and automatic backup features are built into the software itself. No server software other than the network capabilities of the operating system is needed.

To better understand ArchiCAD for TeamWork, consider the three types of information ArchiCAD users typically manage in a project:

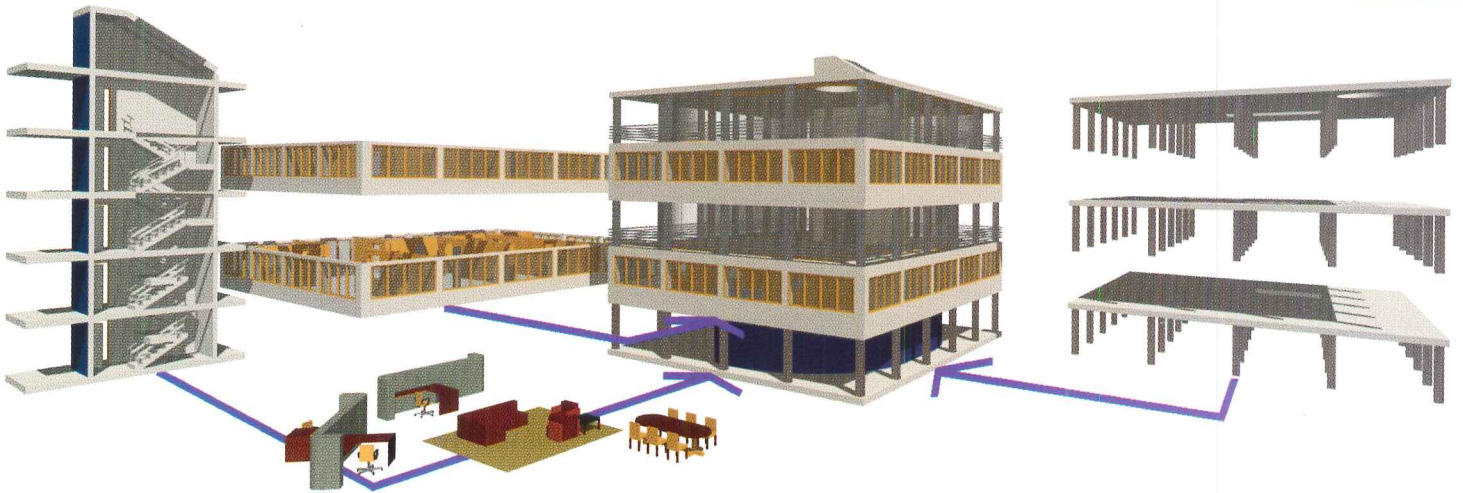
-  the 3D building model (ArchiCAD project file)
-  the building products used (object library),
-  the working drawings (PlotMaker files)

ArchiCAD for TeamWork addresses all three aspects of the architect's work and delivers features to make collaborative work easy and secure.

Project File

New projects may be started by a single architect using ArchiCAD as he or she would today. When the architect decides to share the project with a team, he or she creates a "Shared Project" file and an associated administration file. These files can reside on any computer provided that all team members have access to them. Various access rights and privileges can be assigned at any time.





for Collaborative Architecture

Once the shared project file is created, other team members can "sign in" and begin to work on different areas of the project.

Using any combination of stories, layers and the marquee selection tool, team members define their "workspace." Using these criteria, almost any portion of the project can be selected. For example, a user can select the area within a marquee on the Base and Partition layers and stories 3, 7 and 9. Should conflicts arise when reserving a workspace, a dialog displays the type of conflicts and who has signed out the conflicting areas. A report of team members currently signed in and their workspaces is also available at any time. While signed in, team members can view the entire project, including areas reserved by other team members, but can only create and make changes in their own reserved workspaces.

After a team member signs in, a "satellite" of the project file is created in RAM on that member's local computer. Thanks to ArchiCAD's object-oriented technology, these project files are relatively small. The local computer is used for scratch space and data swapping so that, no matter how many people are working on a project simultaneously, no extra load is placed on the network. At appropriate intervals, team members can "Send" their work to the master project file and "Get" from the master file any changes submitted by others.

Team members may sign themselves into a project, but for added security, ArchiCAD for TeamWork also allows an administrator to pre-assign teams and workspaces, require an electronic sign-off before changes are sent to the master project file, and lock down the project file element by element.

Subcontractors and consultants can also be part of the team as off-line team members with reserved workspaces. For consultants using other CAD packages, ArchiCAD for TeamWork supports AutoCAD release 13 level dxf and dwg translations as well as the ability to import and re-export unbound Xref files by using ArchiCAD for TeamWork's Group/Ungroup feature.

Library Elements

The parametric object library has always been an essential part of ArchiCAD. These libraries can be on a local computer, on a server, or both. Team members can share one or more centrally located object libraries and/or use a local library on their computers.

If a local - or "Satellite" - library is used, ArchiCAD for Teamwork synchronizes the local copy with the original each time changes are sent or received.

Layout Files

With ArchiCAD for TeamWork will come a new version of PlotMaker, Graphisoft's sheet layout, printing and plotting software. PlotMaker's ability to "hotlink" ArchiCAD drawings to sheet layouts is greatly enhanced and several new features have been added to help large CAD document management.

The new PlotMaker includes layers for both individual drawings and sheet layouts. By using layers in PlotMaker, far fewer ArchiCAD drawings need be hotlinked, saving significant time and disk storage. PlotMaker will also support scripted batch processing so construction document sets can be scripted and plotted overnight, and, like ArchiCAD, it will import/export r13 dwg files and respect Xref file structures using its Group/Ungroup feature.

ArchiCAD for TeamWork is the latest, and one of the most significant milestones since ArchiCAD was first introduced in 1985. In addressing the challenge of multiple architects working together on a single project, Graphisoft has delivered an original solution which strikes at the heart of the problem and solves it elegantly and simply. Since all architects - even sole practitioners - face the need to collaborate with other architects on projects from time to time, ArchiCAD for TeamWork offers an exciting opportunity for architectural firms large and small.



Sign-In To...

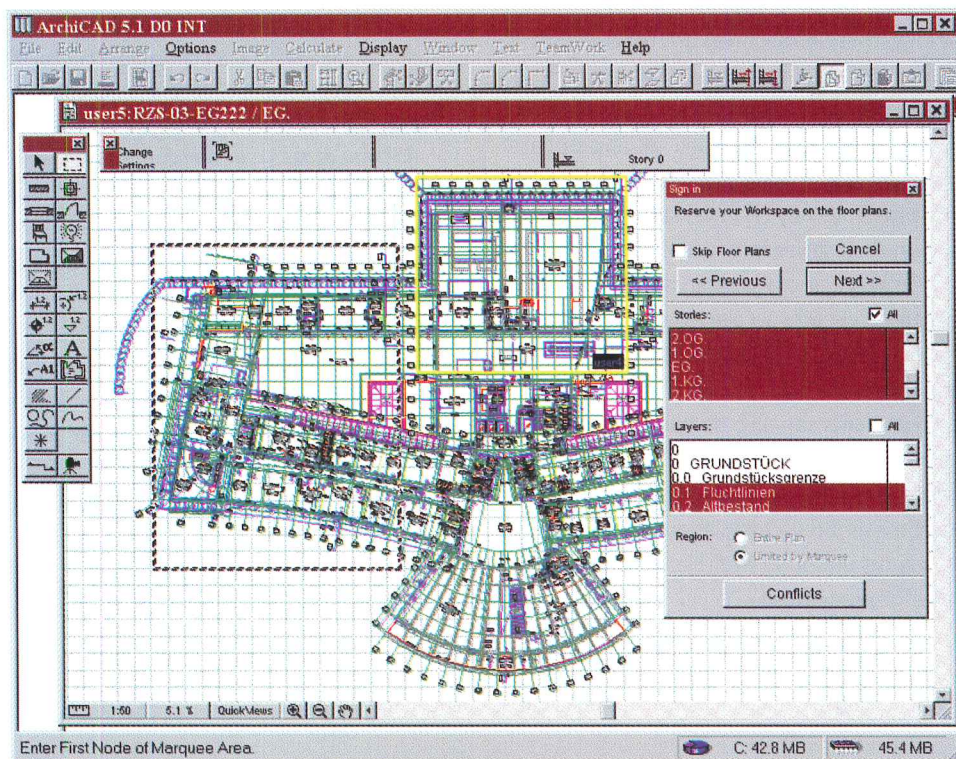
Simply and powerfully, ArchiCAD allows architects to work intelligently. Now, ArchiCAD for TeamWork allows **many** architects to work **together** intelligently.

ArchiCAD for TeamWork is an original and elegant solution to the problem of sharing the work of building design and documentation. Easy and intuitive to set up and use, ArchiCAD for TeamWork allows architects to collaborate **simply, flexibly and securely** - while all building information remains stored in ArchiCAD's object-oriented, compact and integrated 3D project file.

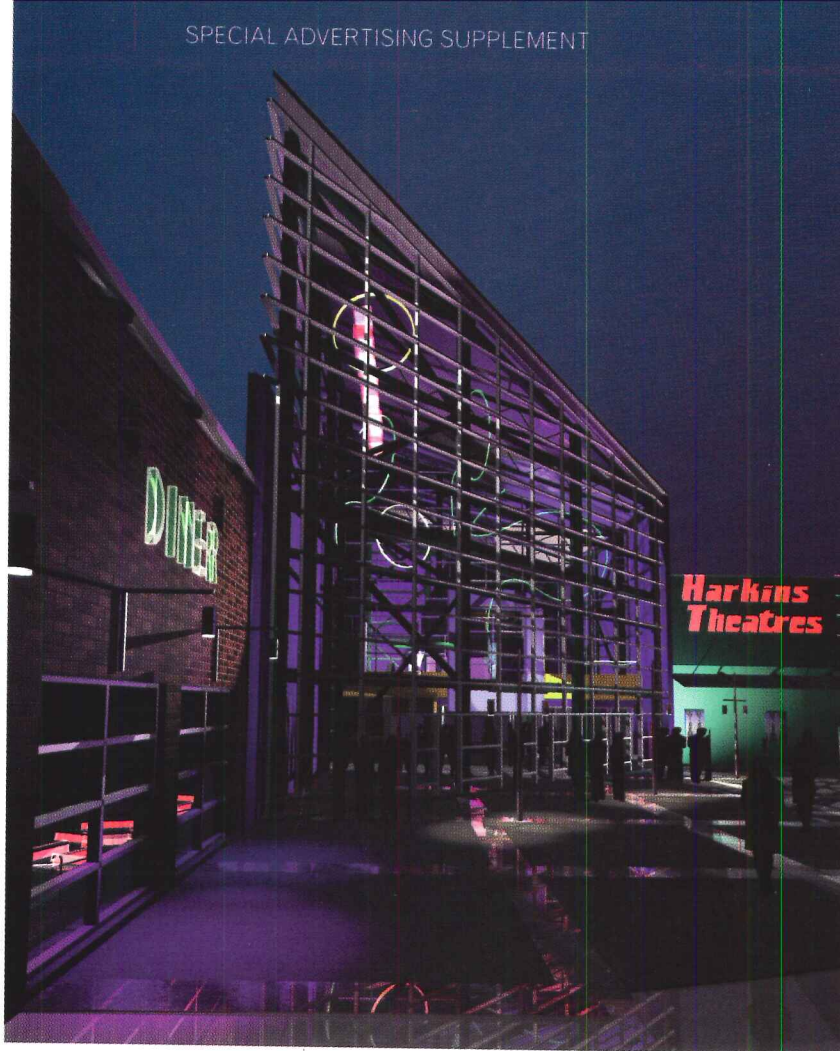
"Graphisoft has taken a great product and made it even better. With projects becoming more complex and the need for information to be shared with more people, ArchiCAD for TeamWork will improve efficiency and document management."

- Chuck Hill, Orcutt/Winslow Partnership

Employing document sharing functions similar to those of modern operating systems, ArchiCAD for TeamWork offers equal peer-to-peer access to a 3D building model and object libraries across LANs or WANs. Its high level file sharing is both network neutral and network independent. ArchiCAD for TeamWork also supports collaboration with engineers and consultants with AutoCAD r13 dxf and dwg compatibility and the ability to import and re-export Xref files using its new Group feature.



Recreation Center
- Bad
Schallerbach.
Architect: D.I.W.
Nuhsbaumer,
Vienna, Austria



Harkins Theatre.
Designed and
modeled in
ArchiCAD,
rendered in
Artlantis Render.
Architect: CCBC
Architects, Inc.,
Phoenix,
Arizona.

ArchiCAD[®] for TeamWork

"Flexibility and simplicity of ArchiCAD for TeamWork are key attributes for our design team who work on large scale projects with tight deadlines."

- Marty Ball, CCBC Architects, Inc.

"ArchiCAD for TeamWork shows that Graphisoft is committed to offering solutions to large architectural offices."

- Randy Sietz, The Core Group

"We're excited about the new possibilities this opens up for us to work collaboratively among our offices."

- Bradley Skaggs, STUDIOS Architecture

ArchiCAD for TeamWork will be available for Windows 95/NT and Mac OS in early Summer, 1997.

For the ArchiCAD distributor nearest you, see the listing on the back page or visit www.graphisoft.hu.

In the United States and Canada, call **800-344-3468** for the name of a local reseller and a

Free Videotape* explaining the benefits of ArchiCAD, or visit us at www.graphisoft.com.

** free shipping in the US and Canada only.*

GRAPHISOFT[®]



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The Objects Among Us

With a few clicks of a mouse button, an employee at Champion Products can change a store's Spring collection to Summer. He can also visualize the new store interior, count inventory and track style numbers. The ArchiCAD-based virtual merchandising system, developed by Logikos in New York City, not only aids in controlling brand image, but can greatly accelerate store planning and visual merchandising work in an industry where time equals money.

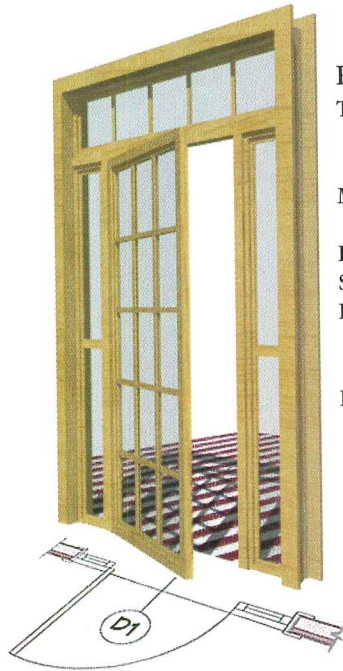
Toronto architect Willem Langelaan was able to clad a continuously curved wall by setting MasterLibrary's spandrel curtain wall element to one module wide by 12 stories tall and using ArchiCAD's "Multiply..." command just once for each of the 3 curved wall sections. The window elements adapted themselves automatically to the curvature of the walls, resulting in a crisp and accurate representation in both floor plan and perspective.

Thanks to identical object libraries used in their respective offices, Architechnology in Cincinnati, Ohio, and Design Integrations in Atlanta, Ga., were able to exchange elaborate house models by email as they fought a deadline to produce a collection of 12 custom homes for Stephen Fuller/Design Traditions.

In Phoenix, Ariz., the Orcutt/Winslow Partnership used original drawings of Fountain Hills High School to create a 3D library of original details and reassemble them quickly to generate a successful design for an addition that maintained both a technical and aesthetic continuity with the old school.

They may seem like visions of the future, but these architects - and thousands more across the globe - use ArchiCAD's intelligent building objects every day in these and other ways.

ArchiCAD has offered architects a building-object oriented working environment since its first release in



PROPERTIES

Type: Ext. Door w/Sidelights & Transom
 Mfr: Andersen Door & Window Corp.
 Part: FWH 3168
 Size: 5'0 x 8'0 r.o.
 HW: Schlage Brass anod. alum. lockset and lever
 Fin.: Nat. satin polyurethane 2 coats

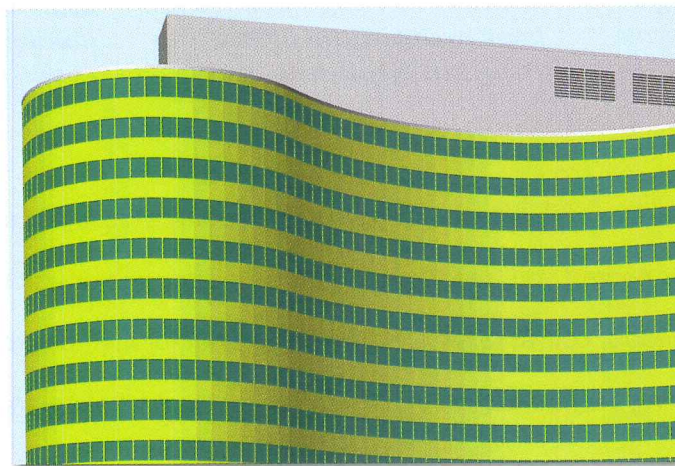
1985. ArchiCAD's external libraries of building parts are unique because they simultaneously manage and store the three essential types of information needed to design and document buildings:

- 3D geometry and finishes for producing renderings and calculating surfaces and volumes,
- multiple 2D CAD symbols to represent the object at different scales and conditions such as the DIN vs ANSI drafting standards or product variations within a product line, and;
- text information for specifications, quantity take-offs, calculations such as heat loss/gain, cost estimating, and inventory tracking.

ArchiCAD's object technology extends beyond libraries of building products and underpins all of the architectural elements of a building. For example, walls in ArchiCAD are not just parallel lines in plan; they can contain valuable information about their composition, materials, finish, height, price and connection to other walls, columns, floors and ceilings. All of this data is viewable in the form of perspectives, elevations and the bill of materials which are generated automatically from the floor plan.

Equally important is ArchiCAD's ability to alter an object's appearance and behavior according to rules which can be embedded within objects. For example, a staircase, when enlarged graphically in plan, can "know" that new treads should be added according to a given rise-to-run ratio rather than simply making the treads appear wider; a door can "know" that, when it is displayed at large scale in plan or section, additional detail should appear; a window can "know" that it is an Andersen brand casement and that only certain trim and hardware are available for it; a wall can "know" how to wrap its sheathing around a column; a steel beam can "know" that its length can be changed but never its cross section.

ArchiCAD delivers this intelligence



Curvilinear building by Willem Langelaan uses curved glazing system

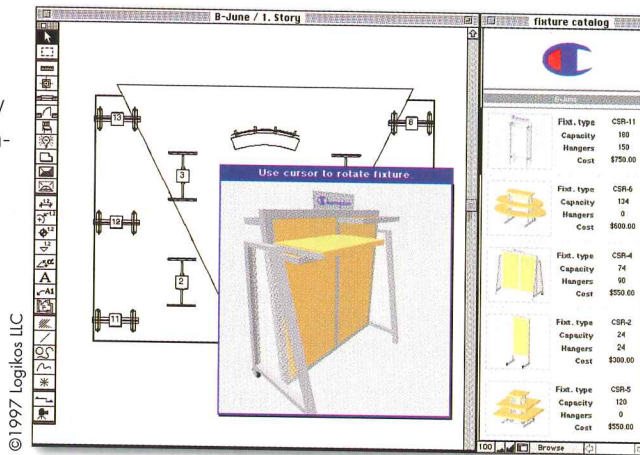


They may seem like visions of the future, but these architects - and thousands more across the globe - use ArchiCAD's intelligent building objects every day in these and other ways.

to architects around the world by using the "Geometric Description Language," or GDL. Developed by Graphisoft in 1982 and continuously improved ever since, GDL is the foundation technology of ArchiCAD and the common format for the tens of thousands of building parts in existence today.

Similar to common printer languages such as Adobe's Postscript and Hewlett-Packard's Printer Communication Language, GDL describes geometry in a language (i.e. text) form. Unlike these languages, however, GDL describes objects in three-dimensions as well as two-dimensional drafting symbols and lists of properties. GDL contains "geometric primitives" which describe shapes such as BRICK, CYLIND(er), and MESH; "transformation statements" which define scale, orientation and location using x, y and z coordinates and statements such as MOV(e), ROT(ate), MULT(ibly); and "directives" which describe the object's appearance using material names such as PINE. When ArchiCAD is used, these GDL statements are "executed" which make the objects described by GDL behave and appear as either rendered views, CAD symbols or a list of properties and values.

In addition to its rich description language, GDL features a scripting interface resembling the BASIC programming language. Architects can simply write "scripts" of how objects should appear and act under certain circumstances or "parameters." Users can enter variables such as unit cost, heat loss, or pieces/area in the script



Logikos' virtual merchandising system helps retailers layout space & track inventory.

or through graphic dialogs. These variables can then be used in formula to dynamically track project cost, energy use, materials used or almost anything which can be derived from the building's surface or volume.

A GDL object can also reference another GDL object, data from other software, or external information from ArchiCAD such as drawing scale, view point, and local origin. External databases can be accessed by GDL's open-architecture so that values from a database can directly impact CAD drawings and, conversely, changes made in the drawings can directly impact values and

specifications in a separate project database. GDL can also store parameters to be used by external applications, such as StairMaker and ArchiSITE, which are written especially to work inside of ArchiCAD.

GDL was the first intelligent building object technology for architects using desktop computers, and Graphisoft will continue to enhance GDL and expand its reach and availability. If standards are set by common use and accessibility, then the GDL format employed by ArchiCAD is truly a standard today. If standards are a reflection of superior and ever-improving technology, then GDL will be a standard for tomorrow as well.

(1000's OF OBJECTS AVAILABLE + 1000's MORE COMPATIBLE) X PARAMETERS = MILLIONS OF PRODUCTS

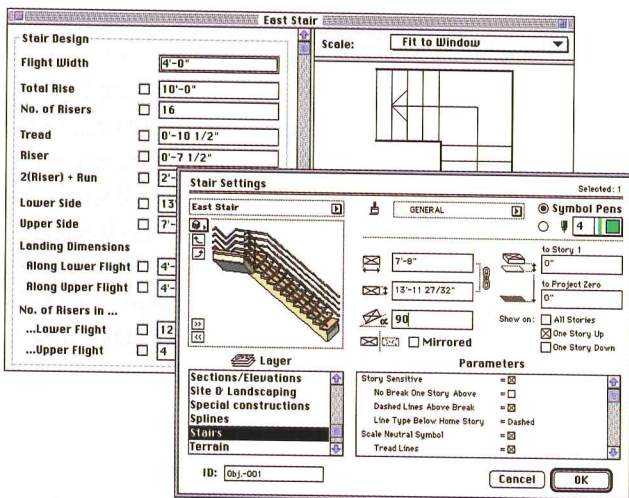
ArchiCAD includes a library of more than 600 three-dimensional objects covering the entire range of construction needs from site planning to detailing and special equipment. Based on ArchiCAD's GDL format, each object is highly "parametric" and compact: building parts may be as small as 5Kb, and are generally no larger 50Kb, easily transportable across a network or even the Internet.

Thousands more building parts are commercially available in specialized object libraries developed by experienced ArchiCAD users. These libraries usually focus on specific needs, such as populating a rendering (People & More), office furniture systems (ArchiMOS), kitchen design (M.A.D. Design), or wood mould-

ings (Smart Parts Trim Library). For more general needs, Master Library offers more than 400 additional objects including an advanced library of lighting fixtures.

In addition to library parts created specifically for ArchiCAD, other 2D CAD symbol libraries and many 3D libraries can be converted easily to GDL. GDL reads dwg and dxf formats of CAD symbols and will import 3D objects in dxf, 3D Studio or ZOOM file formats without loss of colors and material attributes.

Contact a local Graphisoft distributor for more information and a list of available libraries, or visit the Graphisoft web sites, www.graphisoft.hu and www.graphisoft.com.



Premium Insurance for Young Firm

ArchiCo-Projekt Ltd.
Warsaw, Poland



One of the competition entries of the PZU Tower rendered by ArchiCo-Projekt, Ltd.

The Warsaw, Poland, based architectural firm, ArchiCo-Projekt Ltd., assumed one of the greatest challenges of its short history when it decided to enter the PZU Tower competition in Warsaw. The design program called for 68,000 square meters (71,800 s.f.) of office space and ancillary spaces to house the headquarters of PZU, Poland's largest insurance company. Entries to the design competition, held late last year, came in from firms throughout Europe. The 18 person firm, led by architects Piotr Szaroszyk and Konrad Tanasiewicz, had to be audacious to have a chance at victory.

"Because we have such a young office and the competition was so strong, we needed to be faster with a more professional presentation," said Konrad Tanasiewicz. Although they only had a little time to prepare their submission, they chose to create a complete three-dimensional model of the proposed building so they could spin-off a large number of rendered, accurate views and show their design in its true site context. Their choice of ArchiCAD made this strategy feasible because of the software's efficiency as a building modeler

and its integrated file structure, which would make 3D modeling, 2D drafting and tracking a bill of materials an almost simultaneous process.

Within 20 days of beginning the project, the design team had produced not one, but three building designs complete with models, renderings, photomontages and animations. To show their proposed designs in the context of the site in downtown Warsaw, the team produced several photomontages using ArchiCAD and Adobe Photoshop. Additional renderings, plans, sections, elevations and animations were also part of the submission package. All of the presentation materials were generated from the same 3D model, giving ArchiCo-Projekt Ltd. an edge over the competition in generating more information at a higher speed.

The jury is still out on the PZU Tower competition, but based on an overwhelming presentation of three designs and a clear explanation of how each proposed tower would really work in 3D, ArchiCo-Projekt Ltd. is in the running with firms twice its size.

ArchiCo-Projekt Ltd. has used ArchiCAD to create numerous projects ranging from simple dwellings to large shopping centers. According to Szaroszyk and Tanasiewicz, there is no better way to illustrate the value

of 3D visualization than a design competition. "This is one of the greatest benefits to clients. At last, they can see a building before it is built," said Tanasiewicz. "They can suggest changes – move walls and windows, and modify the facade and landscaping. They can even look out their windows to see the view."

The Plots Thicken

Roger J. Thrum & Associates
Sydney, Australia

Imagine plotting hundreds of drawings per day on a regular basis and using a mile of plotting paper in one weekend. Six hundred plots a day might sound like an unbelievable figure, but it has become routine for leading Sydney, Australia, architectural firm, Roger J. Thrum & Associates, ArchiCAD users since 1988.

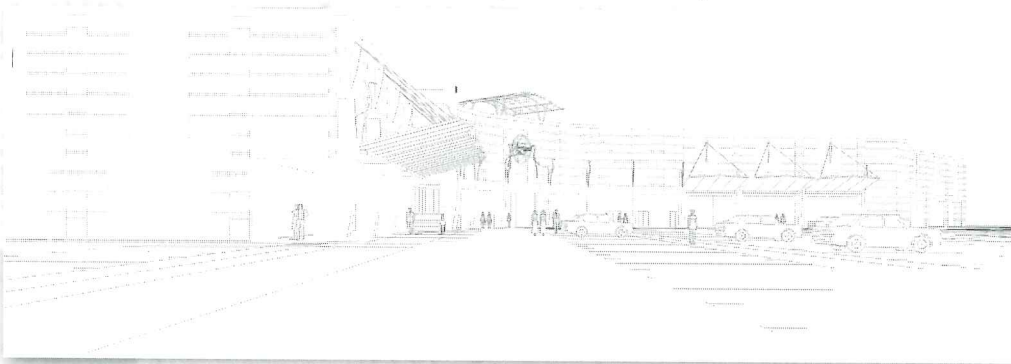
Warringah Mall, a shopping complex located 20 kilometers north of Sydney, will cover a 170,000 square meter (1,830,000 sq.ft.) site, making it the second largest mall ever built in Australia. Plotted at 1:100 scale, the project requires more than 450 A1 sheets to cover the entire site and all stories. More than 2000 drawings are expected to be produced as part of Stage 1 alone. The challenge of outputting documents at this scale is daunting, but the dedicated ArchiCAD team led by CAD Manager, Sam Bassilius, has been managing the job successfully.

With the help of Archigraph, ArchiCAD's Australian distributor, an innovative method of linking ArchiCAD documents to a drawing control database was developed. This Document Management Database helps Bassilius control and direct the scope of work required on a given section of the building model. Team members can access the model at any time, select the area of the model for which they are responsible, and see from the database the extent of work required. The Document Management Database tracks the minute by minute status of all of the drawings in the project.

The Document Management Database issues current drawings only and has the ability to monitor the progress of all drawings against the construction program. Every member of the project team is always aware of the electronic documentation's progress.

Roger J. Thrum & Associates uses only ten of their seventeen ArchiCAD workstations on the Warringah Mall project, allowing the remaining stations to operate on various other jobs. Strict deadlines for submitting thousands of drawings repeatedly challenge the architects, but Sam Bassilius and his team are meeting the requirements:

"We often plot more than six hundred drawings a day. One weekend alone we plotted more than 1,500 drawings. I don't know how we would have been able to do this without ArchiCAD."



Wire frame view of Australia's second largest shopping mall designed by Roger J. Thrum & Associates.



Exceeding Expectations

Kayhan International, Limited
Schaumburg, Illinois



Renderings of the first floor lobby of Motorola's Greater China Headquarters exceeded Motorola's expectations.

When your biggest client asks you to design the interiors of their 18 story Greater China Headquarters building, and the client is Motorola, you not only get the job done on time, but you strive to exceed even their highest expectations.

Recipient of the Motorola Vendor Quality Award and an ArchiCAD client since 1993, the 60-person architectural and interior design firm, Kayhan International Limited, has been exceeding Motorola's expectations for 14 years with projects completed in 26 countries including architectural design, interior design, contract furniture and installation. Kayhan is known for quality in every project they do, from 300-sq. ft. (28 sq.m.) offices to 1.2 million sq. ft. (114,000-sq.m.) high-rises.

"Our motto is 'from concept to move in,' integrated service is something clients want," said Daniel Hellriegel, Kayhan's Executive Vice President, "We believe in doing everything technologically possible to serve our client."

Kayhan's latest project for Motorola is the interior design of the 18 story Motorola Greater China Headquarters in Beijing, China. Using ArchiCAD, Kayhan created animations of Haworth's open plan furniture to analyze workstation requirements and various team concepts.

Because of an incredibly tight schedule, Hellriegel enlisted Architechnology, a service bureau in Cincinnati, Ohio, to help with the modeling, rendering and animation work of the three-story lobby and executive boardroom.

Architechnology had less than two weeks to produce the 3D model and renderings which required extensive custom detailing. The biggest challenge was meeting the deadline while living up to Motorola's high standards. Kayhan didn't want to lose sight of their belief that, while finding innovative solutions for their client, they could again exceed Motorola's expectations.

Joe Bayer, President of Architechnology, explains why ArchiCAD made the work easier on a critical deadline: "Because of ArchiCAD's integration, everything I did in plan or section was automatically updated in 3D. ArchiCAD also facilitated the repetitive custom details in the project."

In late February, Kayhan unveiled the renderings in an eight-hour presentation to Motorola's Construction Department. At the request of Tom Sun, Vice President and Corporate Director of Logistic Operations for Motorola, the entire Peer Review presentation was videotaped to be used as an example of standards to strive for in design quality.

"They were very impressed by the quality of the renderings, and the first question was what technology was used to produce them," said Hellriegel, "ArchiCAD sold them on the project - they were able to see with such outstanding quality just what they were getting."

NEW PRODUCTS

SITE-ASSEMBLED FABRIC PANELS FOR SOUND-CONTROL AND DECORATION

First marketed in the early '90s, the Novawall interior-wallcovering system uses proprietary extruded-plastic profiles to hold fabric under tension. Though primarily a wall-finishing technique, the system can also be used on ceilings, as the fabric is kept under an even, constant stretch that is said to preclude sagging. Each Novawall installation is custom-designed for a specific interior, and applications can range from simple panels or bands intended to dampen incident noise in offices, and tackable surfaces near desks, to large-scale projects that combine noise control with interior decoration throughout an auditorium, theater, or sound studio.

Installed over—and held away from—an acoustically absorbent fiberglass board, the upholstered wall has a different look than a direct-glue treatment.

The wall design can handle fabric-panel separations with several different joint or reveal profiles, including 1/2- and 1-in. square joints; a 1-in. radiused joint (a softer, puffy look); a 1-in. bevel-edge; and the most prominent, a 1/2- or 1-in. reveal (detail, right). This reveal can be finished in a metallic trim, or covered with the wall fabric, as shown. Crisp panel-edge treatments are created by the framing channels that hold the fabric in a line of grip-

ping “teeth” and provide space to tuck the cut ends of the fabric. The plastic track is stapled directly to the gypsum board, plywood, or other wall substrates, following the predetermined layout, and shimmed as necessary to allow for surface irregularities. An acoustic fiberglass-board core is installed flush and level with the frame, and the specified fabric is stretched from one track to another using a special mounting tool. There are track configurations specifically to accommodate inside and outside corners. A specified level of acoustic performance (per ASTM C423) is met by selecting the required board density and thickness, up to 4 in.

Fabric options

Novawall makes the fire-resistive mounting system only; the designer must specify fabric that passes ASTM E84 (NFPA 255) to insure that installations meet code requirements. The framing is rugged enough to take even a heavy tapestry fabric; thin materials such as silk should be backed to prevent distortion and show-through. (Some fabrics are not suitable for areas of high humidity.) Wall-fabric designs that must be railroaded, with framing at top and bottom only, require a material with enough vertical give to take the tension needed to keep the fabric taut and away from the surface of the backing board.

The corporate conference room, left, designed by Perkins & Will, has 1-in. square-edge panels inset flush with sapele mahogany millwork surrounds. The installation has blocking behind the fabric to allow for hanging and repositioning artwork. For the large auditorium space, right, in the new Owens Corning headquarters designed by Cesar Pelli & Associates, a gray woven (Devon fabric from KnollTextiles) is set in a distinctive

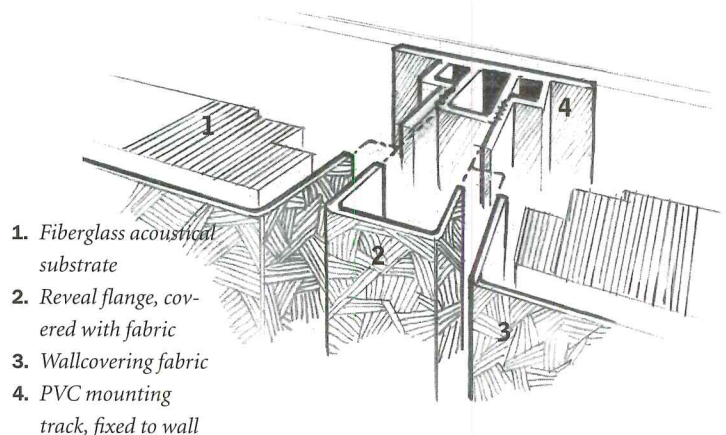


New Products in May includes a track system that uses the designer's choice of fabric to “upholster” walls and ceilings, meeting a range of acoustic and decorative criteria in a Class A treatment. Also, window coverings for commercial and institutional interiors, especially different versions of the increasingly popular woven-fiberglass shades that permit a view to the outside while shielding occupants from glare. The Briefs pages cover some new products for healthcare (an antibacterial toilet!), and miniatures of buildings that no longer exist. And there are four pages of Literature.—Joan Blatterman, *New Products Editor*



diamond pattern of 1/2-in. reveals on the convex, upwardly canting walls. The curvature of the wall surfaces required a very absorptive, 4-in.-thick backing to avoid acoustical ‘hot spots’. For complex installations like this, the manufacturers will supply architects with a full-scale mock-up of the wall design, including all of the different

reveals, panel joints, and corner treatments intended. Obviously, the more intricate the design, the more installation labor required, increasing costs. A complete architectural binder details all edge and reveal conditions, and supplies acoustic and flame-spread data. 800/695-6682. Novawall Systems, Inc., Reno, Nev. **CIRCLE 240** ■



WINDOW TREATMENTS FOR ARCHITECTURAL SPACES

Window treatments in commercial and institutional spaces should be considered an integral part of the design, not as an intrusion on the architecture. Shading must be included in the program from the start, not as an afterthought, and the cost of various manual or power-control options should be built into the budget. New screening materials can meet the most stringent flame-spread requirements while offering a range of color and openness options that provide glare- and light-control for occupants—and lower hvac bills—without compromising the exterior esthetic.



▲ Custom shading

This fabricator can make up its imported Solar Scrim material into window treatments that fit most architectural requirements, such as extra-wide roller shades (either pull-down or motorized); fixed screens for indoor or exterior installation; sun-control Roman shades; and verticals. Made of fiberglass in a 98-in. width, the material meets California 19 and NFPA 701 flame tests. 914/592-4545. Window Modes, New York City. **CIRCLE 241**

► From France in colors

Made using a new weaving process and three separate colors of glass-fiber yarns, Thermoscreen shading fabric now comes in 78 designs, each with two different sides. Available in a range of see-through transparencies and suitable for exterior installation, where solar control is most efficient, Thermoscreen can also be made into interior blinds and shades. Mermet, S.A., Lyon, France.

CIRCLE 242



▼ Hospital window covering

The CuraFlame Level-Lok blind is a "woven-wood" look made up in an inherently flame-retardant combination of CPVC slats woven with modacrylic yarns in versatile colorways. Intended for the special cleaning and maintenance requirements of healthcare settings, shades are said to retain a new appearance over a service life of at least 10 years. Cord-free operation meets standards for psychiatric wards; blinds are rugged enough for student dorm rooms. 800/262-9322. Webb Designs, Inc., El Cajon, Calif. **CIRCLE 243**

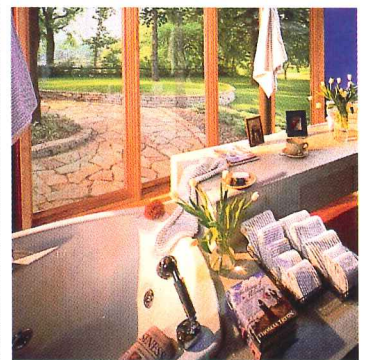


▲ Challenging sun control

The hard-to-reach and special-shape windows of Ohio State's Wexner Center were covered by custom shadings in colors that blended with the white, bronze, and silver-tint glass and maintained the esthetics of the design by architect Peter Eisenman. Proprietary clutch-operated shades, for manual and motorized operation, can be assembled to suit the most difficult placements. 800/742-3372. Inside Outfitters, Dublin, Ohio. **CIRCLE 244**

▼ Through a glass sometimes

A high-tech glazing option that is working its way into everyday projects, Privacy Glass made by Viracon can be specified in Marvin Casemaster wood-framed residential windows. Now available in tints—bronze, gray, and green—that are said to improve viewing clarity, switchable glass incorporates a liquid-crystal film from 3M that gives a "frosted" appearance when not being charged. When a tiny amount of electricity is applied, the glass becomes clear, providing an unobstructed view out. The amount of light transmitted is identical whether the glass is "on" or "off". Privacy Glass can be ordered as single-pane or insulating configurations. 800/346-5128. Marvin Windows & Doors, Warroad, Minn. **CIRCLE 246**



◀ Dual-function screening

Made of a vinyl-coated fiberglass in a tight weave, Phifer new "20 by 30" screening provides protection from insects as well as a significant amount of glare- and solar-control. It improves daytime privacy compared to standard aluminum mesh, and permits a clear view out (dark colors are easier to see through, as they absorb the incident glare that obscures viewing through lighter-colored materials). Intended for fixed installation on the outside of windows, screening comes in widths up to 84 in. 800/633-5955. Phifer Wire Products, Inc. Tuscaloosa, Ala. **CIRCLE 245**



PRODUCT BRIEFS



◀ Triple-function

Part of a total healthcare communication system, the Spectrum 760 message-light unit incorporates three modes: Room Status, to indicate open rooms and those requiring service; Staff/Patient Sequencing, with multicolored annunciators showing where doctors are, and who gets seen next; and Patient Call, to alert nursing staff for help. 800/621-1903. Jeron Electronic Systems, Inc., Chicago. **CIRCLE 249**

▼ Metallic lay-in ceiling

Part of this maker's SoundAbsorber line of non-fibrous noise-control panels, "clouds", and baffles, the Type I module is made completely of steam-cleanable aluminum. Said to have an NRC of 0.80, the ceiling is suitable for hospital operating rooms. Industrial Acoustics Co., New York City. **CIRCLE 247**



▼ Germ-fighting W/C

Using a new china-glaze technology, Toto now offers a commode said to actively inhibit the growth of germs and to kill common bacteria. The antibacterial glaze also prevents staining, lime, scale, and "toilet-ring buildup." Also available on floor and wall tiles, the glaze is a permanent metallic coating which breaks down water and oxygen when exposed to light. 770/282-8686. TOTO Kiki USA, Inc., Morrow, Ga. **CIRCLE 248**



▼ Soothing patient space

Winner of healthcare product-design awards, Bedscapes is a selection of high-resolution photographic murals of nature scenes printed on fire-retardant, washable fabric hung from cubicle-curtain track fittings. Accompanied by recordings of corresponding sounds from nature, the scenes are claimed to create a soothing environment that reduces stress and speeds healing. Sets cost about \$250 per bed. 914/657-8300. Healing Environments, Woodstock, N.Y. **CIRCLE 250**



► Healthcare fabric

Also a design-award winner, Maharam's Duratex Atelier collection includes 10 patterns developed specifically for use as patient-bed cubicle curtains. Some motifs, such as Pointille (pictured) are an unusual 72-in.-wide without a repeat. The fabric itself is fire-retardant Trevira CS, a European textile said to have a soft, cotton-like hand, also suitable for drapery and bedspread applications in hospitality settings. Swatches of all 10 designs offered. 800/645-3943. Maharam, New York City. **CIRCLE 251**

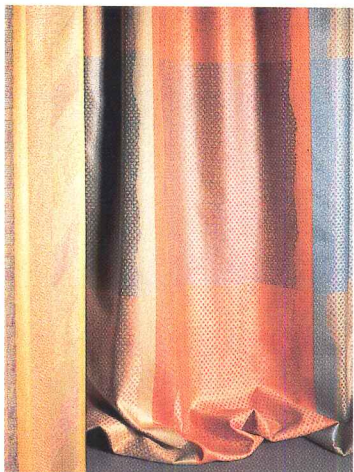
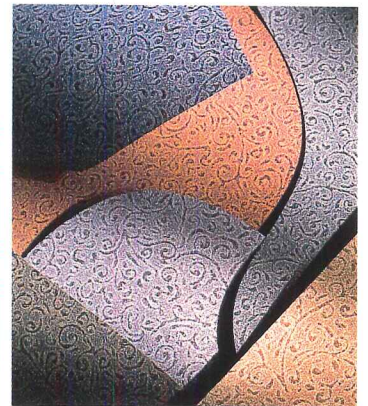


▲ Curvaceous drinking fountain

A new line, SoftSides Colors is made of a nonporous polymer composite in emerald green (pictured), black, and gray granite-look patterns, as well as a solid white. Waterways are lead-free. The curved shape has no blunt corners which can cause injury; most models meet ADA guidelines when properly installed. 630/574-8484. Elkay Mfg. Co., Oak Brook, Ill. **CIRCLE 252**

▲ Colorful floorings

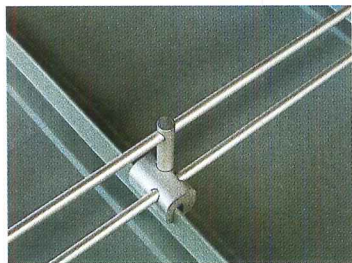
Made for the heavy foot and wheeled traffic of healthcare spaces, Medintech sheet vinyls come in new, more monolithic-appearing contemporary colors. Patterns are low contrast, for easier identification of small dropped objects. Camouflaged welding rods help create a seamless-looking, boldly patterned floor. Architectural sample program. 717/397-0611. Armstrong World Industries, Lancaster, Pa. **CIRCLE 253**



▲ Rugged wallcovering

Ravenna is one of several new patterns in 54-in.-wide vinyl wallcoverings for healthcare, hospitality, and other heavy-duty interiors. The Escher-like pattern, in a single color over a solid ground, creates a subtle, visual interest in an easy-to-manage scale. Colorways are selected to work with shades offered by manufacturers of carpeting, flooring, and laminate surfaces. 201/489-0100. Lanark Wallcovering, a Division of GenCorp., Hackensack, N.J. **CIRCLE 254**

PRODUCT BRIEFS



▲ Snow retention assemblies

S-5-A snowguards can be constructed in a variety of unobtrusive, color-matched assemblies for standing-seam metal roofs. The resulting SnoRail and SnoFence systems, when installed correctly, "will not," according to Mizell, "inhibit the thermal movement of standing-seam panels." 404/875-9361. Mizell Bros. Co., Atlanta. **CIRCLE 255**



▲ Acoustical panels

Conwed Designscape has added Subtle Textured (off-white or other soft color finishes) and Design Textured (speckled, metallic, woven, and pearl finishes) styles to its collection of painted and textured acoustical panels for walls and ceilings. The panels have a glass-fiber core with chemically hardened square, radius, or beveled edges, with different mounting options. 800/932-2383. Conwed Designscape, Ladysmith, Wis. **CIRCLE 256**

► Double chaise and canopy

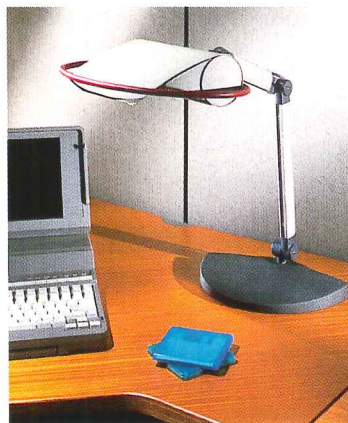
A new model from Weatherend, the Southern Harbor Double Chaise is made of mahogany or teak using mortise and tenon joinery, with custom brass hardware that allows each seat to be adjusted individually. The company's marine finishing system, available in custom colors, is said to withstand years of use and exposure. The foldable sun and wind canopy is constructed from lightweight aluminum tubing and covered with Sunbrella, a stain- and mildew-resistant fabric. 800/456-6483. Weatherend Estate Furniture, Rockland, Maine.

CIRCLE 257



▼ Decorative laminates

Designed to provide a glimpse of its offerings for 1998, Pionite has introduced nine new decorative laminates for both general-purpose and postforming applications. Several have dimensional effects, including Moroccan Fresco, a rag-rolled pattern in an earthy tone; the Impression Series, which includes Opal, Celadon, and Slate designs inspired by artists like Claude Monet; and Terrazzo, pictured below, a multi-colored design with a mosaic-like pattern. 800/746-6483. Pionite Decorative Laminates, Auburn, Maine. **CIRCLE 258**



▲ Portable task light

The Pavo desk lamp has a computer-designed optical system said to provide asymmetric light distribution without direct or reflected glare. It has dual articulating arms with an integral grab ring available in black, slate blue, or burgundy. Pavo, which holds a 13W compact-fluorescent lamp, may also be ordered in clamp- or panel-mounted versions. 615/325-7727. Garcy/SLP, Portland, Tenn. **CIRCLE 259**

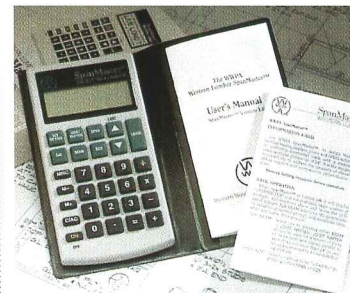
▼ African-inspired fabrics

Textiles of Africa from Sina Pearson includes Kente Cloth (vertically striped worsted wool and linen); African Stripe (grospoint construction with a hand-dyed look); Savannah (cotton blend pattern inspired by rough-cut tribal block prints); and Kuba and Raffia Cloth (chenille fabrics). 212/366-1146. Sina Pearson Textiles, New York City. **CIRCLE 261**



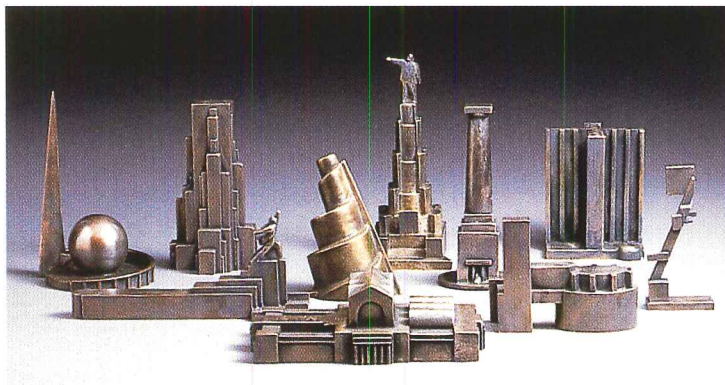
▼ Hand-held span calculator

The SpanMaster is offered as an aid for quickly designing uniformly loaded Western lumber beams, headers, joists, and rafters with a cross-sectional dimension up to 24 in., as well as spans for machine-stress-rated (MSR) or structural-glued Western lumber. \$39.95. 503/224-3930. Western Wood Products Association, Portland, Ore. **CIRCLE 262** ■



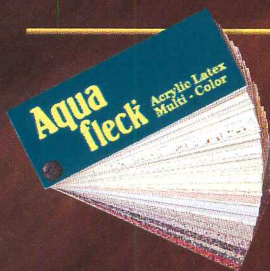
◀ Lost designs in miniature

Russian-born designer Constantin Boym has replicated in miniature some of the century's visionary proposals, as well as seminal buildings that no longer exist. Among his cast-bronze, 3- to 5-in-high, \$60-150 "Missing Monuments" are Malevich's Architekton (1920), McKim, Mead & White's Pennsylvania Station (1910), and Loos's Chicago Tribune Column (1922). 212/228-4037. Boym Design Studio, New York City. **CIRCLE 260**





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PRODUCT LITERATURE



Details and engineering drawings also available on AutoCad-compatible disks. 914/452-5500. KDI Paragon, Inc., LaGrangeville, N.Y. **CIRCLE 268**

Contract window treatments

Both Levolor and LouverDrape lines are included in a 28-page catalog. Track, tilt controls, brackets, and other hardware meet the heavy-use requirements of contract and institutional environments. Designers' sample program available for all window treatments. 800/221-6803. Levolor Home Fashions Contract Division, High Point, N.C. **CIRCLE 269**

Cross-platform program

A brochure on MiniCAD 7 describes the most recent upgrade of MiniCAD, said to "bridge the gap" between CAD professionals operating on Windows platforms, and those using Macintosh systems. The 2D/3D software provides features such as high-quality renderings and solids modeling for under \$1,000. 410/290-5114. Diehl Graphsoft, Inc., Columbia, Md. **CIRCLE 270**

Decorative ceiling panels

Cirrus Themes acoustic-ceiling panels have new designs, "Things that Fly"—airplanes, birds, party balloons, kites, and hot-air balloons carved into the tile surface. Suggested applications include

pediatric facilities, daycare settings, and children's specialty shops. 800/448-1405. Armstrong World Industries, Inc., Lancaster, Pa. **CIRCLE 271**

Fire and smoke seals

Zero's Fire and Smoke Protection catalog explains how Intumet seals protect door openings from penetration by heat, flames, and smoke. Materials activate at low temperatures, and expand with a controlled force that seals the gaps but will not force open the door. Other gasket and seal systems are intended to block sound, light, and air infiltration/exfiltration at door openings. 800/635-5335. Zero International, Bronx, N.Y. **CIRCLE 272**

Wood-window guide

A new Web site offers product and selection advice on this maker's windows and doors, as well as custom designs and finishes: www.kolbe-kolbe.com (Web page). 800/955-8177. Kolbe & Kolbe Millwork Co., Inc., Wausau, Wis. **CIRCLE 273**

Wood-frame block windows

Glass-block windows are preassembled within an all-metal, wood, or wood-clad frame, ready for installation. A catalog page illustrates all standard frame dimensions; custom frame colors may be specified. 541/389-5033. Pacific Accent, Bend, Ore. **CIRCLE 274**

Silicone sealant performance

A brochure on new 756 Building Sealant H-P explains how it has been engineered for porous and esthetically sensitive substrates. Described as a non-streaking compound that should insure lower life-cycle costs, 756 is covered by a 20-year warranty. 800/346-9882, x 8316. Dow Corning Corp., Midland, Mich. **CIRCLE 263**

Abuse-resistant wallboard

A catalog explains how Sheetrock panels were designed to withstand surface indentation and through-penetration better than standard drywall. Combined with systems such as Imperial Finish Plaster, the panels offer a cost-effective and abrasion-resistant interior wall for heavy-traffic interiors. United States Gypsum Co., Chicago. **CIRCLE 264**

Tile-setting product line

Catalogs detail mortar, grout, and adhesive systems for different weather and loading conditions. Includes Latapoxy grouts for heavy-traffic floors in malls, airport terminals, and plazas, and installation products and systems specifically for exterior facades, where seismic shock and freeze-thaw cycles are factors. 800/243-4788. Laticrete International, Bethany, Conn. **CIRCLE 265**

Model codes

The newest Uniform Building Code reflects the latest technological advances in building design, including updated sections on means of egress, concrete, seismic isolation, accessibility, structural forces, and roofing. Published in three volumes, available separately, the 1997 edition also comes in CD-ROM format. Also new: the 1997 Uniform Fire Code and the Urban-Wildland Interface Code. 800/284-4406. International Conference of Building Officials, Whittier, Calif. **CIRCLE 266**

Rugged bedside lamp

Catalog pages illustrate different Nightingale lights built to meet the requirements of healthcare and other institutional settings. Bulb guards deter theft; PolyLast shades are described as "virtually indestructible." 800/558-2628. Adjustable Fixture Co., Milwaukee, Wis. **CIRCLE 267**

Swimming-pool equipment

Paragon's 1997 catalog has 24 pages on pool-deck and underwater products for recreational, competitive, and resort pools. New items include a "fast start" takeoff platform, parallel bars for aquatic therapy, and portable lifeguard chairs.



PRODUCT LITERATURE

Stone and tile installation

Mapei's setting-materials catalog contains 16 pages on hydraulic mortars, self-levelling underlayments, polymer-modified grouts, and other products intended to insure long-term performance of tile and stone walls and floors. Specification data is also available in electronic format. 800/992-6273. Mapei Corp., Garland, Texas. **CIRCLE 275**

Solar window screening

A 12-page Sol-R-shade catalog tells how the company's fiberglass shades anticipate solar geometry with a cut-off angle that emulates the shading edges provided by exterior overhangs or awnings. Shades offer a view out while lessening glare on computer monitors; recessed mounting configuration encourages air flow that dissipates heat away from window glass. 800/433-4546. DFB Sales, Inc., Long Island City, N.Y. **CIRCLE 276**

Acoustical panels

Illbruck makes a line of panels, ceiling tiles, and baffles that can help control noise and unwanted reverberation in any type of interior space. A 12-page catalog illustrates Contour sculptured patterns, Fabrix textured-surface panels, and AcoustiROC grid-mounted tiles for high-

traffic areas. 800/225-1920. Illbruck Architectural Products, Minneapolis.

CIRCLE 277

Water-management EIFS

A recently updated guide offers industry-standard details for the correct installation of drainable exterior insulation and finish systems, intended to meet specific code requirements and to help reduce risk of moisture damage to sheathing. 800/494-EIFS. EIFS Industry Members Assn., Yakima, Wash. **CIRCLE 278**

Spray-on noise control

A brochure on K-13 describes the flame-resistant, acoustic, and thermal properties of cellulose ceiling insulation, which can be made in different densities and colors to meet specific noise-control, impact-resistant, and visual requirements. 713/433-6701. International Cellulose, Inc., Houston. **CIRCLE 279**

Accordion-fold doors

A 12-page catalog illustrates partitions in a variety of commercial, educational, and residential settings; drawings detail jamb and framing requirements. Panels may be specified in wood, vinyl, or clear acrylic, framed in aluminum. 503/357-7181. Woodfold-Marco Mfg., Inc., Forest Grove, Ore. **CIRCLE 280**



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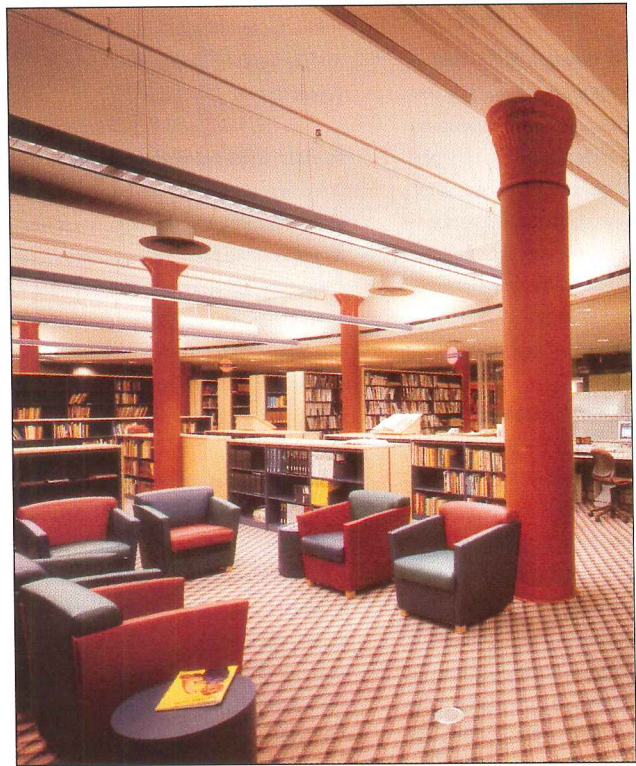
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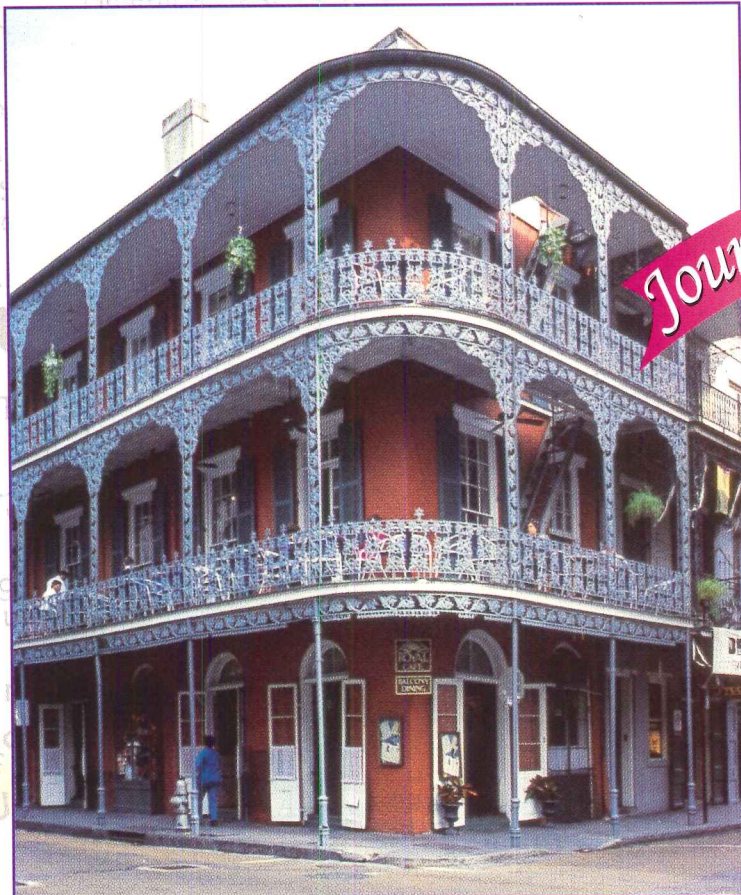
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PRODUCT LITERATURE

Tile-specification guide

This 1997 Ceramic Tile Specifier has installation and product photographs, design ideas, and technical information on all floor and wall products. A distributors' list locates local sources. United States Ceramic Tile Co., East Sparta, Ohio. **CIRCLE 281**

Sun-screen system

An architect's guide illustrates woven, see-through shade cloths in sophisticated installations. Products include manually operated MechoShades and Electro-shades, for large glass areas such as lobbies and atria. Control options include a new group/master device that lowers shades to any of four positions; all shades can be automatically lowered to identical positions. 800/899-8081. MechoShade Systems, Inc., Long Island City, N.Y. **CIRCLE 282**

Playground planner

Written for school and park officials and their designers, a 16-page pocket guide has advice on describing the sponsor's ideal playground, analyzing the site, preparing a plan, and choosing play equipment that meet the project's specific criteria. 800/328-0035. Landscape Structures, Inc., Delano, Minn. **CIRCLE 283**

Resilient flooring

A 104-page Design Book illustrates all Congoleum residential and contract floor patterns, with photography that includes room vignettes and product close-ups. An Architects Portfolio samples all commercial sheet and tile products. 609/584-3000. Congoleum Corp., Mercerville, N.J. **CIRCLE 284**

Entry security/communication

New features of this line of German access-control devices: hammer-resistant camera lens, a film record of callers, and a new color range for units. 610/353-9595. Siedle Communications Systems of America, Inc., Broomall, Pa. **CIRCLE 285**

Code-evaluated EIFS

A report from SBCCI lists the Senerflex CDsystem and the QR-CDsystem as meeting the revised building-code requirements for Type VI construction in North Carolina. These two Senergy exteriors create an unobstructed drainage plane that removes incidental moisture from the system. Fax: 401/941-7480. Senergy Division, Harris Specialty Chemicals, Inc., Cranston, R.I. **CIRCLE 286**

1997 Ceramic Tile Specifier

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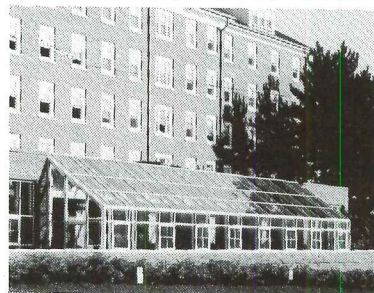
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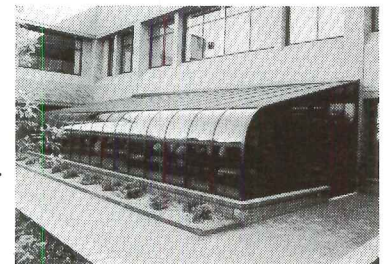
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PRODUCT LITERATURE

Customizable unit kitchens

A 12-page color catalog covers custom features, including more-contemporary cabinet styles (in widths of up to 120-in.) new finish options, and decorative porcelain countertops. Efficiency-style kitchens are said to be easy to integrate into new or renovated facilities such as military housing, motel rooms, and assisted-living centers. 800/348-8508. Dwyer Products Corp., Michigan City, Ind. **CIRCLE 287**

Composite floor systems

A combination of poured-in-place concrete with proprietary steel joists, the Hambro system creates floors with clear spans of up to 50 ft. Described as a rigid and simple design that saves on both concrete and reinforcing steel, the system is applicable to all types of framing. A brochure shows installation step-by-step, and gives acoustic and fire ratings. 305/772-0440. Canam Hambro, Fort Lauderdale, Fla. **CIRCLE 288**

Translucent structures

Skywall's latest architectural brochure

illustrates recent projects using this engineered skylight and wall system, including airport terminals, ballparks, and hospitals. 800/259-7941. Skywall Translucent Systems, Terrell, Texas. **CIRCLE 289**

Multimedia stone selection

A booklet describes Studio Marmo's CD-ROM catalog, based on the well reproduced photography of natural stones found in their printed stone-selection volumes. Built to run under Windows software such as AutoCAD, the disk sup-

plies images of 400 different granites, marbles, travertines, and limestones from quarries world-wide. Images can be exported to CAD drawings; technical data such as compression strength and impact-test results given for each stone. To order, fax 718/491-1359. Studio Marmo USA, Brooklyn, N.Y. **CIRCLE 290**

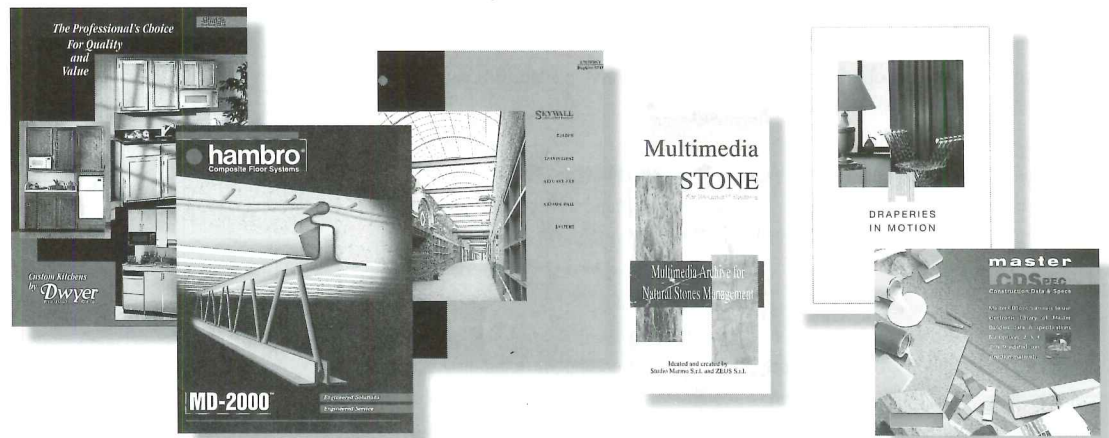
Drapery motors and controls

Somfy's brochure highlights compact motors engineered to open and close draperies either as original equipment or

retrofitted to existing cord-operated window treatments. 609/395-1300. Somfy Systems, Inc., Cranbury, N.J. **CIRCLE 291**

Concrete admixtures and more

Products from CSI Divisions 2, 3, 4, 7, and 9 are referenced on Master CDSpec, a Windows-compatible CD-ROM, as well as at www.masterbuilders.com (web page). Includes photos, installation guidelines, and technical data. Faxline: 888/628-4329. Master Builders, Inc., Cleveland. **CIRCLE 292** ■



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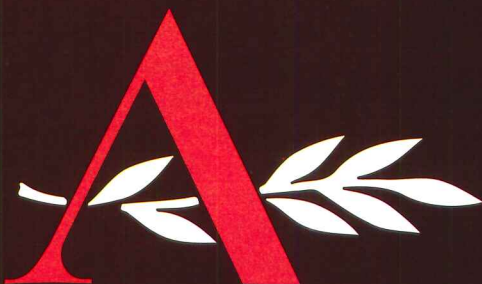
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CIRCLE 91 ON INQUIRY CARD

DATES EVENTS BOOKS

Calendar

May 16–18

Ernest N. Morial Convention Center New Orleans, Louisiana

The annual AIA National Convention and Expo, themed “Practice and Prosperity: Serving Client and Community,” is expected to draw over 10,000 architects, allied designers, and construction professionals to seminars, business sessions, and exhibits. More than 400 companies will offer their latest products. Architects may earn up to 36 AIA Learning Units. For information or to register, call 202/626-7395.

May 16–September 2

Montreal Museum of Decorative Arts Montreal, Quebec

With more than 200 objects from around the world, “Designed for Delight: Alternative Aspects of Twentieth-Century Decorative Arts” attempts to document “the diverse aesthetics, beyond functionalism and rationalism, that have informed and designed modern design.” The inaugural exhibition in the museum’s new building, designed by Frank O. Gehry & Associates, will travel to cities in North America and Europe. Call 514/259-2575.

May 17–20

Jacob Javits Center New York City

Designers, manufacturers, and representatives of furniture, lighting, textiles, and wall and floor coverings will present their wares at the International Contemporary Furniture Fair. Call 800/272-SHOW.

Through June 1

Chicago Athenaeum: Museum of Architecture and Design

The exhibition “Alvar Aalto’s Viipuri Library: Masterpiece of Finnish Architecture and Functionalism” is presented as part of an international effort to raise funds for the restoration of the 72-year-old library. Call 312/251-0175.

Through June 1

Canadian Center for Architecture Montreal, Quebec

“Richard Pare–Tadao Ando: The Colors of Light” focuses not on specific buildings, but on the “shared vision” that developed between the architect and photographer over a 10-year period. Call 514/939-7000.

Through June 3

Museum of Modern Art New York City

Loosely based on Philip Johnson’s Glass House, “Projects: Rirkrit Tiravanija,” is a site-specific installation in the museum’s sculpture garden, a child-sized model of an International Style pavilion—an open-air classroom for school children and families. Call 212/708-9400 or Fax 212/708-9889.

June 5–8

Downtown DoubleTree Hotel Tulsa, Oklahoma

Continuing its focus on “great buildings and great cities” begun in Phoenix this spring, the AIA Committee on Design will focus on Goff, Wright, and the Art Deco core of Tulsa. The committee theme is “The Case for Quality: The Public/Private Partnership.” Call 800/242-3837.

June 9–11

Merchandise Mart, Chicago

NeoCon 97, the annual contract furniture trade show, includes an emphasis on products for hospitality applications. For registration and seminar information, call 800/677-6278.

June 12–13

Renaissance Washington Hotel Washington, D.C.

The requirements of access laws in existing buildings and new construction will be discussed at the Universal Accessibility Conference, sponsored by the AIA and the U.S. Architectural and Transportation Barriers Compliance Board. For panel topics and registration information, call 301/694-5243 or fax 301/694-5124.

Through June 15

Palladian Basilica Vicenza, Italy

Work by Norwegian Modernist and 1997 Pritzker Prize winner Sverre Fehn is presented in an installation designed by the architect. Call 39/444-221-111 or fax 39/444 544-762.

June 16–19

Pennsylvania Convention Center Philadelphia

A/E/C Systems 97, billed as the largest computer show for design and construction, will be held in conjunction with Construction Technology 97 and other related industry events. Call

800/451-1196 or 610/458-7689, fax 610/458-7171, or visit <http://www.aecsystems.com>.

June 17–September 28

Canadian Center for Architecture Montreal, Quebec

The CCA will explore the myths underlying a cultural phenomenon with “The Architecture of Reassurance: Designing the Disney Theme Parks.” Call 514/939-7000.

June 24–October 19

Cooper-Hewitt New York City

“Do-It-Yourself Architecture for the Great Outdoors” will offer a look at the advanced materials and the innovative tectonics of tent design; 10 commercially available tents will form an “urban campsite setting” on the museum’s grounds. Call 212/860-6868 or visit <http://www.si.edu/ndm/>.

June 26–29

Orange County Convention Center Orlando, Florida

The Construction Specifications Institute has announced its 41st annual convention and exhibition. For registration and exhibitor information, call 800/689-2900.

June 26–29

Sea Ranch, California

This summer study tour of Sea Ranch is titled “Freehand Analysis Sketching.” The fee is \$440 (accommodations extra). Contact Landscape Architecture Program, UCLA Extension, 10995 Le Conte Avenue, Room 414, Los Angeles, California 90024, call 310/825-9414, or visit <http://www.unex.ucla.edu>.

Through June 29

Museum of Contemporary Art Barcelona, Spain

“Josep Lluís Sert: Architect in New York” chronicles the Spaniard’s first years in exile (1939 to the mid-1950’s), his architecture and town planning projects, and collaborative efforts with artists including Calder and Leger. Call 34/3 412-0810 or fax 34/3 412-4602.

July 16–September 21

Bard Graduate Center of Design New York City

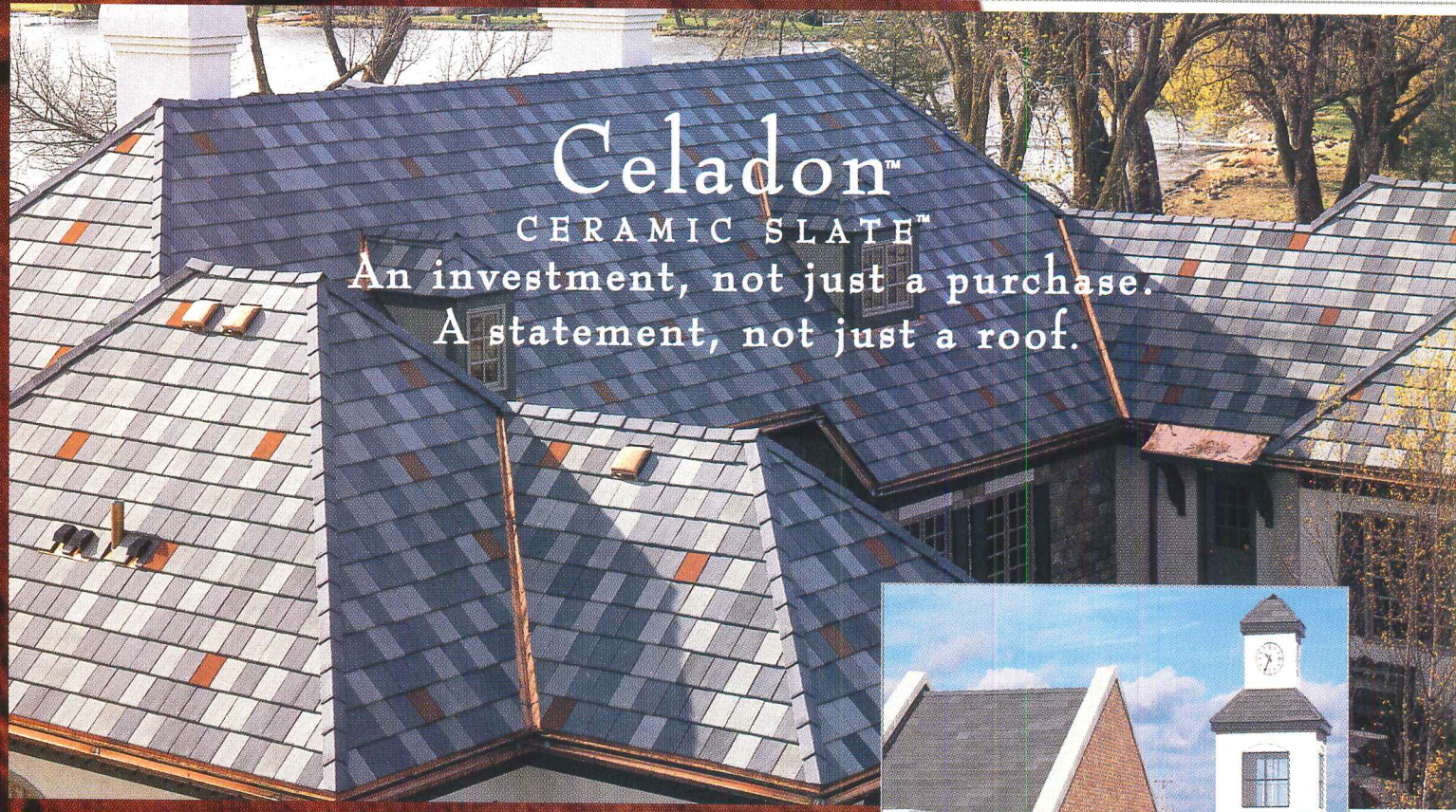
A two-part exhibition, “Masterworks of Italian Design, 1960–1994,” highlights contrasts between Modernism and Post-Modern design during the period. Call 212/501-3000. *(continued on page 264)*

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CIRCLE 92 ON INQUIRY CARD

(Essay continued from page 81)

independently continued to win awards for projects at the development into the 90's, a decade that saw Seaside, Fla., emerge, winning three awards in one year.

The 1960's ended with Richard Meier's first award, for his Smith House. Over 28 years, Meier, the current gold medalist, has won 11 awards. The Modern worm began to turn in the 70's, even though I.M. Pei and Partners won three awards in 1974. Michael Graves won an award in 1975 for the Hanselmann Residence, the Corbusian forms of which provided no clue to Graves's future role as one of the fathers of Postmodernism.

Two years later the firm of Venturi and Rauch appeared on the awards scene, although Philadelphia's Franklin Court also little foretold the emergence of such seminal concepts as the decorated shed. And keep in mind the fact that Robert Venturi's *Complexity and Contradiction in Architecture* had rocked the cognoscenti a full 10 years before.

This is just one example of how the AIA Honor Awards program does eventually catch up with the best of the current isms, though it rarely catches them at their flood. Frank Gehry's proto-deconstructionist design for his Santa Monica residence went against the tide by winning an Honor Award when it was

first submitted in 1980, but that was because it was entered under the Extended Use category. Insiders were convinced at the time that the house never would have won in the straight-laced Current Use category. Extended Use was later dropped, arguably because too many avante garde projects crept in or because those winners wanted to be seen as "mainstream."

The 80's also saw awards go to structures that solved environmental concerns with powerful artistry. These included Fay Jones's Thorncrown Chapel, Robert Frankberts' Phoenix Lath House and SOM's tented Haj Terminal in Jeddah. All three so surpassed the idea of elemental shelter as to near the sublime.

With the belt tightening of the early 1990's came the return of a Modern esthetic, albeit a neo version that was neither as virginal nor as pure as its inspiration. An industrial esthetic has remained compelling to jurors since the beginning, evidenced by interior awards this year for an advertising agency (Meyocks and Priebe) and a distribution center (Praxair), both designed by the Des Moines, Iowa, firm of Herbert Lewis Kruse Blunck Architecture. The interior award for a Bottega Veneta store (Francois deMenil with Bergmeyer Associates) welcomed unadulterated neo-Miesian Modernism, an indicator of the new respect for Minimalism—excess is unfashionable again.

While it visually resembles the style maturing at the inception of the design awards, today's Modernism is less optimistic and has a less-idealistic agenda for social change. On the other hand, architects are increasingly accepting the need for conservation of energy, resources, and expenditures. We are still searching for a moral and ethical means to practice and for practice methods that contribute to societal advancement. The question today is to what extent the Honor Awards need to reflect these concerns. The Institute has again convened an Honors and Awards Task Force to evaluate the program. The Honor Awards may no longer enjoy special status, but may be lumped with all other institutional honors, seemingly leveling the playing field. The potential for diluting the message of the awards is real. Recognizing all the players that make architectural greatness possible is a laudable goal as long as we do not lose sight of (as the *Random House Dictionary* defines it) "the profession of designing . . . artificial constructions and environments usually with some regard to esthetic effect." ■

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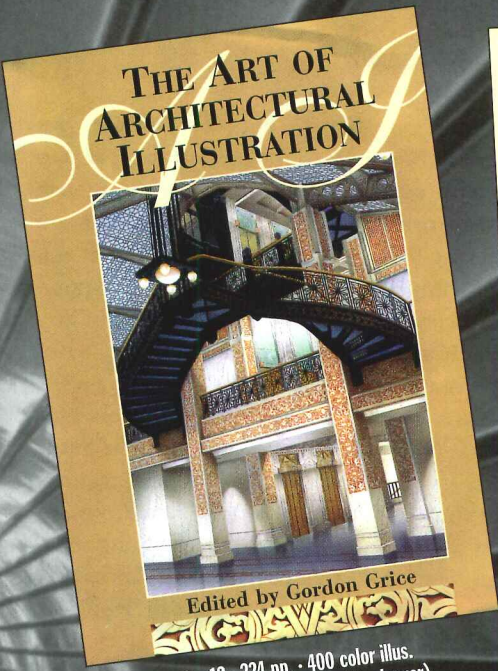
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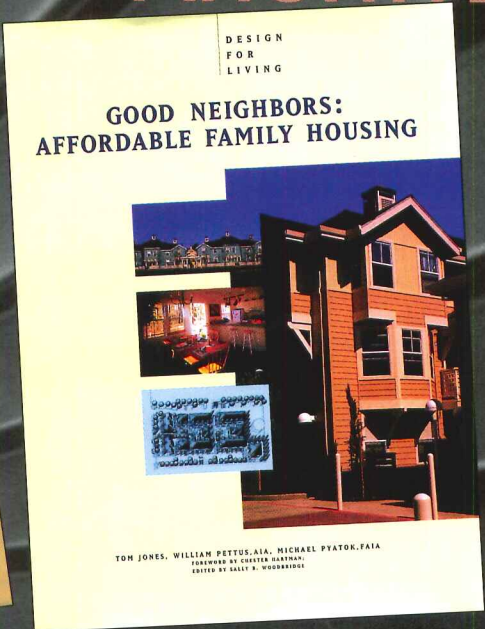
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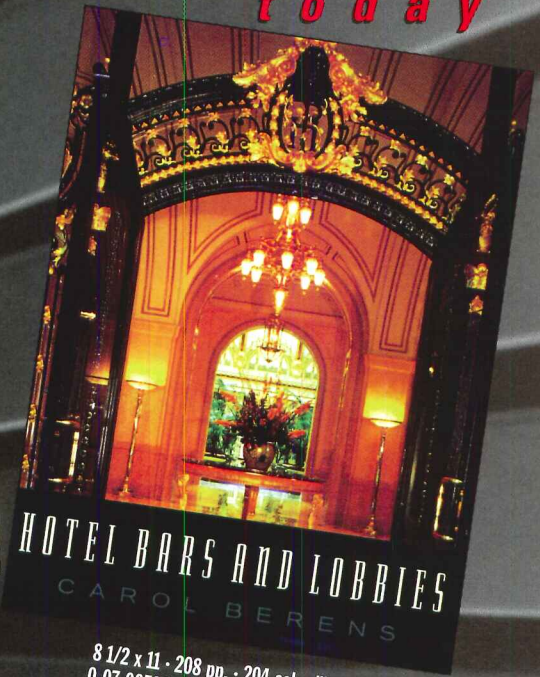
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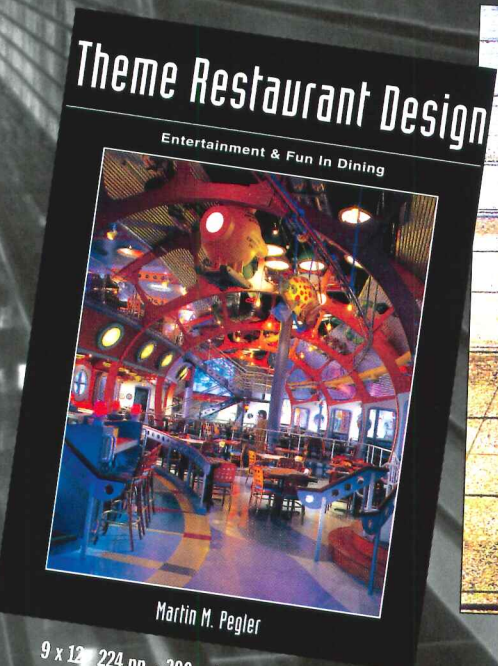
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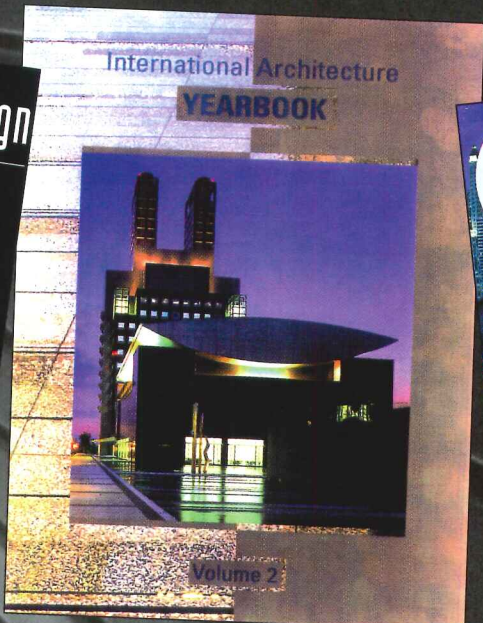
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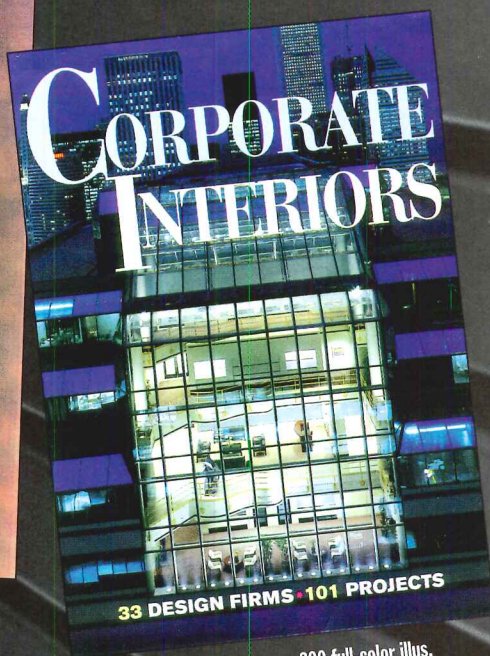
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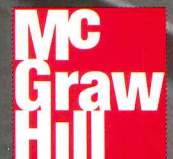
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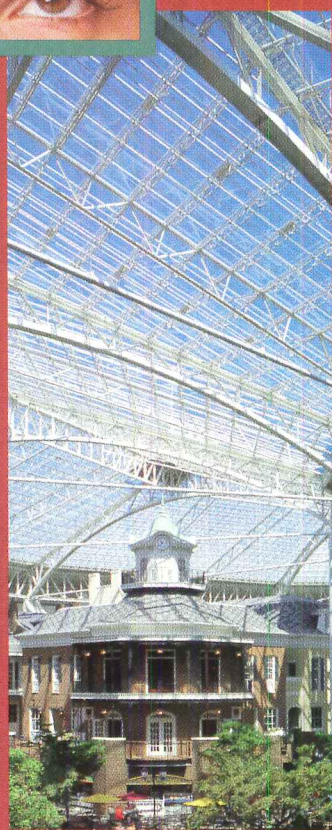
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CIRCLE 95 ON INQUIRY CARD

(continued from page 260)

August 7-8

Chicago

(Location to be announced)

BOCA's "Public Officials Symposium" will bring together local officials, code-enforcement officers, and building-design professionals to exchange information on the latest in hazard-mitigation strategies and problem-solving techniques. Call 708/799-2300, ext. 329.

August 8-10

AIA Chapter Headquarters Seattle, Washington

The Fourth Annual Diversity Conference 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. Contact 800/242-3837.

Summer 1997

Harvard Graduate School of Design Cambridge, Massachusetts

Harvard's GSD is offering professional development courses in architecture, from mid-June through mid-August. The program, which is registered with the AIA Continuing Education System (AIA/CES) and meets criteria for Level 3 learning units, includes courses on environmental sustainability, public-school planning and design, marketing strategies, and mid-sized firm management. Contact Office of External Relations, GSD, Harvard University, 48 Quincy Street, Cambridge, Massachusetts 02138; call 617/495-1680, fax 617/495-5967, or e-mail: pd@gsd.harvard.edu.

Competitions

The Boston Society of Architects invites entries in two awards programs: the **Urban Design Awards Program**, which recognizes excellence in urban design and planning by Massachusetts architects and architects worldwide who have built work in the state (submission deadline: May 22); and **Unbuilt Architecture**, an annual program open to practitioners, educators, and students (submissions due: August 21). Submit entries to the attention of the program at Boston Society of Architects, 52 Broad St., Boston, MA 02109-4301. Queries on either program, call 617/951-1433 ext. 232.

Portland has issued a call for entries in its awards program, **Architecture + Energy: Building Excellence in the Northwest**.

Recognition will be given for design excellence in buildings that integrate energy-efficient technology. The program is open to nonresidential buildings in Idaho, Montana, Oregon, and Washington. Sponsors are Portland General Electric and the Bonneville Power Administration. The deadline is May 30. To request an entry packet, contact AIA/Portland, 315 S.W. Fourth Avenue, Portland, Oregon 97204. For information, call 815/436-7093.

Toward a More Perfect Union: An International Design Competition for the Future of Union Square

"aims to generate innovative urban design concepts that are inviting to a wide range of users and that will make Union Square the renewed focal point for San Francisco's retail core." The jury will award \$10,000 in prizes and the City of San Francisco, which intends to renovate the square, will interview the winners for retention as part of a design team. The deadline for submissions is July 7. Send requests for entry by June 6 to The San Francisco Prize, c/o SPUR, 312 Sutter Street, Suite 500, San Francisco, California 94108 (include a check for \$20 payable to the San Francisco Prize). For technical questions, contact Evan Rose, Competition Project Manager, San Francisco Planning Department at 415/558-6291, fax 415/558-6426, or e-mail: Evan_Rose@ci.sf.ca.us.

The Chicago Athenaeum: Museum of Architecture and Design invites designers and manufacturers to submit industrial and graphic design projects, including office furniture, housewares, and lighting, to **GOOD DESIGN® 1997**. The deadline for this international competition is July 1. Winning submissions will be exhibited at the museum this fall and installed in the permanent collection. Entry forms are available from the Athenaeum at 312/251-0175, fax 312/251-0176, or visit <http://www.chi-athenaeum.org/>.

The Young Architects Group of the AIA New York Chapter, the Van Alen Institute, and the Hudson River Park Conservancy are sponsoring a **design competition for a sunshade structure** on a pier at 13th Street in Manhattan, as an interim improvement within the context of the Conservancy's current waterfront development plans. The registration deadline is July 31 and entries are due September 2. Call 212/683-0023, ext. 23. The MIT School of (continued on page 266)

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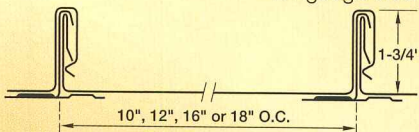
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CIRCLE 96 ON INQUIRY CARD

(continued from page 264) Architecture and Planning announces the 6th biennial **Lawrence B. Anderson Award**. The \$12,500 award is given in "support of creative documentation as a valuable form of learning." Eligibility requirements include a professional-level degree and/or a recognized contribution to the built environment and full-time residence at the school for a two-year period. The application deadline is July 31. For information, contact Office of the Dean, School of Architecture and Planning, MIT, 77 Massachusetts Avenue, 7-231, Cambridge, Massachusetts 02139, or call 617/253-4401, fax 617/253-9417, e-mail: peggy@mit.edu.

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 sheets of paper; no electronic media. For entry requirements, contact Tomoko Ochiai, Editor, *The Japan Architect*, at fax

81/3-3811-0243. Entries must be received by September 10, 1997.

Reviews

Goff on Goff: Conversations and Lectures, edited and with an introduction by Philip B.

Welch. Norman, Okla.: University of Oklahoma, 1996, 352 pages, \$29.

A Quest for Life, by Ian L. McHarg. New York: John Wiley & Sons, 1996, 446 pages, \$35.

An Architectural Life: Memoirs and Memories of Charles W. Moore, written and edited by Kevin P. Keim. Boston: Bulfinch Press/Little, Brown, 1996, 302 pages, \$50.

Reviewed by Nancy Levinson

The lives and works of three mavericks of mid-20th-century design education, and practice, Bruce Goff, Ian McHarg, and Charles Moore, are presented in a new volume of collected lectures, an autobiography, and a biography. Also presented to varying degrees in these books is evidence of some of the shortcomings of late-20th-century design publishing.

On the record: an Oklahoma prodigy

Goff on Goff is a series of transcripts of the

architect's lectures and conversations, most recorded in 1953 and 1954 at the University of Oklahoma, where Goff chaired the School of Architecture. The book's editor, Philip Welch, a colleague of Goff's at Oklahoma, has chosen to present this material straight. Only a brief introduction, long on personal memories and short on biographical fact and historical perspective, serves to locate Goff in place and time.

Welch emphasizes, in fact, that there will be "no interpretation of [Goff's] philosophy"—no critical friction, as it were, between speaker and reader. Such remarkable editorial reticence would have been justified had the material been the timeless treasure the editor believed it to be; but the lectures are, rather, a fascinating anachronism.

Born in 1904, Goff was an architectural prodigy who began working in a Tulsa office at age 12 and who, by age 21, had a dozen constructed projects to his credit. He reached artistic maturity in the 1940's and 50's, designing in those years a series of extremely original houses notable for their vigorous and often brilliant explorations of different geometries and for their use of such unexpected materials as feathers, chunks of anthracite, and parts of scrapped B-17s. (continued on page 270)



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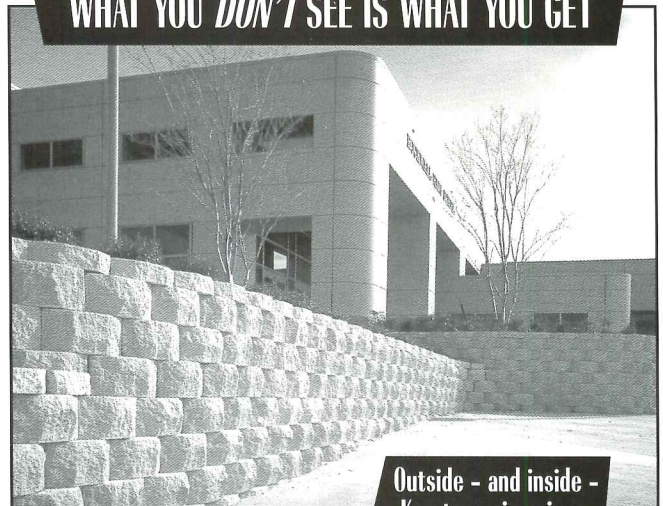
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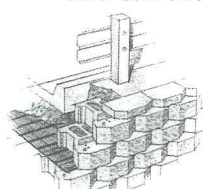
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CIRCLE 75 ON INQUIRY CARD

(continued from page 266) What is most striking about these lectures is how thoroughly they are a product of their period. “The New and Different in Architecture,” “Honesty in Architecture,” “The New Geometry in Architecture,” “Advancing Architecture”—such titles suggest a catalogue of some of the themes and topics that engaged architects during America’s wildly prosperous and willfully optimistic postwar era. Evident throughout these lectures is a confidence in the influence and efficacy of architecture and the architect, or, in Goff’s unfussy and slightly ungainly syntax, “in knowing that it is possible to do right now potentially almost anything that we can think of.”

Such confidence has all but vanished in our own more self-consciously complicated time. Welch describes Bruce Goff as a dedicated and compelling teacher, and these intelligent lectures contain many sophisticated and insightful passages on diverse matters, including the architecture of Wright, Gaudí, and Mies, the music of Debussy and Schoenberg, and the training and obligations of the artist.

But to read these lectures four decades later is to realize again the truth of the widespread conviction that sometime in the past quarter century there began a new era. Whatever this era will eventually be labeled—“postmodernity” now being the favored term—it has made a great deal of the not-so-distant past seem deeply out of date. Or, put another way, this book seems to me to possess not lasting but historical value. This is not a very harsh judgment of Goff; very little of what is spoken or written outlasts its occasion.

Bruce Goff would have been better served by editor and publisher had these lectures been supported by a more ambitious editorial context. Such a context might have included a major essay on Goff’s methods and influence as a teacher, as well as on his life and work. And a larger context should certainly have featured better images of Goff’s work than the small, grainy photos reproduced here. This last, in fact, seems especially important; for if Bruce Goff’s words remain rooted in their time, his buildings look more amazing than ever.

From Glasgow to Penn: Ian McHarg

Ian McHarg, born in 1920 and now professor emeritus at the University of Pennsylvania, served recently as the Bruce Goff Professor at the University of Oklahoma. We learn much about the renowned landscape architect and planner in his autobiography, *A Quest for Life*. Despite the swashbuckling title, McHarg

recounts the major episodes of his life in straightforward style, describing his lower-middle-class boyhood in Depression-era Glasgow, his meritorious army service during the Second World War, postwar study of landscape architecture and city planning at Harvard, three decades as founding chair of Penn’s prestigious landscape architecture department, partnership in the firm Wallace, McHarg, Roberts and Todd (now Wallace Roberts and Todd), and, most important of all, his major role in the environmental movement of the 1960’s, during which he wrote the influential book *Design with Nature*.

Ian McHarg emerges from these pages as an intelligent, idealistic, and passionate man of large ambition and broad achievement. This is nonetheless a flawed book. While acknowledging at the outset the pitfalls of autobiography—“the necessary repetition of ‘I’ groans with immodesty”—this autobiographer has not entirely resisted the seductions of the genre. “Autobiography is an unrivaled vehicle for telling the truth about other people,” the British writer Philip Guedella once said; and indeed, from every encounter described here, whether with army brass, Harvard faculty, or highway engineers, the author comes through victorious, with the best lines or the last word.

And while McHarg writes with verve and feeling about his Scottish boyhood and European tour of duty, he seems oddly content, when discussing his prolific American career, simply to elongate his curriculum vitae into paragraphs and chapters.

No one else really comes to life in these pages, which is particularly disappointing, given the range of the author’s experience. Not only has McHarg known, as student, colleague, or teacher, many of the best and most influential landscape architects of the past half century; he has also, as part of his crusade to enrich the discipline of landscape architecture with knowledge from other fields—ecology, of course, but also anthropology, biology, theology, and literature—known such distinguished figures as Lewis Mumford, Loren Eiseley, René Dubos, Margaret Mead, Erich Fromm, Howard Nemerov, and Paul Tillich.

But rarely do these men and women make more than anecdotal, *Who’s Who*-like appearances here. The engaging candor and narrative detail that enliven the early chapters on the author’s youth all but vanish in the chapters on his professional life. Probably this latter material—dealing with colleagues, collaborators, and rivals, many of whom are still practicing—posed more sensitive authorial dilemmas. And

in this regard I am *not* implying that what is needed is dirt or dish—that McHarg or any memoirist should indulge in the popular practice of training a laser on the frailties of the famous. I am suggesting that the author has not written the better and more ambitious book that lurks in these pages.

To judge from how often McHarg rhetorically reaffirms the importance of ecological knowledge, he intended to explore in some measure how recent landscape practice and teaching have—and have not—made use of this learning. But this critique doesn’t quite come off; what we have instead, for too much of the book, is the dutiful description of projects and personnel. This is regrettable, given the author’s extraordinary access and well-earned authority.

A posthumous life of Charles Moore

Charles Moore did not live to complete his own memoirs. At his death in 1993 at age 68 he was working, with Kevin Keim, on what has become *An Architectural Life*.

Much about Moore’s architectural life will be familiar to anyone who has even casually followed recent architectural culture. After receiving his Ph.D. from Princeton University in the late 1950’s (missing there his fellow Postmodern traveler, Robert Venturi, by several years), Moore embarked on a four-decade career remarkable for its range of associations and activities. He taught at Princeton, Berkeley, Utah, Yale, UCLA, and Texas; founded such diverse and productive offices as MLTW, Moore Grover Harper (now Centerbrook), Moore Ruble Yudell, and Moore/Andersson Architects; and wrote influential articles and books, including *Body, Memory, and Architecture* (with Kent Bloomer) and *The Place of Houses* (with Donlyn Lyndon and Gerald Allen).

Making possible this intense and nonstop schedule was intense and nonstop travel. Moore was famously on the go, usually balancing projects and teaching and writing in several places at once. Merely to *read* about a typical Moore week—jam-packed with working sessions on the red-eye, desperate but ultimately creative charrettes, lengthy and convivial dinner parties, never-ending phones and faxes—is to be torn between envy and exhaustion.

As its exceedingly equivocal title suggests, this is not a full-fledged biography. Rather, it is an extended but protectively restricted glimpse into Moore’s life and career. As such, it seems to me a limited achievement, not disrespectful, but simply too unambitious to matter much. The book has been as much assembled as written, and many of the (continued on page 272)

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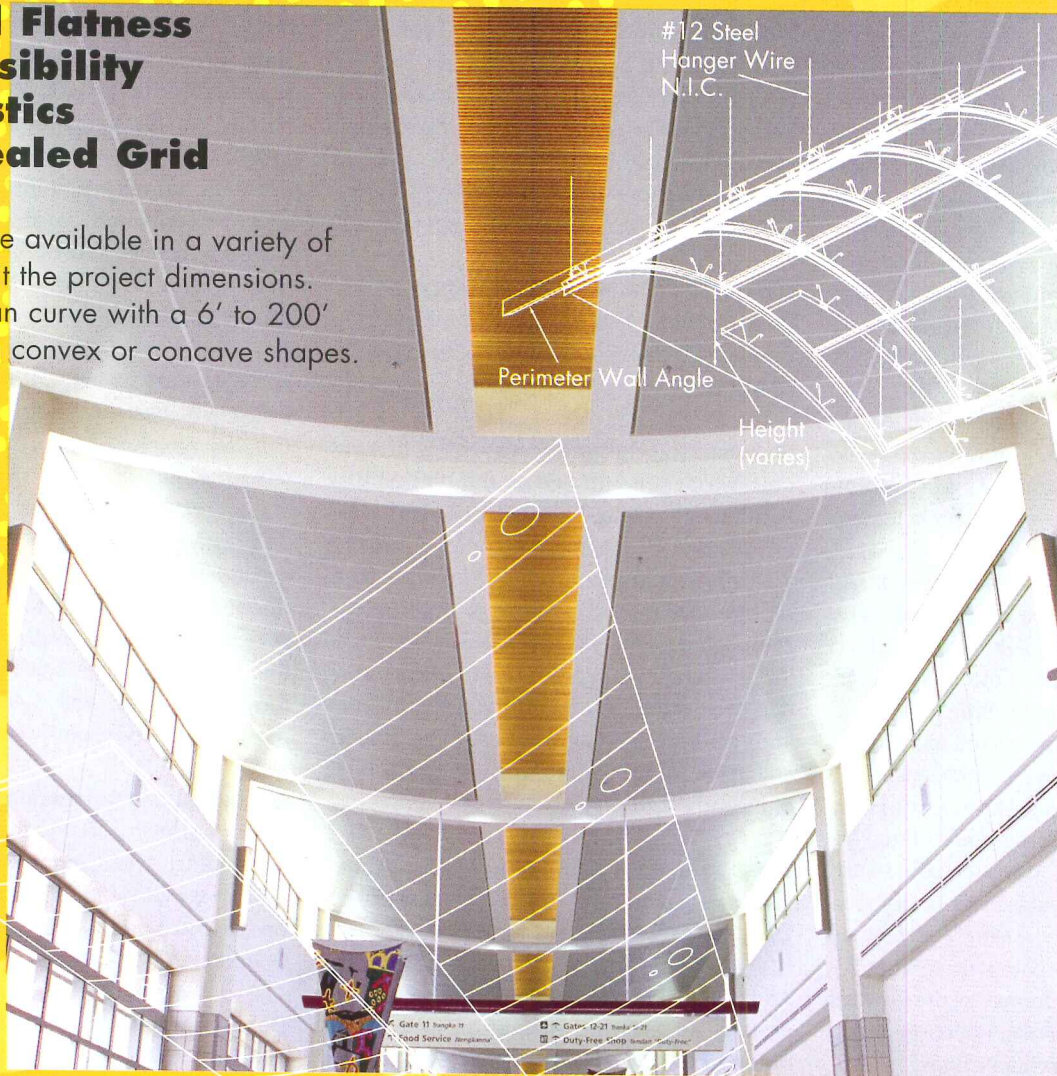
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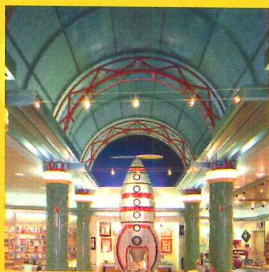
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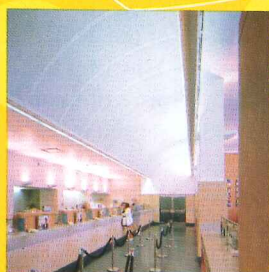
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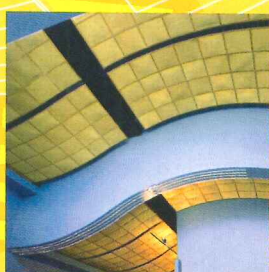
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CIRCLE 100 ON INQUIRY CARD

(continued from page 270) best parts are excerpts from Moore's writings and recollections from colleagues such as Lyndon, Bloomer, William Turnbull, Lawrence Halprin, and Mark Simon.

The author/editor justifies the decision to produce an *architectural* life, as opposed to a life, by arguing that Charles Moore's professional life *was* his personal life. Well, maybe; but in that case the literary result might have been a full-blooded, forthright study of Moore's career and the eventful period in which he practiced.

But *An Architectural Life* does not display much authority about either the architectural or American scene. You don't need to have lived through the 1950's to perceive the callow confusion in this attempt to encapsulate the decade: "It was a time of sober slogans such as 'I Like Ike' and 'Less is More.'" And if there is little historical understanding here, there is even less critical perspective. The author is disinclined to explore the contours of Moore's long career, the entirety of which is treated as a continuous, unvarying success. Sea Ranch and the Piazza d'Italia, the inventive wood houses from the 60's and the painted PoMo projects of the 80's—it's all pretty much the same here. This indiscriminate affection makes the book seem like a mix of eulogy and press release.

The shortcomings described above might be understood simply as the limitations of three specific books. But they might also be understood as symptomatic of some of the larger shortcomings of design publishing today.

Although book shops are full of oversized monographs, well-produced anthologies on cities and landscapes, book-like magazines and magazine-like books, design publishing has been enduring lately a crisis of confidence. Publishing economics—never excessively reassuring—have become increasingly precarious, for reasons ranging from competition from TV, movies, and now the Internet, to the growing obsession with the mega-major bestseller at the expense of the merely profitable book.

The case of design publishing is further complicated by the debatable but widespread suspicion among publishers that designers invariably prefer the visual to the verbal—hence the growing practice of placing between book covers the photo library of a firm and labeling the result a monograph.

Whatever the reasons, this recent uneasiness has made the work of writing, editing, and producing books more difficult than ever. Good books take great effort; but today there is too little time and too little money, and too few manuscripts receive the attention they require.

How else to explain why the author of *A Quest for Life* recalls meeting, on a hiking trip that occurred in 1930, veterans of the Spanish Civil War (which didn't start until 1936)? How else to explain why, in books about the contemporary design world, the names of so many prominent figures are misspelled or mangled? Philip Johnson, Paul Rudolph, Spiro Kostof, and Denys Lasdun are just a few of the many whose names slipped by the celebrity spellchecker in these books. And what, if not regrettable haste, accounts for the fact that in a life of Charles Moore the word *charrette* is misspelled?

Maybe these are minor matters—maybe it is a minor achievement to spell correctly or to know when the Spanish Civil War started—but these lightweight errors, so easy to catch and avoid, arouse this writer's suspicion that attention isn't being paid to weightier matters as well.

The Details of Modern Architecture, Volume 2: 1928–1988, by Edward Ford. Cambridge, Massachusetts: MIT Press, 1996, 384 pages, \$75.

As fascinating and provocative as his first volume, which concentrated on the 19th century, Ford's final work in this two-part series focuses on "structural expression, the mechanisms for achieving it, and the models that exemplified, to Modern architects, its correct application." Although a magnifying glass is needed to read its painfully small type, the book offers a spirited perspective on the history, design, theory, and construction of 20th-century Modern architecture through the work and ideas of 15 of its leading proponents.

Glass in Architecture, by Michael Wigginton. London/San Francisco: Phaidon/Chronicle, 1996, 320 pages, \$95.

A timely publication in light of the architectural profession's growing interest in and exploration of the structural potential of glass, this handsome volume by a British architect and educator makes for a useful, if not comprehensive, reference on glass in architecture. A survey of technologically and formally sophisticated contemporary works in North America and Europe is sandwiched between essays on the history and the technology of the 4,000-year-old material and an essay on the future. The book includes appendices—illustrated with beautifully rendered diagrams and graphs—that cover materials and performance, glass manufacturing, unconventional glass types and products, and transparent plastics.

Expressive Details, by Duo Dickinson. New York: McGraw-Hill, 1997, 259 pages, \$50.

The fifth in a series of books by author and Connecticut architect Duo Dickinson, this survey of mostly residential, often quirky details by a variety of architects, designers, and builders, is intended to fill the gap between books devoted to "preciously self-conscious" presentation drawings and the dry, often opaque content of technical journals. The author's intention is admirable, but there are too few drawings and those included are sometimes too small and difficult to read; others, presumably due to production problems, fall partially in the gutter of the book. Divided into six categories (structure, skin/surfaces, openings, movement, millwork/minutiae, and systems/mechanical), each with approximately a dozen details shown in black-and-white photos and working drawings, the book provides some inspiration for designers.

The Elements of Style, Revised Edition, edited by Stephen Calloway and Elizabeth Cromley. New York: Simon & Schuster, 1997, 568 pages, \$70.

Originally published in 1991, this updated and expanded "encyclopedia" documents domestic interior architectural details from 1485 to the present. It is a solid, well-organized reference tool, with more than 3,000 drawings and historic engravings, and 1,400 photographs—most reproduced exquisitely.

Omissions and Corrections

Lead architect credit for the Columbus Performing Arts Complex [RECORD, March 1997, page 35] should have gone to Hecht, Burdeshaw, Johnson, Kidd, and Clark, Inc., of Columbus, Georgia.

Due to incorrect information supplied to the magazine, the March 1997 story on NikeTown [pages 100-103] misstated the role of members of the design team. Michael Leclere of Leclere Associates should have been noted as architect-of-record, and Brain McFarland as architectural consultant to Leclere Associates.

The story on the 1997 Topaz Medallion for Excellence in Architectural Education [RECORD, April 1997, page 52] had two errors. First, the name of one of the two sponsoring organizations is the Association of Collegiate Schools of Architecture (ACSA). Also the award is given jointly by the AIA and ACSA. ■



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CIRCLE 101 ON INQUIRY CARD

(Letters continued from page 35)

become public perception that anything is possible and readily available. Hanna-Barbera has been replaced by virtual reality. Market-driven architecture is arguably becoming king.

This mass entertainment trend is right on schedule for the next millennium. Who better to build the way to Never Never Land than architects?

—Boukman Mangones

Miami, Florida

I live within 10 miles of both the Mohegan Sun [RECORD, March 1997, pages 104–109] and the Mashantucket (Western) Pequots' casinos, and have visited both buildings. At the Mohegan Sun, on-site traffic flow is confusing. I know people who have parked in the garage and had to walk halfway around it to find the casino at night. During the day, the exterior of the building makes you feel like you are

approaching a factory. If not for the “tepees” at the entrances, the casino would look like a short version of the nearby Preston incinerator.

In contrast, the Mashantucket Pequots casino, to the dismay of some local residents, gives visitors a feeling of “having arrived.” It is tall, bright, and huge. It also displays a tribal architecture that does not stop with the plan but extends through the walls to the building's exterior design.

If the Mohegan Sun architects were to have designed “everything the public sees,” they should have considered the exterior. The interior is a beautiful surprise, if you can force yourself through the doors.

—Mark A. Pawlikoski, AIA

The Hermann Associates

Mystic, Connecticut

Public housing: grid lock

As noted in Blair Kamin's “Can Public Housing Be Reinvented?” [RECORD, February 1997, pages

84–89], there are many factors other than physical design that affect the life of communities. Integrating the other factors with appropriate physical design promotes the most satisfying communities, as architect Christine Killory and many others have noted.

In my opinion, a reintroduced or reinforced street grid, like the one proposed for Cabrini-Green, is rarely a positive component in the integration of the various factors. The kind of “discipline” it embodies is a poor substitute for the “enlightened choices” that a richer urban environment can provide. How to “enlighten” those choices and avoid “the tragedy of the commons,” is not an easy process; but to simply limit the choices is a regrettable admission of defeat.

—William A. Stewart

Marble Falls, Texas

W. W. II Memorial: state of the Union

Regarding Friedrich St. Florian's expression of the “autonomy” and “collective will” of the 50 states in his design for the World War II Memorial [RECORD, March 1997, page 31], memorials communicate the builder's understanding of history to future visitors. Forty-eight states fought in the war; the number 50 is as inappropriate in commemorating W. W. II as it would be for the Revolutionary War. What history are we communicating?

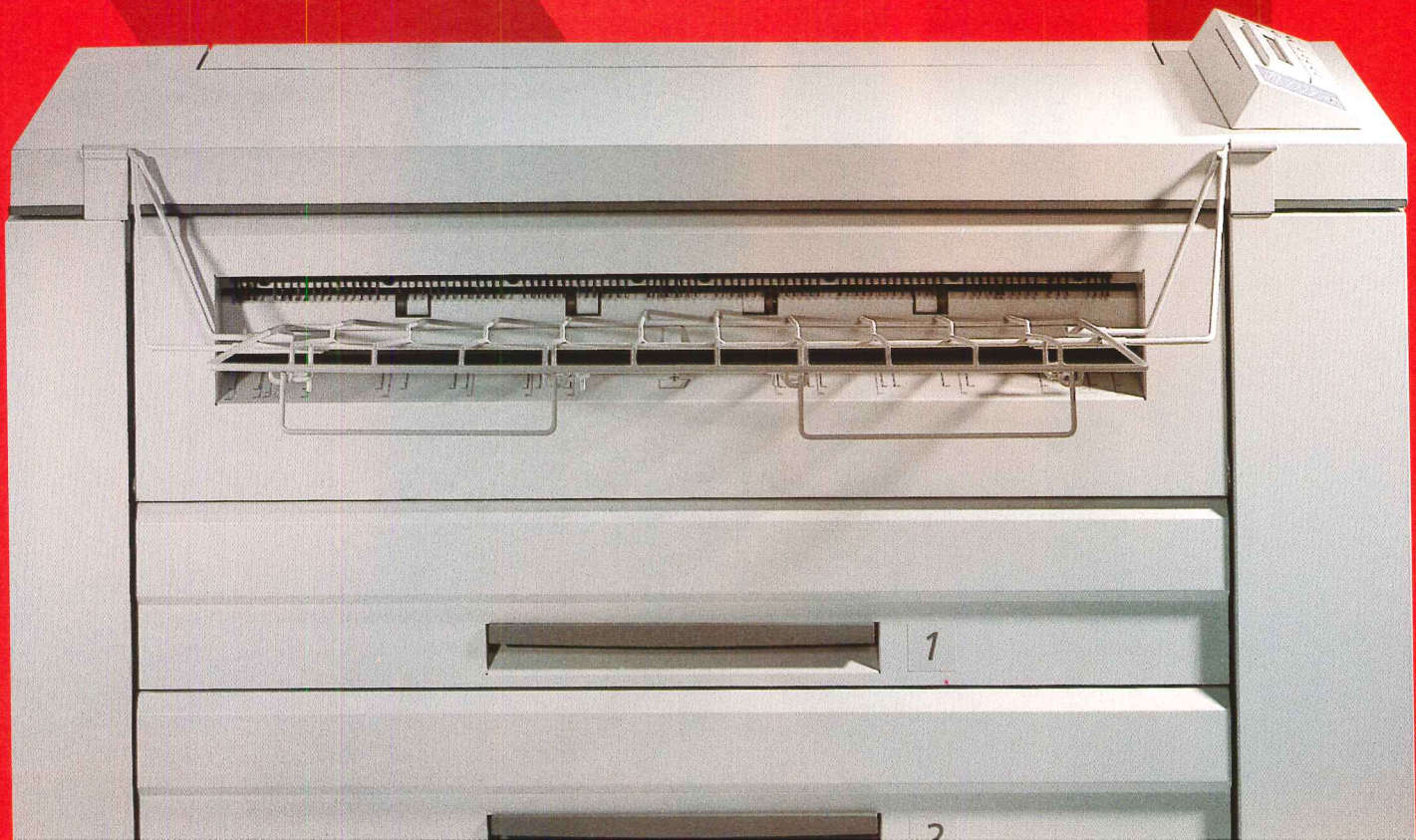
—Robert W. Grzywacz, Architect

New Haven, Connecticut

Enabling interns

Bob Dillon gave a remarkable portrayal of the experience of architectural interns in *Speak Out* [RECORD, January 1997, page 28]. Your article gave me a sense of what to expect from and how to achieve the full learning potential of the Intern Development Program (IDP).

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However, Dillon fails to mention that the main reason interns feel frustrated by IDP is because architecture schools are not preparing them adequately for the real world. The current structure of architecture education segregates professional practice classes. In the rapidly changing world of architecture, however, schools should integrate practice into the studio to keep up with the pace of change. This would create an intensive studio-based education where students would learn to work more collaboratively with people of different expertise and experience.

The benefits of the IDP experience will be realized when a more practice-oriented studio is implemented.

—Manuel Da Silva, fifth year student
School of Architecture
Roger Williams University
Bristol, Rhode Island

Debating the boldness gap

In her comments on the "boldness

gap" [RECORD, February 1997, page 16], Cathy Rogers demonstrates a familiar inferiority complex: if architects strive for the essence of the meaning of design to society, Rodgers would have us believe, they commit the crime of "snobbery and elitism" and ought to be ashamed of themselves. We are to understand, in her opinion, that designing an unprofitable building is equivalent to defending a "hallowed ground."

Cathy Rodgers delivers the crux of her homily by defining the criterion for judging the contribution of architecture to society: "The amount of repeat business a firm generates." Have we just experienced a revelation?

—Oreste Drapaca, Architect
New York City

In response to the "boldness gap" letters in your February 1997 issue, I submit that all architecture is not great and some architects don't practice as well as others: That's life. But to say that architecture must

allow itself to be driven by the marketplace is to abdicate the architect's authority and responsibility to the client. This argument implies that the client is more competent than the architect to make decisions relating to architecture as a profession and a practice. Have architects become so fearful of the "pompous" label to be willing to strip architecture of its professional status and to relegate practitioners to the position of techno subcontractors to the client? Rather than cave in to market demands, perhaps architects should fight them.

Isn't one of the most impressive skills of an architect the ability to understand and meet wishes and needs in ways the client could not imagine?

—Edward J. Devine, Assoc. AIA
Rochester, New York

A better RECORD

I'm pleased to say that the quality of RECORD hit a new high with the January 1997 issue. The only com-

plaint I would have is to echo Ulrich Franzen's comment [RECORD, February 1997, page 16] on the lack of floor plans in Steven Holl's Makuhari housing complex—too much like *Architectural Digest!*

The February issue is even better, because I found the articles to be of greater interest to me. The first two paragraphs of Bob Ivy's editorial gave the best explanation of why I, like many other architects of a contemporary persuasion, support the preservation movement. As you say, it is "part of who we are."

—Bradley R. Storrer, AIA
Alta Loma, California

Community service

Robert Ivy's December 1996 editorial [RECORD, page 9] in which he reflected on the efforts of his architect-friend's tireless vision and service to his community was heartfelt. Ivy's gratitude and editorial support of his friend's efforts

(Letters continued on page 278)

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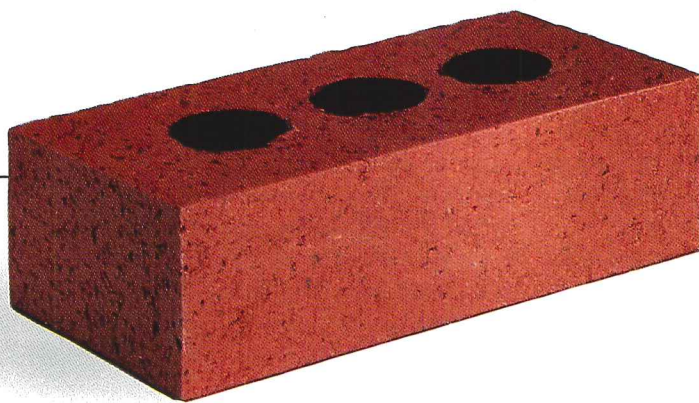
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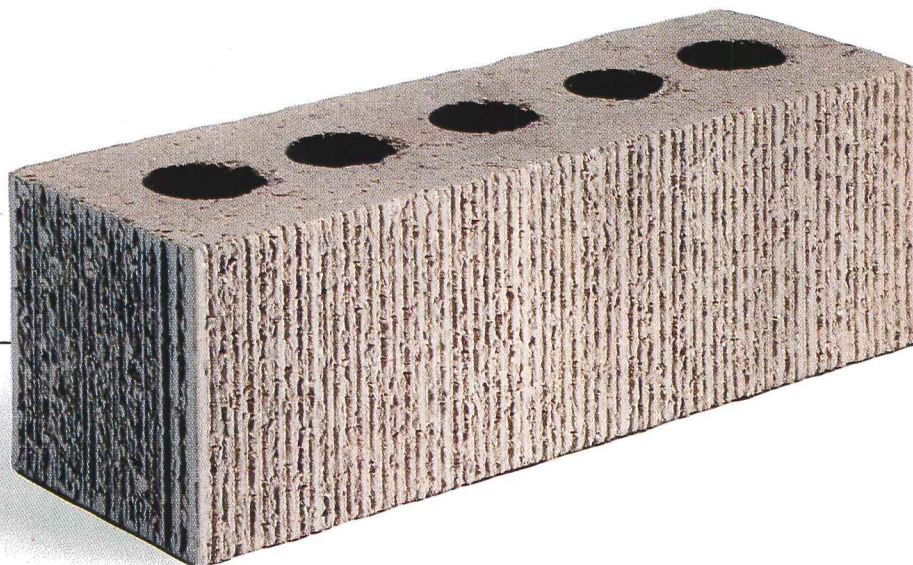
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(Letters continued from page 275)

touched on an issue that has not been explored fully by the media or the profession: community service. Years ago, while sitting in my doctor's office, I read an article in the *AMA Journal* that was a reminder to doctors that each and every one of them had a responsibility to contribute their skills and talents to their own communities. This is good advice from which many architects could learn and grow.

My own experience reveals unforeseen, career-sharpening benefits derived from serving as a board member of a science and history museum, guest teaching about design to a 5th grade class for a few semesters, and designing a playground for a homeless shelter. I've found myself sitting in rooms filled with doctors, attorneys, professors, priests, computer designers, corporate directors, bankers, and other community-minded people. Through these relationships, I've transformed the common perception of my skills, from designer of buildings to strategic thinker, creative problem-solver, planning process organizer, and overall "vision" advocate. I have also learned about organizational bylaw structures, public speaking and presentations, the political process, and organizational development.

And I've also developed a key understanding of other professions that I would most likely never have had exposure to.

These are win-win situations that can accelerate and augment the traditional skills learned in the architect's office. Our professional skills and passion are needed throughout our communities in organizations that have an unfulfilled need for our vision. In most instances, I've been the sole representative of our profession and a "first contact" with a designer. Participation in our professional organization is fine, but more of us could and should contribute as individuals. Architectural offices and colleges should support and encourage community service. It would be a great idea if community service became a required component for licensure. Get involved.

—Gary Orr
 ORR Design Office
 Sacramento, California

More on themed architecture

While I feel disturbed by the so-called "theming of America" trend sweeping this nation, I do believe that it is real architecture [RECORD, March 1997, page 20]. America has a rich heritage of themed built environments. From Coney Island and Midway Gardens to the World's Fairs, many archi-

itects have had a hand in creating these environments. What is sad is the public's desire (real or advertiser-imposed) for more of these outrageous, controlled, glitzy places. The disturbing pattern, in my view, is that instead of supplementing our everyday environments they are becoming the replacements for real places and events.

—Jim McAuliffe, Architect
 Newtown, Pennsylvania

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

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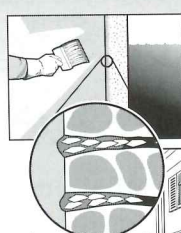
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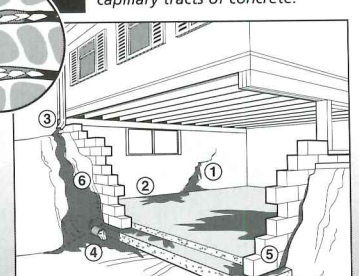
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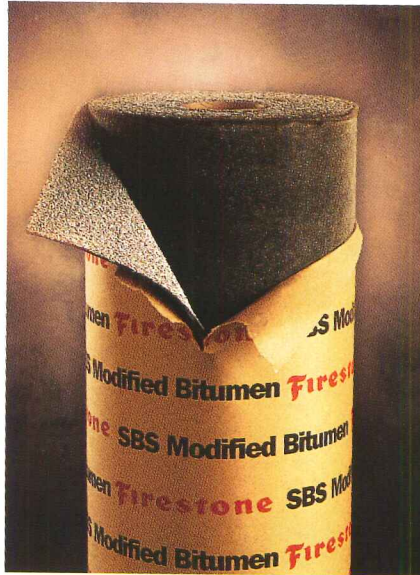
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**AIA / ARCHITECTURAL RECORD
CONTINUING EDUCATION**

INSTRUCTIONS:

- ◆ Read the article, "New Tools in Fire Protection" (pages 207-210), using the learning objectives provided to focus your study.
- ◆ Complete the questions below, then check your answers (page 282).
- ◆ Fill out the self-report form on page 282 and submit it to receive two AIA Learning Units.

—Mark Scher, AIA Director of Continuing Education Programs and Products

Questions:

1. What issues, other than safety, are behind the successful adoption of residential sprinklers for multifamily and single family residences?

Answer 1.

2. What safety factors are behind negative- and positive-pressure door tests?

Answer 2.

3. What code and market-place changes are occurring that will affect the way architects specify fire-rated doors?

Answer 3.

4. List and briefly describe the pros and cons of: intumescent seals, sprinklers, passive noncombustible-material protection, Halon 1301, and fine water spray systems.

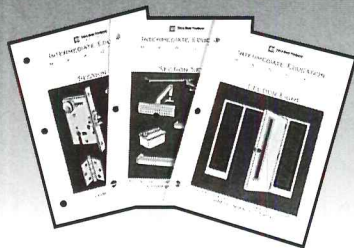
Answer 4.

5. Describe two areas of NIST fire-protection research with important implications for designers.

Answer 5a.

6. Apply the design lessons learned from disasters such as the 1991 Oakland fire.

Answer 6.



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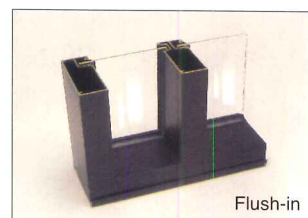
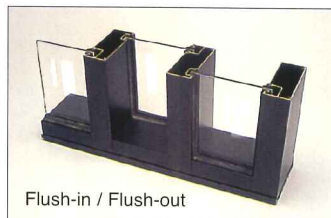
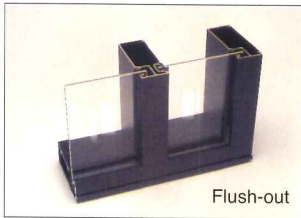
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AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

ANSWERS:

◆ Answers refer to the the article, “New Tools in Fire Protection” (pages 207-210), using the learning objectives provided to focus your study.

◆ To receive CES credits, fill in the Self-Report Form below.

1. Economy of scale: The cost of sprinklers on three floors is compensated by a fourth floor. Maintenance: Multifamily residences are likely to have a professional superintendent for monitoring and servicing systems. Density: Homeowners in isolated areas must share responsibility for their own protection. Remoteness also justifies fewer fire stations in sparsely populated areas and for some urban redevelopment projects. Residential sprinkler ordinances allow fire trucks longer response times in denser living areas.

2. Traditionally, doors have been tested under negative pressure. Positive pressures, typical in real fires, permit most existing swinging doors to leak super-heated gases and smoke at a rate high enough to ignite the door and to impede firefighters’ vision.

3. ICBO voted to change to positive-pressure testing for both wood and metal doors. BOCA and the SBCCI code groups may adopt this test procedure. Working together, all three groups proposed fire test standard NFPA 252, allowing both positive and negative door testing in the proposed International Building Code. Door manufacturers are retesting and redesigning some of their products. Research, develop-

ment, and new production costs of the new doors may add about 10 percent to the cost of a metal door and up to 20 percent for wood.

4. Intumescent gaskets begin to expand gradually, filling the gaps between the door and frame, and blocking flames and smoke. Conventional seals are only used one time and are ineffective smoke gaskets on doors used repeatedly during an emergency. Sprinklers are familiar and often effective, but may not be sufficient by themselves in many spaces and/or with particularly vulnerable populations. New fabrics made from heat-resistant polymers reduce some risk from burning upholstered furnishings. Cost is only a little higher than traditional furnishings. Halon1301, which damages the ozone layer, is an extinguisher that substitutes for water where water application would be a problem. Fine-water sprayers are effective against liquid fires and minimize water damage, but cannot completely replace Halon for electrical fires.

5. NIST is developing fire simulation software that uses CAD files for input and models smoke and fire behavior in burning buildings. Also, NIST is exploring water flows and the protection of electrical systems in elevator-door and component-housing design.

6. Plant vegetation away from structures, consider a “fuel modification zone” approach, and be aware that the government may hold individuals responsible for the way buildings are constructed and sited. Design enclosed eaves. Specify double-glazed windows and noncombustible roofs and cladding. Look for impact of the particular structure on down-wind-structures in the event of a fire, i.e., flying roof debris.



AIA/CES SELF-REPORT FORM

(Use to report learning units earned for Architectural Record only)

Member information:

Last Name

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AIA ID Number

Program/project title: Architectural Record (05.97)

Check the following as applicable.

- “New Tools in Fire Protection”
 “Offering Unique Contributions to Health, Safety, and Welfare in Architecture”
 (National Wood Window & Door Association advertising section, page 189-205)

Completion date (M/D/Y): _____ / _____ / _____

Quality Level (QL) of this program: Each article will earn you a total of 2 LUs at Quality Level 2. (fill in:) _____ total LUs.

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Signature

Date

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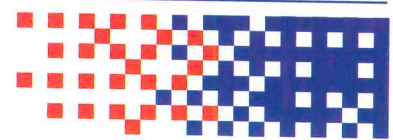
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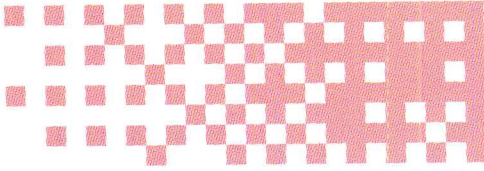
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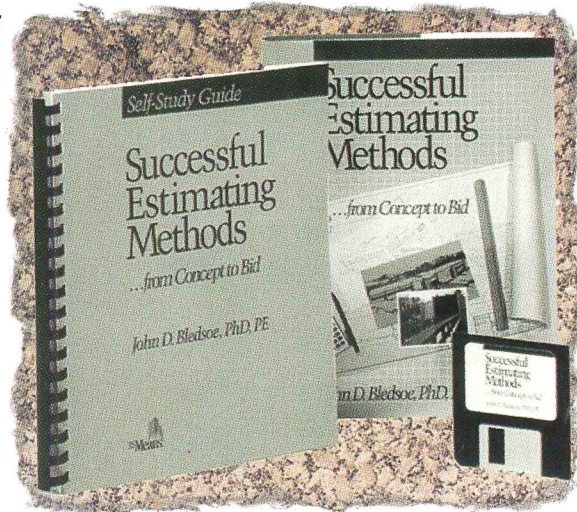
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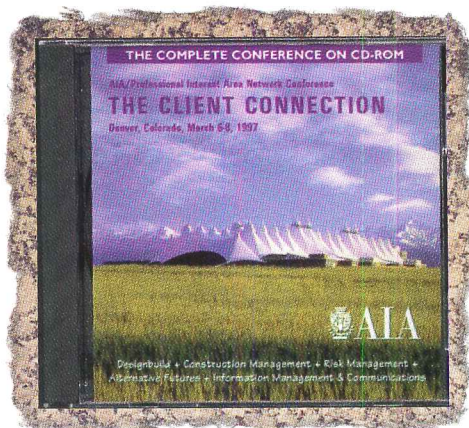
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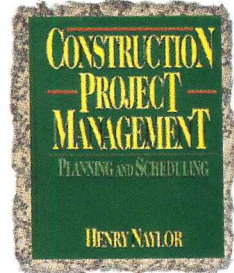
Reference • \$49 AIA/\$69 • Order Number: W784

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By Delmar Publishers

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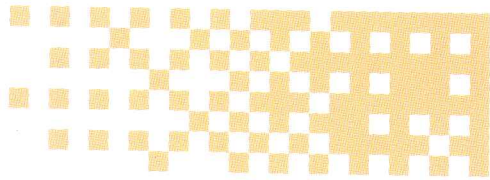
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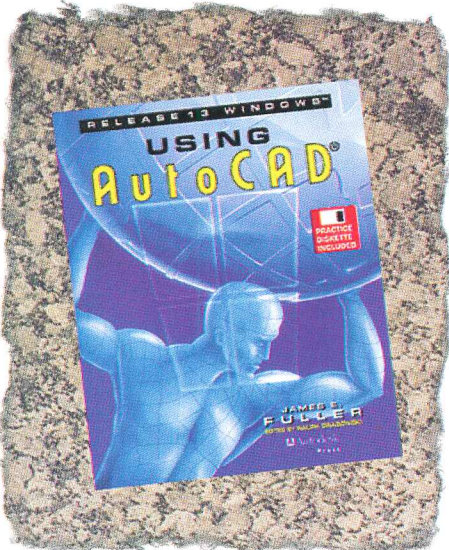


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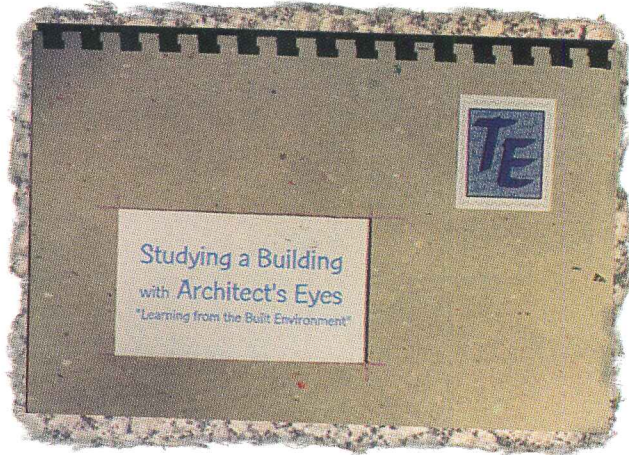
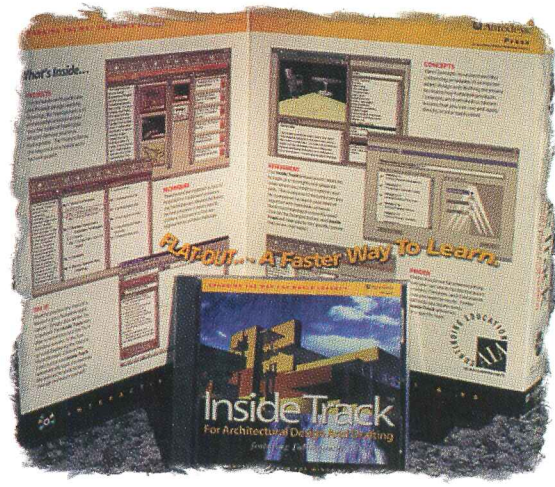
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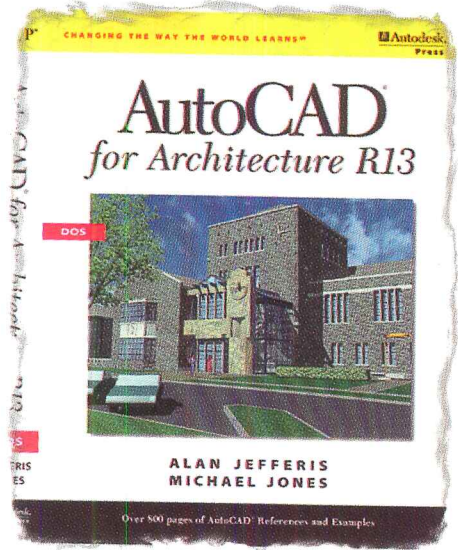
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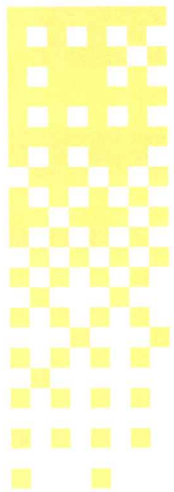
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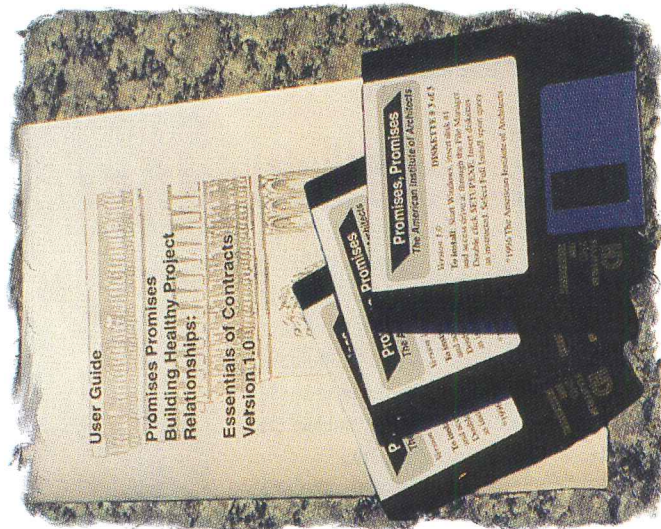
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Highlights

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This series of six workshop-in-a-box modules examines how to forge healthy project relationships through well-defined roles, responsibilities, and rights. It was developed by the AIA's Documents Education Task Group specifically for architects.

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Coordinator's Kit—includes a complete set of instructor guides and implementation guidelines for each of the six workshop-in-a-box modules

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Module 2: Design Phase Services—explores the scope of the architect's basic services, owner's responsibilities during preconstruction, customized scope of services after contract, optional and contingent additional services, and project representation.

Contact Hours/Learning Units: 3/6 • \$15 AIA/\$21 • Order Number: W791-P

Module 3: Design Phase Conditions—examines compensation and billing, timing and duration, ownership and use of the documents, and suspension and termination.

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Module 4: Construction Phase Services—delves into the roles and responsibilities of the owner, architect, and contractor; observation vs. supervision; action on the owner's behalf; and submittals such as review, approval, and no action.

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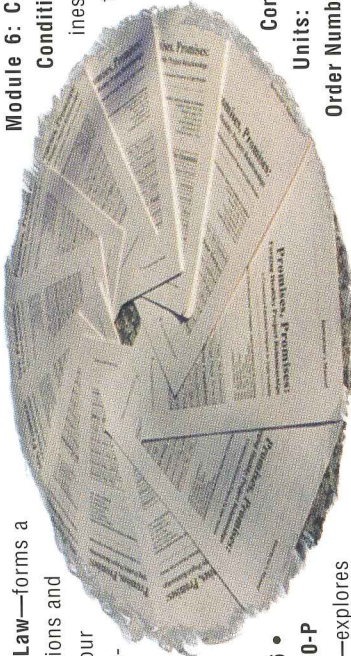
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Contact Hours/Learning Units: 6 • \$15 AIA/\$21 • Order Number: W795-P



Essentials of Contracts Self-Study Diskette By the AIA

This 3.5" diskette is a tutorial version of the first workshop-in-a-box module of Promises, Promises: Forging Healthy Project Relationships. Windows.

Contact Hours/Learning Units: 5/15 • \$49 AIA/\$69 • Order Number: W755

Upgrade! The ArchiCAD Interactive CAD Course By Graphisoft

Discover the power and benefits of ArchiCAD. This CD-ROM course includes a 52-page tutorial, sample files, renderings, animation, and a self-administered test to be returned to Graphisoft.

Contact Hours/Learning Units: 12/24 • \$32.75 AIA/\$46 • Order Number: W758-P (Win95) • Order Number: W758-M (Mac)

Cyberplaces™: The Internet Guide for Architects, Engineers and Contractors
By Paul Doherty

A book on the practical application of Internet, intranet, and related technologies specifically designed for architects, engineers, and contractors. Part I explains the latest and most useful available technology. Part II describes the application of specific tools, with examples from leading firms. And Part III previews emerging telecommunications and information-management technologies and explains how to capitalize on them.

Contact Hours/Learning Units: 20/60 • \$59.95 AIA/\$84 • Order Number: W606



ARCHITECTURAL RECORD
a publication of the McGraw-Hill Construction Information Group

The monthly magazine architects have been turning to for design, technical, and practice information for more than a century now offers readers a chance to earn learning units. Every issue includes at least one article accompanied by questions, answers and self report form earning two learning units per article. A subscription to Architectural Record comes at no additional cost as a benefit of AIA membership. Subscription information is for nonmembers only.

Contact Hours/Learning Units: 1/2 or more per issue • NA AIA/\$59 per year. -Subscription information: call 800-525-5003

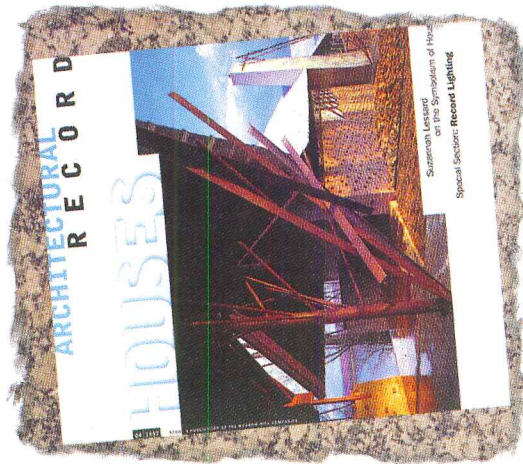
Top Seller! ADA Self-Study By the AIA

This easy-to-use, question-and-answer approach with instant checking and explanations provides an overview of the Americans with Disabilities Act (ADA) and key implications for design professionals. You'll gain quick access to the specifics of the ADA and greatly reduce the amount of time spent on research. The package also highlights ADA terminology, concepts, practice tips from top accessibility architects, and references.

Contact Hours/Learning Units: 10/30 • \$99 AIA/\$139 • Order Number: W181

ADAHelp 2.0
By Kelley Computer Software

ADAHelp is your single-source reference for the ADA regulations. This Windows program guides you through over 700 pages of both text and graphics for Titles 1, 2, and 3; the ADA Accessibility Guidelines; Public Law 101-336; the Technical Assistance Manuals for Titles 2



and 3; and the most recent changes and updates to the ADAAG regulations. Save research time by finding obscure regulations with the full-text search engine. Copy the text and graphics for use in other programs. Software updates will be available as new regulations are adopted.

The ADAHelp software comes on 3.5" Windows floppy disks. Requires 8 MB of disk space. Separate AutoCAD graphic files are available from the vendor.

Reference • \$99.95 AIA/\$140 • Order Number: W811 • Save \$25 and purchase the ADA Self Study and ADA Help together \$173.95 AIA/\$244 • Order Number: W828



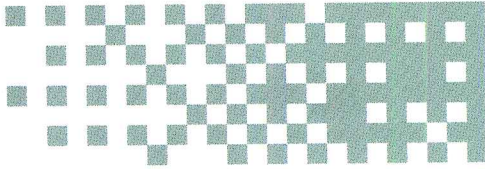
Intelligent Workplaces
By Johnson Controls, Inc.

This interactive CD-ROM describes the relationship between productivity and the office environment and how to plan for individual environmental control during the early stages of design. Design dynamic spaces that all ways respond to the occupants' needs.

Contact Hours/Learning Units: 6/18 • \$42 AIA/\$59 • Order Number: W761



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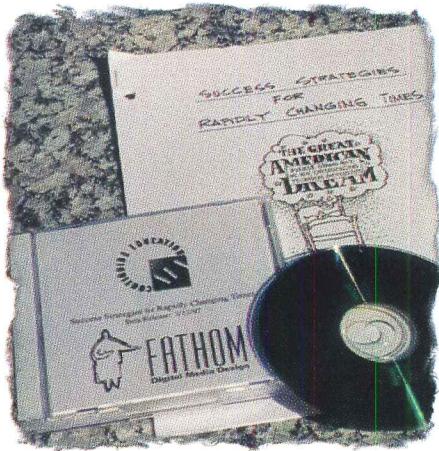
"Great resource material with project-specific applications."

Practice Management

Success Strategies for Design Professionals From the AIA learning archives By Fathom Digital Media

Adapted from one of the AIA's most popular workshops, this program brings to life the highly rated small-projects workshop by James Franklin, FAIA. Multimedia technology is combined with questions and explanations from Ronald Battaglia, FAIA.

Contact Hours/Learning Units: 3/9 • \$79 AIA/\$111 • Order Number: W800



Plan Writer: The Business Plan Tool By American Management Association

For use with How to Write A Business Plan.

Workbook Course with 3.5" diskettes for Win/Win95 • Contact Hours/Learning Units: 30/90 • \$249 AIA/\$349 • Order Number: W797 **NEW!**

Successful Business Plans for Architects by McGraw-Hill

Book. **NEW!**
Reference • \$42 AIA/\$59 • Order Number: W812

How to Develop the Strategic Plan From American Management Association

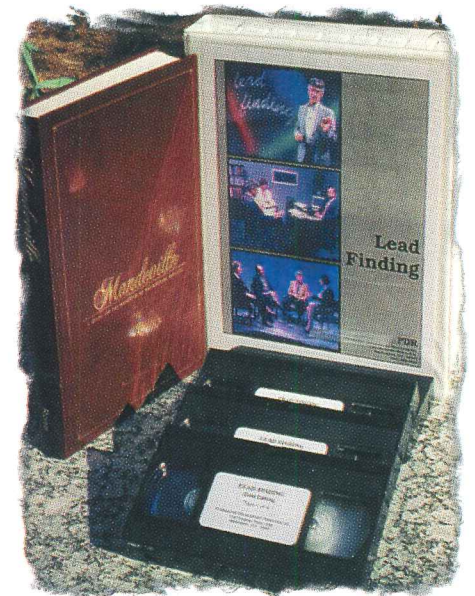
Workbook.
Contact Hours/Learning Units: 20/60 • \$130 AIA/\$182 • Order Number: W759

Financial Management: Make the Money and Keep It! By the AIA

Workshop-in-a-box.
Contact Hours/Learning Units: 7.5/22.5 • Coordinator Kit \$45.50 AIA/\$64 • Order Number: J198-C • Participant guides \$15 AIA/\$21 • Order Number: J198-P

Financial Competence: Financial Statements Made Simple By Competence Software

Diskette course.
Contact Hours/Learning Units: 10/30 • \$78 AIA/\$110 • Order Number: W766



Construction Administration: You Don't Want to Be a Lawyer. You're an Architect! By the AIA **NEW!**

Workshop-in-a-box.
Contact Hours/Learning Units: 7/22.5 • Coordinator Kit \$45.50 AIA/\$64 • Order Number: J199-C • Participant Guides \$15 AIA/\$21 • Order Number: J199-P

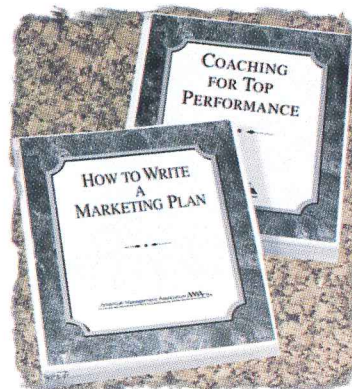
Better Practice Management: Organizational and Personnel Management By the AIA

Workshop-in-a-box.
Contact Hours/Learning Units: 7/22.5 • Coordinator Kit \$45.50 AIA/\$64 • Order Number: J203-C • Participant guides \$15 AIA/\$21 • Order Number: J203-P

How to Write a Business Plan, 4th Edition
By American Management Association (AMA) **NEW!**
Workbook.
Contact Hours/Learning Units: 30/90 • \$130 AIA/\$182 • Order Number: W796

An Architect's Guide to Financial Management By AIA Press **NEW!**

Book.
Reference • \$25 AIA/\$35 • Order Number: W810
Special: Order *An Architect's Guide to Financial Management* plus the AIA Financial Management Assessment Learning Diskette to obtain an additional 9 learning units.
DOS.
\$45 AIA/\$63 • Order W810 and W184



Mandeville: A Guide for the Marketing of Professional Services From Professional Development Resources, Inc. (PDR)

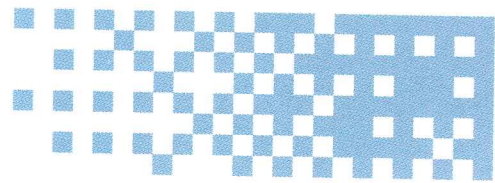
This book on professional services marketing shows you what you need to do to secure the clients you'd like and identify the strongest market opportunities and client demands over the next three to five years.
Reference • \$62.30 AIA/\$88 • Order Number: W183

Lead Finding Video Set From PDR

Five-hour, four-video program.
Reference • \$275 AIA/\$385 • Order Number: W182

How to Write a Marketing Plan **NEW!** From American Management Association

Workbook.
Contact Hours/Learning Units: 20/60 • \$130 AIA/\$182 • Order Number: W760



"The material was very helpful and informative. I got new information even though I have been studying earthquake damage to buildings for 40 years."

Building Performance/Technology

Buildings at Risk: Seismic Design Basics for Practicing Architects By the AIA

Make well-informed decisions when planning and designing earthquake-resistant buildings. Buildings at Risk is an AIA program supported by the Federal Emergency Management Agency.

**Contact Hours/Learning Units: 20/60 • \$99 AIA/\$139 •
Order Number: W113**

Buildings at Risk (Coming in September):

Wind Design Basics (W786)

Flood Protective Basics (W785)

Prices and LUs to be determined.

Seismic and Wind Loads in Architectural Design, Second Edition

By the AIA

This reference on resisting lateral forces includes information on obtaining regional building codes.

Reference • \$35 AIA/\$49 • Order Number: R660-90



Sustainable Architecture: Principals, Paradigms, and Case Studies By McGraw-Hill

This landmark book offers an environmentally sound approach to building design and urban planning. Revealing why building technology has been so environmentally destructive, with 175 illustrated examples it shows what can solve these problems.

Reference • \$49.95 AIA/\$70 • Order Number: W813

Selected Issues About Environmental Architecture From Environmental Building News (EBN)

This program consists of an EBN newsletter issue, learning objectives, study questions, answers and explanations, and instructions for receiving credit. Extra sets of questions only are available for EBN subscribers and newsletter purchasers.

Contact Hours/Learning Units: 1.5/3 each •

\$25 AIA/\$35 • Questions Only: \$15 AIA/\$21

**The Refrigerant Revolution: Cooling Builds ...
But Warming the Earth?**

Order Number: W816 • Q Only: W816Q

Rethinking the Conventional House

Order Number: W817 • Q Only: W817Q

The IAQ Challenge: Protecting the Indoor Environment

Order Number: W818 • Q Only: W818Q

Windows: Looking Through the Options

Order Number: W819 • Q Only: W819Q

**Performance-Based Compensation: Getting
Paid for Good Design**

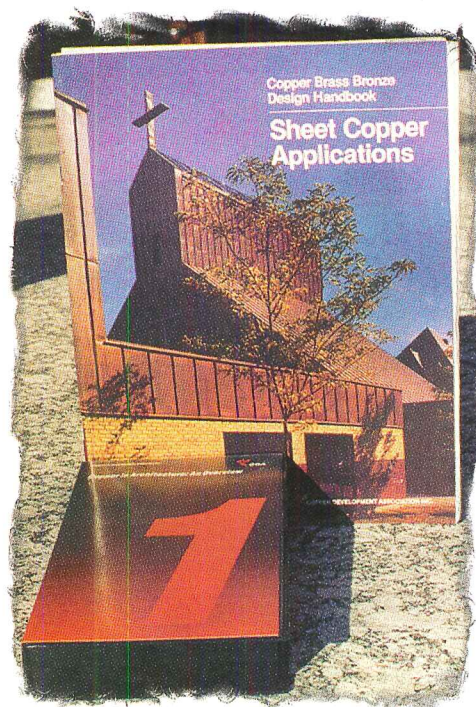
Order Number: W820 • Q Only: W820Q

Establishing Priorities with Green Building

Order Number: W821 • Q Only: W821Q

Copper in Architecture Self-Study Course Copper Development Association Inc. (CDA)

You get a video on roofing and flashing systems, a design manual, a diskette for specifying, toll-free technical



support and project design assistance, a subscription to CDA's trade publication, and updated reports.

**Contact Hours/Learning Units: 5/10 • \$35 AIA/\$49 •
Order Number: W827**

Energy-Efficient Design and Construction For Commercial Buildings

By McGraw-Hill

Energy costs remain high, and so does client interest in ecology. This complete guide to design and construction methods and materials provides the most advanced and cost-effective solutions with more than 170 illustrations in 288 pages.

Reference • \$44.95 AIA/\$63 • Order Number: W815

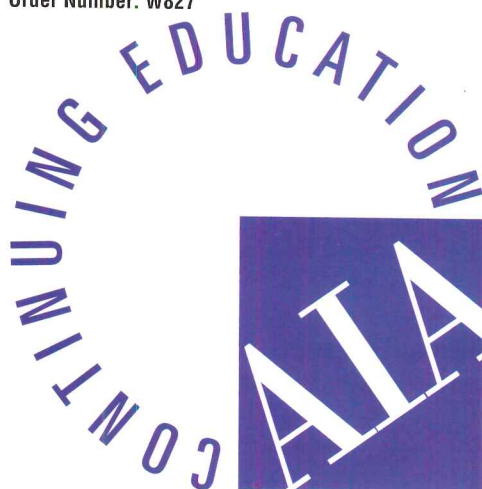
NEW!

Interactive Correspondence Course By APA-The Engineered Wood Association

Interactive CD-ROM correspondence course on the proper use and specification of engineered wood products in commercial and residential projects. Up-to-date information on use in high-wind and seismic regions.

Contact Hours/Learning Units: 5/10 • \$29 AIA/\$41 •

Order Number: W798



"I was amazed so much ground was covered in such a concise manner."

Index of Products

Product	Format	Hours/LUs	Member Price	Order Number
ADA Help	C	Reference	\$99.95	W811
ADA Help and ADA Self-Study Bundle [H]	C	10/30	\$173.95	W828
ADA Self Study [H]	C	10/30	\$99	W181
An Architect's Guide to Financial Management	B C	10/10	\$25	W810
APA Interactive [H] Correspondence Course CD-ROM	CD	5/10	\$29	W798
ArchiCad (Mac version) CDROM [H]	CD	12/24	\$32.70	W758-M
ArchiCad (PC Win95 version) CDROM [H]	CD	12/24	\$32.70	W758-P
Architectural Programming	B	Reference	\$44	W814
AutoCad for Architecture	B	Reference	\$39.95	W801
Better Practice Workshop-in-a-Box IG	W	7.5/22.5	\$45.50	J203-C
Better Practice Workshop-in-a-Box PG	W	7.5/22.5	\$15	J203-P
Buildings At Risk: Flood Protective Design Basics [H]	W	(avail. fall)	(avail. fall)	W785
Buildings At Risk: Seismic [H]	B,W,V	20/60	\$99	W113
Buildings At Risk: Wind Design Basics	W	(avail. fall)	(avail. fall)	W786
Client Connection CDROM [H]	CD	Reference	\$49	W784
Construction Administration Workshop-in-a-Box IG [H]	W	7.5/22.5	\$45.50	J199-C
Construction Administration Workshop-in-a-Box PG [H]	W	7.5/22.5	\$15	J199-P
Construction Project Management	B,W	Reference	\$64.95	W754
Copper in Architecture Self Study Course [H]	V B	5/10	\$35	W827
Cyberplaces: The Internet Guide for Design and Construction	B CD Web	20/60	\$60	W806
EBN Establishing Green Priorities [H] with Green Building	NQA	1.5/3	\$25	W821
Questions Only	Q	1.5/3	\$15	W821Q
EBN Performance-Based Compensation— Getting Paid for Good Design [H]	NQA	1.5/3	\$25	W820
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EBN Windows— Looking Through the Options [H]	NQA	1.5/3	\$25	W819
Questions Only	Q	1.5/3	\$15	W819Q
EBN Rethinking the Conventional House [H]	NQA	1.5/3	\$25	W817
Questions Only	Q	1.5/3	\$15	W817Q
EBN The IAQ Challenge —Protecting the Indoor Environment [H]	NQA	1.5/3	\$25	W818
Questions Only	Q	1.5/3	\$15	W818Q
EBN The Refrigerant Revolution [H]	NQA	1.5/3	\$25	W816
Questions Only	Q	1.5/3	\$15	W816Q

Product	Format	Hours/LUs	Member Price	Order Number
Energy Efficient Design and Construction for Commercial Buildings	B	Reference	\$44.95	W815
Essentials of Contracts Self Study Diskette [H]	C	5/15	\$49	W755
Financial Competence	C	10/30	\$78	W766
Financial Management Workshop-in-a-Box IG	W	7.5/22.5	\$45.50	J198-C
Financial Management Workshop-in-a-Box PG	W	7.5/22.5	\$15	J198-P
How to Develop the Strategic Plan	W	20/60	\$130	W759
How to Speak Persuasively	W	10/30	\$98	W789
How to Write a Business Plan	W	30/90	\$130	W796
How to Write a Business Plan/Plan Writer	W C	30/90	\$249	W797
How to Write a Marketing Plan	W	20/60	\$130	W760
Inside Track: Architect CDROM [H]	CD	40/80	\$149.95	W753
Lead Finding	V	Reference	\$275	W182
Listen and Be Listened To	W A	10/30	\$155	W808
Mandeville : A Guide for the Marketing of Professional Services	B	Reference	\$63	W183
Intelligent Workplace CDROM [H]	CD	6/18	\$42	W761
Project Administration Workshop-in-a-Box IG	W	7.5/22.5	\$45.50	J197-C
Project Administration Workshop-in-a-Box PG	W	7.5/22.5	\$15	J197-P
Promises Promises Workshop-in-a-Box Series				
Coordinator's Kit IG	W	3/6	\$225	W790-C
1 The Essentials PG [H]	W	3/6	\$15	W790-P
2 Design Phase Services PG [H]	W	3/6	\$15	W791-P
3 Design Phase Conditions PG [H]	W	3/6	\$15	W792-P
4 Construction Phase Services PG [H]	W	3/6	\$15	W793-P
5 Construction Phase Conditions Office PG [H]	W	3/6	\$15	W794-P
6 Construction Phase Conditions Field PG [H]	W	3/6	\$15	W795-P
Seismic and Windloads	B	Reference	\$35	R660-90
Studying a Building with Architect's Eyes [H]	W	4.5/9	\$100	W807
Success Strategies for Design Professionals [H]	CD	3/9	\$79	W800
Successful Business Plans for Architects	B	Reference	\$42	W812
Successful Estimating Self Study [H]	B W	7.5/22.5	\$79.95	W764
Successful Estimating Workshop-in-a-Box [H]	W	7.5/22.5	\$79.95	W765-C
Successful Negotiating	W	20/60	\$110	W809
Sustainable Architecture	B	Reference	\$49.95	W813
Using AutoCad Release 13 for Windows	B	Reference	\$49.95	W802

Key: B—book; C—computer; CD—CD ROM; NQA—newsletter with questions/answers; Q—questions only; V—video; W—workbook; [H]—HSW credit; IG—instructor guide; PG—participant guide; price reflects 40% discount for AIA members

ARCHITECTS



Learning Source

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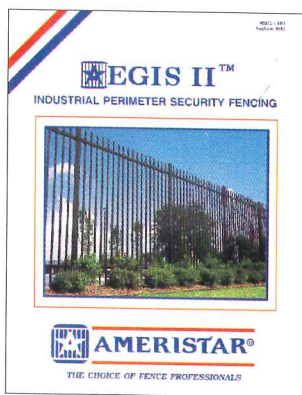


44-pg color "Idea Book" featuring a collection of column projects from classic to contemporary for interiors & exteriors. Includes Columns Product Portfolio. \$10 + \$3 p/h from the column co. selected #1 by Professional Builder Readers. Product Portfolio \$5. Wood, fiberglass, polyester, E.P.S., & stone, round, square, octagonal w/ plain or fluted shafts. Job site del., worldwide shipping. 1.800.COLUMNNS-1.800.265-8667.

Chadsworth's Columns

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AEGIS II

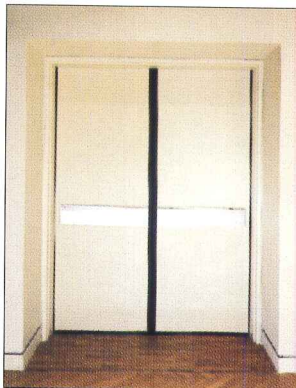


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by Crystallization**



Applied as a slurry coating Xypex is a chemical treatment that waterproofs by penetrating the concrete with a crystalline formation that "plugs" the pores of the structure preventing water seepage. Xypex is ideal for use on the "inside" of wet underground structures.

Xypex Chemical Co.

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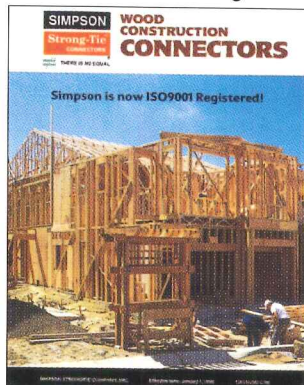


These bronze elevator door facings were manufactured by Surface Design + Technology specializing in custom & standard metal graphics. Using sheet metal finishes of a variety never offered before. There is virtually no limit to the types of patterns which can be created by combining multi-directional satin brushing, electroplating of gold, nickel or copper. For information on custom or standard designs call 800-537-1127.

Surface Design

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**12 New Products Featured
in 1997 Catalog**



12 new products are introduced in Strong-Tie's '97 catalog, Wood Construction Connectors. A necessary reference for structural engineers, building officials, and architects, it includes updated specs, load charts, application drawings, & building code acceptance - plus info on holdown anchorage design, & available custom hanger options. ISO9001 Reg. For 1997 catalog (C-97), write POB 10789, Pleasanton, CA 94588

Simpson Strong-Tie

CIRCLE 155 ON INQUIRY CARD

**Accessible Lavatory
Insulation**



A full color catalog will explain the different Handy-Shield safety covers offered for the new or retrofit projects that need to comply with the American Disabilities Act. The specific use sample, sample specifications, drawings and color choice are all summarized in this easy to understand catalog. 800-475-8629.

Plumberex

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**New Fireplace Tested as a
Wall Furnace**

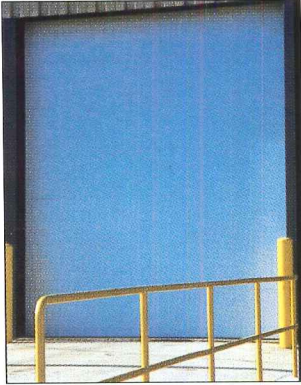


Our Products have taken direct-vent technology & incorporated it into a new high performance fireplace. Model 6000 Supreme is a high efficiency fireplace (thermal efficiency up to 74%) & has an AFUE (Annual Fuel Utilization Efficiency) rating of 63%. The 6000 Supreme is standard with a variable regulator to adjust the flame & BTU input with the turn of a dial. Heat-N-Glo, 6665 West Hwy 13, Savage, MN 55378, 1-800-669-HEAT.

Heat-N-Glo

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Clopay Building Products

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Raymond Enkeboll Designs ©1996

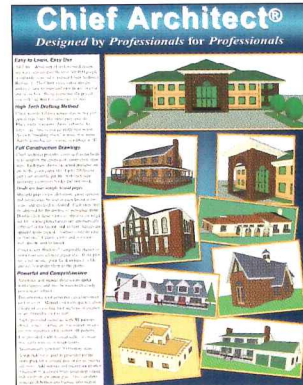


Crafts an extensive array of Architectural Elements carved in solid woods. 104 pg. catalog shows a selection of capitals, panels, etc. Stocked in Maple and Red Oak. Avail. for immediate delivery. Spiral Bound catalog \$20.00, Special binder version \$30.00. Visa & MC welcome. Brochure available. Raymond Enkeboll Designs. 16506 Avalon Blvd AR57, Carson, CA 90746. T: (310) 532-1400 F: (310) 532-2042.

Raymond Enkeboll

CIRCLE 159 ON INQUIRY CARD

Advanced Relational Technology, Inc.

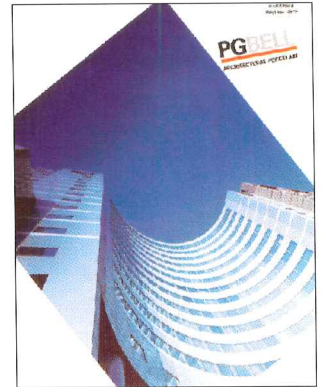


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PG Bell

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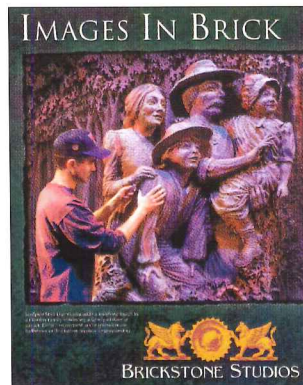


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Buckingham-VA Slate

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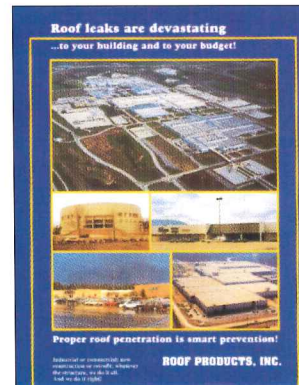


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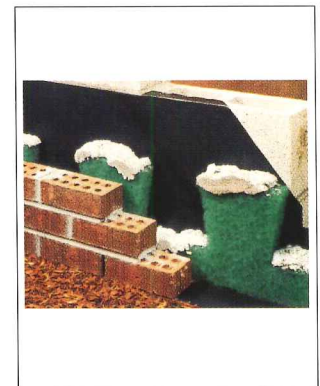


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Vintage Lumber

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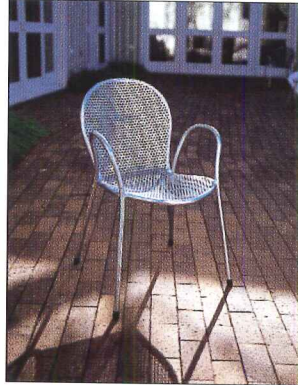


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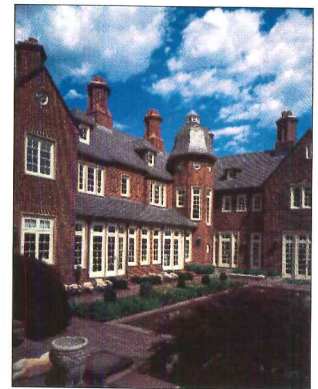


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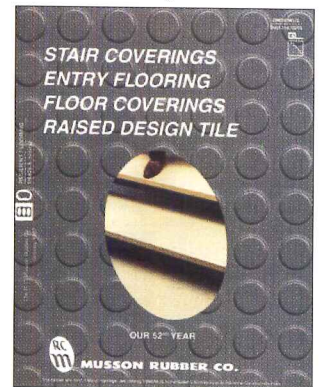


Pushbar allows the user to unlock, open or adjust an operating H Window with one hand. Even the largest of H Windows will open with less than 5 lbs. of operating force. The round, telescoping handle features clean styling and several ventilating positions. Patented hinge hardware allows an H Window to rotate 180° for easy cleaning. A full perimeter seals assures one of the most airtight windows around (.006 CFM at 25 mph). 1 (800) The-H-Way.

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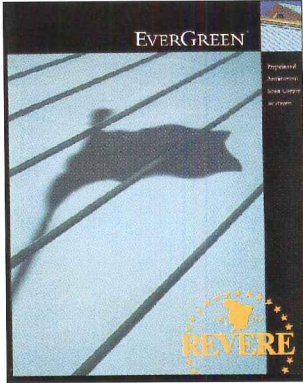


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EverGreen Brochure



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Bomanite Corporation



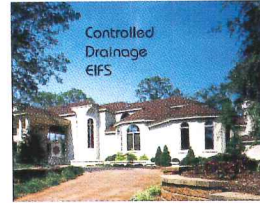
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Senergy CDsystems



Senergy

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Senergy

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Truebro, Inc. Basin-Guard™ Undersink Enclosure

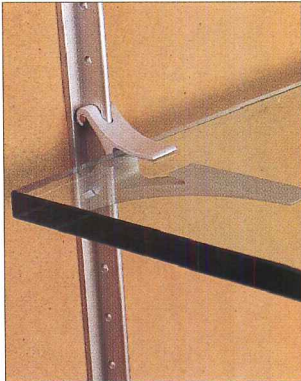


The Basin-Guard™ undersink enclosure attractively conceals unsightly plumbing and mechanical connections while maintaining knee and foot clearances mandated by A.D.A. It can be installed under kitchen sinks or restroom lavatories where countertops and sidewalks are present. The Basin-Guard™ is offered in 36" and 42" widths in white or beige and is easily trimmed down with common tools.

Truebro, Inc.

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Parallel Design Partnership Limited

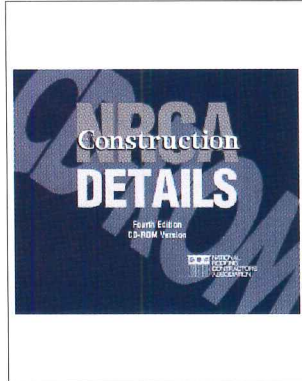


"ellen's brackets", an anodized-aluminum shelving system designed by M Ali Tayar, provides an elegant alternative to exist ing bracket-and-track systems. Cantilevered brackets come in two sizes, for shelves 3/4 or 3/8-in. thick and 10-in. deep. Wall-mounted tracks permit 1 1/2-in. adjustment of wood, glass or plexiglass shelves. For more info phone Parallel Design Tel: 212/989-4959 Fax: 212/989-4959.

Parallel Design

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NRCA Construction Details on CD-ROM

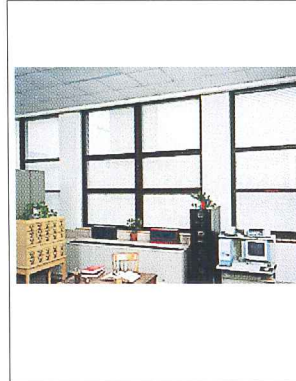


This CD-ROM contains more than 350 built-up, modified bitumen, single-ply, metal, sprayed polyurethane foam, and waterproofing roofing construction details. With compatible CADD software, you can select, view, modify and print details to fit your specific project needs. The CD contains both drawing .DWG and drawing exchange .DXF files.

National Roofing

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Between-the-Glass Blinds

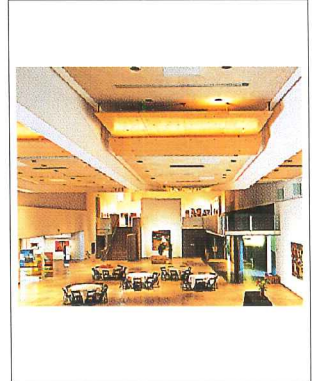


Nanik Between-the-Glass Blinds by Springs Window Fashions, incorporated with windows from various manufacturers, provides a high quality, low maintenance product ideal for health-care, educational and commercial applications. Contact us for OEM applications or for a window manufacturer/distributor in your area. Call us at Spec-Fax, (800) 327-9798.

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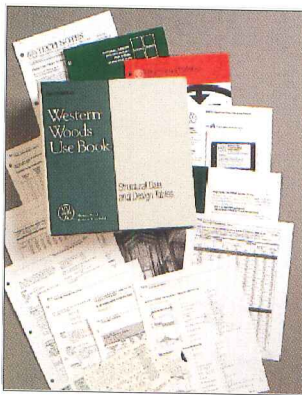


Pyrok Acoustement acoustical plasters are widely utilized by designers (Phoenix Art Museum above) for their beauty, design flexibility, sound absorption, durability & value. Available in custom colors or paintable. For brochures & samples call Pyrok, Inc. at 914/777-7070 or see us at Booth 686 at AIA Expo 97.

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Western Wood

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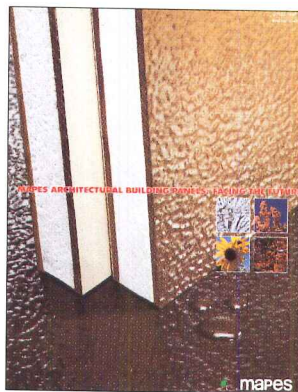


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Peerless Industries

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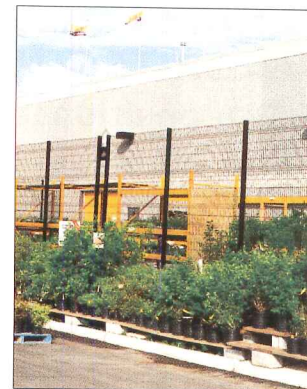
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Mapes Industries, Inc.

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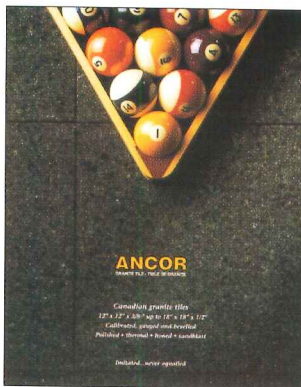


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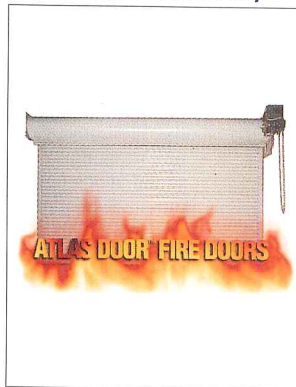


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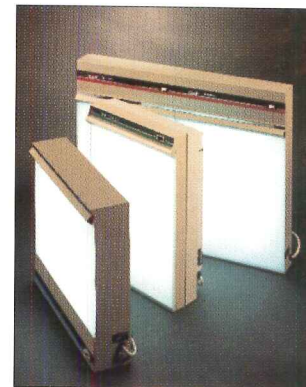


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<http://www.unimelb.edu.au/ExecServ/Seniorapp/index.htm>

All correspondence (marked "PERSONAL AND CONFIDENTIAL") should be addressed to the Registrar, The University of Melbourne, Parkville, Victoria 3052, Australia.

Telephone enquiries (+613) 9344 7529
(Kaye Goldenberg) Secure facsimile
(+613) 9344 6897 Email:
kaye_goldenberg.exec_serv@pc.unimelb.edu.au

Enquiries of an academic nature may be directed to the Dean, Faculty of Architecture, Building and Planning in the first instance.

Telephone enquiries (+613) 9344 7203
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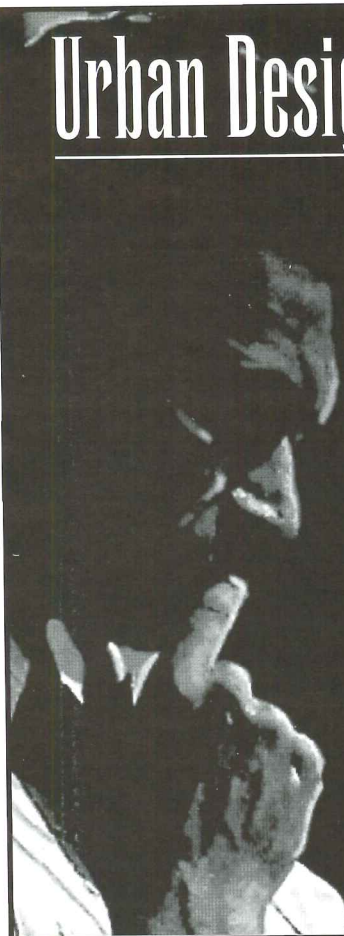
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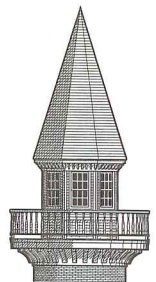
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THE FUTURE: “Health-care delivery and design: 2000 to 2040.”

BY JOAN BLATTERMAN



Before one more obsolete hospital gets built, architects must look at the future of patient care and the technologies it will demand. That's according to Robert J. Iverson, AIA, a Senior Associate Principal with Loebl Schlossman & Hackl/Hague-Richards in Chicago, who has spent 28 years involved in the architecture of health-care—nursing homes, primary-care and tertiary hospitals, and research facilities. In a presentation for NeoCon this June, he identifies some medical advances that will dramatically affect the delivery of patient care, and suggests design strategies for the hospital of the coming century.

Among the developments Iverson anticipates might be everyday medicine by the year 2010:

The Healthwatch A device you'll wear just like a Timex, it will continually monitor your physiological and emotional state of being, and will feed your medical records directly into a data base and onto a “smart card” accessible to you and your doctor.

Automated drug dispensing You will be able to fill your doctor's prescriptions by simply using your “smart card” at a machine similar to an ATM. You will have online access via your home computer to the pharmacist or the pharmaceutical company to answer any questions.

Gelchip Tired of the routine annual physical exam where you get poked and probed? Your neighborhood shopping mall will have an automated drug-dispensing kiosk. Insert your “smart card” and out comes a gel-covered computer chip about the size of a vitamin pill. Once swallowed, this device will transmit

your blood work, blood pressure, and pulse. It will take pictures of internal organs and transmit them to your medical-record database.

Multimedia medical records Medical-records storage will become digitized in “compressed data” systems, eliminating the need for traditional medical-records departments. The multimedia network will empower patients with information such as cure rates for cancer therapies or new developments in allergy medications, permitting control over their own therapies and care.

Smart caps A company in California, Apex, has used the electronics of a digital watch to develop a pill-bottle cap that records the time and date when a bottle is opened, letting doctors check if their patients are taking prescriptions.

Image-guided therapy Combines CT and MRI images to construct a three-dimensional, see-through model of a patient showing bones and tissue. In the operating room, surgeons will be able to see a live body and an overlaid image of the patient on a teleprompter-like screen. Light-emitting scalpels will be registered with the image, allowing surgeons to operate with more precision in areas they normally could not see. Surgeons will be able to preplan complex procedures before operating.

Trackless surgery Eventually, operations will be performed without ever invading or touching the human body—and without anesthetics. A significant advance over today's “keyhole” and “trap door” techniques, surgery will focus ultrasound waves on a target area

to destroy diseased tissue. Using multiple wavelengths, free electron lasers, and proton synchrotrons, doctors will treat a target area with dye for the laser to seek out and destroy. The patient will go home immediately afterwards, with no need for a hospital bed in this bloodless, non-invasive operation.

Tele-presence surgery Iverson calls this “Nintendo medicine.” Being researched by the Pentagon for a future battlefield, tele-presence combines the technologies of image-guided therapy, trackless surgery, and robots. Doctors will perform operations on patients from far away, using robotic instruments that give the controls the same feeling as if the surgeon is doing the cutting himself.

Genetic medicine By the year 2010, the function and structure for most DNA will be understood, eventually leading to the eradication of all inherited diseases.

Design for the future By 2040, Iverson calculates, there will be 374 million Americans, but less than 300,000 hospital beds, located in “super-tertiary” centers. Other medical services—routine surgery, obstetrics, oncology, care for the terminally ill, and geriatrics—will take place in small, community-care centers, alternative-site treatment and diagnostic facilities, and at home, with care delivered via tele-medicine and other emerging technologies. To insure that the healthcare facility you design today will have value in the patient-driven medical care of the next century, Iverson has these

Now: telemedicine. Technicians remotely monitor astronaut trainees.

suggestions for architects as they work with clients.

1. Emphasize facility *and* operational redesign to clients. Develop a tactical assessment of future technologies, and formulate strategies of how they will affect patient needs and treatment modalities.
2. Group similar diagnostic functions such as radiation therapy, oncology treatment, and hematology, into a cancer-care center.
3. Design inpatient and outpatient surgery adjacent to each other to meet the shift to outpatient surgery. Emphasize programs that integrate similar types of care.
4. Create a universal bed concept by designing seamless medical/surgical care beds in an ICU configuration. (Most beds in the future will be in larger, private rooms.)
5. Use a flexible structural system, such as steel.
6. Create an adaptable electronic infrastructure, with extra depth above ceilings and in walls to accept fiber-optic and other cabling of the future multimedia hospital.
7. Plan and program space in modules, based on universal room types.
8. Think smaller/alterable/adaptable/flexible/changeable.
9. Consider an interstitial design.
10. Recognize the importance of design in creating a quality healing environment. It's the “spirit of what we do” and no one else can bring that to the table. ■

Iverson can be reached at biverson@lshchic.attmail.com



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BEST ARCHITECTURAL CAD



Private residence in San Diego, CA
Kent Larson Architect, PC
ARRIS computer image rendered with Lightscape

In November, 1996, a unique competition was held in Boston to determine the **Best Architectural CAD** software.

The results?

Over 300 architects and design professionals voted ARRIS, by Sigma Design International, the **"Overall Winner"** in a head-to-head contest with AutoArchitect using AutoCAD, Microstation TriForma by Bentley, Allplan by Nemetscheck, ArchiCAD, MiniCAD, DataCAD, and Architrion.

ARRIS voted:

- ★ *Best Overall Architectural CAD*
- ★ *Best Conceptual Sketching*
- ★ *Best Design*
- ★ *Best Presentation*
- ★ *Easiest at 3D Modeling*
- ★ *Most Accurate 3D Modeling*
- ★ *Best Quick-Shaded Perspectives*
- ★ *Best Animation*
- ★ *Best Rendering*
- ★ *Best Network Collaboration*

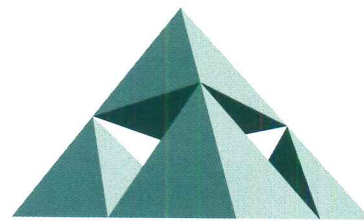


"We congratulate the ARRIS Team and also Sigma Design, the developers of ARRIS. They clearly demonstrated that they are the current standard bearers of architectural CADD excellence."

Geoffrey Langdon
CAD Shoot-out Organizer

The Software for Architects

See us at **AIA EXPO 97** Booth #1458



ARRIS

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