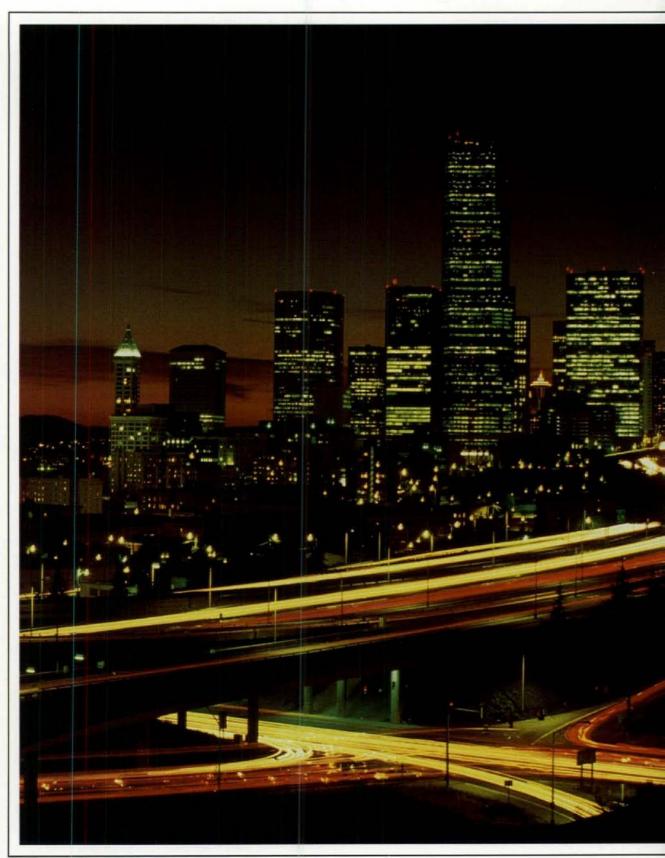
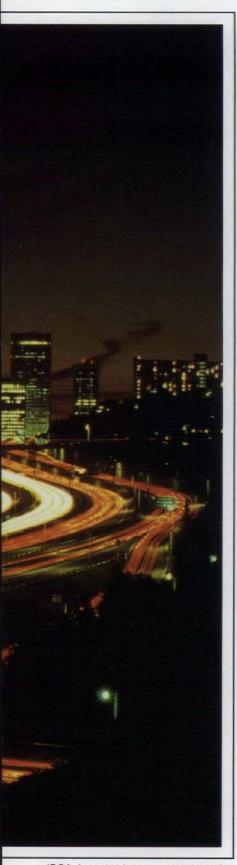


It Took A Little Doing, But We Finally



C-945 †Compared with standard F-40 white fluorescent lamps.

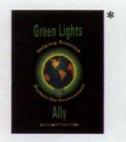
Got A Shot Of Our Full Product Line.



*E.P.A. does not endorse any product or service.

Pretty amazing, isn't it? At GE Lighting we provide more light to more people than anyone else.

That's a lot of illumination. Coming from all kinds of lamps.



And they all have one thing in common. GE technology.

It is why our T8 TRIMLINE fluorescent lamps use 20% fewer watts than standard fluorescents.† It's the

reason our Halogen IR™
lamp can convert excess
heat back into light for
greater energy
efficiency.

And GE technology
led to the ConstantColor™
coating of our Precise™ MR16 lamp, which provides sparkling color and beam control with less heat than standard PAR lamps.

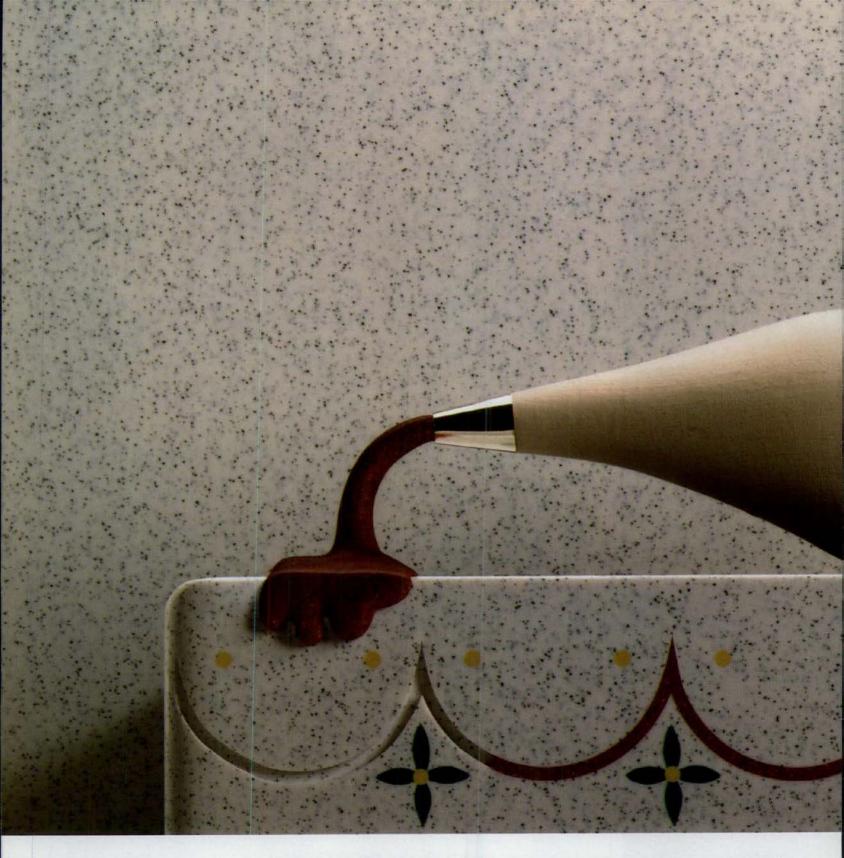
More importantly, it's how we create some of the most beautiful lighting in the world. The kind designers use to help their customers work more productively and help products look more appealing.

When you consider all that, the view here looks very impressive indeed. Maybe it's time you took a closer look at our product line. Call 1-800-523-5520 for information.

GE Is Light. And The Light Matters.



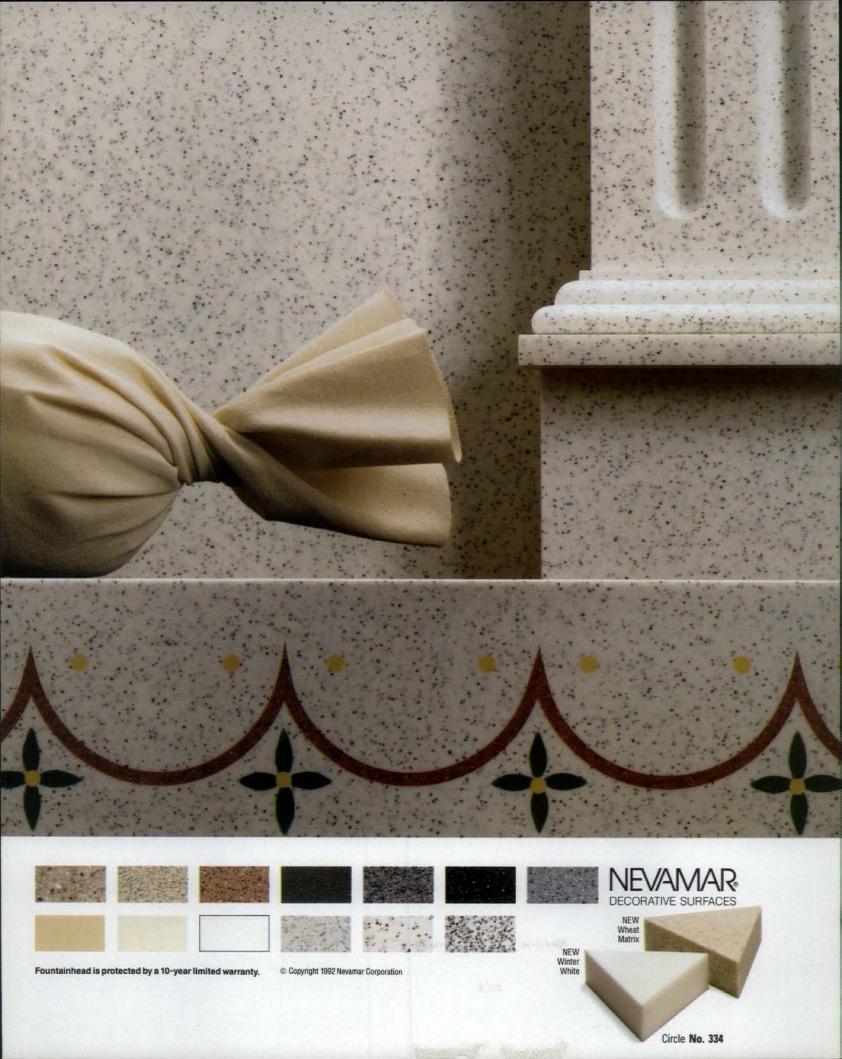
GE Lighting



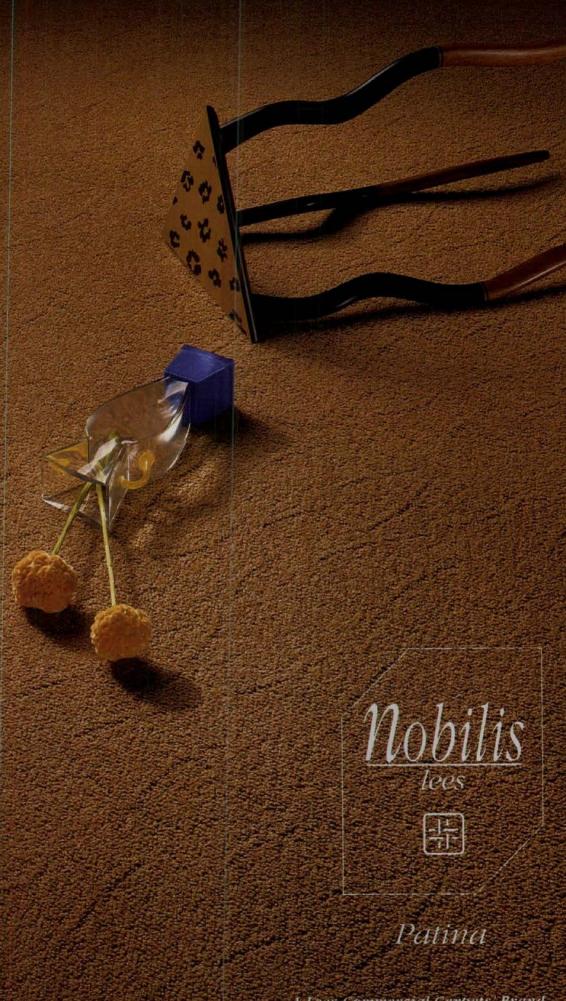
WITH FOUNTAINHEAD, INTRICATE DESIGNS ARE A PIECE OF CAKE.

Most designers choose Fountainhead by Nevamar* for its rich, natural beauty and its remarkable durability. But the intricate designs you can create in Fountainhead solid surfacing are the icing on the cake. Fountainhead is easy to rout and shape. And Fountainhead inlay kits make the most extraordinary designs a snap. Curves, shapes or colors...an Accredited Fountainhead Fabricator can achieve almost any custom inlay or edge treatment you can imagine. Available in 15 colors, Fountainhead is the perfect recipe for

one-of-a-kind solid surfaces. So satisfy your appetite for creativity... with Fountainhead. For information, samples, or the name of an Accredited Fabricator, call 1-800-638-4380. Nevamar Corporation, 8339 Telegraph Road, Odenton, Maryland 21113.



Until now,
carpet
that existed
only in
your
imagination.



ANTRON LEGACY

Circle No. 340

1 Tees Commercial Carpets Brand 1 800-545-9765 Cover: TWA Terminal, John F. Kennedy International Airport, New York, by Eero Saarinen & Associates (page 96). Photo by Ezra Stoller/Esto.

Progressive Architecture May 1992



Editor

John Morris Dixon FAIA **Executive Editor** Thomas Fishe **Profession and Industry Editor** James A. Murphy, FAIA

Managing Editor Senior Editors

Ziva Freiman, Interior design, Features Mark Alden Branch, News, Features

Associate Editors Kenneth Labs. Technics **Assistant Editors** Julie Meidinger Trelstad **Editorial Assistants**

Louise A. Cronin

Copy Editor Mary Bishop Coan Editorial Production Manager Cécile M. Lelièvre

Art Director Associate Art Director

Contributing Editors Norman Coplan, Hon. AlA, Law William T. Lohmann, AIA, FCSI Walter Rosenfeld, AIA, CSI Specifications Eric Teicholz, Computers Robert Gutman, Management Ross Miller, at-large

Correspondents Sally Woodbridge, San Francisco Peter Papademetriou, AIA, at-large Thomas Vonier, AIA, Washington Monica Pidgeon, Hon. FAIA, London Joel Warren Barna, Austin Cheryl Kent, Chicago Daralice D. Boles, at-large Donald Prowler, AIA, Philadelphia Hiroshi Watanabe, Japan Morris Newman, Los Angeles Donald Canty, Hon. AIA, Seattle

Vice President-Editorial Perry Pascarella

Vice President and Publisher Robert J. Osborn **Business Manager** Daniel H. Desimo Assistant to the Publisher Paul McKenn Administrative Assistant Carol Zezin **Promotion Director** Jack Rudd **Production Director** Gerry Lynch Katz **Production Assistant Circulation Marketing Manager**

Joanne M. Improta **Circulation Manager** Sue Stearns

Design Editor in charge: Ziva Freiman

Introduction

Restoration, Reconstruction, Conservation, and Adaptive Use

Landmarks 96

> TWA Terminal, New York/Eero Saarinen & Associates · Thomas Fisher Interview with Peter Papademetriou TWA's Shell Construction · Christopher Hart Leubkeman

Connecticut State Capitol Restoration 110

Hartford/D.C. Cimino & Associates, Design Group One - Mark Alden Branch

Romeo and Juliet Windmill Reconstruction 119

Taliesin, Spring Green, Wisconsin/Taliesin Associated Architects - Jim Murphy

Housing Adaptive Use 122

Pine Street Cottages, Seattle/Marcia Gamble Guthrie; Belmont-Boylston Houses, Seattle/Stickney & Murphy -Donald Canty

Mission San Xavier del Bac Conservation 128

Pima County, Arizona/Robert Vint · Philip Arcidi

Portfolio: Low-Budget Interiors · Ziva Freiman 134

Neighborhood Defender Service of Harlem, New York/McBride & Associates Architects Tenderloin AIDS Resource Center, San Francisco/FACE The Children's Book Council, New York/Office of J.M. Reynolds Printed Concepts, Inc., Chicago/Direction

Seabird Island School

Agassiz, British Columbia, Canada/Patkau Architects Inc. - Donald Canty

Emerging Talent 148

Shim & Sutcliffe, Toronto · Thomas Fisher

154 Perspectives

> Foreign Brief: Finland · Scott Poole Roundtable: Preservation in Minority Communities

Projects Eco-Tectonics · Abby Bussel 159

Marginalized Architects · Joel Warren Barna 162 Books

Technics

Cost-Effective Building through Life-Cycle Costing · Rosalie Ruegg

Technics Topics Three Design Research Books . Min Kantrowitz

Practice

Power, Knowledge, and the Art of Leadership .

Responses to "Architects and Power" 69

P/A Prospects Retail Shops · Peter Morris Dixon

P/A Competition

Public Realm Reminder

Departments

Editorial A Future for Preservation?

Views 11

27 **News Report**

37

New Products and Literature 170

177 **Building Products**

Computer Products 181

184 **Building Materials**

191 P/A Classified

Advertisers' Index 193

194 Furthermore...

197 **Reader Service Card**

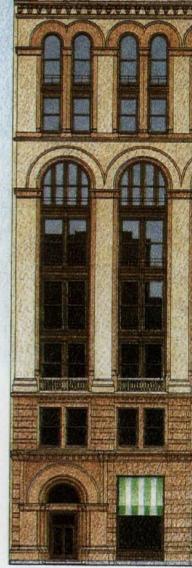
Penton Publishing P/A Progressive Architecture (ISSN 0033-0752) is published monthly, except semimonthly in October, by Reinhold Publishing, A Division of Penton Publishing, 1100 Superior Ave., Cleveland, OH 44114-2543. Philip H. Hubbard, Jr., President, Robert J. Osborn, Vice President. Penton Publishing: Sal F. Marino, Chairman and CEO; Daniel J. Ramella, President and COO; Philip H. Hubbard, Jr., President, Eastern Operations Group. Executive and Editorial Offices, 600 Summer St., P.O. Box 1361, Stamford, CT 06904. Phone (203) 348-7531. FAX (203) 348-4023. Copyright © 1992 by Penton Publishing. For copy information and subscription rates, see page 193.

For Subscription Inquiry: 1-800- I READ PA (1-800- 473-2372) Or 216-696-7000 (Ext. 4027) Eric Strong

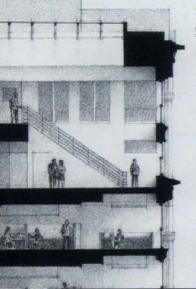


NATURE WONDER

The new National Audubon Society headquarters in New York is setting a 21st-century standard for energy efficiency and environmental impactusing today's technology-thanks in large part to the use of clean, efficient natural gas. As designed by The Croxton Collaborative, this retrofit of a 19th-century building will save \$100,000 a year on energy costs-\$18,000 a year on heating and cooling costs alone with its natural gas heat, hot water and air conditioning. The design cuts total electricity use by 68%. Eliminates sulfur oxides, the major component of acid rain. And cuts CFCs to zero.



Headquarters of the National Audubon Society in New York. 21st-century ideas built into a 19th-century landmark.



400

TYPICAL AUGUST PEAK DAY

1990 NY. CODE AUDUBON SYSTEM

A key to Audubon's success is a system of high-efficiency gas-fired absorption heater/chillers that serve air handlers on each floor. It uses a localized variable volume box that allows for fine-tuning of air wherever it's placed. And will save \$18,000 per year over conventional design. As architect Randolf Croxton put it, "While we have been character-

ized as doing environmental design, we have really ended up doing high-performance design." Natural gas is at the heart of that performance.

New York State's energy code is the most stringent in the U.S.

CHOICE (

Use natural gas. We'll all breathe easier.



Editorial

A Future for Preservation?

Twenty-five years after the signing of the National Historic Preservation Act, the preservation community's next quarter-century will be very different from and more difficult than the last.

Growing up in Cleveland, with an interest in architecture, I was drawn to the ornate, 19th-Century Arcade at the far end of Euclid Avenue, the city's major commercial street. I remember taking the bus down Euclid, with its busy intersections and miles of high-quality old buildings, to arrive at the Arcade's large dusty canyon of space, where I would spend hours browsing among the used books in the ground-floor shop, gazing at the renderings and models displayed in the architects' offices that ringed the upper balconies, and eavesdropping on the stragglers who would sit at the dingy lunch counter under the stairs, nursing their coffee as I downed a hot-dog and a Coke.

A lot has happened to both the Arcade and Euclid Avenue in the intervening years. The Arcade has been restored - its skylights repaired, its brass rails polished, its stone cleaned. And it has gone upscale; gourmet shops have replaced the lunch counter, and bestsellers have replaced the used books. At the same time, Euclid Avenue has been nearly wiped out. The buildings along the severalmile stretch between the edge of the downtown and the city's cultural institutions have been widely replaced with grassy fields and mounds of rubble grim monuments to the hopelessness that now lives there. This is an old story and hardly unique to Cleveland. But rarely do we talk about the relation between those two phenomena: that downtown revitalization and inner city demolition are often the result of some of the same social and economic

While no one would quibble about the value of restoring the Arcade, I wonder about what has been lost in the process: the oddball shops and the old men who seemed a part of its patina. One reason for preserving a landmark such as the Arcade is to retain a sense of place amidst the placelessness of modern consumer culture, with its chain stores and commercial strips. But a certain uniformity can also develop in projects such as the Arcade, denying some of the reason for restoring them in the first place. Independent shops, for example, often give way to national franchises, which can pay the higher rents, and the local, poorer population gives way to tourists and suburban commuters out for a (nottoo-disturbing) urban experience amidst banners and ferns.

Similar forces underlie the ruin of inner-city commercial streets such as Euclid Avenue. The demolition of buildings on those streets certainly has many causes, not least of which is the poverty that acts as a kind of acid in cities, dissolving the urban fabric. But, as in the Arcade, many of the independent businesses that once lined Euclid Avenue are now gone, replaced, as a destination for inner-city shoppers, by a nearby suburban mall with its many franchise stores. And, as in the Arcade, the older and poorer people who once shopped along now desolate stretches of Euclid are no longer visible to the passing commuters who still use the avenue to get downtown.

This connection between urban revival and urban decay presents both a dilemma and an opportunity for architects and preservationists. The dilemma is that some of the same clients – banks, corporations, government agencies – who have supported downtown revitalization have also allowed inner cities to rot. The opportunity lies in helping those same clients see the connection between the two phenomena and the need to protect their investment in the one by now investing in the other.

Last October, the National Trust held a conference in San Francisco to assess the last 25 years, since the signing of the National Historic Preservation Act, and to discuss where preservation should be headed. These are difficult times for the preservation community. Funding for preservation, particularly at the state and local levels, is being cut, in some cases quite drastically. And landmark laws are increasingly coming under attack in legislatures and the courts, the most recent blow occurring in Pennsylvania (see P/A, November 1991, p. 28). At the conference, there was encouraging talk about the need for preservationists to become more multicultural and more responsive to diverse ethnic groups (see Perspectives, p. 156), although there was not much debate about how those goals might be achieved. Advocating inner-city revitalization is clearly one way. Such an effort would not only broaden the base of support for preservation and solidify gains made in the revival of many downtowns, but could help empower some of the most needy and vulnerable groups in our society.

The preservation community has traditionally focused on projects such as the Arcade. But if preservation is to have a future, it must also begin to deal with the more difficult and perhaps more important problems of Euclid Avenues.

Thomas Fisher

Canyonstone Plus. The right recipe for a safer kitchen.



If the emphasis is a slip-resistant floor, the ceramic tile should be Canyonstone.™ □ The arch enemy of a safe commercial food preparation environment is the concentration of grease and water. Unlike through-body products, Canyonstone's™ impervious slip-resistant surface prevents the absorption of grease and moisture. □ Canyonstone™ is available in several earthtone colors and in two different finishes: regular and Plus. Canyonstone Plus™ offers an even higher slip-resistance for commercial kitchens and similar applications. All colors come complete with single bullnose and 6" x 8" sanitary cove base.

Contact our National Accounts Department at (214) 226-0110, FAX (214) 226-2263, or see our extensive product line in Sweet's General Building and Renovation File, section 09300/AMA, Buyline 4908.

359 Clay Road - Sunnyvale, Texas 75182-9710 - (214) 226-0110



Views

Star Gazing

Your editorial entitled "Star Gazing" (February, p. 7) was very interesting. As a student of architecture, I am well aware of the effects that "star gazing" can have on students and the influence it has on their projects. There is a problem and something must be done about it.

I applaud your attempt to set the "goal of seeking out people, places, and positions that might otherwise be eclipsed by the stars." There is very good architecture being created by relatively unknown names. I look forward to seeing more of these projects in the future.

There is one further note I would like to add. "Star Gazing" appears on page seven. In the section entitled Views, two pages following your editorial, there is a letter from Robert A.M. Stern, congratulating P/A on 20 years of success. Although I am in agreement with Mr. Stern, I feel that the only reason this letter was printed was Mr. Stern's "star" status and his endorsement of Progressive Architecture magazine. Mark R. LePage, AIAS co-president Roger Williams College Bristol, Rhode Island

[We publish a large proportion of all the reader letters we receive, only a few of them from "stars." – Editor]

Praise for Perspectives

This is a quick note to let you know that I am very happy with the direction you have taken lately. I am speaking mainly about your Perspectives feature in which there is always something provocative to read and think about, Silvetti's and Baldwin's comments, Kipnis's article a while back, and Christopher Alexander's article come to mind (P/A. March 1992, November 1990, and July 1991, respectively). I would appreciate more of this type of critique worked into your presentation of new projects. Along with the glossy photos it would be nice to have intelligent, critical commentary above and beyond the mandatory walkthrough.

Keep up the good work and please do not lose sight of or underestimate the intelligence of your readers who are interested in more than a stylish flash and quick trip through your magazine. George Beckwith, R.A.

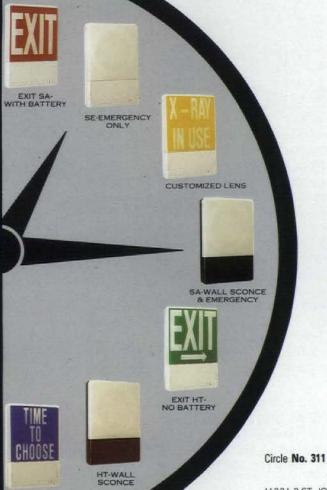
New York

Democracy at Colton Palms

User participation in the design process is currently a notso-popular practice. I appreciate your magazine mentioning the process in the article "Vaguely Familiar" (February, p. 84). Valerio Associates' Colton Palms living community for older residents is an award-winning project not only in last year's P/A Awards, but also in its commendable "commitment to the democratic process" by involving the community and clients in the design.

The notion of the all-knowing architect deciding what is best for everyone should be abandoned for more realistic human views. It seems logical that building design that includes the input of residents and clients can be better equipped to serve the people physically. In addition, people feel psychological comfort because their ideas had an impact on the creation of their new environment.

Colton Palms proves that projects designed with the aid of the future occupants do not result in weaker architecture, only happier residents. The use of "vaguely familiar elements (and a) ...wide



PRATICA BELLA!

SO MANY CHOICES...

SO MUCH TIME.

RELAX. TAKE YOUR TIME. AFTER ALL, DECISION MAKING IS IMPORTANT

WHEN IT COMES TO DOING THE JOB RIGHT.

THAT IS WHY BEGHELLI HAS THE PRATICA BELLA SERIES.

A UNIQUE LIGHTING LINE THAT OFFERS YOU SEVERAL CHOICES OF LIGHTING

FUNCTIONS, THREE VERSATILE FIXTURE COLORS, AND ONE OVER-ALL DESIGN

TO HELP YOU MIX, MATCH, AND CREATE A DISTINCTIVE LOOK.

AND WITH OUR TIME-SAVING INSTALLATION FEATURE,

YOU HAVE ALL THE TIME THAT YOU NEED TO MAKE THE RIGHT CHOICE.

AT BEGHELLI, WHEN WE SAY YOU HAVE A CHOICE, WE MEAN IT.



IN THE DARKNESS, A LIGHT.

U.S. MAIN OFFICE: BEGHELLI, INC. 11221-2 ST. JOHNS INDUSTRIAL PARKWAY SOUTH, JACKSONVILLE FL 32216 - TEL: (904) 646-4416 - FAX: (904) 646-1949 FACTORY: BEGHELLI S.R.L.
VIA MOZZEGHINE, 15 - 40050 MONTEVEGLIO - BOLOGNA - ITALY
TEL: (051) 838411 - TLX: 512413 GPB I - FAX: (051) 838444

array of types" in this complex contribute to the satisfaction felt by the people. Individuality is expressed in the slight differences in the organization of the units, and the residents can personalize their homes since they are designed as "a blank canvas."

I hope to see more projects utilizing the valuable tool of "cooperative effort between the architects and the clients" to create architecture that is really for the people.

Christie Wheate Roger Williams College Bristol, Rhode Island

More on the Getty

I found the juxtaposition of your Editorial column, your Architects and Power essay, and the discussion on Meier's Getty Center (P/A, February 1992) almost comical, if it weren't so sad.

Here we have one of the "stars" of the profession, comfortably entrenched in the "old-boy network" getting the "plum commission of the last half of the 20th Century," and what does he produce? A ho-hum, hollow hodge-podge. It looks as though Meier scooped up a handful of 1980s business parks, gave them a good shaking, and rolled them across a craps table. The results would be as inspiring.

The importance of this commission negated any and all of the excuses for why and how the project is ending up as it is. Or are the "stars" of the profession destined to "carry the seeds of declining quality"? Brian Wakil Developer/builder St. Catharines, Ontario, Canada

St. Catharines, Ontario, Canada
[We would not attribute "declining quality" to Meier, some of
whose current work is exceptionally fine. Also, we doubt that
any of today's architects – even
those with "plum commissions"
are "comfortably entrenched."
– Editor]

Goldman Sachs Credits

In the article on Kohn

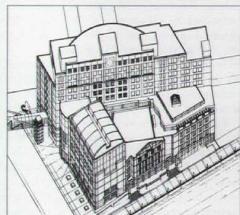
Pedersen Fox's London headquarters for Goldman Sachs (P/A, Mar. 1992, p. 100), the following should have been listed as members of the project team: Robin Andrade, Joshua Chaiken, Roger Cooner, Susan Davis-McCarter, Angeline Ho, Mark Nosky, Megan Walker, Carol Buhrmann, Karen Cook, John Crellin, Miriana Doneva, Jane Murphy, Stephanie Spoto. Also, the name of the artist Christopher Cosma, who designed the cast glass panels in the building's recention area, was

reception area, was misspelled.

P/A Plans Credits

In the process of preparing the P/A Plans supplement on schools (March 1992), one series of credits was omitted from the article on Stuyvesant High School in New York (drawing at right). In addition to the involvement of

Cooper, Robertson & Partners, the associated architects were Gruzen Samton Steinglass, also of New York. Members of that firm who participated, and their roles, are as follows: Ralph Steinglass, partner; Tim Schmiderer, associate partner/ project manager; Robert Genchek, associate partner/project manager; Bogusha Engel, job captain; Geoff Doban, associate, Nancy Garcia, Avo Guyumdjian, Paul Laux, Jeff Randolph, Richard Rosinski, and William Singer, design team.





Our Broad Product Line Is Old News.

And we're proud of it. Because we've been making frigh-quality, innovative building products from recycled newsprint since 1909. Long before recycling was in fashion. Homasote environmentally safe fiberboard products include wall-paneling, structural roof and floor decking, carpet underlayment, sound control board, hail base roof insulation—even custom-designed packaging. Products are available in a variety of different sizes and thicknesses, and many offer a Class A fire rating. Our Sweet's Brochure and Recycled Products Guide tell the whole story. For your FREE copies, call us at

1-800-257-9491, Ext. 27. And see for yourself that, with Homasote, old news is good news.



Box 7240, West Trenton, NJ 08628-0240 Phone: (800) 257-9491 Fax: (609) 530-1584

O 1992 Horoasote Company

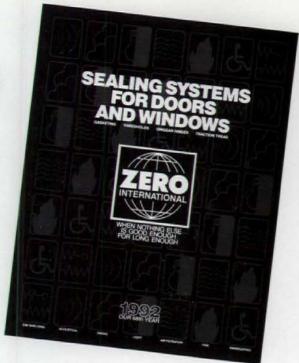
Circle No. 341 on Reader Service Card





When it comes to sealing systems for doors and windows, ZERO wrote the book.

And you can get it free.



To specify the highest quality sealing systems, just say "ZERO." More than 60% of all architects do. Zero pioneered the system concept, and delivers on a tradition of constant innovation, construction integrity and design excellence.

Our new, fully illustrated catalog makes it easy to design and specify. Along with specs and details, are actual-size cross sections of every product. Hundreds of systems for: stopping air, fire, smoke, sound; computer-room doors; saddles, sills, handicap access, jambs and ramps.

And again this year, there are some great new developments.

SOUND TRAP. This patented sound control system is designed to give you a 53 STR (Sound Transmission Rating) at door opening.

EMI/RFI SEALING SYSTEM.

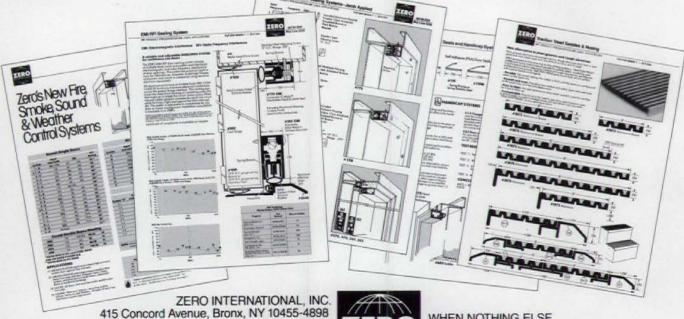
A system for continuous-use doors that eliminates electromagnetic and radio frequency interference.

TRACTION TREAD® SADDLES AND NOSINGS. A better alternative to plain grooves and rough

abrasives. Specially formulated rubber inserts are fitted within rugged, profiled aluminum grooves. The metal and rubber wear evenly. Water and dirt can't collect.

HANDICAP REQUIREMENTS. Our 1992 catalog highlights products that meet ANSI standards for providing accessibility by handicapped people. These Zero systems require less pressure to operate.

PHONE NOW FOR OUR NEW CATALOG. Make sure you have the latest edition of this industry reference. It's free to qualified professionals.



1-800-635-5335 In NYC, call 212-585-3230 FAX 212-292-2243

TELEX 239777 ZERO UR



WHEN NOTHING ELSE IS GOOD ENOUGH FOR LONG ENOUGH. The Creators
Of AutoCAD Have
Just One Thing
To Say To
All Those Who
Have Stubbornly
Refused
To Learn CAD.

e have to admit, you're persistent. Year after year, you've had the same objections to learning CAD. So we've finally decided to do something about them.

Objection #1: ⊢
"IT TAKES TOO LONG
TO LEARN."

Not any more. Now
AutoCAD® runs on Windows™
That means you get all the
advantages of AutoCAD with-

out memorizing command names. Instead, you create your drawings by selecting simple Windows tools and icons. So your learning curve is much shorter.

→ Objection #2: ⊢

"I CAN'T DESIGN ON A COMPUTER."

Windows helps change all that. Its intuitive interface and pull-down menus eliminate most of the repetitive keyboarding that makes computer work feel confining.

The AutoCAD Release 11 Extension for Windows also lets you move back and forth effortlessly between other Windows applications. So you can work the way that comes naturally to you. Create a brilliant drawing on



The intuitive Windows interface, tools and icons make AutoCAD far more accessible.



With the Windows clipboard, AutoCAD drawings are easily added to documents and presentations created on desktop publishing, paint, drawing or word-processing software.

Now AutoCAI

AutoCAD. Write the specs on your word-processor.

Then use the Windows Clipboard to insert both pieces into a desktop publishing program, so you can polish your proposal.

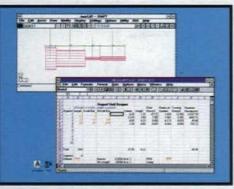
→ Objection #3: -

"I CAN WORK FASTER BY HAND."

Okay, let's be honest about this. Maybe you and your pencil can beat the blazing speed of AutoCAD for rough sketching. But AutoCAD leaves your pencil in the dust



Using Dynamic Data Exchange, you can eliminate many repetitive tasks by linking AutoCAD to other Windows programs.



AutoCAD gives you the tools to link your drawings to spreadsheets. So you can explore the possibilities of parametric design.

when you update your spreadsheet, it can revise your AutoCAD drawing for you. See how long that takes you by hand.

With the new AutoCAD
Extension for Windows, all the advantages AutoCAD users have been hoarding are now accessible to you. Now your files will be instantly transferable, and your work compatible with more than 650,000 other AutoCAD users. That

probably includes many of your clients and colleagues. In addition, you can use the power of programs like Microsoft Visual Basic™ or Borland Turbo C++™ to create custom CAD applications that fit the work you do.

Only \$99* for AutoCAD Release 11 Users.

Still on the fence? Call 1-800-445-5415 ext.600 for the name of the nearest Authorized AutoCAD Dealer.

Runs On Windows.

when it comes to designing, making revisions and creating multiple views.

That's not all. AutoCAD on Windows has another way to make you more productive. It's called Dynamic Data Exchange (DDE). With DDE, information flows in both directions between AutoCAD and other Windows applications, like Microsoft® Excel® and Lotus 1-2-3.

So when you update an AutoCAD drawing, new costs can be automatically computed on your spreadsheet. And



Circle No. 332 on Reader Service Card

ARCHITECTS NEED TOLLET TRAININGS

Tighten up your Bobrick specs and close your washroom door to flimsy, unsafe imitations.

According to a nationally conducted survey of architects, Bobrick is considered No. 1 across the board. Quality, design, durability, functionality, vandal-resistance, service. And we estimate that

Bobrick is specified in 9 out of 10 major projects.

So what's the problem? Too frequently, the specs are written without a clear standard of quality and the architect's intentions are compromised down the line.

With Bobrick, edges are hemmed for safety, vendors keep vending, soap dispensers stand up to time, leakproof means leakproof, fit and finish are superb—you've got the idea.

But, you should specify Bobrick as the standard of quality and put some teeth into it. What a

> shame to put your heart and soul into architectural perfection and lose it in the washroom!

Want an Architectural Representative who will help you prepare layouts and specs? Call 800/553-1600. In CA call 818/503-1630. Or write to: Bobrick, 11611 Hart Street, North Hollywood, CA 91605.



BOBRICK Washroom Equipment

New York Los Angeles Jackson, TN Toronto

News Report



Perspective of Kleihues Museum of Contemporary Art design (above); model showing museum's relation to the landmark Water Tower (right); section through skylit galleries (below).





In Perspectives, architects discuss the politics of preservation in minority communities. Page 156.



The design for the new Museum of Contemporary Art (MCA) in Chicago by German architect Josef Paul Kleihues was revealed in late March. In three years, when the new building is completed, the MCA will move from its present quarters in a renovated bakery to the new building, splendidly sited between Lake Michigan and North Michigan Avenue with public parks on both sides.

This will be Kleihues's first building in this country, and it promises to be at once Classical and contemporary. A 20-foot setback from the museum's property line and a park across from the entry will lend the new building a forecourt suitable to a building devoted to culture. The grand entry stair and six-foot-high stone-clad podium emphasize the Classical vocabulary being used.

But the building's cast aluminum cladding, glazing, and functional detailing announce the architect's intention to make this a building of its own time. Together, the Indiana limestone base and aluminum skin should create a dramatic contrast. Bolts fixing the square metal panels to the frame declare the cladding non-structural and add a decorative punctuation to the building.

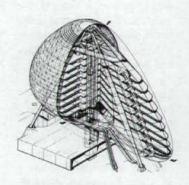
Kleihues describes his work as poetic rationalism. It is indeed rational. The site has been divided into two perfect squares, each measuring 198 feet per side. The museum building will occupy one, and a sculpture garden, elevated to the same height as the podium – with parking beneath – will take the other. The museum square is divided and subdivided, with everything from the bays to the cladding fitting into a ubiquitous grid.

If the design has a failing, it is that rationality could look like rigidity when the building is completed. The relentless reiteration of the square – not a soaring shape – could leave the building feeling grimly earthbound, as though it were gripping the ground with its toes. Weightiness will surely be felt on the side streets, where the stone base extends nearly 400 feet beneath the museum building and the sculpture garden.

The relief the building needs may be afforded in the expansive glass wall at the entry; it will certainly help to open and lighten the building. In some areas, it will be possible to see through the building to Lake Michigan.

There is much in this building that older museums will envy. Two 9000-square-foot galleries on the podium level are designed exclusively for traveling exhibits. To accommodate everything from Anselm Keiffer canvases to photography shows, Kleihues has designed a ceiling that can be raised to 22 feet or lowered to 16 feet by means of a cable and pulley system that is simple and elegant. Natural light will be admitted in the upper galleries through automatically adjusting louvers to protect the artwork from direct sunlight.

Cheryl Kent



High design meets low-tech energy-efficiency in Projects, page 159. (Above: Green Building by Future Systems.)

Pencil Points

Portuguese architect Alvaro-Siza has won the 1992 Pritzker Architectural Prize, and Tadao Ando of Osaka has been awarded the new Carlsberg Prize. Details in next month's P/A News Report.

Structural engineer Peter Rice of Ove Arup Partnership, London, has been awarded the 1992 Royal Institute of British Architect's Gold Medal. The jury cited Rice's "passionate belief that technology is a tool to be used with imagination for the benefit of mankind." The Sydney Opera House, the Pompidou Centre, and Lloyd's Bank are among projects on which Rice has collaborated.

Rafael Moneo has been commissioned to design a new building for the Museum of Fine Arts, Houston; it will house temporary exhibitions. In 1990, Venturi Scott Brown Associates, completed a master plan to guide museum expansions; Carlos Jimenez of Houston is designing a classroom building for the adjacent Glassell School of Art.

Three AIA awards were recently announced: the Edward C. Kemper Award to the late Betty Lou Custer, former administrator of the AIA St. Louis chapter; the Whitney M. Young, Jr., Citation to architect Curtis L. Moody of Moody/Nolan, Columbus, Ohio, for his work as a socially active practitioner; and the Topaz Medallion for Excellence in Architectural Education (bestowed with the ACSA) to the late Spiro Kostof (P/A, Feb. 1992, p. 24).

In other AIA news, the institute has announced its support of the Anti-Recession Infrastructure Jobs Act of 1992. If passed by Congress, the initiative would provide \$10 billion in accelerated funding for public works projects ready for construction within 90 days of enactment.

Temporary Home for American Center in Paris

An interim home for the American Center in Paris – to house the nonprofit multidisciplinary center while it awaits construction of its new building by Frank O. Gehry & Associates (P/A, Jan. 1992, p. 96) – has been completed. The temporary structure is on a triangular park site across the street from the center's future home in the Bercy section of Paris. Gehry's building will be completed in 1993.

The temporary site, known as Place Léopold I, is "on loan" from the City of Paris; when no longer needed, the building must be dismantled and the land restored to its original condition. Thirty-three-year-old architect Nasrine Seraji won a limited competition last April to design the temporary structure, with a scheme that both respects the city's site stipulation and acts as a prelude to the dynamic forms of Gehry's building.

The two-story, 7600-square-foot temporary structure is a clever configuration of prefabricated modules, set into the ground with steel posts. The wood-clad structure has an interior court designed



Temporary American Center by Nasrine Seraji.

around three rows of existing linden trees; an undulating, light-permeable roof of Makrolon, "a new glass-like material," feeds sunlight into the court. The building houses a public welcoming area, an artist's atelier/studio, staff offices, classrooms, conference rooms, and a small performance/exhibition space.





After half a decade of planning, the first-phase design for the New Jersey Performing Arts Center by Barton Myers Associates was announced in March. A study of state facilities initiated by former Governor Thomas Kean in 1987 targeted Newark, which has some 4.5 million people within a 25-mile radius, as a permanent home for a variety of performing arts groups.

An original concept of four major buildings was ultimately scaled down in a 1991 master plan developed by Skidmore, Owings & Merrill and James Stewart Polshek & Partners. Their plan envisions a Cultural District including the 12-acre site for the NJPAC and a mix of commercial and residential development extending to the Passaic River waterfront two blocks away. Myers's proposal dresses up the urban design goals of the master plan to create, in the words of SOM's Marilyn Jordan Taylor, "a lively giant outdoor living room where people will feel at home." The first phase, which involves the realignment of existing streets, will forge a spatial connection with Military Park, upgrading its existing 1100-car un-



master plan model by SOM and Polshek (left).

Phase one of NIPAC by

Myers (far left);

museum site is at

middle right in

derground parking garage. Theater Square, the new forecourt to the Center, is a step in extending the park to the waterfront. As Goldman stated, "we want to keep [this area] from becoming Stamford, Connecticut. . . superblocks lined by parking garages, where there is no human scale."

Myers's design features a great lobby/rotunda. This brightly lighted, transparent element, rising 85 feet from street level, elaborates goals of the SOM/Polshek master plan: a visual feature to function as gateway to the proposed district, a "hinge" to align the complex site geometry, and an axial termination to Park Place, one of the edges of the triangular Military Park. Myers describes the scheme as a "small village of separate structures in keeping with the scale of the 18th- and 19th-Century fabric of Newark." The festive character of the buildings' ornamental program furthers its "user-friendly" image. The building program includes a 2700-seat multipurpose theater, a 500seat studio theater, two restaurants, banquet facilities, and a gift shop.

Leaders of the NJPAC and the city want the new center to attract affluent suburbanites, along

with city residents. To the project's creators, a cultural center is not a frivolous indulgence, but a strategic move toward social integration and an economic "jump start." Some 40 percent of the total site is targeted for private development, which would both support and benefit from the center.

Yet the center is not without its critics. Preser-

vationists wanted a location better integrated with existing residential - rather than commercial areas. Others question the appropriateness of the very concept when community leaders have been petitioning for a special hospital to treat Newark's growing AIDS population, now 19 percent of all state cases. Peter C. Papademetriou

WestWeek '92: Holding Patterns

"Core confidence," the current corporate buzzword for sticking to the tried and well-trod, was the reigning mode at WestWeek, the annual design fair held March 18-20 at the Pacific Design Center in Los Angeles. With few exceptions, risk taking, even of the educated kind, had evidently been banished from manufacturers' boardrooms and production lines.

This at a time when the contract furniture industry is faced with challenges of global magnitude: the needs for environmentally sound fabrication methods and for design remedies to Repetitive Strain Injury Syndrome, to name two. At WestWeek, harbingers of such bold reform were ominously scarce.

The relative dearth of innovative launches made Frank Gehry's new (and very deserving) bentwood collection for Knoll (P/A, March 1992, p. 116) seem even more dominant than its all-out publicity campaign could have envisioned.

It was a year of refreshingly economical but effective showroom installations. Among the most memorable was Brayton's, designed by architect Lauren Rottet to display "Evaneau," her new seating line for the company. Rottet took advantage of a wonderful resource in the PDC's backyard, renting a slew of old canvas backdrops from a Hollywood studio. These, hung in a blacked-out space and theatrically lighted, made glamorous foils for carefully assembled vignettes. Happily, the furniture more than held its own. The pieces generally cut trim figures, low-lying, straight-sided, with firm seats and thin arms. In all, a calm, assured debut reminiscent of Florence Knoll's Modern classics of the 1950s, updated with a mix-and-match approach to fabrics and accessories.

Hickory Business Furniture, a new presence at



Scene from Brayton's movie-set showroom, starring Lauren Rottet's new seating line.

the PDC, also strutted its stuff in an inventively frugal setting. Designer Michael Vanderbyl used state-of-the-art laser printing technology to render a portion of Michelangelo's frescoes from the Sistine Chapel on a tall serpentine curtain suspended across the otherwise bare showroom.

But the fair's most delightful display by far was actually mounted in one of the PDC escalator wells: "Industrial Elegance," curated for Vecta by George Beylerian of the Steelcase Design Partnership. Dozens of architects, designers, and other prominent figures had been invited to select an object that epitomized the height of engineered elegance. Their picks ranged from the Japanese ball drain stopper (nominated by Adele Chatfield-Taylor) to the Stealth bomber (Philip Johnson).

The exhibit, along with one or two rousing panel discussions (and especially a penetrating soliloguy by architect Michael Sorkin on latter-day urbanism) worked the magic of reminding this doom-and-gloom-weary reporter what the excitement was all about. Ziva Freiman

A Symposium Asks: Can We Learn from the 1960s?

Alternately worshipped and ridiculed, the 1960s have been immortalized in our collective conscience. We all have our own impressions of the decade, whether or not we lived through its tumultuous days. "ReThinking Designs of the 60s," a one-day symposium in New York in March, sponsored by Architects, Designers and Planners for Social Responsibility (ADPSR)/New York and Perspecta: The Yale Architecture Journal, asked its panel of architects, academics, artists, and planners a deceptively simple question: what, if anything, can we learn from the events of the 1960s?

A look back is timely, as we now face many of

the same dilemmas as 30 years ago. The public is once again discontent with existing conditions, and the demand for change is growing louder. Panelists took advantage of this 1990s Zeitgeist and posited their ideas in the context of current social, environmental, and political concerns.

Ronald Schiffman of the Pratt Institute Center for Community and Environmental Development, recalled the seriousness with which the domestic agenda was perceived in the 60s, saying that "the 60s were naïve times perhaps, but [the decade's] ideologies, dreams, and visions" deserve a second look. Architect Robert Goodman suggested that as (continued on next page)

PCI Design Awards

The Precast/Prestressed Concrete Institute has announced the winners of its 1991 Professional Design Awards competition, ten precast or prestressed buildings cited for "aesthetic expression, function, and economy."

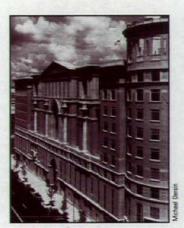
Jurors for the program were C. James Lawler, former president of the AIA; Thomas J. D'Arcy of Consulting Engineers Group; Deborah K. Dietsch, editor-in-chief of Architecture magazine; David Edwards, president of the Royal Architectural Institute of Canada; and Jan Tuchman, executive editor of Engineering News-Record.

The winners are:



Jefferson-Pilot headquarters.

Jefferson-Pilot Corporate Headquarters, Greensboro, North Carolina, by Smallwood, Reynolds, Stewart, Stewart & Associates, Atlanta;



AARP Headquarters.

AARP Headquarters, Washington, D.C., by Kohn Pedersen Fox Associates, New York:

(continued on next page)

PCI Design Awards

(continued from previous page)

 Southern New England Telephone Company Data Center, Meriden, Connecticut, by Rose, Beaton + Rose Architects and Engineers, White Plains, New York;



Shields Library.

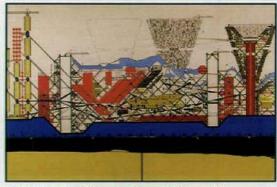
- Peter J. Shields Library, University of California, Davis, California, by Simon Martin-Vegue Winkelstein Moris, San Francisco;
- Minneapolis Convention Center, Minneapolis, by Setter, Leach & Lindstrom, The Leonard Parker Associates, and Loschky, Marquardt & Nesholm, Minneapolis;
- Washington State Convention & Trade Center, Seattle, by TRA Architects Engineers Planners Interior Designers and HNTB, both of Seattle;
- Limon Correctional Facility, Limon, Colorado, by Clifford S. Nakata & Associates, Colorado Springs, Herald R. Holding Associates, Colorado Springs, and Reilly-Johnson Architecture, Denver;
- School Street Parking Deck, Illinois State University, Normal, Illinois, by LZT Associates, Peoria, Illinois;
- Citrus Bowl Stadium,
 Orlando, Florida, by HNTB
 Architects and Engineers,
 Kansas City, Missouri;
- All Saints Catholic Church Bell Steeple, Dunwoody, Georgia, by Slater-Paull & Associates, Marietta, Georgia.

The Harry H. Edwards Industry Advancement Award was presented for the Esker Overhead, a railway overpass in Northwestern British Columbia, by structural engineers Acres International, Vancouver.

1960s Symposium (continued from previous page)

the architect/activists of the 1960s were inspired by the politics of the New Left movement, today's practitioners might look to the end of the Cold War for inspiration, considering such issues as new uses for obsolete military bases. Michael Webb, a former Archigram member, remembered the decade for its "riotous invention [and] magnificent investigation" and suggested that practitioners today could benefit from similar endeavors.

Though the topics of discussion varied, symposium participants inevitably returned to the same message: architects and designers must take advantage of their expertise as shapers of the environment and must become socially engaged. The true potential of the day's events lies with the audience: they must take the activists' enthusiasm of the 1960s back into their offices and classrooms, where their own ideas and energy can be tapped.



Rethinking the 1960s: Archigram's Plug-in City.

The passion for invention and reform in the 1960s is surely the decade's most valuable legacy.

Abby Bussel

The symposium was conceived and coordinated by Clay Miller and was co-hosted by the Parsons School of Design.

First Kennon Symposium Misses its Mark

The theme of the first biennial Paul Kennon Symposium at Rice University in Houston was supposed to be "The City Imagined"; but with a small audience and a low energy level, the event never coalesced around this topic, providing instead dispiriting evidence of the fragmentation of architectural discourse and the limits of the profession's star system.

Held March 14 in the concert hall of Rice University's recently opened Alice Pratt Brown Hall, (P/A, Jan. 1992, p. 24) the symposium honored the memory of Paul Kennon, FAIA. Dean of the Rice School of Architecture at the time of his death in 1990, Kennon had also been president of the architectural division of Houston-based CRSS,

Inc. a decade ago when it was the largest architecture firm in the world, designing Late-Modern buildings for foreign clients.

Back then, the avant-garde of American architecture developed around a critique of the stylistic means and the social forces that such buildings represented. Leading the way in that critique was New York's Institute for Architecture and Urban Studies, for which Kennon helped raise funds in the early 1980s. Thus it was that many of the participants in the Kennon symposium - architects Diana Agrest, Peter Eisenman, Mario Gandelsonas, and Jennifer Bloomer, along with architectural historian Mary McLeod, who acted as moderator - had either taught or studied at the institute. Other participants were architect Rem Koolhaas, geographer Edward Soja, and culture critic Marshall Berman. Rice faculty member Richard Ingersoll (editor of Design Book Review) and Alan Balfour, chairman of London's Architectural Association, responded to the presentations.

Mary McLeod opened the symposium promisingly, urging panelists to imagine how the public realm could be reconstituted to include excluded groups and to imagine an architecture "with emancipatory potential."

Unfortunately, none of the participants did anything of the sort. Gandelsonas and Agrest both presented slides of projects in Chicago and Des Moines in which various site conditions were analyzed as a basis for arriving at painterly urban compositions. The drawings presented, Gandelsonas said, show "the urban text as an object of desire," but in the end, they were self-portraits. Bloomer, speaking between Gandelsonas and Agrest, gave a talk in the form of an open letter to the late English novelist and cultural critic, Angela Carter, talking about encounters with poor women in various cities and with a foolish group of philosophers in Iowa. Bloomer showed slides of recent work, including a sculptural construction that inverted materials, ideas, and the social milieu of (continued on page 32)



Low-energy event? Bloomer and Gandelsonas at Kennon symposium.

PAC-CLAD' Metal Reciting Panels

he new Harold Washington Library in Downtown Chicago was designed to preserve generations of priceless literature. The library's roof was designed to preserve the architectural creativity in a cost-efficient way.

Preservation was a priority. Books from many branch locations around the city needed to be consolidated into one central location. Leaky roofs in the branches had already caused irreplaceable damage to some classic works.

Design guidelines called for an "old-fashioned" copper standing seam panel system, with barrel vaults and skylights. Such a look was chosen by the Chicago architectural firm of Hammond, Beeby & Babka because they believed a classic, antique look would work well with surrounding architecture.

Aesthetics and costs were the two primary reasons a Petersen Aluminum PAC-CLAD Roofing System was selected. The high snap-on standing seam panels met all design guidelines. A custom color kynar® finish, carrying a twenty year non-prorated warranty, was created to match the natural patina of weathered copper at a fraction of the cost.

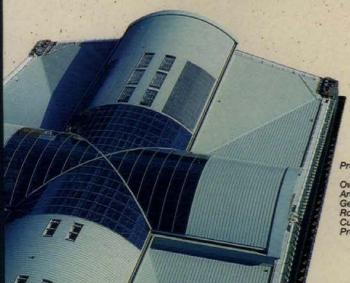
For more information and technical assistance, please contact Petersen Aluminum Corporation at 1-800-PAC-CLAD.



955 Estes Avenue, Elk Grove Village, IL 60007 1-800-PAC-CLAD or 1-708-228-7150 FAX: 1-800-722-7150

Other Plant Locations: Annapolis Junction, MD 1-800-344-1400

Tyler, TX 1-800-441-8661



Project: Harold Washington Library

Chicago, Illinois

Owner: City of Chicago

Architect: Harnmond Beeby & Babka/ A. Epstein & Sons

General Contractor: Schal/Mortenson

Roofing Contractor: James Mansfield & Sons Roofing

Custom Color: Patina Green

Profile: High Seam Paniel

Profile: High Seam Panel

Circle No. 390 on Reader Service Card

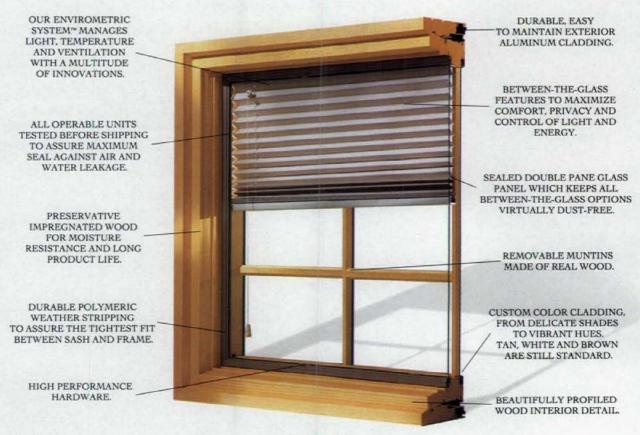
Kennon (continued from page 30)

selected canonical works of Chicago architecture. Eisenman, pronouncing himself willfully unprepared, recalled his friendship for Kennon, and that a job Kennon got for him helped dissolve his former partnership with Jaquelin Robertson. Then he turned to presenting a recent project for office buildings and housing in Stuttgart, to be clad in the quaky, indeterminate envelopes that he currently favors (and which he kept describing as "the new neutral," sounding perilously like a candidate for *Vogue* editor).

As incipient controversy turned to coziness, Eisenman added a couple of anecdotes: for the Frankfurt project, he had teamed with Albert Speer, Jr.; and in Berlin he had a client who wanted him to forget height limits and zoning regulations along with the city's history and "build a monument to the 21st Century." In a room half full of architects from firms that had once dominated the market for exported American architecture, Eisenman's story excited a gasp of envy and chagrin: the king of the avant-garde was swapping comradely tales about big bucks clients.

The afternoon presenters did little to lighten the mood, which became more wake-like with each passing moment. Rem Koolhaas presented unremarkable projects for La Défense in Paris and for an entertainment center to be built on landfill at the edge of a Japanese city, denying they were urban interventions by the end of his talk. Edward Soja, promising a methodology for creating space that escaped the polarities of economic and political power, instead described the physical geography of Los Angeles as militarized. He was followed by Marshall Berman, who, with a big beard, a mop of curly hair and an orange T-shirt, stood out from his gray-suited fellow presenter. Berman played "Out in the Street," a very long, decade-old mid-tempo Bruce Springsteen song (Bloomer and Gandelsonas danced in the aisle), then settled into his talk, which turned out to be a book review in which he criticized various writers, including Soja, for unreflective leftism.

During the ensuing discussion, Alan Balfour tried unsuccessfully to stir up some interest in talking about Houston and other Sunbelt cities, and McLeod argued with Gandelsonas about the relative egalitarianism of shopping malls and city streets. The event fizzled out after a Houston architect asked if the panelists could offer any advice about designing malls, a question that met with shrugs and puzzled looks. The day ended without any meshing of the varied terms or methods used by the presenters, and with a general sense that any attempt to do so would be futile. One only hopes that the next Kennon Symposium, which is supposed to take place in 1994, will better reflect the hard work of its organizers and the potential of its setting. Joel Warren Barna



-

Historic Philadelphia Stadium is Demolished

Demolition began last month on the venerable, but crumbling, John F. Kennedy Stadium in South Philadelphia, which is being razed to make room for a new basketball and hockey arena.

Originally called Municipal Stadium, JFK was built for the U.S. Sesquicentennial Exposition of 1926. It was designed in a "Modern" Classical style by architect Grant Miles Simon, a University of Pennsylvania graduate and Paris Prize winner. With its yellow-brick and limestone bearing walls and its familiar horseshoe plan, JFK was characteristic of the grand, single-tiered collegiate football stadiums of the 1920s. Through the years, JFK has been the site of many historic events, including the legendary 1926 Dempsey-Tunney heavyweight championship fight, the 1985 Live Aid famine relief concert, and, for more than 50 years, the Army-Navy football game.

Philadelphia city officials, shackled by severe budgetary problems, and local preservation groups, staggered by recent court decisions limiting the legal scope of historic designation status in the Commonwealth, raised surprisingly little objection to the demise of the stadium. The city bargained the development rights of the historic site to Spectacor Corporation, a private sports developer, in a deal designed to keep the 76ers and the Flyers from leaving Pennsylvania for a new facility proposed by Spectacor across the Delaware River in Camden, New Jersey. For their part, preservation activists have been preoccupied by battles to save higher-profile historic structures threatened in Center City.

The new arena, called Spectrum II, has been designed by Kansas City architects Ellerbe Becket and is slated for completion in 1995. It will be linked to a new 1000-car parking garage and to the existing Spectrum (where these teams now play) by an upper-level pedestrian concourse. JFK's VIP Entrance portal, the widest and most ornately detailed of the stadium's 39 original entrance portals, will be saved and incorporated into the new design in a half-hearted gesture to the historic site. Donald Prowler

THIS IS WHAT HAPPENS WHEN YOU DON'T QUIT WHEN YOU'RE AHEAD.

Pella originated the idea of putting more between two panes of glass than just air. Today the technology we pioneered has evolved into the best all around window

INTRODUCING THE PELLA DESIGNER SERIES.

we've ever made. The Pella Designer Series™ which includes SmartSash technology.

SmartSash II™ of the Designer Series, is designed to give you between-the-glass features (like Slimshades, pleated shades, and removable muntins), as well as any design your imagination can come up with.

SmartSash III™ offers the same between-the-glass features plus argon filled, Low E, InsulShield™ For ideas and more information and for a few Polls West argon

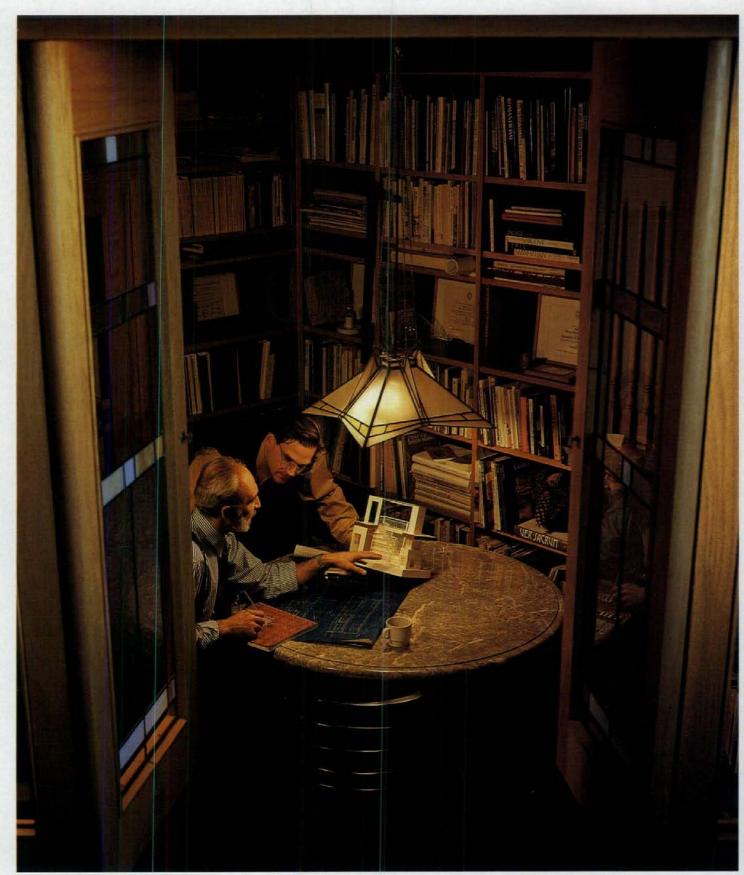
glass which gives you unprecedented thermal performance.

Since we didn't quit while we were ahead, you don't have to shop any further than Pella. Stop by your Pella Window Store^{3M} or call 1-800-524-3700.

	and more in r call 1-800-		nd for a free Pella	Windowscapin
		☐ Remodel	☐ Replace	000
Name		Address		Pella
City	State	Zip	Phone	

Mail to: Pella Information Center, Dept. A017E2 P.O. Box 308 Moline, IL 61265-0308. Also available throughout Canada, Japan and Australia. Coupon answered in 24 hours. ©1992 Rolscreen Company.

BUILT TO IMPOSSIBLY HIGH STANDARDS.



© 1992 THE SHERWIN-WILLIAMS COMPANY

LONG BEFORE PEN HITS PAPER, YOU KNOW WHAT IT LOOKS LIKE. EVERY ROOM. EVERY ANGLE. EVERY DETAIL. AND YOUR VISION WILL NOT BE COMPROMISED. WHICH IS WHY YOU SHOULD HAVE SHERWIN-WILLIAMS

WHY YOU SHOULD
BE SURE OF
THE FINISH EVEN
BEFORE THE START.

ALONG FROM THE VERY START.

BEYOND SUPPLYING YOU

WITH THE HIGHEST QUALITY

COATINGS AROUND, OUR

ARCHITECTURAL CONSULTANTS

AND CORROSION ENGINEERS

CAN PROVIDE THE MOST

UP-TO-DATE TECHNICAL ADVICE

AND FINISHING TECHNIQUES.

AND SHOULD YOU EVER HAVE A QUESTION OUR PAINT DATABANK® 800 NUMBER OFFERS ASSISTANCE ON EVERYTHING FROM STATE-BY-STATE VOC COMPLIANCE TO COATING SPECIFICATIONS. A GIVE US A CALL BEFORE YOU START. BECAUSE

WORK IS SOME OF THE BEST WORK WE DO. CALL 1-800-321-8194, MONDAY THROUGH FRIDAY, 8:30 A.M. TO 5:00 P.M., EST.



THE PROS KNOW. ASK SHERWIN-WILLIAMS.™



up-to-the-minute solid colors, 27 of which are prematched to Formica* brand laminates.

distinctive colorways. Acrovyn also offers 63

For colorful, free literature, call The C/S Group 800-233-8493.

ACROVYN INTERIORS

Circle No. 392

Calendar

Exhibitions

John Lautner Through June 5

New York. "John Lautner, Architect" was organized by students at the School for Applied Arts in Vienna; original drawings, photographs, and models of his residential commissions are exhibited. National Institute for Architectural Education.

Future Systems Through June 6

New York. Recent work by London-based Future Systems (see page 159) is on show. Storefront for Art & Architecture.

John Hejduk Through June 21

Montreal. Hedjuk's Lancaster/Hanover Masque – produced between 1979 and 1983 – is on display. Canadian Centre for Architecture.

Gehry's Bentwood Furniture Through August 2

New York. Prototypes, drawings, and photographs chronicle the design process undertaken by Frank Gebry for his bentwood collection for The Knoll Group (P/A, Mar. 1992, p. 116). American Craft Museum.

Competitions

P/A Competition: The New Public Realm Entry deadline June 19

Stamford, Connecticut. It is no secret that public facilities in the U.S. are in need of improvement, but little is being done to alleviate current conditions. P/A invites readers to address the problems and offer solutions in an ideas competition, "The New Public Realm." Entrants are asked to interpret public needs broadly – including buildings, urban design, open spaces, bridges, even public policy proposals – and to suggest how public and private funds might be used to realize their ideas. (P/A, Apr. 1992, p. 59) Contact The New Public Realm, P/A, 600 Summer St., Stamford, CT 06904.

Visionary and Unbuilt Landscapes Entry deadline July 6

Washington, D.C. Landscape Architecture magazine has announced its third annual juried December issue of "Visionary and Unbuilt Landscapes." "Projects at all scales, from site-specific sculptures and monuments to wilderness landscapes, are invited." Contact Bill Thompson, Landscape Architecture, 4401 Connectitut Avenue, N.W., Washington, D.C. 20008 (202) 686-2752.

Cedar Design Submission deadline July 1

Portland, Oregon. "Cedar Design Naturally" architectural awards program, honoring outstanding projects using Western Red Cedar, is sponsored this year by the Western Red Cedar Lumber Association and the AIA. Contact Cedar Design Naturally, Western Cedar Lumber Association, 522 S.W. Fifth Ave., Portland, OR 97204 (503) 224-3930 or FAX (503) 224-3934.

Religious Buildings/ Sacred Projects

Registration deadline July 1, submission deadline August 3 Washington, D.C. The 1992 IFRAA international architectural design awards program for built religious structures, sponsored by the Interfaith Forum on Religion, Art, and Architecture, has been announced. Built structures that serve as, or support, a religious facility – including new construction, renovation, restoration and interior design projects – designed by a registered architect and completed after 1987 are eligible. Contact IFRAA National Headquarters, Doris Justice, Executive Secretary, 1777 Church Street, N.W., Washington, D.C. 20036 (202) 387-8333.

Waterfront Center Awards Submission deadline July 1

Washington, D.C. Completed urban waterfront projects and waterfront planning studies may be entered in the sixth annual awards program sponsored by the Waterfront Center. Contact Susan

(continued on page 38)

DIMENSION STONE

Granite • Limestone • Marble Quartz-Based Stone • Slate

Technical and Design Help. Job Inspection Service.

OF THE WORLD Volume I

312 large, removable color plates. ASTM values. Source Information.



\$195.00 + \$10.00 shipping (in USA).

DIMENSION STONE DESIGN MANUAL IV

Technical and General Information. Material and Installation Specs. Data Sheets. Typical Detailing. ASTM Specifications and Standards.



\$89.50* + \$10.00 shipping (in USA).

> * design professional price

DIMENSION STONE EXPO Exhibits - Seminars SEATTLE, November 2-5, 1992

The ONE SOURCE!

Everything you need to know about dimension stone.



MARBLE INSTITUTE OF AMERICA 33505 State St. • Farmington, MI 48335 (313) 476-5558; fax: (313) 476-1630

ASK FOR INFORMATION

Keep Birds Off Your Structural Designs

Include NIXALITE® **Architectural Bird Control** from the Start!

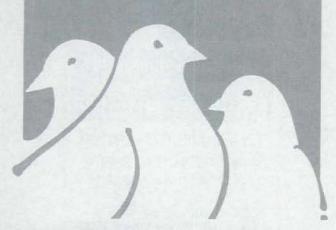
- Permanent Stainless Steel Strips
- · Does Not Stain Building Materials
- Conforms To Every Structure Contour
- Easy Installation
- Fastening Materials Included
- · Recommended By Bird And Humane Societies
- Available In Colors!







Call our Design Department Hotline 800-624-1189 for technical assistance and mounting procedures





NIXALITE of AMERICA 1025 16th AVE. • P.O. BOX 727 EAST MOLINE, IL 61244 • 309-755-8771 800-624-1189 • FAX 309-755-0077

SPECIALISTS IN BIRD CONTROL

a federally registered trademark of NIXALITE* of AMERICA

Circle No. 391

Calendar (continued from page 37)

Kirk or Ginny Murphy, Waterfront Center, 1536 44th St., N.W., Washington, D.C. 20007 (202) 337-0356 or FAX (202) 625-1654.

Conferences

A/E/C SYSTEMS '92

June 8-11 (conference), June 9-11, (exhibit)

Dallas. The 13th International Computer and Management Show for the Design and Construction Industry will be held at the Dallas Convention Center. Contact Sharon Price, A/E/C SYSTEMS '92, P.O. Box 310318, Newington, CT 06131-0318 (800) 451-1196 or FAX (203) 666-4782.

NeoCon® 92

June 8-10

Chicago. The revamped NeoCon® furniture market (see page 177) now includes: a series of cohesive educational programs, an expanded group of product manufacturers (including CAD and building products pavilions), and pre- and post-NeoCon® seminars, among other events. Contact NeoCon®, 222 Merchandise Mart Plaza, Suite 470, Chicago, IL 60654 (800) 677-6278 or FAX (312) 527-7782.

Building Industry Automation-Integration

June 10-12

Dallas. Building Systems Automation-Integration, the 1992 Symposium on Computer Integration of the Building Industry is an international, inter-professional forum "to enable architects and engineers....to learn about parallel advances of common interest in computer systems development." Contact Saar Management Company, 13253 N. La Montana Dr., Ste. 205, Fountain Hills, AZ 85268 (602) 837-6575 or FAX (602) 837-6580.

Solar Energy

June 13-18

Cocoa Beach. Florida. "Solar 92: The National Solar Energy Conference" is an interdisciplinary meeting of energy and design professionals to exchange information on current solar technologies. Contact American Solar Energy Society, 2400 Central Ave., Suite G-1, Boulder, CO 80301 (303) 443-3130 or FAX (303) 443-3212.

AIA Convention June 19-22

Boston. The theme of the 124th annual AIA National Convention is "Exploration '92: Engaging Society in Vital Ways." In addition to workshops, seminars, forums, and consultations, the event will include the third annual International Book Fair and a program on healthcare architecture. Contact AIA Convention Department (202) 626-7395.

Making Cities Livable

June 24-27

Venice, Italy. An international group of architects, landscape architects, planners, urban designers, developers, city officials, and community leaders will gather for the 13th International Making Cities Livable Conference. Contact Suzanne H. Crowhurst Lennard, Conference Organizer, P.O. Box 7586, Carmel, CA 93921 (408) 626-9080 or FAX (408) 624-5126.

International Tile Exposition

June 25-28

Chicago. Tile and stone producers from more than 60 nations will present their wares at the International Tile Exposition at McCormick Place North. The third annual "Profit by Design" conference will be held concurrently, featuring sessions on practice and design issues. Contact TSI Inc., 900 E. Indianatown Rd., Ste. 207, Jupiter, FL 33477 (407) 747-9400 or FAX (407) 747-9466.

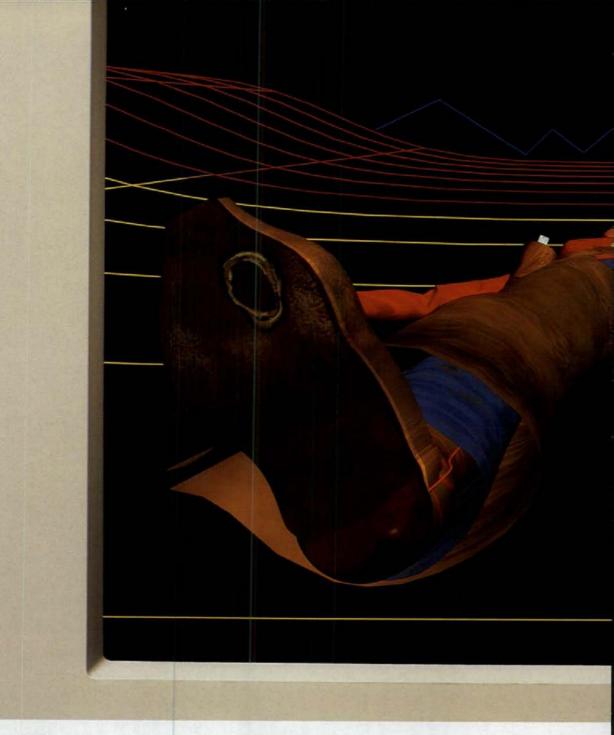
CSI

June 26-28

Atlanta. The Construction Specifications Institute's 36th Annual Convention and Exhibit will be held at the Georgia World Congress Center. A preconvention program on June 25 will examine the host city, Contact Sandy Humphries, CSI, Convention Services Department, 601 Madison St., Alexandria, VA 22314-1791 (703) 684-0300.



Intel's new RapidCAD
CoProcessor will help your
i386 PC draw 70% faster.



So you'll stop kill

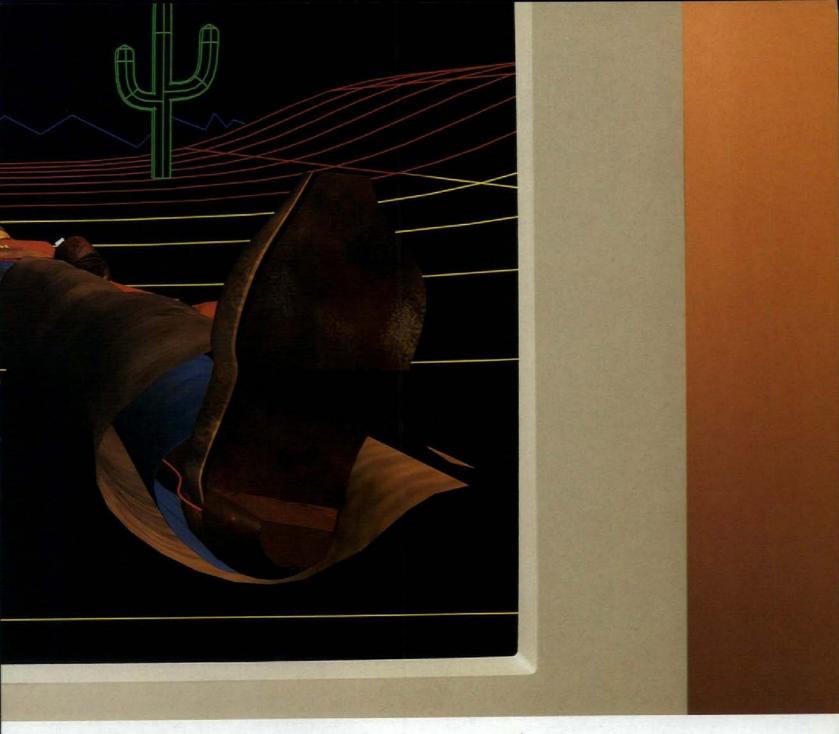


Wait, wait, wait. Do you ever get the feeling that's all you do when your PC is running CAD soft-

ware? Annoying, isn't it?
Well, pardner, the wait is over. At

least a good portion of it. Because now there is new Intel RapidCAD[™] the industry's first Engineering CoProcessor. This powerful twochip set replaces both your i386[™]DX and your i387[™]DX CPU Math CoProcessor, to make your PC quick on the draw.

Designed specifically to accelerate PC CAD and other technical applications, the RapidCAD Engineering CoProcessor will help you realize productivity gains of up to 70% on certain CAD functions. Or to put it in



ing an hour a day.

dollars and cents, by saving you an hour a day, the RapidCAD Engineering CoProcessor will pay for itself in no time.

Naturally, since it's made by

Intel, the world's leader in
microprocessor technology, it's compat-

WE MAKE COMPUTERS WORK HARDER. Call and ask for packet CI 1-800-538-3373 ible with plenty of technical applications—over 2,100 at last count.

So call 1-800-538-3373 for an informative Intel RapidCAD Engineering

CoProcessor brochure. It'll give you

something good to read while you're waiting for your PC to redraw.



Circle No. 001

THE FIRST THING WE DID TO HELP REMODEL THIS OLD HUNTING LODGE WAS

This large, beautiful room is the centerpiece of what was once an exclusive hunting lodge. Built in 1930, the property was converted to a single family residence in the early Fifties. But 40 years of paint, plasterboard and paneling had all but hidden its original elegance.

So, when new owners began repoyating it in 1991, they

So, when new owners began renovating it in 1991, they asked architect Katherine Cartrett of Mulfinger, Susanka and Mahady to recapture the original rustic charm of the place.

They asked her to use only the finest high performance building products available. Given those terms, it's not surprising that, when the subject of windows and doors

came up, the owners asked to talk with Marvin.

The first step was an on-site meeting. Nick Smaby from Choice Wood Custom Residential Remodelers was there. So were representatives from the Marvin dealer and distributor.

One by one, they inspected every opening in the home. Then the entire group sat down and planned the job out.

Sizes were discussed. So were shapes, styles, energy efficiency,

maintenance and budgets.

By the end of the day, the plan called for a combination of new windows and replacement sash — 46 windows in all. There were eight sets of doors too.

The results of that meeting are pictured above. The Marvin Sliding French Doors add light and open the room to the panorama of woods and hills





beyond. And in keeping with the architectural style of the home, each door features custom divided lites and an exterior finish in a color mixed specifically for the project.

Today, this rustic home looks much like the hunting lodge it once was. And if you ask the owners, they'll tell you the key was tracking down the right window and door supplier in the first place.

MAKE US YOUR FIRST CALL, NOT YOUR LAST RESORT.

If you've got a look you're trying to achieve or a problem you just can't solve, call the one company you know will have the right solution. Call Marvin Windows and Doors at **1-800-346-5128** (1-800-263-6161 in Canada). Or mail the coupon for a free catalog featuring the entire line of made-to-order Marvin windows and doors.

Circle No. 377 on Reader Service Card

Name	
Company	MOSTAL HISTORY
Address	
City	State
Zip	Phone

Send to: Marvin

Windows and Doors, Warroad, MN 56763

1509205B MARVIN WINDOWS & DOORS MADE TO ORDER. Objective: Transform a drab old mall,

Transform a drab old mall, make it appealing to today's shoppers and keep it cost effective for the owners.



Solution.

Retrofit with Dryvit Outsulation in a harmonious mix of panel and field application. Colonie Center Mall in Albany, NY, offered the challenge of 166,000 square feet of varied wall materials in a range of deteriorating conditions. These substrates included spalling plaster, structural concrete, splitface masonry and glazed brick.

Dryvit Outsulation®, an Exterior Insulation and Finish System, was specified. Field application of Outsulation was suitable for 40% of the wall area. The other 60% was clad with lightweight prefabricated Outsulation panels constructed off site and installed quickly without interruptions even during winter conditions. Two types of

Outsulation panels were employed — Dryvit Fedderlite® and conventional steel stud. The tremendous design scope afforded by Outsulation allowed the architect to carry out his plans for a homogenous look, regardless of substrate.

Dryvit Outsulation. It helps you put your best face forward in retrofit as well as in new construction. Whatever the challenge — give us a call.

Toll Free 1-800-4-DRYVIT

Circle No. 322 on Reader Service Card



©Dryvit Systems, Inc. 1991

ACRYLIC POLYMER

FEED POWER HUNGRY WORKSTATIONS

From the innovator in thru-floor electrification there's now a Furniture Feed that transforms the others into discards of history.

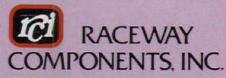
One glance at the Raceway RC-900-FF "Station Master" tells you this is something different. The unobtrusive low silhouette disguises the largest capacity of any Furniture/Partition Feed fitting; ten #12 power, five 4 pair communication and five IBM class II data cables. With a total of 0.1014 square inches of copper tested in a single fitting, the Raceway "Station Master" far exceeds the present UL limitations of any of the others.

LOW AND ROUND

The roundish, semi-flush design contains impressive function within its fabulous form. Its omnidirectional hexagon provides as many as six opportunities for a variety of power and low tension. It meets the demand for more and more protected data and communications by being the first to permit more than one

flexible conduit connection. Each facet permits interchangeable "drop-in" power plates or communications grommets. Disciplines are isolated as needed or the entire fitting can be dedicated.

The RC-900-FF "Station Master" is a true departure from the past, both esthetically and functionally. So, give those workstations an energizing "Power Lunch". For further information, contact Raceway Components, Inc. 208 19th Avenue, Paterson, N.J. 07504 (201) 279-1116.



Circle No. 308 on Reader Service Card

Technics Cost-Effective Building through Life-Cycle Costing

and Technology describes how to identify cost-effective building technology.

Buildings economics expert Rosalie Ruegg of the National Institute of Standards

This article gives the basics for comparing the long-run costs of alternative building layouts, exterior wall systems, roofing systems, window sizes and styles, floor coverings, equipment, and a host of other building features. Focusing on a single method of comparison, life-cycle cost (LCC) analysis, it explains the method, shows how to structure an LCC study, and takes the reader step by step through an analysis of a typical design decision involving the choice of a floor covering for an office building. Recently upgraded, inexpensive (sponsored by the U.S. government) computer software makes it easy to perform the calculations.

LCC Basics

LCC analysis is one of a group of methods for evaluating and comparing the economic performance of alternatives. Other related methods are benefit-cost analysis, net benefits analysis, benefit-cost ratio analysis, and internal rate of return and overall rate of return analysis. The methods look beyond first costs and take into account economic effects over the time period of concern to the decision maker. They all adjust for the time value of money.

The focus here is on LCC analysis because it is relatively easy to understand, use, and explain to clients, and it is appropriate for making many design decisions. It is widely used both by businesses and by Federal and state governments.

LCC analysis is an appropriate method to use when alternatives compete primarily on the basis of costs. The alternative with the lowest life-cycle cost is preferred, other factors being equal. If alternatives differ substantially in non-cost ways that affect their performance and desirability, the one with the lowest life-cycle costs is not necessarily the best choice. In this case, one of the other methods of economic evaluation may be more suitable than LCC analysis. However, if there are performance differences and they are difficult to quantify, it may nevertheless be useful to compute life-cycle costs and weigh the cost differences against the performance differences to help make the choice.

Although it is generally difficult to quantify performance differences, there is a growing effort to do so, and to include these explicitly in economic evaluations. James Woods, ¹ for example, has investigated productivity effects of building characteristics. Robertson Ward² has studied functional use costs, and Kerry Vandell and Jonathan Lane³ have

attempted to measure the value of alternative building designs in an urban setting.

LCC analysis is used to compare alternatives that are mutually exclusive: accepting one means not accepting the others. Alternative floor plans, wall systems, HVAC systems, and roofing systems for a specific building, for example, are mutually exclusive. For building systems that are non-discretionary, such as a roofing system, the choice is among alternative roofing systems. For building design features and systems that are discretionary, such as an atrium or a storm door, the choice extends beyond alternative designs, such as alternative atrium designs and alternative storm doors; the choice also entails whether to have the building feature or system - an atrium or a storm door - or not to have it. When the feature or system is discretionary, it is important to compare the most costeffective version of it against the option of not having it, to determine whether the investment is economic.

How to Calculate LCC

For each alternative, an LCC measure must be calculated. This requires a formula and data for applying the formula.

$$LCC_i = \sum_{j=0}^{N} \frac{C_j}{(1+MARR)^j}$$

where

LCC_i = LCC in present value dollars associated with choosing the ith alternative,

C_j = relevant costs, less any positive cash amount such as resale, occurring in period j,

MARR = Minimum Acceptable Rate of Return or discount rate, denoted "i" in the table of discount formulas (1),

N = the number of periods comprising the study period.

The formula calls for assembling the significant costs for each alternative, year by year, over the length of time of concern to the decision maker, adjusting the resulting cash flows for their time of occurrence, and summing them. It allows for any positive cash flows, such as resale value, to be taken into account by subtracting them from costs.

The time adjustment of cash amounts is required for a valid economic analysis because a

Computer Software for LCC Analysis

Three Design Research Books

Technics-Related Products

Technics Life-Cycle Costing

A widely used computer program for evaluating alternative building designs and systems is the Building Life-Cycle Cost (BLCC) Computer Program developed by Stephen Petersen at the National Institute of Standards and Technology. It is applicable to a wide range of building-related decisions, although its primary orientation is towards evaluation of energy conservation projects. It allows simultaneous evaluation and comparison of up to nine alternatives to determine which has the lowest LCC. The analysis provided by BLCC complies with ASTM standards for building economics and with Federal requirements for performing LCC evaluation of energy conservation investments in Federal buildings.

When BLCC is used to evaluate energy conservation projects, estimates of annual energy requirements for each alternative must be obtained prior to performing the BLCC analysis. In energy applications, BLCC is often paired with A Simplified Energy Analysis Method (ASEAM), developed for the Department of Energy (DOE). Estimates of future energy prices, or the rates of increase in energy prices are also needed. Projections of rates of increase in energy prices are available from DOE by fuel type, rate type, and region of the country. These rates are provided on the BLCC diskette and can be automatically retrieved into the analysis if desired. The projections are updated annually; hence, the program diskette should be updated annually if it is to be used for energy analysis.

BLCC is menu driven. Each evaluation commences with the

(continued on page 49)

Equation Name	Schematic Illustration	Application, To Find	Algebraic Form a,b
Single Compound Amount (SCA)	$\begin{array}{c} \\ \hline P \\ \hline \end{array} \longrightarrow \begin{array}{c} \hline F? \\ \hline \end{array}$	F when P is known	$F = P \cdot [(1+i)^N]$
Single Present Value (SPW)	P? ← F	P when F is known	$P = F \cdot \left(\frac{1}{(1+i)^N}\right)$
Uniform Sinking Fund (USF)	A? + A?+ A? ← F	A when F is known	$A = F \cdot \left(\frac{i}{(1+i)^{N}-1}\right)$
Uniform Capital Recovery (UCR)	P > A? + A?+ A?	A when P is known	$A \doteq P \cdot \left(\frac{i(1+i)^N}{(1+i)^{N-1}} \right)$
Uniform Compound Amount (UCA)	A + A+ A > F?	Fwhen A is known	$F = A \cdot \left(\frac{(1+i)^{N} - 1}{i} \right)$
Uniform Present Value (UPW)	P? ← A + A+ A	P when A is known	$P = A \cdot \left(\frac{(1+i)^{N}-1}{i(1+i)^{N}} \right)$
Modified Uniform Present Value (UPW*) ^c	$P? \leftarrow A_1 + A_2 + A_n$	P when A _o is escalating at rate e.	$P = A_0 \cdot {1 + e \choose i - e} \cdot \left[1 - {1 + e \choose 1 + i}\right]^n$

1 If we know the rate of interest (i) at which a person or organization is willing to trade present dollars for future dollars, we can compute "time-equivalent" values for that person or organization, using discount formulas such as those listed in the table. For example, suppose we want to know whether a company would find it preferable to pay \$1000 additional in initial costs for a building system in order to avoid paying an annual repair bill of \$250 a year for the next 10 years, and suppose that the company requires a minimum return on investment of 12%. From the schematic illustration, we can determine that the UPW equation is the appropriate discount operation. It is applied as follows:

$$P = \frac{$250 [(1+0.12)^{10}-1]}{0.12(1+0.12)^{10}}$$

P = \$1413

We find that the present value of the savings (\$1413), that is, the present value of the future repair costs avoided, exceeds the initial expenditure needed to avoid the cost (\$1000), and therefore conclude that the initial investment is cost-effective for this company. Tables of "look-up" factors and computer programs and calculators with special functions to perform the discount operations make this a simple computational task.

ere:

= present sum of money.

= future sum of money equivalent to P at the end of N periods of time at i interest or discount rate.

= end-of-period payment (or receipt) in a uniform series of payments (or receipts) over N periods at i interest or discount rate.

= initial value of a periodic payment (receipt) evaluated at the beginning of the study period. = $A_0(1+e)^t$, where t=1,...,N. = number of interest or discount periods. = interest or discount rate.

= price escalation rate per period.

Note that the USF, UCR, UCA, and UPW equations yield undefined answers when i=0. The correct algebraic forms for this special case would be as follows: USF formula, $A \in PN$; UCR f t-1 $\overline{(1+i)^I}$

1 DISCOUNT FORMULAS

dollar paid or received today is not the same as a dollar paid or received in the future. A dollar in hand can be used to purchase goods and services, it can be invested to earn a return, and it can be used to pay off loans or to avoid borrowing costs. One hundred dollars invested today at a rate of return of 10%, for example, would amount to \$110 a year later, that is, $$100 \times (1 + 0.10)^{1} = 110 . Paying \$100 a year from now would be equivalent to paying \$91 today if the rate of return on the funds in the interim were 10%: \$100 x $1/(1+0.10)^1$ = \$91, and paying \$100 five years from now would be equivalent to paying \$62 today: $$100 \times 1/(1 + 0.10)^5 = 62 .

If the person or organization whose money is at stake would just as soon receive (or pay) \$62 today as \$100 in five years, it would imply that their Minimum Acceptable Rate of Return (MARR) is 10%, that is, MARR = $-1 + (\$100/\$62)^{1/5} = 0.10$. We would say that \$100 today and \$62 in five years are "time equivalent values" for this person or organization. Computing the present value of a future amount is usually called "discounting," and this term has come to be used in a general way for the process of adjusting cash flows to time-equivalent values. Several different discounting formulas are commonly used for calculating present values, annual values, and future values of cash flows (1).

Knowing an investor's MARR makes it possible to make informed choices for the investor among alternatives that entail different patterns of cash flows. The decisions can be made in keeping with the investor's willingness to trade present dollars for future dollars. Discounting cash flows is an important part of evaluating building alternatives because costs usually extend far into the future. Ignoring the times of occurrence and simply adding and subtracting amounts to find the net effect can lead to incorrect choices.

Putting LCC into Practice

LCC is put into practice with the following seven steps that identify, characterize, evaluate, compare, and select from design alternatives.

- 1 Specify the objective and identify any constraints. Careful delineation of the problem will avoid wasting time evaluating infeasible alternatives.
- 2 Identify alternatives that satisfy functional requirements and constraints. Since the outcome can be no better than the best of the alternatives considered no matter how sound the LCC analysis - the task of identifying good alternatives is of first importance. The alternatives should be compared against the functional requirements and constraints to make sure they comply. Any that do not should be eliminated at this stage.
- 3 Estimate data and establish economic parameters. Obtaining marketplace quotes for cost items is a simple, direct, and usually reliable method of estimating costs. Historical data is another source of estimates, as are cost guides based on statistical analysis of historical data. Examples of cost guides for estimating initial building costs and systems costs are those published by R.S. Means Company4 and Allan Thompson Publishers.5

Additional useful resources for data estimation are various databases maintained by government. Create New Input Data File
Edit Existing Input Data File
Print Input Data File Report
Print Detailed LCC Report
Compute Cash-Flow Analysis
Lowest LCC
Comparative Economic Analysis
Information on BLCC
Setup
Quit/Go To DOS

2 Main menu of BLCC lists major functions of the program.

One of these is accessible directly through the BLCC computer software (see sidebar). The U.S. Army Corp of Engineers' Construction Engineering Research Laboratory (CERL) maintains a maintenance and repair costs database that is useful for estimating the long-run costs of maintaining a wide variety of building components. The database is based largely on time-motion studies, with costs expressed as unit index values to which one can apply one's own labor rates and quantities. This enables the user to customize the cost estimates to fit more closely the specific application. Another source of maintenance and operating cost data is the Building Owners and Managers Association International (BOMA).

Future prices are derived automatically from today's prices by the BLCC computer program. This is done by escalating today's prices at a rate specified by the analyst. Note that it is important in specifying the price escalation rate to maintain an assumption about inflation that is consistent with the inflation assumption reflected in the specified value of the MARR (the higher the expected rate of inflation, the higher the rate of return an investor will require to be willing to invest today for a future return).

It is also necessary to establish various economic parameters that affect the outcome of the analysis. The MARR, or discount rate, of the person or organization whose money is at stake is one of the more critical parameters. Another parameter is the length of the study period. In addition, taxes can dramatically affect the choice of investments by changing the distribution of benefits and costs; in most cases, taxes should be taken into account in the analysis of building investments that are subject to them. Tax laws are complex, change over time, and vary by state. Up-to-date information from a qualified tax advisor is recommended.

Financing is sometimes an important element in an economic evaluation, but not always. For most building design decisions, in fact, it is better not to include financing effects in the comparison of alternatives, unless the terms are unique to each alternative. When financing terms are not unique to the investment under evaluation, the financing analysis should usually be separated from the project design choice in order to avoid confusing the economic attractiveness of borrowing money with the economic attractiveness of the design choice. For example, amortizing a present amount at a rate of 8% and computing the present value of the result-

ing loan payments with a discount rate that is higher, say 12%, will result in an amount that is less than the initial amount. This, however, does not mean that a particular building system has become more cost effective relative to its alternatives; rather it means that it pays to borrow money at 8% and invest it at 12%.

All of the foregoing elements (estimating future prices, determining the MARR, setting the study period, taxes, financing, and project selection guidelines) are covered in detail in the book Building Economics.⁸

- 4 Eliminate obviously inferior solutions or accept a superior one. Eliminate any alternatives that are clearly not economic, that is, those that have higher first costs, higher future costs, and lower durability than one or more of the others. By like token, look for an alternative that is clearly superior to the others, that is, it has lower first costs, lower future costs, and greater durability than the others. This will avoid unnecessary LCC analysis. Note, however, that it applies only if the alternatives are equally desirable on other grounds.
- 5 Calculate LCC for each alternative. If one of the alternatives is not clearly superior, calculate LCCs for the alternatives either by applying the formula or by running an appropriate computer program, such as BLCC.
- 6 Consider uncertainty. Because some if not all of the data are uncertain, the outcome usually is not certain. There is a risk that the alternative that is estimated to have a lower LCC relative to others, will, in fact, have a higher LCC. Furthermore, decision makers respond differently to risk, some being more willing than others to invest up-front in return for a given possibility of reducing future costs. To make decisions in the face of risk, information is needed both on the level of risk exposure inherent in the choice, and on the risk attitude of the decision maker. A number of techniques have been developed to help make better decisions under conditions of risk.

A simple, straightforward technique that may help is sensitivity analysis. While this does not tell the decision maker exactly what to do, it often sheds light on the decision by testing the strength of the LCC outcome based on other assumptions and data – particularly those that are less favorable to the alternative estimated to have the lower LCC. Sensitivity analysis entails recalculating LCCs based on other data and assumptions, usually with one value changed at the time. Performing sensitivity analysis is greatly facilitated by the BLCC computer program. Probability-based techniques for making building-related decisions under uncertainty are treated in detail by Ruegg and Marshall.⁸

7 Compare LCCs and make a decision. The last step is to compare the LCCs of the alternatives and determine the lowest one. Often the architect simply selects the designated alternative at this point and drops the others from consideration. However, there may be circumstances where it is better to convey the LCC information to others who make the selection decision. This may be done, for exam-

(continued from page 47)

creation of an input data file for each alternative building or system design to be evaluated. The input data file contains initial costs, operating and maintenance costs, replacement costs, energy costs, resale value, and data related to taxes and financing analysis. At the Main BLCC Menu (2), "Create New Input Data File" is selected for the first alternative. Later, when creating the input data files for the other alternatives, it is usually most convenient to retrieve and edit the previously created input data file.

When each input data file is saved, corresponding LCC computations are automatically performed and saved in an LCC output file. A summary report can be printed to either the screen, printer, or disk file, for later retrieval (3). A detailed report of the LCC analysis can be printed by selecting "Print Detailed LCC Report" from the main menu (4). It is also possible to generate and print a year-by-year cash flow report.

After the LCC analyses have been completed for two or more project alternatives, the LCCs for the alternatives can be compared to determine which is lowest. The alternatives are displayed in ascending order of initial costs, and the alternative with the lowest LCC is flagged (5).

A more detailed comparison between any two of the alternatives can be obtained by selecting "Comparative Economic Analysis" from the menu. Main cost components are displayed side by side, and the difference shown. Net savings, savings-to-investment ratio, and the adjusted internal rate of return are calculated for the alterative case relative to the designated base case.

ple, when the architect lacks direct knowledge of local markets that may have an impact on costs such as the quality of maintenance service available for the various alternatives. In this case, it may be preferable to rank the alternatives in ascending order of their LCCs, perhaps deleting the worst from the list, and give the builder greater flexibility in making the selection. Another situation that may call for ranking the alternatives and deferring the choice is when the building owner has a preference between the alternatives, but has not quantified the difference in preference. Having the LCC comparison usually clarifies the tradeoff and helps with the decision.

Flooring Alternatives Data

High-grade commercial asphalt tile, '8" (designer color)

Purchase and installation = $557.42\text{m}^2 \times \$26.587 /\text{m}^2 = (6000 \text{ ft}^2 \times \$2.47/\text{ft}^2) = \$14,820$:

- \$67/carton with 45 ft²/carton
- \$0.98/ft² installation

Expected life = 15 years

Replacement cost = \$14,820 + \$1,500 floor preparation

Residual value = 0

Routine repairs = 2% of purchase and installation costs/every $2 \text{ yrs: } 0.02 \times \$14,820 = \$296$

Routine Maintenance:

- sweep daily = 3 hr/day x 240 day/yr x \$11.19/hr = \$8,057/yr
- clean and wax monthly = 557.42m² × 2.153 min/m²/mo × 12 mo/yr × 1/60 min/hr × \$11.46/hr = 6000 ft² × 0.2 min/ft²/mo × 12 mo/yr × ½60 min/hr × \$11.46/hr = \$2,750/yr

High-grade solution-dyed commercial carpet tile

Purchase and installation = $557.42 \text{ m}^2 \times \$57.264/\text{m}^2 = (6000 \text{ ft}^2 \times \$5.32/\text{ft}^2) = \$31,920$

Expected life = 10 years

Replacement cost = \$31,920 + \$750 floor preparation

Residual Value = 0

Routine repairs = 2% of purchase & installation costs/every 2 yrs: $0.02 \times \$31,920 = \638

Routine maintenance:

- vacuum daily = 3 hr/day \times 240 day/yr \times \$11.19/hr = \$8,057/yr
- shampoo quarterly = 557.42 m² × 2.153 min/m²/qtr × 4 qtr/year × $\frac{1}{40}$ min/hr × \$11.46/hr

Case Study: Selecting Floor Covering

The selection of floor coverings affords a straightforward illustration of how to structure an LCC analysis. This case study is hypothetical in nature and would no doubt produce a different outcome if based on a different set of assumptions, prices, and maintenance standards. Product endorsement is neither made nor implied.

The building for which the floor-covering analysis is performed is to be constructed in the Maryland suburbs of Washington, D.C. It is a commercial building, subject to Federal, state, and county taxes. Ownership is by a partnership of two people with similar financial circumstances.

Design Objective. The objective is to select costeffective floor covering for 557.42 m² (6000 ft²) of public space in the building that is now in the early design phase. The building is scheduled for occupancy in two years and the floor covering is to be installed shortly before occupancy. The designer has identified four types of coverings that would meet aesthetic and functional performance requirements, and the owner has requested that the most economical over the long run be selected.

Constraints. The owners wish to limit their initial expenditure for floor covering to no more than \$10,000 out of equity funds. Given their arrangements to finance the initial costs of the building with an 80% loan, this means that 20% of the initial cost of the floor covering should not exceed \$10,000. The owners also wish to avoid the disruption of frequent replacements, and, to that end, coverings that require replacement more often than every ten years have been disallowed. One of the owners does not like the appearance of ceramic mosaics or terrazzo, and has asked that these not be considered.

Alternatives. Four alternatives have been recommended by the architect for consideration: I commercial asphalt tile; 2 solution-dyed commercial carpet tile; 3 oak parquet flooring, with a polyurethane coating; 4 handmade quarry tile with a portland cement bed. Preliminary checking of first costs and durability indicate that the cost constraint and time-to-replacement constraint can be met by these alternatives.

MARR or Discount Rate. Funds are available at an annual interest rate of 9% to finance the construction and furnishing of the building. The owners

view 9% as an indicator of their opportunity cost of capital. This is the rate they will use to discount all future cash flows to a time-equivalent present value.

Study Period. The owners expect to hold the

Study Period. The owners expect to hold the building for a period of at least 30 years, during which time it will house their business operations. They wish to consider costs over a 30-year period for the purpose of making current design decisions.

Tax-Related Assumptions. The applicable Federal income tax rate is the marginal Federal income tax rate of the owners, 31%. State and local income tax is collected as a surtax on the Federal tax. At the margin, it adds an additional 7.5% to the Federal income tax rate. The property tax rate is assumed to be a nominal 4%, and the assessment rate is assumed to be 50%. The property tax rate is applied to the remaining value of the floor covering each year, reduced for wear ant tear and escalated for general price inflation.

Floor coverings lasting no longer than 15 years are treated as 7-year property for depreciation purposes, and a 200% declining balance depreciation method is applied. Those lasting up to 30 years are treated as 20-year property for depreciation, and a 150% declining balance method is applied. (The tax treatment presented in this case study does not necessarily comply with actual IRS requirements).

Financing. Eighty percent of the initial costs of the floor covering will be financed as a part of the overall mortgage loan placed on the building. The loan rate is 9%, and the term of the loan is 30 years. Financing is included here simply to demonstrate the financing module of the computer program. The loan rate and the discount rate are set equal to avoid the distortion that would otherwise result from combining the analysis of financing with the analysis of alternatives subject to the same terms of financing.

Cost Estimates. All costs are given in 1992 dollars and prices are assumed to increase at an annual rate of 3%. Estimates of purchase and installation costs were obtained from several local suppliers (other suppliers might supply the floor coverings at different prices; prices cited here are used only to illustrate the method). Routine repair, maintenance, and replacement costs were based in part on published estimates and in part on supplier quotes. A labor rate of \$11.19/hr is assumed for routine janitorial services, and a rate of \$11.46/hr for "special" janitorial services.

Calculate LCC with BLCC. A "Summary LCC Report" (3) and a "Detailed LCC Report" (4) are shown for the asphalt tile alternative. A set of these reports was generated for each of the three other alternatives, but these are not shown. The LCC ranking for all four alternatives (5) reveals that the parquet flooring – though more expensive to purchase and install than the carpet and asphalt tile – is estimated to be have the lowest LCC.

Uncertainty. For illustration purposes, assume there is substantial uncertainty about the durability of the asphalt tile in the intended use, but relative confidence in the other input data. In particular, assume that the supplier claims that the tile will last

	PRE	SENT VALUE	ANN	NUAL VALUE
ASH REQUIREMENTS (AS OF OCCUPANCY)		\$2,647		\$254
INANCING-RELATED COSTS		\$10,928		\$1,050
NNUALLY RECURRING OWM COSTS		\$135,352		\$13,007
ON-AN. RECURRING OWM COSTS		\$1,723		\$166
PROPERTY TAXES		\$2,441		\$235
REPLACEMENT COSTS		\$6,233		\$599
LESS: TAX ADJUSTMENTS	(\$59,059)	(\$5,675)
LESS: REMAINING VALUE	(\$0)	(\$0)
POTAL LCC (WITHOUT TAX ADJUSTMENTS)		\$159,323		\$15,310
TOTAL LCC (WITH TAX ADJUSTMENTS)		\$100,264		\$9,635

3 SUMMARY LCC REPORT: ASPHALT TILE

PART II - LIFE-CYCLE COST ANALYSIS
DISCOUNT RATE = 9.0% Nominal (including general inflation)

ROJECT NAME: Asphalt Tile		RUN DATE: 03-12-1992/19:17:25			
		PRESENT VALUE (1992 DOLLARS)			
	CASH REQUIREMENTS AS OF OCCUPANCY				
	(EXCEPT PREPAID PROPERTY TAXES): DURING CONSTRUCTION	\$0 \$2,647		\$0 \$254	
	AT OCCUPANCY				
	SUBTOTAL	\$2,647		\$254	
6	FINANCING-RELATED COSTS (AFTER OCCUPANC	Y):		****	
	PRINCIPAL	\$2,179 \$8,750		\$209 \$841	
	INTEREST				
	SUBTOTAL	\$10,928		\$1,050	
	OPERATING, MAINTENANCE & RELATED COSTS:			612 007	
	ANNUALLY RECURRING COSTS (NON-ENERGY) NON-ANNUALLY RECURRING COSTS	\$135,352		\$13,007 \$166	
	PROPERTY TAXES:				
	PREPAID AT OCCUPANCY	\$265		\$25 \$209	
	PAID AFTER OCCUPANCY	\$2,176		\$209	
	SUBTOTAL	\$139,515		\$13,407	
٥.	REPLACEMENTS TO INITIAL CAPITAL ASSETS	\$6,233		\$599	
2.	INCOME TAX ADJUSTMENTS*:				
	TAX SAVINGS FROM O AND M COSTS TAX SAVINGS FROM DEPRECIATION:	(\$50,397)	(\$4,843)	
	INITIAL INVESTMENT	(\$3,714) (\$1,907)	(\$357)	
	REPLACEMENTS TO CAPITAL	(\$1,907)	(\$183)	
	TAX SAVINGS FROM INTEREST AND POINTS:	(\$3,041)	(\$292)	
	SUBTOTAL	(\$59,059)	-	33,675)	
	RESIDUAL VALUE OF CAPITAL ASSETS	(\$0)	(\$0)	
ž.	TOTAL LIFE-CYCLE PROJECT COST:	****		*** ***	
	WITHOUT INCOME TAX ADJUSTMENTS WITH INCOME TAX ADJUSTMENTS	\$159,323 \$100,264		\$15,310	

4 DETAILED LCC REPORT: ASPHALT TILE

COMPARATIVE PRESENT-VALUE COSTS OF ALTERNATIVE PROJECTS (Shown in ascending order of initial cost, * = lowest LCC)

PROJECT NAME	LCC FILENAME	INITIAL COST (PV)	LIFE CYCLE COST (PV)
Asphalt Tile	ASPHALT	\$2,911	\$100,264
Carpet Tile	CARPET	\$6,271	\$109,941
Parquet	PARQUET	\$6,990	\$94,667*
Quarry Tile	QUARRY	\$8,251	\$113,921

⁵ LCC RANKING OF ALL ALTERNATIVES

- 3 This brief report, which may be printed to the computer screen or in hard copy, provides a quick "bottom tine" LCC measure for the alternative. The results are shown two ways: 1 as a lump-sum present amount, and 2 as a time-equivalent annualized amount. Selecting the asphalt tile is estimated to generate costs over a 30-year period equivalent to paying an after-tax lump-sum amount today of \$100,264 or an annual amount over 30 years of \$9635.
- 4 The components of the LCC analysis are broken out here in Part II of the "Detailed LCC Report" (Part I prints out the initial assumptions and cost data used in the analysis). Section E, for example, shows that tax savings from deducting operating and maintenance (O&M) costs from taxable income reduced the after-tax costs of the tile by a present value equivalent of \$50,397.
- 5 This compares the various alternatives with respect to their estimated LCCs. They are listed in order of their initial costs (the part paid up-front out of equity funds). Parquet flooring is estimated to have the lowest LCC of the four considered.

LCC: The Video

If building economics seems too impersonal to you, maybe Least-Cost Energy Decisions for Buildings: Introduction to Life-Cycle Costing will help. Prepared by the National Institute of Standards and Technology (NIST) for the Department of Energy, this onehour video features Technics author Rosalie Ruegg explaining principles of LCC, while her NIST colleagues Harold Marshall and Stephen Petersen discuss risk, uncertainty, and use of the BLCC software. A case study looks at the energy/cost performance of storm and replacement windows. The video is accompanied by a 26-page workbook and costs \$19 (including shipping and workbook). Order from Video Transfer Inc., 5709-B, Arundel Ave., Rockville, MD 20852 (301) 881-0270.

30 years, whereas the cost estimating manual listed 15 years as the expected life. A greater durability for asphalt tile may make it LCC-competitive with the parquet flooring. Further examination with a sensitivity analysis (not shown) performed with a 30-year life for asphalt tile (instead of 15 years) shows that, even with the life extension, parquet remains slightly more cost effective.

Decision. At this point, the architect may feel satisfied that parquet is likely to be a cost-effective choice. Even if the cost estimates are not exactly on target, the results of the analysis suggest that parquet will be a reasonable choice from a cost standpoint. Now suppose that the building owner had, after all, a preference for quarry tile. In this case, the LCC results would be helpful by indicating the long-run cost penalty associated with selecting quarry tile instead of parquet. The LCC results would serve to test the strength of the owner's preference.

(continued from page 50) = $(6,000 \text{ ft}^2 \times 0.2 \text{ min/ft}^2/\text{qtr} \times 4 \cdot \text{qtr/yr} \times \frac{1}{60} \text{ min/hr} \times \$11.46/\text{hr})$ = \$917/yr

Oak Parquet, with Polyurethane Coating

Purchase and installation = $557.42 \text{ m}^2 \times \$60.202/\text{m}^2 = (6000 \text{ ft}^2 \times \$5.93) = \$35,580$

Expected life = 35 yrs

No replacement

Residual value = $5/35 \times$ purchase and installation costs = $0.14 \times$ \$35,580

Routine repairs = strip and reapply polyurethane coating every 5 years (15% of purchase and installation costs = 0.15 x \$35,580 = \$5,337)

Routine maintenance = mop daily (3 hrs/day × 240 day/yr × \$11.19 = \$8,057)

Quarry Tile with portland cement bed

Purchase and installation = $557.42 \text{ m}^2 \times \$75.37 = (6000 \text{ ft}^2 \times \$7.00) = \$42,000$

- \$5.00/ft² material
- \$2.00/ft² installation

Expected life = 35 yrs

No replacement

Residual value = $5/35 \times$ purchase and installation costs = $0.14 \times$ \$42.000

Routine repairs = re-grout & replace broken tiles every 10 yrs = 2% of purchase & installation costs = 0.02 × \$42,000 = \$1,260/10 yrs

Routine maintenance = wet mop daily = 4 hr/day \times 240 day \times \$11.19/hr = \$10,742

Conclusions

LCC can be of valuable assistance to the architect in making a broad range of decisions – from which floor plan to select to what furnishings to put in the building. New software, databases, and guidelines make it feasible for even those with little or no prior experience to add LCC analysis to their repertoire of design tools – and business services.

The BLCC computer program is easy-to-use, menu-driven software that runs on most micro-computers. It is available at minimal cost, and complies with ASTM standards and Federal requirements for performing LCC analysis. It prompts the user for the required data, helps structure the data in the necessary format, and performs LCC calculations. It provides printed reports which document the input data, show detailed cash flows, give LCC results, and compare alternatives. These reports, as printed, are appropriate for reporting to clients.

There is no longer a good reason not to use LCC analysis for selecting building designs, systems, and components. Wider use should result in long-term savings to owners and users of buildings.

Rosalie T. Ruegg

The author is senior economist for the Advanced Technology Program at the National Institute of Standards and Technology. She is coauthor of Building Economics: Theory and Practice and has taught courses for architects and engineers in the U.S. and abroad on life-cycle costing, construction economics, and energy economics.

This article is a contribution of the National Institute of Standards and Technology (NIST) not subject to copyright. Identification in this article of certain commercial products does not imply endorsement by NIST or that the products are the best available for the purpose.

References

- 1 "Cost Avoidance and Productivity in Owning and Operating Buildings," J. Woods, Occupational Medicine: State of the Art Review, vol 4., no. 4, Hanley & Belfus, Philadelphia (215) 546-7293, 1989, pp. 753-770.
- 2 "Office Building Systems Performance and Functional Use Costs," R. Ward, CIB Proceedings of

the Fourth International Symposium on Building Economics, Danish Building Research Institute, Copenhagen, 1987.

- 3 "The Economics of Architecture and Urban Design: Some Preliminary Findings," K.D. Vandell and J.S. Lane, Paper presented at the Allied Social Sciences Associations Annual Meeting, New York, 1988.
- 4 Means Building Construction Cost Data Book, R.S. Means, Kingston, Massachusetts (617) 585-7880, updated annually.
- 5 Design Cost and Data, LMR Publishers, Tampa, (813) 989-9300, quarterly.
- 6 Maintenance, Repair, and Replacement Data Base for Life-Cycle Cost Analysis (LCCA): A User's Guide to the Computer Program, Adjunct to ASTM Standards E 917, E 964, E 1057, E 1074, and E 1121, ASTM, Philadelphia (215) 299-5585, 1992 (in preparation).
- 7 The Downtown and Suburban Office Building Experience Exchange Report, Building Owners and Managers Association International (BOMA), Washington, D.C. (202) 408-2662.
- 8 Building Economics: Theory and Practice, R.T. Ruegg and H.E. Marshall, Van Nostrand Reinhold, New York (800) 926-2665, 1990, 486 pp.
- 9 Life Cycle Cost Data, A.J. Dell'Isola and S. J. Kirk, McGraw-Hill, New York (800) 2MC GRAW, 1983, 140 pp.

Additional Reading

ASTM Standards on Building Economics 2nd Ed. (compilation of standards produced by ASTM Subcommittee E06.81), ASTM, Philadelphia (215) 299-5585, 1992, 160 pp.

Comprehensive Guide for Least-Cost Energy Decisions, R.T. Ruegg and S.R. Petersen, SP 709, NIST, 1987. Available from National Technical Information Service (703) 487-4650.

Life-Cycle Costing Manual for the Federal Energy Management Program, R.T. Ruegg, HB 135, NIST, 1987, 267 pp. Available from National Technical Information Service (703) 487-4650.

Pay Now or Pay Later, Building Research Board/ National Research Council, National Academy Press, Washington, D.C. (800) 624-6242, 1991, 54 pp.

NIST's BLCC Software

The NIST Building Life-Cycle Cost (BLCC) Program User's Guide and Reference Manual, S.R. Petersen, NISTIR 4481, National Institute of Standards and Technology, 1991, 33 pp. (with version 3.1 software) may be obtained by contractors to Federal agencies from Kelly McNulty, Advanced Sciences, Inc., 2000 North 15th Street, Arlington, VA 22201 (703) 243-4900. Others may obtain the software from one of the following organizations: National Technical Information Service, Springfield, Virginia (703) 487-4650; PC Software Interest Group, California (408) 730-9291; MTS Software, St. Charles, Missouri (314) 441-1022; Energy Ware, Littleton, New Hampshire (800) 248-5148. Be sure to specify either 5.25" or 3.5" disk size.



Earth, Water and Fire **Advanced** Istonishing Tile of Spain Romanti Postmodern McCormick Center, Chicago, June 25-28, 1992 International Tile Expo The Pavilion of Spa Circle No. 343 on Reader Service Card

Technics Topics Three Design Research Books

Researcher Min Kantrowitz reviews a triple crown of recent books

that expand the turf of design research.

Architects want to create quality environments, and the promise of environment/behavior research has been that it will inform and facilitate that process. However, when such research in the past did not quickly provide enthusiastic architects with research-based design directives, initial excitement faded. As it has been replaced with renewed enthusiasm for exploring formal aesthetics, architects' interest in research on human actions in the built environment has, according to Russell Ellis and Dana Cuff. taken on "all the appeal of a draft horse in the Preakness." This situation is partially because of the glue-like presentation of research ideas and reports; partially because of the lack of opportunities to have the kind of highly spirited interactions that simultaneously stimulate research and enliven design; and partially because of the predominance of research approaches that are mired in the tracks of traditional social science paradigms.

While these classic research paradigms work well within some contexts, they often ignore other types of knowledge, devalue other ways of learning, and discredit other ways of understanding. Recently, as a result, in part, of post-structuralist questioning throughout all fields of practice and research, from anthropology to zoology, this is starting to change. Research paradigms are broadening to include issues of wider context, individual differences, personal experience, and inclusive definitions of history and culture. This set of changes promises to enrich the dry, hard ground of research by incorporating many more issues of interest to designers; but the pivotal

question is how to meaningfully include these issues in environmental design research.

Can environmental design researchers go beyond (or outside) traditional social science methods to find ways to examine these other types of knowledge and other ways of knowing? If so, can these alternative approaches to examining environments begin to contribute to architectural theory? Three recent books do: Visual Research Methods in Design by Henry Sanoff, Architects' People, edited by Russell Ellis and Dana Cuff, and Amos Rapoport's History and Precedent in Environmental Design.

Why should recent books in the environment and behavior research field be of interest to practicing architects? Haven't fascination with style, wrestling with overwhelming amounts of technical information, and coping with increasingly complex regulations in a tightening economy relegated social/behavioral/psychological issues in architecture to the level of mere functionalism? Why should P/A's readers care about three new books utilizing new research methods, when the existing methods - adapted from traditional social science - are well known and well used, although little loved in the design community? Why? Because these three books, each in its own way, leap giant hurdles toward examining the relationship between people and design, using approaches that make sense to the practicing designer.

Rapoport: Historical Precedent

Amos Rapoport's recent book, History and Precedent in Environmental Design, is the most ambitious of the three. It presents a new approach to studying the history of the built environment and to using analysis of these historical precedents in design. Rather than seeing environment/behavior studies as a set of applied methods for assisting design, Rapoport maintains that such studies can, through rigorous analysis, derive "lessons from historical precedents for the purpose of generalizing more validly about human and humane environments, thus leading to a new theory of design." Rapoport is undauntedly global in his thinking; he is interested in examining "all environments in all cultures covering the full time span."

Rapoport maintains that traditional architectural history misses many important sources by confining itself to the high-style Western tradition; by considering built environments as separate "things-in-themselves"; and by beginning with Egypt 5,000 years ago. The more complete the record to be examined, the "more it covers the totality of built environment, the more potentially useful it becomes." To illustrate his method, he presents a detailed case study of the perceptual characteristics of pedestrian streets, identifying specific design elements (for example, low percentage of visible sky; variation among minimum, maximum, and average width; limited length of views; highly visual overall texture of enclosing surfaces) that constitute a specific hypothesis about this type of space. Using 192 examples ranging from seventh millenium B.C.E. Turkey to Belgium in the 1970s, he identifies how these characteristics are present in pedestrian streets world-wide, maintaining that these would

Tech Notes

The 1192-page Proceedings and the 825-page Collected Papers of "Tall Buildings: 2000 and Beyond, the Fourth World Congress on Tall Buildings," are now available for \$85. A 40-minute videotape featuring prominent architects is also available. Council on Tall Buildings and Urban Habitat, Lehigh University, Bethlehem (215) 758-3515.

The Seismic Restraint Manual: Guidelines for Mechanical Systems from the Sheet Metal and Air Conditioning Contractors' National Association contains details and sizing tables for support and bracing of ducts and pipes. Anchorage is shown for a variety of structural systems, including concrete, steel, and wood. SMACNA, Chantilly, Virginia (703) 803-2980, 1991, 77 pp.

Hot Weather Concreting, 305R-91, is a new publication from the American Concrete Institute that deals with problems of and recommendations for handling and curing cast-in-place concrete under conditions of high temperature, low humidity, and wind. ACI, Detroit (313) 532-2600, 17 pp., \$13.95.

The Architectural Anodizers
Council has released its new
Anodized Aluminum Color Standards. The brochure contains six
anodized metal plates in colors
that any producer can provide to
maintain color consistency in
mixing sheet, coil, and extruded
stock. AAC, Wauconda, Illinois
(708) 526-2010, 4 pp.

"Many studies that have examined architectural meaning conclude that architects differ from non-architects in the constructs they use to evaluate buildings and in their evaluation of buildings."

then "become the precedents that might guide the design of pedestrian streets and other pedestrian movement systems." The photographs and drawings are compelling, and the analysis is a striking step toward answering one important design (and design research) question – what makes this place wonderful?

Sanoff: Visual Research

Henry Sanoff's Visual Research Methods in Design focuses on identifying visual methods for explaining the physical environment in ways that will enable researchers, designers, and clients to find a common mode of communication. Criticizing previous research, it states that such work often relied primarily on verbal depictions and perceptions of the physical environment, without paying enough attention to visual elements.

By expanding the visual information base, design researchers and designers can understand more about the form, action, and interpretations given to environmental settings. The central contribution of this book is a set of methods for understanding and producing such images, and for questioning their meaning. Sanoff's work, which has largely focused on participatory design methods in communities, has resulted in an increasing awareness of how nonverbal environmental messages are important to psychological well-being in a place. Visual Research Methods in Design gives a series of applied problem-solving approaches based on visual communication, for more fully understanding the relationship between people and specific physical surroundings. Each section of the book presents a different set of methods for describing and communicating features of the visual environment, along with specific examples – frequently from Sanoff's own work – of visual research and communication techniques.

For example, the chapter entitled "Imageability" discusses how mental images of the environment are the result of a two-way process, the actual physical environment and how that environment is interpreted. It discusses the process of explicitly looking for nonverbal cues in buildings, streets, and landscapes as clues to the values of the people who own and occupy them. He presents a specific discussion tool, the "Best Fit Slide Rule," which is designed to examine infill solutions and their consequences. "It was developed as a strategy for discussion among public officials, land owners, professionals, and citizens' groups.... The technique brings to light the numerous social and economic concepts that need to be understood by various interest groups The visual impact of the images is significant in conveying connotations usually associated with building alternatives."

Sanoff's book shows a philosophical commitment to active user participation in design. It presents an expanded menu of methods for structuring and focusing involvement. By using visual pathways to explore how people see, understand, interpret, and discuss the physical environment, these methods can more directly inform the process of design.

Ellis & Cuff: Architects' People

Architects' People, edited by Russell Ellis and Dana Cuff, explores

the question of who architects have in their minds as they design. This book is a series of essays about how architects conceptualize those who will people their buildings. It hopes to analyze how architects think about those people and to influence that thinking. The editors state, "We hope that, through discussions of the sort included here, architects might develop an informed and artful attitude toward the lives of the people they imagine into their designs: an attitude that might bring evernew living texture to the art of architecture." In their introduction to Architects' People, Ellis and Cuff acknowledge the importance of participatory methods, but focus on a different sort of participation: "Despite the reeflorescence of participatory democracy and citizen participation, social scientists have dominated the discussion about the features of people that ought to be or might be attended by architects. Few have asked architects what has guided their own thinking on this topic. If our premise is correct that no building can be designed without some noisy or quiet conception of its prospective use, then we can discover some set of architects' conceptions of people and social life attendant to their designing. This book seeks to display some of those conceptions, to sharpen the discussion, and to see where it may lead."

The first essay in the book, Diane Favro's discussion of man (sic) in Vitruvius and Alberti, identifies the historical roots of disdain for the ordinary user. "Both (Vitruvius and Alberti) focus on the elite – the aristocratic client and the learned practitioners. For them, the architect – or rather the ideal architect – possesses the qualities most highly valued by the society at large. People of lesser status do not matter." This is one influential root of the legacy of devaluing the client that Sanoff's book addresses. Vitruvius argues "that although even an ignorant layman, idiota, can recognize quality architecture, only the learned architect is able to conceptualize an unbuilt structure's appearance."

Alberti is revealed as an environmental determinist: "Alberti goes on to explain how the learned practitioner should use architecture to mold individual behavior and emotions. In designing for the clergy, he urges the architect to create model environments that provide neither the opportunity nor the inclination to be unchaste." In one of the most interesting essays in the book, Cuff summarizes and analyzes interviews focusing on the issue of architects' people that she held with seven thoroughbred New York architects. The differences in their conceptualizations of the issue are striking. Peter Eisenman states "Architecture is made by architects, for themselves - I do my work for me; there are no other 'people' for the architect," Hugh Hardy, on the other hand, states, "The client is not a vehicle for our vision, because we believe they know as much as we do about what and why they are building. There are two things I detest in our profession: self-glorification and running down clients."

In this same essay, James Polshek discusses cross-cultural design concepts: "...If you place a window above eye level where there is a view – the resulting

"In contrast to some early environment and behavior research... these books indicate a legitimization of style issues as valid subjects

for environmental design research."

frustration would be universal – a desire to see a view cuts across cultures. It is always important to distinguish between perceptual phenomena that are culture specific and those that are cross cultural."

Roger Montgomery's final essay, "Architecture Invents New People," discusses the development of person/environment relations as a new paradigm for the architectural design process. Rather than being limited to the users of the buildings, the domain has expanded so that this research now includes all the people around the building process, especially the architects. "Hidden in the talk about the architects' people lie clues no one can miss. What really excites these scholar-authors is the architect herself, as subject, in her role within the social process that produces the built environment." Ellis and Cuff's book illustrates the kind of relentless self-evaluation that characterizes a good design process; the questions it raises are important for architects at every stage of their training and practice.

New Subjects, New Methods

Each of these books has a different focus. The Ellis/Cuff volume examines professional designers of the built environment as subjects of research. Rapoport analyzes built artifacts across time, profession, and place, and uses environmental historical analysis as a path toward architectural theory. Sanoff looks at visual communication between users and designers in the process of planning environmental change. Yet all three share an interest in broadening the subject matter of

design research, and in increasing the validity of their findings through developing groundbreaking research methods. Each, in very different ways, examines how architects differ from people who are not architecturally trained.

Many studies that have examined architectural meaning conclude that architects differ from non-architects in the constructs they use to evaluate buildings and in their evaluation of buildings. Ellis and Cuff state that architects, because they focus on buildings, have their own distinctive tendencies as they model their inhabitants, for example, assuming that meaning and potential action reside in objects: "...the window wants to be in the corner."

In Robert Gutman's discussion, "Human Nature in Architectural Theory," (in the Ellis/Cuff book), he maintains that architects are particularly diverse in their acceptance and use of social theory; such eclecticism "...runs deeper among architects... because their basic commitment is to the visual realm, and statements composed in words are therefore less crucial for the success of their imaginative enterprise." This reinforces the relevance of Sanoff's attention to visual communication tools.

In contrast to some early environment and behavior research that often regarded architectural style as unworthy of scientific attention, these books indicate a legitimization of style issues as valid subjects for environmental design research. Sanoff states, for example, "It is evident that people may infer emotional and other qualities from styles, which Rapoport [in a 1982 discussion] describes as pragmatic meaning.

For those with an interest in architecture that communicates desirable meanings, continuing studies of the meaning inferred from style is important."

All the authors are employed by university architecture schools, and are thus exposed to, if not directly involved in, contemporary controversies about architectural theory and the philosophy of practice. They share traditional architectural pedagogical orientation toward case studies to illustrate their points of view, but their innovative approaches to analyzing and synthesizing these case studies leave many of the traditional approaches behind in the dust. These volumes demonstrate the results of post-structuralist thinking. According to Johanna Drucker, writing in the Ellis/Cuff volume, "Poststructuralism is largely concerned with examining the ways in which disciplines, systems, and discourses are manifest and articulated. Rather than assume the system, as in a structural mode, poststructuralism examines the assumptions and processes by which such a system can be conceived. It aims at deconstruction, taking apart and examining processes of support and structuring that make possible most of the institutional orders within which we conceive of and organize our lives."

Rapoport speaks explicitly about reframing the focus, content, and method for examining how people and the built environment interact. "Redefining the domain conceptually... changes the evidence used, the questions asked, and hence the approach equally dramatically."

These three books do just that, by expanding the turf of environmental design research. They all belong in the winner's circle! Min Kantrowitz

The author is principal of Min Kantrowitz Associates, Albuquerque, and an adjunct associate professor at the University of New Mexico. She sits on the editorial boards of the Journal of Architecture and Planning Research and Environment and Behavior, and is a past juror and four-time winner in P/A's annual awards program.

References

Architects' People, R. Ellis and D. Cuff, eds., Oxford University Press, New York (800) 451-7556, 1989, 291 pp.

History and Precedent in Environmental Design, A. Rapoport, Plenum Press, New York (212) 620-8047, 1990, 522 pp.

Visual Research Methods in Design, H. Sanoff, Van Nostrand Reinhold, New York (800) 926-2665, 1991, 239 pp.



SEE YOUR WAY

Nature carries an almost unlimited number of weapons in her arsenal. From the biting winter winds to the broiling summer sun. As an architect, you have never had an attractive alternative to shield you. Until now. Introducing Supersmart® Wood Windows and Doors from Weather Shield. This unique triple glazing option

COMFORTABLY

offers a striking advancement in thermal performance with an R-factor of 6.67. Triple glazing produces two airspaces which are filled with Argon gas. Then two surfaces are coated with Low E to reflect 95% of the sun's damaging UV rays. In tests conducted against 1 inch insulated glass, Supersmart windows gave a 48%

THROUGH

reduction in heating costs due to window loss. As well as a 35% reduction in cooling costs. But once the beauty of performance is appreciated, the physical beauty becomes even more appealing. Weather Shield is the only major manufacturer to offer a high-performance glazing option across our entire

ANY KIND OF

window line. Which offers you the utmost design flexibility, including the options of True Oak™ and Cherrywood™interiors. And to help you choose with confidence, we share our confidence: A written 20-year Limited Warranty. It's just one more detail that helps create the first perfect all-weather window.

WEATHER.

Supersmart Wood Windows and Doors from Weather Shield. For the name of the Weather Shield dealer nearest you, call I-800-477-6808 between 8 a.m. and 5 p.m., C.S.T.

THERE'S MORE TO SEE IN A WEATHER SHIELD WINDOW.

WEATHER SHIELD

WINDOWS & DOORS

*Test results are available upon request



The house phone that's truly at your beck and call.



The average house phone seems to just hang there in your entryway. About the only thing it does is buzz from time to time. Not so of the new Siedle System HT 611-01 House Phone.

Besides being simply beautiful in black or white, it's beautifully simple to operate. And thanks to Siedle's system technology each button has a lot of brain power. Number 1 opens your door, of course. And the others go on to do a whole lot more.

With the Siedle-Vario® entryway system, you have a complete security center right at your front door. With customized features like call buttons, light switch, door loudspeaker, illuminated house number and sharpeyed CCD Siedle video camera.



With six additional functions for you to choose from, you can adapt it to your individual lifestyle. You can communicate from room to room with a clarity of sound that's assured by the Siedle electret microphone. At the push of a button you can open doors, operate gates, raise blinds, control lights and more besides. With the Siedle System House Phone you can take life a lot easier. To find out more, send in the reply coupon – or call 800-874-3353, fax 215-353-9716.

***	ma	m				_		
Ju	μu		_	_	_	_	_	-

Send to: Siedle Communication Systems of America, Inc. PA 5, 750 Parkway, Broomall, PA 19008

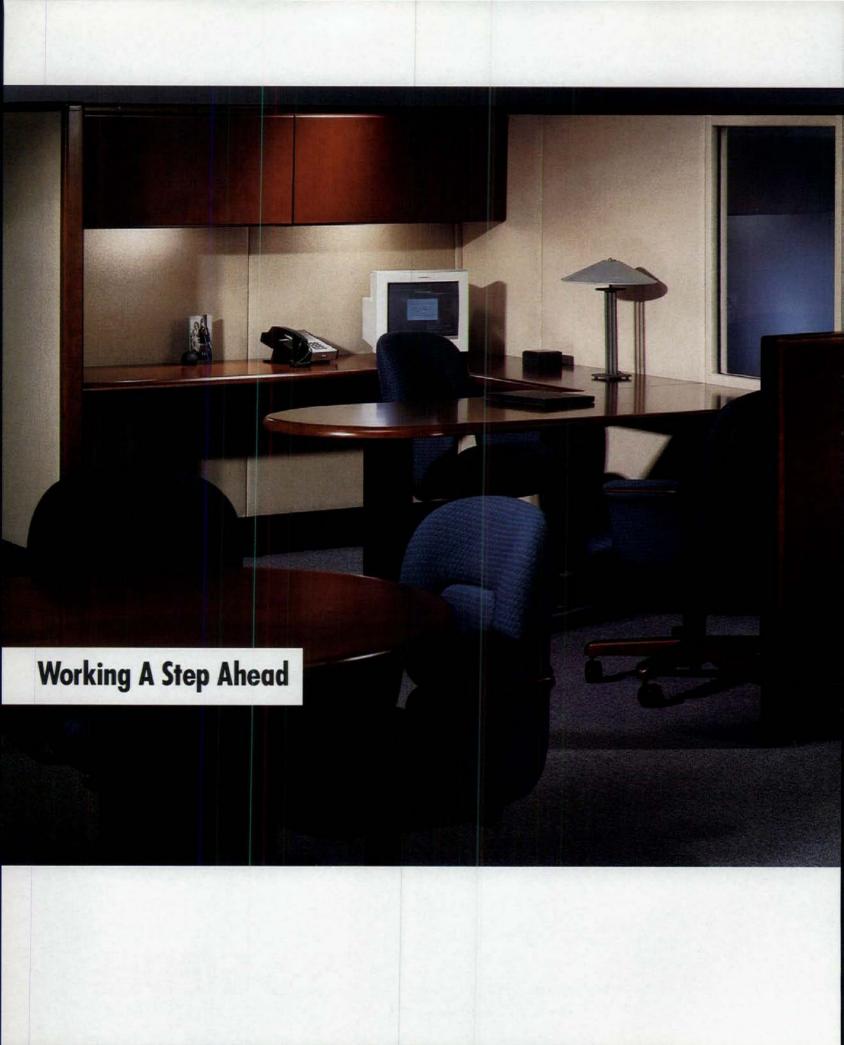
Please send me further information on Siedle communication systems.

Name				
Address				

State/Zip code _____

Phone





In today's demanding work environments, you need solutions that do more than just keep pace. You need solutions that give you the edge.

Our System 3.0 stands up to the challenge of change and puts you in control. Advanced electronic capability is built in and a multitude of configuration options, in both all-wood and wood/metal componentry, provide maximum flexibility to address a variety of corporate applications.

With so many choices to stay a step ahead, it's time to put System 3.0 to work for you.

Panel Concepts Systems Work For You Now And In The Future



From spacious, multi-function offices (left) to compact, focused work areas (above), System 3.0 suits a wide range of applications.

TISCHLER WINDOWS AND DOORS. UNCOMMON. UNCOMPROMISING. TISCHLER UND SOHN Made in Germany since 1888. Three Greenwich Office Park 51 Weaver Street Greenwich, CT 06830 USA Telephone 203/622-8486 Telefax 203/622-8558 Toll-free 800/282-9911 Circle No. 323

65

69

77

Practice Architects and Power

Professor Sharon E. Sutton of the University of Michigan argues that the profession's

lack of power stems from its deficient knowledge base.

Power, Knowledge, and the Art of Leadership

[We welcome readers' comments on the position taken and the proposals made in this essay. Comments will be published in the August issue. –Ed.]

During the affirmative action years of the late 1960s, we African-American students who had been recruited to Columbia University's School of Architecture spent endless hours discussing this profession's powerlessness to affect the built environment in any significant way - a powerlessness that seemed to make it especially difficult to serve our community or attract our people to the field. It was depressingly apparent to us that even "guru" architects were upstaged by developers, real estate tycoons, and politicians. For this reason, more than a few of the African Americans who studied architecture during this period opted out of the field to pursue careers in law or business.

Today as demographers point to increasing numbers of persons of color in the general populace, the possibility for recruiting minorities into architecture continues to be arguable. It is still abundantly clear that this predominantly white male profession is quite ineffectual in the larger scheme of things, and that many minorities who are interested in environmental issues believe that law and business offers surer routes to positions of influence. I fundamentally disagree with this perspective and would like to propose to those of you interested in the inseparable tasks of diversifying and empowering the profession that the route to all power is through knowledge. Attorneys have political power because they

have knowledge of the legal system that they, in fact, create. Financiers have economic power because they have knowledge of the structure of private enterprise that forms the basis of capitalism. Physicians have medical power because they have an almost frightening knowledge of and ability to control the human body.

If we architects had such a reservoir of knowledge about the built environment, we would not have had to suddenly learn how to design energy-efficient buildings after the 1973 Arab Oil Embargo. We would have seen the energy problem coming and would have provided leadership in reducing the country's dependence on fuel. If we had a knowledge base, we would not be volunteering technical expertise to social workers so that shelters can be built for the homeless. We would have established that housing is a basic civil right in the early 1980s and attorneys would have followed in our footsteps, bringing class action suits to prevent the spread of homelessness. If we had a knowledge base, we would have known better than to encourage developing countries to adopt the International Style which proved not to be international but Eurocentric and quite unsuited to the cultural and climatic needs of these countries.

If we had a knowledge base, we would be fully informed of the origins of the materials we use – who makes them, from what, and under what conditions – as well as their future disposability. If we had a knowledge base, we would confront policy makers with evidence of the relationship between the increasing privatization of public space and decreasing levels of personal safe-

ty. If we had a knowledge base, we would be at the center of K-12 school reform, showing how curricula, no matter how good, are upstaged by what children learn from the built environment. Needless to say, we architects lack such a knowledge base.

In 1969, the Architecture Program at the University of Michigan, where I teach, became one of four schools in the country to offer doctoral education. Twentytwo years later, it is one of 25 out of the approximately 100 accredited schools of architecture to offer advanced training. 1 Despite this modest growth of doctoral education, the goal of creating a knowledge base for the field remains unachieved largely because architectural research continues to be dwarfed by a Howard Roark vision of professional practice. In comparison to engineering - another applied field that relatively recently adopted advanced, theoretical study - architecture is not even on the map.

Or let's compare it to the other field of which I am a member, psychology, which is just a little over 100 years old. Practitioners in psychology are guided by about 50 different areas of theoretical and applied research reported in dozens of inexpensive publications. In comparison to the handful of jobs that were advertised last month in architectural publications, our professional association's newsletter advertised about 500 positions for all levels of employment. When over 15,000 psychologists met last summer at our annual conference, the San Francisco media provided prime time, front-page coverage of many of its events. Now, you tell me. How

Practice Points

Practice

Architects and Power

and Power P/A Prospects

Responses to Architects

The value of new construction in 1992 will be about the same as it was in 1991, approximately \$415 billion, according to the U.S. Department of Census Outlook Report for the Construction Industry. A predicted downturn in commercial buildings this year will be offset by an expected increase in remodeling and repair work as well as new construction in public service buildings. Call the Bureau of the Census at (301) 763-4100 for information on ordering census documents.

Some segments of the building economy are already showing signs of improvement, according to F.W. Dodge. Contracting for public works construction reached an all-time high in December 1991, and new housing starts were up 40 percent in January 1992 over the previous year, showing a significant increase in single-family house construction.

The demand for renovation is apparent in the nation's public schools, more than 70 percent of which were built before 1969. The survey by the American **Association of School Adminis**trators (AASA), found that overcrowding, structural defects, and poor ventilation systems in older schools interfere with learning and are leading to high maintenance costs. The AASA provides recommendations for more efficient schools. Contact the AASA at 1801 North Moore Street, Arlington, VA 22209.

"To separate the art and science of building from the social and political context in which they occur is to further distance ourselves from those decision-making processes that do more to shape the built environment than the design of isolated objects ever can."

is it that an emerging field – one concerned with something as abstract as the human mind – has become so essential to society while architecture, which is at the center of our everyday lives, remains in the shadows? It is underpaid, limited in opportunities and impact, and quite unable to attract, or serve, a multicultural society. What is blocking our growth?

Howard Roark and Other Mindless Fairy Tales

Stanford Anderson provides one clue in distinguishing between the profession of architecture and the discipline of architecture. According to Anderson, the profession is bounded by a particular client's needs and a range of other project constraints, while the discipline is that collective body of knowledge which is unique to the field but unfettered by the requirements of a specific commission.2 Clearly, it is the discipline that offers the greatest possibility for leadership for it is in this mode that we can anticipate a future need or goal in a way that we cannot as practitioners. Regrettably, there is an insidious resistance to allowing the discipline to blossom.

In academic circles, the most seductive resistance comes from the part of Anderson's argument that calls for a knowledge base that is uniquely architectural – this despite the realities of practice, where the ultimate challenge is that of drawing from many disciplines to effectively alter the fabric of the built world. While I cannot deny the need for establishing autonomy (and will later suggest a means of doing so), attempting to do so by carv-

ing out a knowledge base that is unique to architecture defies common sense. Real-world problems – especially those related to the built environment – are not neatly sliced into disciplines. As Harlan Cleveland, former Rhodes Scholar and U.S. Ambassador to NATO, writes:

"The Scientific Revolution, and

"The Scientific Revolution, and its younger sibling the Industrial Revolution, were made possible by our capacity to divide into separable disciplines and proven methods of inquiry.... But in the latter part of the twentieth century, we came to realize that most of our troubles stem from neglecting the interconnectedness of knowledge and the interdisciplinary character of all real-world problems."

To separate the art and science of building from the social and political context in which they occur is to further distance ourselves from those decisionmaking processes that do more to shape the built environment than the design of isolated objects ever can. Additionally, it ignores the fact that most of the precious little knowledge in architecture has been created by those with training in other fields, including Robert Gutman, Jane Jacobs, Clare Cooper Marcus, Leon Pastalan, and Amos Rapoport, to name just a few. While conditions in the built environment cry out for expansive knowledge, we fiddle away searching for a tower labeled "Architects Only."

Another resistance to building a knowledge base is revealed by Sherry Ahrentzen and Linda N. Groat who point to the undue centering of learning in architectural schools around the design studio. They write:

"While architectural practitioners have been accused of a 'cultural imperialism,'... we can see similar myopic practices in architecture schools' visioning of the architectural act, where the 'spotlight' is fixed on the design studio. This framing allows a sharp focus on the esthetic and geometric dimensions, and blurred vision on the surrounding components.... Once the spotlight focuses on 'the drawing board design,' the other characters, props, and actions on the stage become simply 'supporting cast.' "4

The preeminence of the design studio in the training of architects masks the diversity of talents that people bring to the field and, in the words of Jon Lang, allows us as a group to accept the myth that "if you're doing research, you are a failed practitioner."5 Students who are predisposed toward research are especially disadvantaged by the lack of emphasis on critical thinking and writing; however all students are diminished by the scantiness of intellectual excellence in the all-nighter milieu of architectural schools. Writes Diane Ghirardo: "Students are well aware that only their studio courses 'count,' and that when push comes to shove, time and energy must be given to the studios."6 This means that September's bright, thoughtful students turn into intellectual mush as November's charrette sets in, thus curtailing the possibility that they will hone their analytical abilities.

The preeminence of the design studio in schools across the country also affects the quality, workload, and productivity of faculty. Even though more aspiring architectural faculty are obtaining doctoral degrees, it is

clear that coveted positions are in the design studio where most novice scholars do not have a means to continue developing rigorous research skills in relation to their teaching. The studio's long hours relegates scholarly work to moonlight status while its one-on-one tutorial method eats up those economic resources that provide researchers in other disciplines with vital components of their continued development teaching release time and scholarships for gifted doctoral students who assist them with their work. The vicious cycle of a heavy teaching load followed by lowered research output and therefore less time and support for research is compounded by the unwillingness of architects to recognize research as a rigorous enterprise quite distinct from the information gathering associated with design. Consequently, scholars who have devoted considerable years to developing advanced investigative skills find themselves leveled on the floor of the studio where even the most casual inquiry qualifies as "research."

In the national arena, it is even more unlikely that researchers will find encouragement for their continued growth. Practically all opportunities for professional distinction through awards and publications are for architectural practice, not research.⁷ For example, last year my work in environmental education received the American Planning Association's Education Award and was published in that profession's monthly journal but could not be published in Architecture's recent issue on women because of its exclusive focus on practice. Nor are the picture books and slide lectures that

"What is needed is a new vision of the field in which there are greatly expanded career opportunities diverging from two equally valued paths.

A narrow path leads to practice while another much broader one leads to the research that creates a vital context for the few who practice"

dominate the field suitable formats for the type of rigorous exchange of ideas that result in socially constructed, consensually validated knowledge among scholars.

An exclusionary definition of architecture - the real Architecture - as design or practice not only leaves us without a knowledge base, it makes it less likely for persons of color and women to get into and be successful in the field by eliminating a whole array of opportunities that would appeal to the talents and interests of a more diverse group. An exclusionary definition leaves the choice to become an architect to those few people who wish to practice a "gentlemanly" art - to those few people who have the wherewithal to invest heavily in an education that yields a beginning salary comparable to that of a good secretary - to those few people who are content with being called to the table after vital decisions concerning the built environment have already been made.

We Need People Who Can Reason Like Crazy

A look around at the world of shrinking resources and opportunities should tell you that nonessential things will soon be eliminated. Despite Whitney Young's 1968 plea to the AIA, we have not even begun to make ourselves essential to government, industry, academia, or the general public. As we head toward the 21st Century what we have to offer the global knowledge society is not knowledge, but expensive styling that only a few can afford. Given this reality, you might ask why I struggle to recruit minorities and women

into this field. Why do I encourage my people - people who are already bearing the weight of racism and sexism - to take a front row seat on the Titanic? My response is that I have, as many oppressed persons have, an unflappable commitment to better the living conditions of my less fortunate sisters and brothers; and I believe that access to a quality built environment is a precursor to achieving all other Constitutional rights. My hopes as an African-American woman for a more equitable society are - like it or not - tied to hopes for a more diverse and empowered architectural profession. I am, therefore, tireless in trying to capture the imagination of a new generation of architects who are diverse not only in race and gender, but in class, ability, and world view. I am tireless in trying to inspire that group not only to be committed to creating safe, healthy environments for all peoples, but to acquire the knowledge to act on their commitment.

If architecture is to survive in a technologically sophisticated, multicultural society, it must come out of the cocoon of a medieval guild culture where each person learns at the side of another person, thus perpetuating all the intellectual limitations and cultural biases of the mentor. Simply having more people of color or women as mentors on a sinking ship is not the answer. What is needed is a new vision of the field in which there are greatly expanded career opportunities diverging from two equally valued paths. A narrow path leads to practice while another much broader one leads to the research that creates a vital context for the few who practice.

The faculty at the University of Kansas School of Architecture and Urban Design, among others, have instituted an undergraduate program in architectural studies. This unaccredited program offers a "rigorous liberal education for students who have general interests in the built environment" and precedes concentrated work toward the professional degree provided in an accredited three-year master's program.8 I believe that the Kansas plan is a step in the right direction, but I would amend the baccalaureate program to include introductory courses in research methods and statistics, and use this broadened curriculum as an intake point from which to direct students into either professional or academic studies. Some students would pursue a traditional master of architecture degree with its emphasis on studio work, followed by internship, licensing, and practice. Many others would earn a master of architectural studies degree with an emphasis on research, culminating in a Ph.D. and a career in scholarship whether in academia, government, or industry.

Adherence to quality in professional programs would continue to be regulated through the national accrediting process. However, standards of intellectual rigor in the M..A and Ph.D. programs would fall under the purview of those local and national bodies that oversee graduate education in all disciplines so that this aspect of architecture would be measured in relation to the intellectual standards upheld in other fields.9 In this way, architects could enter the ongoing intellectual discourse in other

disciplines on an equal footing, while still maintaining control over what is specific to practice.

This four-component program (B.A., M.A., and Ph.D. in architectural studies alongside an M.Arch.) should be just that - an indivisible whole. Economically, the components are indispensable to one another because the faculty-to-student ratio accommodated in the seminars and lectures of the larger B.A. and M.A. programs would provide the resources for the one-on-one teaching required in the smaller professional and doctoral programs. Intellectually, the three academic programs would provide a bridge between the rest of the university and the professional program. More important, upper-level components that branch out from a shared undergraduate experience would encourage students to simultaneously understand the interdependence of design and scholarship while respecting each endeavor as a distinct enterprise.

While I acknowledge that this scheme is but one of many that could lead to a more empowered, diverse profession, I am resolute in suggesting that it is critical for architects to accept advanced study, not as a "stepsister," but as a "partner" in design. Early training in research would reveal this option to students, thereby capturing those with diverse interests and resulting in a more highly competent generation of architectural researchers who have spent less time to earn their degrees. Research should not be a second choice for those who cannot "make it" into the precious few positions in design. Nor should it be seen as a necessary evil in order to get academic

who need our services, at the earth's ravaged physical resources, at the conflicts that are building as too many people try to share those resources."

tenure and promotion. It should be an exciting first choice for those who demonstrate outstanding analytical abilities – a choice for those who have a commitment to create the knowledge that is needed to better serve society, a choice that I see as especially benefiting persons of color because it will put us on the only real route to power.

Of course, any proposal for more rigorous education should have a matching one for less rigorous employment opportunities, especially if you consider how few people in the 21st Century will have access to higher education given its immensely increasing cost. Like the field of nursing which embraces a full expanse of caregivers from nurse's aids to nurse specialists, midwives, administrators, researchers, and so forth - architecture should embrace a full array of positions. Nor should we ignore the need to popularize knowledge about the built environment through public outreach. However, these issues are subjects for a different article; the call here is for leadership in the highest ranks of the profession.

Using Knowledge to Better the Human Condition

Will knowledge alone elevate architects to a position of influence? Wendell Berry adamantly affirms that it will not: 'The evidence is overwhelming that knowledge does not solve 'the human problem.' Indeed the evidence overwhelmingly suggests... that knowledge is the problem. Or perhaps we should say instead that all our problems tend to gather under two questions about knowledge: Having the ability and desire to know, how and what should we learn? And, hav-

ing learned, how and for what should we use what we know?"10

When I was a doctoral student in environmental psychology at the City University of New York, I learned to ask a critical question: "Will this knowledge create a better world and for whom?" That question is etched into much of the work in environmental psychology, a field that took shape during the Civil Rights era. Many environmental psychologists, especially faculty at the City University, were troubled that research seemed determined by disciplinary parameters instead of an outward look at real-world problems. Spurred by a commitment to make a difference in people's lives, they pieced together a knowledge base from such diverse fields as architecture, planning, anthropology, sociology, and geography as well as from several subdisciplines of psychology. Despite its interdisciplinary character, the field is distinguished by an agenda of problem-oriented research that is simultaneously rooted in social change theory and in active attempts to improve the everyday lives of those who are, in some way, disempowered.11 In a little over 20 years, this discipline has begun to move toward a position of leadership not because of artificial intellectual boundaries, but because of an explicit moral purpose.

At a conference entitled "African Americans in the Urban Environment" held recently at the University of Michigan, Taylor Culver, who switched from architecture to law, told the audience "I became a lawyer because you need juice (in the sense of the medium that supplies power) to bring about change, and architects just don't have any juice." I

say that we can get juice, but not by always binding ourselves to particular commissions, a feudal apprenticeship mode of learning, or self-serving scholarly work. We can get juice by looking outward at the disempowered who need our services, at the earth's ravaged physical resources, at the conflicts that are building as too many people try to share those resources. We can get juice by acknowledging our complicity, as a privileged group, in many of the current inequities. We can get juice by articulating a moral purpose or commitment to make the built environment better for more of the earth's peoples. If we do. I have no doubt that our numbers will naturally be enriched by many colorful and empowered voices.

Sharon E. Sutton, Ph.D., AIA

The author is an associate professor of architecture at the University of Michigan. She holds degrees in music, architecture, and psychology. She extends special thanks to Dean Robert M. Beckley, Associate Dean Linda N. Groat, and Professor Robert E. Johnson of the University of Michigan; and to the audience of the "People of Color in Architecture Symposium," moderated by Professor Dolores Hayden at Yale University. All provided critical feedback on the ideas presented here.

Notes

1 Groat, L.N. "Post-Professional and Doctoral Education in Architecture: Introduction to the Monograph" in Post-Professional and Doctoral Education in Architecture. Ann Arbor, Michigan: Architecture and Planning Research Laboratories, 1991, p.l. 2 Anderson, S. "Themes for a Symposium on Ph.D. Education in Architecture" in Post-Professional and Doctoral Education in Archi-

tecture. Ann Arbor, Michigan:

Architecture and Planning

Research Laboratories, 1991, p. 8.
3 Cleveland. H. The Knowledge
Executive: Leadership in an Information Society. New York, New York:
Truman Talley Books, 1979, p. 10.
4 Ahrentzen, S. and Groat, L.N.
"Rethinking Architectural Education: Patriarchal Conventions
and Alternative Visions from the
Perspectives of Women Faculty"
in Journal of Architectural and Planning Research, in press.
5 Lang, J. "Creating Theory

ning Research, in press.

5 Lang, J. "Creating Theory
Builders and Disseminators: The
Primary Goal of Doctoral Education in Architecture" in Post-Professional and Doctoral Education in
Architecture. Ann Arbor, Michigan:
Architecture and Planning
Research Laboratories, 1991, p.12.
6 Ghirardo, D. "Liberal Education: The Basis of a Contestorial
Terrain" in The Liberal Education
of Architects: A Symposium Sponsored by the Graham Foundation for
Advanced Studies in the Fine Arts.
Lawrence, Kansas: The University
of Kansas, 1990, p. 21.

7 The P/A Research Awards Program excepted.

8 Dormer, D. and Spreckelmeyer K. "Introduction" in *The Liberal* Education of Architects: A Symposium Sponsored by the Graham Foundation for Advanced Studies in the Fine Arts. Lawrence, Kansas: The University of Kansas, 1990, pp. 1–5.

9 The numbers of students in professional programs mean that the national accreditation board has much greater weight in determining a school's continued viability than have graduate boards. 10 Berry, W. People, Land, and Community in Multicultural Literacy. Saint Paul, Minneapolis: Graywolf Press, p. 42.

11 Thoughts drawn from an unpublished paper by Eric K. Glunt called "History and Environmental Psychology."

Architects and Power

These letters are responses to the first Architects and Power article in the February issue (p. 47).

Architects as Explorers

Power is important; it is awarded by a society as part of a package deal which includes credibility, trust, and privilege. It is more productive, therefore, to talk about the relational concept of empowerment than about the abstract idea of power.

Built form is an expression of two contradictory human needs: empowerment and the assertion of that power. On the one hand, we have a need for acceptance and inclusion as expressed by our conformity to culture and societal expectations in the effort to warrant power. On the other hand, we have a need to distinguish our individuality and assert our free will. The tension thus formed is what drives creative expression and propels civilization forward.

Artists (painters, sculptors, authors, composers, performers, architects, etc.) are those people most actively engaged in the exploration of ways to express that tension and occasionally bring about catharsis for the rest of us who are too timid to strike out on our own. In civilized society, artists are the scouts, the advance party, and they are emowered because of their ability to lead the rest of us into the future. We send them over the mountains and across the seas so that they will come back and entice us with what awaits.

But sometimes our explorers do not serve us well. When they become too fearful of leaving the bounds of conformity, they show us sights we've already seen, and take us nowhere. When they forget from whence they came, they lead only each other, egging on the foolhardy to go deeper and deeper into the woods and leaving the rest of us to fend for ourselves. In either case, they become superfluous and squander their power.

Architects are unique explorers. Their discoveries are more visible, more entwined with our daily lives, more involved with resolving the tension between conformity on the one hand and singularity of vision on the other. If the 39th Annual P/A Awards is any indication, however, honored architects have forgotten the source of their empowerment. It seems they have not only gone ahead; they've discovered the edge of the earth and blithely jumped off.

Juror Kemp may have lamented that among the entries they "had 222 houses, and they all had kitchens and bathrooms and living rooms and bedrooms, but discovery and exploration mean looking for a different way of living..." but as human beings, our evolution does not progress as quickly as her imagination would have us do. As long as we eat, excrete, entertain, and sleep, we will expect our shelters to have facilities for those functions, even if they put a crimp in her design preferences.

Explorers, like all leaders, derive their power from the willingness of others to follow. If the function of art is to explore the tension between conformity and individuality, then civilization requires innovations that solve real problems in ingenious ways. And if our explorers come back with visions of a land that is grotesque and uninhabitable, then we will not follow.

Lee Haugen, Graduate Student Iowa State University

Architects' Specifying Role

This contribution to your 1992 series of investigative articles on this subject is supported by 35 years (1955–1990) of experience in the Chicago area. As a commissioned manufacturer's representative who promoted only specification type products, I spent a high percentage of my effort calling on the large A/E firms in Chicago.

In the 1950s, all major manufacturers had full time salespersons calling on these firms to assist in selection of products and spec writing. This was the primary "point of sale," and very careful examination of product was done before inclusion in the specification. At most, three comparable products were mentioned and the term "or equal" meant only in the opinion of the architect. For those firms who did not have "in-house" engineers, there were formidable consulting firms who screened products very effectively.

Contractors and distributors rarely challenged the specifications. Architects took separate bids on major trades and supervised construction with full time personnel. Excellent buildings were constructed at a cost of \$10-\$20 per square foot. Then came the 1960s and 1970s.

Mandatory governmental regulations forced the A/E to abdicate his position as decision maker. Codes, affirmative action, performance specifications, legal opinions, and a multitude of restrictions took place. Distributors provided complete take-offs to contractors which promoted their products regardless of the specification. The point of sale shifted to them and fewer salespersons courted the A/E. Labor and material increased in cost, jobs ran

over budget and many sacrifices of quality were made to help the project proceed. Costs jumped to \$50-\$75 per square foot and quality declined.

The 1980s continued the trend of the 1970s. The A/E opened up his specifications even more for many of the same reasons. Contractors took control with inhouse estimators, design engineers, purchasing staff, and legal support. Distributors became brokers with reduced inventory as material was shipped from manufacturers direct to job sites. Construction managers, fast track, and computer design became commonplace along with design and build firms.

The point of sale moved to the contractor level, and price became more important than quality, service, availability, or specification. Salespersons only "touched base" with the A/E, mailed price sheets to distributors and concentrated on contractors. Job costs climbed to over \$100 per square foot, projects were rushed to completion, and quality continued to erode.

The 1990s have begun as a continuation of the 1980s ,but there are indications of a reverse trend. Costs approaching \$200 per square foot are causing investors to put control back in the hands of the A/E. Improved design techniques, CAD-CAM equipment, and computer assisted controls will allow the designer to give his client a quality product at a fair price. The salvation of this industry clearly dictates the power (control) must move back to the architect/engineer. Other than the owner, who else cares about the building? Andrew C. Wehrli Naperville, Illinois

"The architect's real power lies in our commitment to the fact that architecture is extremely important to everyone, whether consciously or subconsciously, and that if the architect fails to believe this, then certainly all those outside the profession will feel the same way."

Self-fulfilling Prophesies

As a sole practitioner in Manhattan, I am constantly confronted with the question of power and architecture. All too often I hear from colleagues who say "I can't make any money in this profession" or "I didn't go into this profession expecting to make any money," or "the architect is always blamed when things go wrong." I also hear architects lament that clients are impossible, that they don't appreciate what we do, and are totally unrealistic about the cost and timing of projects.

These comments foster the sense that architects are powerless and are losing more and more of the limited powers that we have. This way of thinking becomes a self-fulfilling prophesy for the profession. Even in your own column you refer to finding architects who are relatively well paid. Why is it that your magazine felt it necessary to say relatively and not just well paid? The architect's power lies in our ability to clearly define our expertise. What we do is unique and all too often we presume that the general public feels that they can do it just as well, if not better than, the trained professional.

The architect's real power lies in our commitment to the fact that architecture is extremely important to everyone, whether consciously or subconsciously, and that if the architect fails to believe this, then certainly all those outside the profession will feel the same way. Architects must have clarity! We must have clarity of vision, clarity of purpose, and clarity of desire. When architects feel that we can be compensated only so much, we are subconsciously relaying that

what we do is not worth very much. We place limits on our power. Those negative perceptions translate into lower fees and diminished respect from not only those paying the fees but from the other members of the building team and even the general public. Sentiments that architects are unrealistic in our expectations also limits what can be accomplished and can lead to failure and thus a reduction in power. The opinion that architecture is apolitical is also limiting in that it fails to recognize a powerful force in making design decisions.

Architects' power lies in our commitment to explaining what the architect and only the architect can do. It is time for architects to focus on what we can do and what we are doing instead of concentrating on all the things that are limiting us!

Paul S. Gleicher, Architect

New York

The Architect's Influence

Your use of the word "power" bothers me. I much prefer the word "influence." To me the word "power" applies to those with great political and financial clout. When any project approaches the conceptural design stage, the people involved usually recognize the architect as the leader at this stage. The architect has assimilated the input of those who have preceded him in the development of the project, i.e., client, public planning agencies and financiers. He also has assimilated the design requirements of the client and his design consultants, i.e., civil, structural, mechanical and electrical engineers, and has incorporated their requirements

into the project. Because the architect's "plans" are the basis which these consultants follow in their work, the architect is the leader during this stage and has the most influence. However, the architect should not let his influence at this stage cause him to have an inflated opinion of his importance to the entire project.

In 1957, Time Inc. published a booklet titled "Building, U.S.A." about "the men and methods that influence architecture in America today." In it the people, organizations, and methods involved with producing a completed project are presented in some detail. They are presented as the real estate operator, lender, contractor, labor force, manufacturer, engineer, corporate client, public, and lastly the architect, in that sequence. I feel that when the architect realizes that the efforts of many people and organizations are involved with producing a successful project, his perception of his importance will be placed in its proper perspective.

The architect's financial involvement and risk are relatively small when compared to the risks of the others involved. Many of the risks taken by others depend upon the adequacy and thoroughness of the architect's work. He knows that any errors or omissions caused by his work may cause large additional expenses during construction or after the client begins to use the project.

I think that most of any dissatisfaction by clients with architects work could be avoided if architects would thoroughly understand the clients' requests, reexamine their work fairly and thoroughly, earnestly improve their professional performance, and avoid relaxing into sub-professional performance. In this way, architects could vastly improve their public image. Roland K. Kuechle, Architect Walnut Creek, California

Stars and Power

Your editorial "Star Gazing" and the companion article "Architects and Power" tapped a vein which I saw exposed at this year's AIA Grassroots in Washington. I wonder if we will ever know whether it contains ORE or BLOOD.

Self-doubt appears to dominate this profession, quite possibly as a reflection of the doubt that grips all of this country. What an opportunity for architects to use our skills as visualizers, designers, planners, collaborators, and consensus builders. Today, plans are being developed everywhere to rebuild our cities, to restructure our industries, to rejuvenate our economy. The country recognizes we must protect and respect our environment and allow it to heal. The profession of architecture is not leading this effort. One must wonder if architects are true participants in the process or are simply following the direction of others.

Power will be there for those who use their skills to produce quality in the cities, in the economy, in the environment. Those people, regardless of education, regardless of affiliation, will become real Architects. Those trained to be architects who do not will have become dress designers, have become....

The discussion P/A is starting with these articles is an appropriate one for the last of the millennium, for if we do not broaden our horizons and expand our

influence beyond what may have become mere decorative arts we may in the next millennium find ourselves a profession without value to or the respect of society. W.O. Neuhaus III, AIA Houston, Texas

Architects and Aristocracies

Architects in the past served their societies through aristocracies. While aristocracies were educated about aesthetics, they had many other important things to do and care about. They were naturally inclined to balance decisions regarding building with the life of the community since it belonged to them and they to it. The world functioned this way for approximately 5000 years, producing the civilizations of Mesopotamia, India, China, Greece, Rome, and Europe.

By chance an 18th-Century French revival of a Classical Greek civic form of government, called Democracy, combined with the 19th-Century invention of mechanization to decide that the previous 5000 years had been all wrong. The result in Europe was a furious and self-destructive search for a replacement, generating Facism, Communism, Modernism in Art and Architecture, several world wars, and an America which deduced that whatever it had been doing must have been right since it was the only one left standing.

The resulting confusion has separated those with the wealth and power to patronize us from those with the education and wisdom to understand and guide us. All the alienation and anxiety expressed in De-Con and Neo-Dada, the nostalgia of Po-Mo and the decadence of the Rats and the Mannerists is the result of a

society which seems to have lost direction and interest in its future. Vision lost ground to avoidance.

It's interesting that the Japanese, who managed somehow to combine industrialization, representative government, and traditional leadership have come to symbolize the questioning of the infallibility of our mercantile/consumer system. Will the first to realize the future of Architecture be Toyota? It's interesting as well that the Japanese seem to be much more interested in the future than we are. Perhaps it's because they sense they have one. Richard Arango, Architect Coral Gables, Florida

Power and the Environment

As our world and our perception of it becomes smaller and more familiar, we need to develop the insight and design vocabulary not just in ourselves as architects, but in the rest of the members of our community. As individuals we are continually being asked to make judgment calls about our environment (built and natural) that affect our quality of life. Voting in a bond for a new school, bridges, roads, open land, dams, recreation paths, or voting for a particular candidate who represents certain points of view that promote growth or no growth as the case may be, are issues that have become integral with our built environment.

Urban design, rural development, and land-use planning are all aspects of a holistic process that architects need to fully embrace. We have the creative ability to think through the rhetoric and offer solid design skills to meet these community problems. Power is transferring to the local communities as the Federal government has fewer resources to spend and the states each slowly transfer that same lack of funding down to the lowest denominator. Architecture needs to expand its definition, change its boundaries, and become part of a community. This would be a positive move, a change in structure and control by the elite to a broader base; it is already happening. Planning boards, zoning boards, design review committees, and city and town councils are recognizing the desirability of visual and creative thinkers in their midst. Landscape architects, urban designers, and architects are finally holding positions in government.

In an effort to shape our environment in a more responsible and physically meaningful way than we have in the past there are many new questions that need to be asked and thought out. The issue of saving our nation's wetlands does not sound like architecture at first glance, but is an example of what we are facing. If we intend to preserve our water quality and our wildlife habitats, there is much existing land that can no longer be developed or farmed. This forces the debate of how to maintain our agricultural land while ensuring that we do not lose more to development, and begins to involve the question of where do we live; higher density cities, less urban sprawl, tighter knit villages, more compact towns. With the crime and anonymity currently in the cities, it is hard to believe we could promote that, but whatever happened to our neighborhoods? There was a strength and support system in knowing your neighbor; there was a responsibility to the

community when we knew and recognized the person across the street! Perhaps it's time to rebuild from the center.

Architecture needs to be a tool in the hands of the people so that community planning decisions and land use are thought through holistically and objectively. Our understanding of space and how to define it to achieve our needs is unique; we have a role to fulfill in helping determine the direction our cities and towns choose to take. It's time to move out from behind the egocentric constructions of the past into the community leadership roles of the future.

Diane Elliott Gayer, Associate Architect The University of Vermont

Women and Power

I would echo your comments on the role of women in architectural offices, especially large offices. I worked for the largest Washington D.C./Maryland architectural firm for over 5 years and found no women were allowed into managerial roles, no partners in a firm of over 20 partners and associates, and a very sharp difference in the salaries of men and women. At one time, I supervised the work of a non-resident architect who was far less experienced, and by pure accident found out he made \$6,000 a year more than I did. Secrecies about salaries further contribute to these unfair practices and to women's reluctance to rock the boat and complain, for fear of losing our jobs. I won't remain in the profession for very many years longer - it's just not a "gentlemanly" sport anymore. Marlene Walli Shade Arlington, VA

"Carolyn's been wi

Gordon Chong is the owner of Gordon H. Chong + Associates, a 45person architectural practice located in San Francisco, California. He is president of the San Francisco Chapter of the AIA for 1991, and has been a director of the California Council of the AIA and president of Asian American Architects and Engineers.

Gudnesching

Carolyn Isseks is vice president of Dealey, Renton & Associates, an independent insurance agency based in Oakland, California. She has represented DPIC's unique insurance program of education and loss prevention services for over thirteen years. She is also a member of the Professional Liability Agents Network (PLAN), a nationwide group that specializes in serving the risk management needs of design professionals.

Jarolyn and Gordon met in 1977. "I was new and he was new," she says, "and we sort of grew together." Perhaps all clients don't take advantage of Carolyn's brand of thorough service, but Gordon does. "He's cautious," she says. "He tends to call us before he starts a project or gets into certain areas. He might say, 'We're thinking about a joint venture with another firm. How will that impact our insurance?" Then our contract analyst and I work together to give him some advice on short and long-term consequences."

On the account management side, Carolyn doesn't just wait for the renewal quote to come in. She's on the phone with DPIC—dealing with the underwriters, pointing out her clients' strengths, negotiating for the terms she needs. And she's persuasive.

"I expect a high quality of service for him—I want to be as professional as Gordon is. He emphasizes high standards in serving his clients. And we feel the same way." Carolyn also works hard to keep Gordon H. Chong + Associates informed about the many premium reduction opportunities available from the DPIC program.

Carolyn has a master's degree in education and began her working life as a teacher. The teacher in her still comes out when she's conducting a workshop panel on liability issues for one of the Bay Area AIA chapters or a brownbag seminar for one of her clients. "I love to see the light bulb go on in someone's head," she says. "The 'oh, now I know what you're talking about.' I think that's what I like about this job: I'm always teaching and getting close to people who, I think, appreciate what I have to tell them. They all have the same interests-they want to better their practice in a professional way."

Carolyn Isselse

Professional Liability Insurance for Design Professionals



The Professional Liability Specialist of the Orion Capital Companies

Design Professionals Insurance Company • Security Insurance Company of Hartford • The Connecticut Indemnity Company • Guaranty National Insurance Company • Landmark American Insurance Company

Available through an exclusive network of independent agents. Please call 1 (800) 227-4284 for the agent serving your area.

DPIC Companies, Inc. 2959 Monterey-Salinas Highway Monterey, California 93940

h us since the beginning.

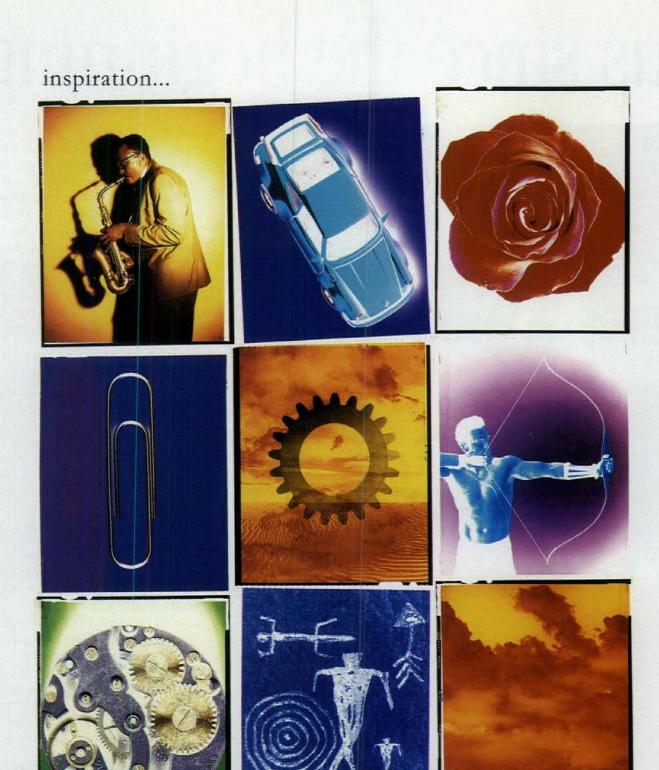


The independent agents who work with DPIC Companies work even harder for you.

Today, 15 years later, with a staff of 45, our firm and its needs have changed and the relationship has changed. In the early years our primary focus was getting work in, making ends meet. We were required by our clients to have insurance and had to struggle to find a million dollars in coverage. Carolyn did a great job of finding alternative proposals for a small firm—she brought us the best of a terrible situation in terms of cost.

Today our projects and contracts are bigger and more complex. Now we use Carolyn's agency, Dealey Renton, a lot for contract review and assistance. Our prospective client may be saying 'it's an unalterable contract-if you don't sign it in the next two days we're going to go to the next architect on the list.' But the agency can call our client's contract manager and say 'it's not in the best interests of either party to do this.' Then the feedback isn't coming from me, which would be totally selfserving. It's coming from Dealey Renton's contract review specialists who know industry standards. They've made little word changes which I think have made the difference, not only in terms of the insurability of the contract, but also from a business perspective.

For us the whole idea of service and quality assurance is key. It's been the focus of our firm since we started and it's very characteristic of what our clients demand. Our firm has never had a claim in its 15-year life. I believe that this is in part due to the preventative approaches to professional liability which DPIC and Dealey Renton advocate.



...realization

INNOVATION CONVEYS SCULPTURE.

Comfort becomes intrinsic.

And practicality rules

The office chair takes an evolutionary step forward.

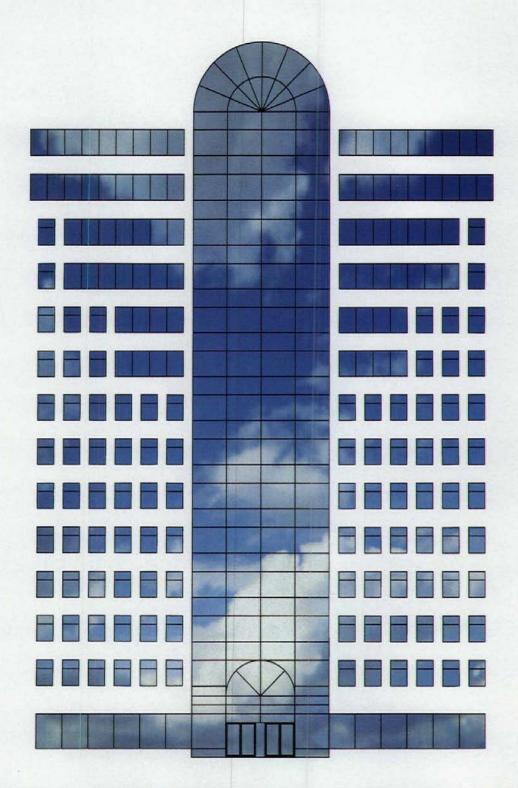
evo

INSPIRATION BY DON CHADWICK. INNOVATION BY DU PONT. REALIZATION BY AMERICAN SEATING.

WAMERICANSEATING

CALL 800-748-0268 OR WRITE US AT 901 BROADWAY NW. GRAND RAPIDS, MI 49504.

Circle No. 304 on Reader Service Card



Glazing from the ground up

Architects know EFCO as the company that makes more windows, more ways than anyone. But EFCO also manufactures a complete line of high performance curtain wall systems, storefront systems, entrances, ribbon window systems, and sliding doors. Make EFCO your single source for glazing from the ground up. Call toll free. 1-800-221-4169. In Missouri, 1-417-235-3193. EFCO Corporation. P.O. Box 609, Monett, Missouri 65708-0609.

PA Prospects

In the current economy, the retail industry has been hardest hit of all: growth in retail sales has been essentially flat for almost two years. As retailers scramble to reposition themselves for their very survival, there are, paradoxically, plenty

of opportunities for architects. But when an industry with so many players is in transition, the opportunities for selling design services may not be where they were in past years.

The trends in retailing faithfully mirror the changes in American economic life as a whole. Those hurt the most in this recession have been the mid-price retailers. Discounters and high-end retailers have done relatively well: scale and volume on the one hand and larger markup per unit on the other have allowed these businesses to remain profitable. Meanwhile, the staple of the industry for decades, the department store, is in danger of disappearing from the scene entirely: extreme predictions see nothing in ten years between J. C. Penney and small, high-priced specialty department stores such as Barneys New York. The middle ground in this scenario would be taken up with small independent shops in malls and other retail centers.

The major department stores have had to contend not only with the overall slowdown in retailing, but with leveraged buy-outs and mergers, which have left them with large amounts of debt. In many cases, owners have been obligated to interest payments that were based on overly optimistic revenue projections. The result has been an epidemic of bankruptcies among the most established and successful department store chains in American history: Hills, Ames, Carter Hawley Hale, Allied and Federated, R. H. Macy. All have filed for Chapter 11 protection since January 1990.

But the strategies the survivors are adopting suggest that the department store as we have known it may not be the same in the coming decades. Saks Fifth Avenue, for example, announced expansion plans recently, benefiting from a large cash infusion from its investor owners. While it will renovate its current stores, Saks also intends to open smaller, free-standing specialty shops along the lines of single departments in its large stores. This strategy will likely appeal to other large retailers as well.

The big winners have been the discount department stores, most notably Wal-Mart and K-mart. Department of Commerce figures show that in the period from 1987 to 1990, national department store chains increased sales by only 2.8 percent, while discount department stores increased their sales by 26.5 percent. Wal-Mart alone did \$43.9 billion in sales in 1991, up 34 percent from 1990.

P/A Prospects returns this month
with a look at
opportunities for architects in
the retail industry

Some of this growth certainly has come at the expense of local non-chain retailers, but with consumers more and more concerned about the value of every dollar, the big discounters are clearly taking sales away from regular-price chains. While the

design needs of the discount chains are more basic than most, and are handled by in-house design departments working closely with a small number of large production firms, low-end retail is undoubtedly an area of growth for architectural services.

The decline of the full-price department stores has put wholesalers and product manufacturers in a precarious position. Should a department store file for bankruptcy, the wholesalers become unsecured creditors, an unhappy designation that puts them last in line to be paid. And even if department stores appear to be operating normally, manufacturers may have difficulty getting payment for their products in a timely and reliable manner. Add to this the reduced traffic in many department stores, and it is clear that manufacturers are looking for other ways to bring their products to the marketplace. Many name-brand manufacturers and wholesalers have opened their own retail establishments, first in outlet centers and more recently in malls and street locations. Accordingly, a whole new class of client is looking for store design services.

The retail landscape also continues to change. Mall construction has slowed to a trickle as most regions of the country have reached saturation, although mall renovation has picked up, as increased competition has led owners to upgrade and expand. In some cases – particularly where a mall has lost a department store anchor tenant – rather substantial reconfiguration is taking place. And factory outlet centers, where name-brand manufacturers sell their own products at reduced prices without the additional draw of a large anchor store, are growing and proliferating: there are now 276 outlet malls in the country, with 100 more in various stages of planning. As more up-scale manufacturers move into these centers, more intensive design services will be needed.

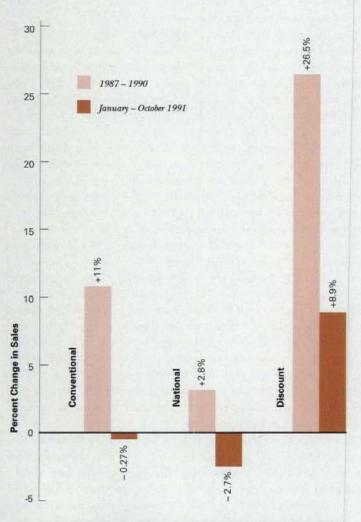
The profiles on the following pages are based on interviews with those individuals, in five different retail chains, who are in charge of hiring architects. Each of the organizations profiled has recently completed new prototype stores, and they exemplify what other, similar companies will be looking for as they adapt to the changes in the retail industry, launching new types of shops, or revamping their image. Certain concerns are shared across the board. For example, architects will need to understand the mechanics of shopping, with the attendant concerns of customer flow and display, of

"Low-end retail is undoubtedly an area of growth for architectural services."

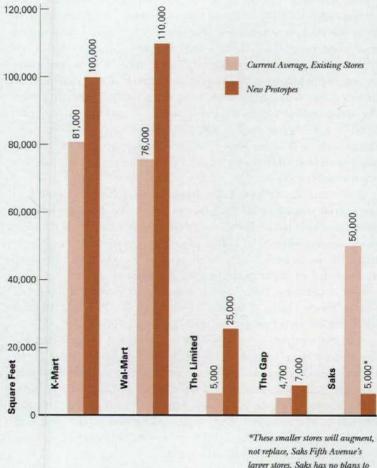
accessibility versus security, and so on. Cost control and durability are likewise common goals. But far and away the most important issue to these executives is that the architects they hire demonstrate an understanding of both the company and its products.

Other than these general concerns, the profiles outline the very different ways in which retailers prefer to work with architects. For example, Country Road Australia develops its prototype design concepts in-house and looks for outside design services to adapt the concepts to specific field conditions. Liz Claiborne, on the other hand, looks to its outside design consultants for concepts that are then tailored to individual locations in-house. As important as it is for architects to understand the company they are approaching for business, it is equally important that they understand the role the company will want them to play. Peter Morris Dixon

The author has several years' experience in marketing professional services and wrote the previous P/A Prospects feature on continuing-care retirement communities (Sept. 1992, p. 69).



Discount chains have been outperforming conventional and national department store chains for years (Source: Department of Commerce).



larger stores. Saks has no plans to stop building its traditional stores

As discount chains and lower-priced chains increase the size of their stores to accommodate increased traffic, some of the large conventional chains are starting to open new specialty shops in which they are doing well. (Sources: County Natwest Securities, CSG Information Services)

Hard worker.
Able to do 19 things at once.
Works well with others.
Requires no feeding.
And comes with its own set of wheels.
How many of your employees can you say that about?

Clean, crisp, wrinkle-free copies up to 36" x 33' from a variety of originals.

Automatically feeds originals from 11" x 17" through 36" x 33' for hands-free copying.

A 100-sheet cassette automatically feeds cut sheets of 18" x 24" to 24" x 36", and makes up to 19 continuous copies.

Mita has been making copies of blueprints** since 1934.

Copies on different media including bond, vellum, polyester film or tracing paper.

An optional roll unit handles rolls from 17" to 36" wide, automatically cuts and feeds sheets from 17" to 33', and makes up to 19 continuous copies.

To order your free video about the DC-3648 call 1-800-445-7988. DC-3648 Engineering Copier



[the image specialist]"

© 1992 MITA COPYSTAR AMERICA, INC.

Joseph Abboud

"I was really looking for someone who would be able to read my mind."

Joseph Abboud, the designer of fine men's and women's clothing, and the company that bears his name represent the highest end of the retail market. This company approaches the design of its stores with as much care as it does the creation of its products. Just as Abboud personally supervises all of the product the company offers, he finalizes the selection of the architects for his stores, and works closely with them on each project.

When he began to plan the Boston store, his first, Abboud undertook what he describes as a very informal search for an architect to work with. "I knew that there were basically two kinds of architects," he says, "architects who design in their own style, and the kind that I was looking for, architects who want to do what their clients want them to do. I was looking for an architect who could hear my ideas and translate them into architecture.

J.A. Apparel Corporation

650 Fifth Avenue New York, New York 10019 Contact Joseph Abboud



Boston store by Bentley LaRosa Salasky.

I was really looking for someone who would be able to read my mind."

His search led quickly to Bentley LaRosa Salasky, the firm he hired

his search led quickly to Bentley LaRosa Salasky, the firm he hired for the Boston store. Abboud was first introduced to the firm through his joint-venture affiliation with GFT USA Corp., who had worked with-Bentley La Rosa Salasky on several previous projects. "This firm wanted to know what I was all about; they asked me about my colors, my fabrics, and so forth. And when I asked them to slow down and talk in layman's terms about their design experience, they did. After we had talked informally a few times I realized rather suddenly that they just felt right." Abboud talks especially about the architects' manner – "young, free-thinking, relaxed" – when asked what appealed to him about the firm. The choice has been amply justified: Abboud and principal Franklin Salasky have developed a close relationship, and the firm has gone on to design Joseph Abboud's New York showrooms and the various new stores he is working on now.

The consistency of Joseph Abboud's product line from year to year gives the company the opportunity to create stores that are not simply neutral backdrops for the clothing but rich, textured environments for clothing with the same qualities. The palette of the store is close to the palette of the clothing: heavily patterned wood and stone complement the fine fabrics, and the kilims which Abboud takes as inspiration are scattered on the selling floor. Suit fabric is used for upholstery, shirt fabric for curtains. The architects have created an

environment that seems to have come from Abboud's own hand.

Abboud's background in both design and merchandising gave him fairly clear ideas of how he wanted his store to be laid out and what atmosphere would work best. His temperament keeps him interested in every detail. Yet he recognizes his limitations and looks to the architect when he does not know what he wants. "It was very important to me in the Boston store that the lighting be dramatic but that the ambient lighting also be highquality so that our customers could appreciate the textures of our fabrics," he says. "I had no idea how to accomplish it. I only knew it has always been a problem in other stores." As Abboud describes it, Salasky understood his mission and went away and solved it. "I don't know whether he knew how to create this lighting before I came along or whether he learned it in the

course of designing the project," Abboud says, "but it really doesn't matter. When I told him what I wanted, he simply said 'Okay, now I know what I have to do.' I want the new J.O.E. stores, which will carry a more casual line of menswear, to be more bright and sunny, and I know that Franklin will know what I mean. He really has learned to read my mind."

This symbiosis is perhaps as close to the traditional image of the relationship between architect and client as can be attained in a commercial setting. The closeness is palpable: Abboud refers constantly in discussing the stores to "Franklin," and his colleagues later add that "Franklin" was there just that morning. It is a relationship based on dedicated attention by the architect to the taste and business needs of a sophisticated client. Where Salasky used to have to bring eight or ten materials samples for Abboud to choose from, he now brings only one or two, and he usually hits the mark. And though the design of the stores is impeccably carried through from overall concept down to the detailing, the architect has not imposed his own style, but has subsumed it in a commitment to Abboud's.

The relationship is a success for both parties. "Franklin knows he will always get the first shot on any project I have, and we both know each project must be better than the last," says Abboud. "And," he adds, "we are our architects' best advertising. People are constantly asking us for their names."

Styled for optimum beauty and design versatility

Engineered for sanitary, wet and harsh environments

Exclusive melamine overcoat over solid core panels for better performance

Unique, corrosion proof, colored HEWI nylon fittings

The only all solid core locker available



KEMMLIT







300 Airport Executive Park Spring Valley, NY 10977-5238 1-800-452-7925 • (914) 425-4000 (NYS) Fax: (914) 425-6156

W&W SALES LTD. - WEST 3086 Gertrude Street Riverside, CA 92506-4323 (714) 784-4718 Fax: (714) 784-8518

SPECIFY A CEILING YOU COULD DANCE ON.



CAST LASTS.

CAST WITH THE NATURAL NEW LOOK, CELOTONE HANDCRAFTED QUALITY TRANSLATES TO ENDURING STRENGTH WITHIN.

One would have to defy the laws of gravity to dance on a ceiling, but that's missing the point.

The point is this. Ceiling tile should be both beautiful and durable. That's why Celotex makes Celotone™ Cast. A premium product for premier jobs. These panels are cured *up to four times longer* than conventional ceiling products, resulting in lasting strength that preserves and protects the original beauty from potential damage.

Celotone Cast also provides a variety of new looks with fine textures, integral colors and many scored designer patterns. The fissuring process is completely natural and not a result of a "machine stamped" impression found in ordinary ceilings. Their durability will protect the beauty long after other ceilings no longer look good enough to dance on.

So, on your next premier project, specify the new look that lasts. Celotone Cast.



THE FIRST NAME IN CEILINGS (813) 873-4498 or FAX (813) 873-4103

Circle No. 380 on Reader Service Card

Country Road Australia

"Clear drawings are particularly important in retail."

Country Road Australia has been in the United States for four years, and currently operates 21 full-price stores and 5 outlet locations. Almost all of the stores are in malls, and they average about 3000 square feet. Country Road is in the process of introducing a new prototype, which will be used for all future stores and for the renovation of their six original stores. Rick Schryber, who as construction manager for the chain is responsible for procuring architectural services for all of the U. S. stores, explains that this new prototype design comes, as did the first one, from a staff architect working in-house in Australia, and that the job of the American architect is simply to implement it at each location.

Country Road selected the firm it continues to use on all its projects, Planned Expansion Group of White Plains, New York,

because the company needed a firm that clearly understood the construction process and could control it adequately. For Schryber, who worked on the Country Road Australia projects at Planned Expansion Group before coming over to the client a year ago, the objective now is to complement his own expertise with a firm that can put together a set of construction documents that are both comprehensive and comprehensible. "A design firm that understands the realities of the retail business must understand this: general contractors whisk through the drawings," he says. "Clear drawings are particularly important in retail, because a store is such a boom-boom-boom type of construction job. The drawings must be in a logical order, with all appropriate cross-referencing."

One problem that Country Road had with a previous design firm involved the use of an inappropriate scale. The reflected ceiling plans were drawn at \(^1/8\"=1'0\"\), so that the recessed downlights, which were 6\" or 8\" in diameter, were not discernible. When contractors dimensioned off the drawings, costly mistakes resulted. Schryber wants to work only with architects who have hands-on experience with how the drawings are actually used in the field. "The architect needs to think, 'How can I represent what I have in my head in two dimensions so that the guy who will build it in three dimensions will build it as I see it?" he says. "For example, sometimes a small axonometric drawing can convey information about how to construct a certain detail that an elevation or section view cannot."

Representation of design in drawing form is indeed Schryber's pri-

Country Road Australia

7601 River Road North Bergen, New Jersey 07047

Contact

Richard Schryber Director of Operations



A store for Country Road Australia by Planned Expansion Group.

mary concern: if there is one thing he would like to see in an architect's promotional material, it would be drawings to accompany photographs of finished work. He also appreciates testimonials from clients with needs similar to his own. "If they've done a number of jobs for a client like Polo or the Gap, and if they've been able to keep them happy, I can safely assume they've done a good job with their drawings," he says.

Schryber responds to strong visual images in a firm's marketing materials. A firm has to have done some retail, he says, to be considered. But the kind of design ability that he feels is relevant to retail stores is the ability to create a dramatic environment on a pedestrian scale. "A retailer must draw passersby into his store," he says, "and for this reason I like to see photos of

office lobbies, reception areas, or showrooms. But the ability to design a dramatic office building is clearly another talent entirely, and not relevant to a retailer's needs."

At an interview with an architecture firm, Schryber says there are three things he would like to hear. The first, of course, is that the firm is familiar with what happens in the field after their drawings are handed over to a contractor. Second, he would like to hear that the firm is cost-sensitive, meaning not cheap but rather efficient. "All firms are talking about this today, so I would recommend giving specific examples of how a firm has, for example, saved a client a significant amount of money by using a less expensive material where it would not be noticed by the customers," he says. The third thing is that the firm knows what Country Road Australia is all about, "who we are as a clothing company and what atmosphere we want to create – don't come in thinking we're just like Banana Republic."

In working with any retailer client, Schryber says, "the bottom line is service." As difficult as it may be to land a client, he believes that the day-in, day-out effort that keeps the client happy is harder. But he feels this should be any design firm's goal: "All the effort and expense of getting a new client is really not worth it for just one or two jobs," he points out. "I want to feel like I'm the only client going, and if I don't feel that way, I'll go elsewhere." But he knows that finding another firm takes his time, energy, and expense, and so he looks from the outset for firms with staying power. He is convinced that his colleagues at other companies do the same.

"We certainly didn't want someone who wanted to change everything around, and who would tell us that what has gone before is not good."

Swatch, the high-profile, trendsetting watch manufacturer, has recently opened, at key New York City locations, the first three of a planned 30 free-standing Swatch stores that will be constructed over the next three years. These stores build on the company's experience designing and implementing the small shops in department stores through which it does the bulk of its sales. The stores are intended to be highly visible presentations of the Swatch image, complementing rather than supplementing department store sales: "Department stores will always be our most important retail outlets." says Leslie Haelg, who is in charge of design for the stores. "But I believe more brands will establish their own independent shops because the greater the control a company can have over its image, the more it will make statements that will enhance the entire

sales effort." Swatch's free-standing

stores are owned and operated by independent jewelry retailers.

Image-conscious Swatch entered the arena of retail design four years ago, when ex-Memphis designer Matteo Thun was recruited to design some fixtures for Swatch shops in European department stores. Basic store-planning concepts were also developed at that time, including the highly successful strategy of allowing the customer to touch the product. "We have found this to be very important for sales," says Haelg. The "tester display system units," which resemble vending machines, were developed at this time to facilitate handling and close examination of the product without sacrificing security – a crucial consideration for a product that is pocketable. One year ago this same approach was adopted for Swatch shops in U.S. department stores.

From their conception, the independent stores were to be an extension of the design direction established in the department stores. "Consistency is very important to us," says Haelg. "The customer must always recognize Swatch." The design must reinforce an image that begins with the product itself and is most widely disseminated in the company's advertising. Thus Haelg began to look for a firm that could successfully adapt Swatch's formula to free-standing stores in this country.

Haelg began the search by talking to contractors and designers who had worked with Swatch on their department store shops and by asking for recommendations of architects. This process led to inter-

Swatch (a division of SMH US Inc.)

35 East 21st Street New York, New York 10010

Contact

Leslie Haelg Manager, Store Planning



A Swatch store by Edward I. Mills & Associates.

views with three firms that were presented with European designs and the components that Swatch wanted to incorporate into the stores. "We supplied these firms with information on our company and our products." Haelg says, "and we tried to see how well they had digested it." By asking the architects to brainstorm with her during the interviews, Haelg says, she learned both how each firm worked and how well they understood the philosophy of Swatch.

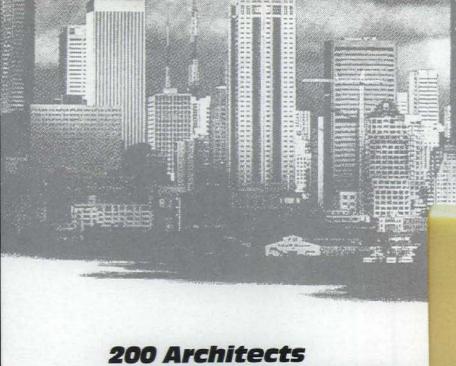
Haelg did have some preconceptions going into the interviews. For one thing, she wanted to see completed projects in an architectural style that fit with the Swatch style. And she knew she preferred a small firm over a larger one; "personal experience" had taught her that small firms were more appropriate for projects of such small scale. (The selling areas of the stores range from 500 to 700 square feet.) She

expected some retail experience so that there was a base of knowledge about such issues as flow, control, and security. She was also looking for the ability to tweak the European concept for the American market, which responds better to a warmer look and more natural finishes.

But it was equally important that the architects understood the philosophy of the brand and did not try to push their own style – especially since they would be working within an already established visual concept that the company had substantially invested in around the world. "We certainly didn't want someone who wanted to change everything around, and who would tell us that what has gone before is not good," says Haelg. "I have seen a lot of this kind of thinking from display and visual people I have interviewed."

Another important issue was the quality of the finished projects. Haelg visited completed stores by each of the firms she interviewed. Supervising construction is an integral part of the architect's commission, and Swatch, a watchmaker, is particularly concerned about quality of construction. The contractors on the projects were chosen in close consultation with the architect to assure a compatible team.

Another concern was cost. "The firm we chose, Edward I. Mills & Associates, really has the ability to find simple solutions without sacrificing quality or design," Haelg says. "This is something that I really appreciate.



and interior designers told us exactly what they wanted in the perfect commercial specification grade wall switch.

Introducing Decora Plus:

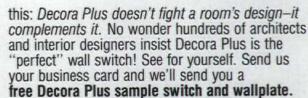
The "perfect" wall switch is here!

And as you'd expect, it's from Leviton. We're hardly a stranger when it comes to making high quality designer wiring devices and controls. After all, our extensive Decora line offers an unlimited variety of applications in six stylish colors. And now, with Decora Plus, we've taken the best and we made it even better.

Decora Plus offers an outstanding combination of specification-grade inside and pure beauty outside. Featuring a rocker panel that's molded softer for a more graceful look, Decora Plus is handsome enough to complement any environment—from the mailroom to the boardroom. The finish

is strong but flexible: smooth, too, for easy cleaning. Decora Plus wallplates are thinner and screwless. In fact, for your total convenience, Decora Plus wallplates are made to also fit right onto existing Decora devices.

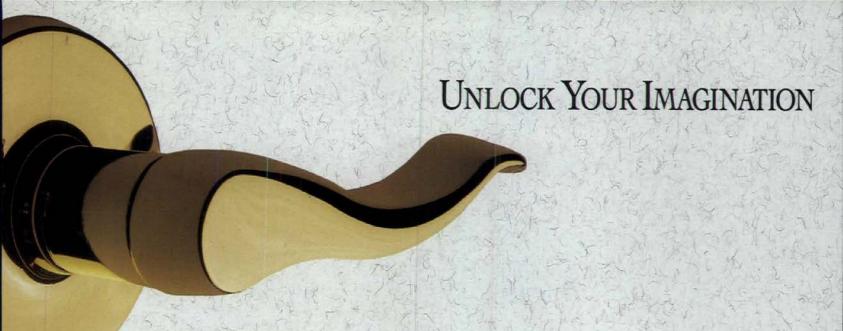
What it all comes down to is

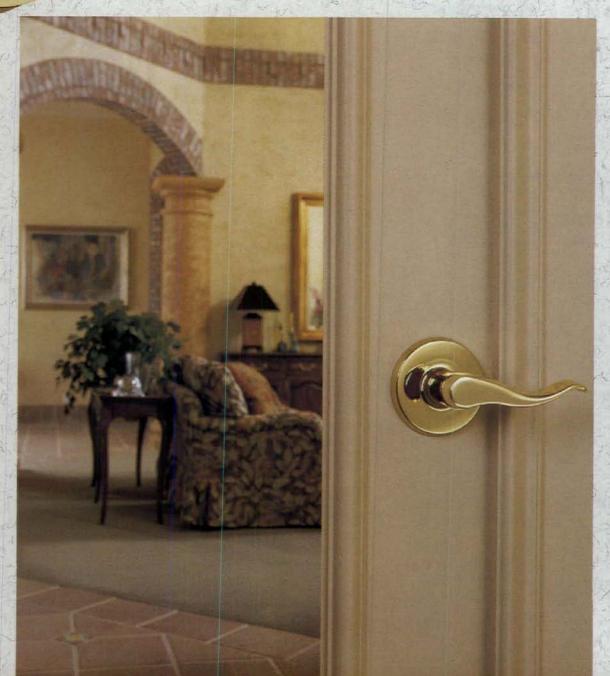


For more information, write to Leviton Manufacturing Co., Inc., 59-25 Little Neck Parkway, Little Neck, New York 11362-2591. For immediate attention, call 1-800-824-3005 or FAX 1-718-631-6439.

In Canada, Leviton Manufacturing of Canada, Ltd., 165 Hymus Boulevard, Pointe Claire, Quebec H9R 1G2, 1-514-954-1840 or FAX 1-514-954-1853.







Weiser Lock has designer knobs, levers and handlesets to provide the finishing touch to your every creative design—traditional to contemporary. Classic styling, quality construction and functional performance have been the hallmark of Weiser Lock products since 1904.

Exclusive new finishes and styles offer your clients security with a style to match your own.

Weiser Lock provides the key to unprecedented quality control and the fastest, most reliable delivery imaginable.

For a brochure or further information, call 1-800-488-LOCK.



A MASCO COMPANY

Circle No. 336

Liz Claiborne

"Architecture firms keep telling us they'd like to do more, such as project management or the graphics package, making things more complicated than they need to be."

Liz Claiborne Inc. has annual sales of over \$2 billion a year. Although the company has a number of free-standing stores, by far the majority of its sales are made through department stores. Liz Claiborne has more real estate within department

stores, more square footage of selling space, than any other company, and most of this space is in the form of Liz Claiborne concept shops, which display and sell the company's merchandise exclusively. These concept shops appear in over 95 stores nationwide and will appear in 70 more in 1992.

Liz Kane, the Director of Visual Merchandising, is responsible for the design work involved in positioning the company's products in department stores. She and her department are a service arm to the 19 divisions of Liz Claiborne Inc., which specialize in dresses, suits,

sportswear, shoes, handbags, menswear, jewelry, and so forth. Kane helps them find design firms to create concept shops that suit their individual needs while maintaining the overall look of Liz Claiborne. She does a lot of research, visiting other stores as she travels, reading in the design and retail press, immersing herself in innovative retail design and display. She also collects the names of firms whose work impresses her and often interviews them without a specific project in mind. Then when a division needs design work, Kane will typically bring in three firms to meet with the division people. "I let the division people make the decision of which firm to work with by whatever criteria they choose; most often it comes down to interpersonal dynamics," she says.

The company is unusual in that it hires many different design firms to work in the same idiom for the different divisions. "The use of light wood and black trim, which was originally developed with Hambrecht Terrell for our store-within-a-store concept, established our image in the consumers' minds, and it still looks timely," she says. The company will undoubtedly continue to work with this palette because it reinforces consumer recognition. "We need our environments to appeal to a great range of people, and we want them to be in a comfortable and easy-to-shop-in environment so they'll come back," Kane says. But underneath the familiar look is constant concern for the product: "More important than the design itself is how it works with the clothing," Kane stresses. "What must be on display is not just the clothing, but the ability for the customer to put together her own individual style from our collections." The same strategy applies to the various concept shops: everything works together. So although the overall look has remained the same over the years, Kane and various design

Liz Claiborne, Inc.

1441 Broadway New York, New York 10018

Contact

Liz Kane

Director of Visual Merchandising and Design



Shop in Rich's Perimeter Mall store in Atlanta by Hambrecht Terrell/Liz Clairborne, Inc.

firms constantly updated and improved the shops, creating new and better displays for an evergrowing range of products.

After a firm has been retained to work with a division to create a prototype concept shop, there is a period of exploration – "We

encourage working quickly to produce a variety of rough thumbnail sketches at first," says Kane – followed by a period of refinement of the agreed-upon design direction. Kane and her staff contribute their knowledge of merchandising: she supplies the architects with parameters – how many display groupings are needed, how many items must be accommodated on the sales floor, and what the ratio of folded to hanging clothing will be. "We help with our understanding of how the space should flow, based on the dynamics of looking around, trying on, and buying," she

says. "We are a very customer-responsive company, and, as we do with our product, we learn from our customers how they like to shop by asking them. We share this information with our designers," who are encouraged to come up with innovative ways to display new types of product – a backlighted wall of shoes, for example – all within the established palette. The design is brought to presentation level, and the division markets it to the department stores. Implementation and construction management are handled in-house by Kane's staff, or on occasion by a firm hired by the host department store.

Kane looks for architects and designers who understand Liz Claiborne's products and its customers. "Architects who come to see me should do their homework; they should look at our product and visit a variety of locations," Kane advises. "I like to hear how they assess our existing shops." How the firms communicate is also extremely important. "I look for good communication skills," she says. "We don't want someone who says, 'Here's what we think you should do.' They've really got to know how to listen." One problem that Kane says she has had with architecture firms in particular, as opposed to industrial designers or interior design firms she has worked with, is that they seem to want to expand their role on the project. "We try to be clear about the assignment," she says, "but architecture firms keep telling us they they'd like to do more, such as project management or the graphics package, making things more complicated than they need to be."

With some of the divisions showing enormous growth potential, with new product lines under discussion, and with international expansion likely, there are clearly opportunities for design firms to continue the evolution and refinement of Liz Claiborne's signature shops.

Edison Brothers

"When I interview a firm, I'd much rather learn about what a firm can do than what it has done."

Edison Brothers owns and manages a large group of boutique chains, including menswear, womenswear, and shoes, generally geared to the mass market. Their line of stores include Oak Tree, Wild Pair, Sasha of London, and Zeidler & Zeidler. Altogether, the company has about 2900 stores, which have an average footprint of about 2400 square feet. Walt Liebert, whose title is Vice President, Marketing, is responsible for the design of a dozen chains of clothing stores, and 160 locations of Edison's new Entertainment Division locations, called "Time Out."

In crowded malls and shopping streets, Edison Brothers' stores must stand out, and Liebert seeks design firms that can create the most exciting images for his chains. Liebert has compiled a thick private catalog of designers and architects; he and his staff follow and review projects

throughout the industry and investigate which firm played what role on projects they like. Liebert's in-house department has a small staff, but in most cases, it generates the concept for a new line of stores or a renovation. Outside firms then must translate the initial concept into a design and determine materials and sources.

Although Liebert most often works with firms he has spotted and pursued, he has definite advice for architects who send him promotional packages. He looks for creativity in the presentation technique; most of what he receives is too plain and ends up in the trash. "If the marketing materials are no different from what I get from a rack manufacturer, or if the firm has just picked a font off the Mac and slapped a few photos onto it, I don't hold on to them. You have to remember that you're selling to the retail community, which is a very creative community." He also frowns on packages that have been produced by graphic design firms or advertising agencies, since he wants architecture firms that can provide graphics as part of their design package. He adds that he would rather see a concept than a completed store, which, in this business, is "old the day it opens."

What he is looking for is, in a word, creativity. "We live and breathe our work here," he says, "and we are looking for that kind of involvement and enthusiasm." He generally finds what he is looking for in smaller firms, with four to six designers, although larger firms "on the forward edge of retailing design" also do well for him. He will consider firms that have never designed a store before – provided they demonstrate a willingness to think about retailing as a business: "I would rather have a designer be wrong at first than not to have

Edison Brothers

501 North Broadway St. Louis Missouri 63102

Contact

Walt Liebert Vice President, Marketing



A Zeidler & Zeidler store in the Saint Louis Galleria.

thought about my business needs at all," he says. "When I interview a firm, I'd much rather learn about what a firm can do than what it has done, and I also want to hear where the architects think the design industry is going, where the retail industry is

going, and where their firm is going, into the 90's." Liebert expects his architects to know his company's product and to investigate the competition as well.

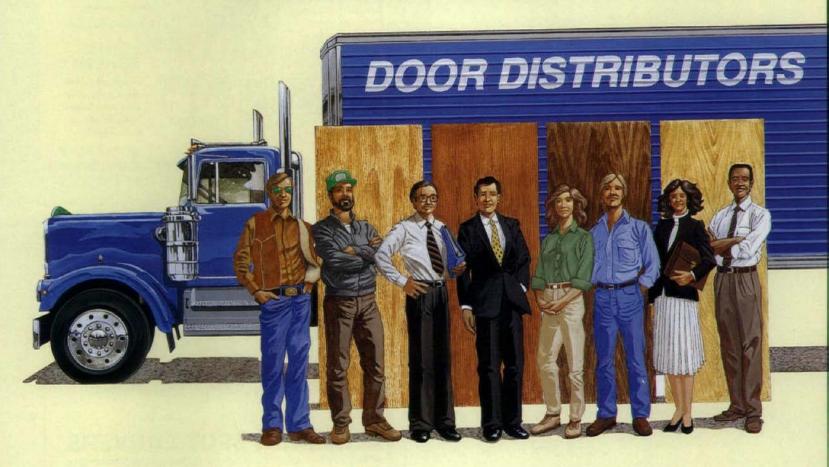
Since he wants a full store-design package, including fixtures and especially graphics as well as architectural design, Liebert has found himself looking outside the profession entirely. "I have found many architects who have gotten so caught up in the turn-it-out turn-it-in mode that they have lost their identity as designers," he complains. For this reason, and because he is always looking for a new take on retail

design, he has sometimes turned to other industries for his design talent: to graphic design firms, to advertising firms, and even to fine artists. Architects then play a very limited role in the implementation of the design.

Because each of Edison Brothers' chains of stores must establish and maintain its own identity, Liebert generally works with one firm on one chain only. Liebert occasionally works with a design firm and a production firm on a single chain, as when the former is a graphic design firm, but when working with a full-service architecture firm, he prefers to use a single firm for both the prototype and the roll-out stores. He thinks, in fact, that an architecture firm should "have the initiative to think long-term in their price strategy," considering the potential for lucrative roll-out commissions when they calculate fees for the initial design because it demonstrates "their belief in their own design abilities," he says. "The firms that want their money up-front [that is, for the design of the prototype] don't seem to me to believe in what they do. The design firm, as much as anyone else involved, can make a concept work."

Another reason Liebert tries to keep the primary firm on board for the roll-out stores is to prevent the design process from ending when the prototype is completed. He asks the designers to visit the completed stores and talk with the merchants, with Edison Brothers' operations people, and with customers. In general, each new store shows some improvements over the ones which have preceded it. As Liebert puts it, "Our attitude is: It's perfect; now, what can we do to make it better?"

We Put People Behind Our Promises



When you select a Weyerhaeuser architectural wood door, you're not alone. Every step of the way, a team of experienced sales people, backed with service support, is committed to your project success.

That team is Weyerhaeuser, and our nationwide full-line distribution network. Whether you're an architect, specifier, general contractor or building owner, and your needs call for technical assistance, project scheduling, hardware preparation, or door coordination, Weyerhaeuser's full-line distributors are there for you.

The Weyerhaeuser "team" will continue it's commitment of quality products and unparalleled service. We have in the past, and will continue into the future.



There Is No Equal.™

LIGHT ETHEREAL FIRST OF THINGS. QUINTESSENCE





eautiful form. Faithful to detail. Practical in function. Fine reproduction lighting in a quintessential array of authentic designs. Request our catalog



REJUVENATION LAMP & FIXTURE CO.

1100 S.E. GRAND AVENUE PORTLAND, OREGON 97214 (503) 231-1900

Plaster veneer over dry-wall...Plaster over ceramic tile... over painted surfaces, concrete, metal...



PLASTER-WELD

Reliable Plaster-Weld®

bonds new plaster to any

structurally sound surface. With delayed fiming as

Lorsen Froducts Corp., Box 2127, Rockville, MD 20857 301/770-5200, 800/633-6668, Fax 301/770-9234 03010/LAR in SWEET'S

needed. Brush, roll or

Interior Only

SDFQY.

WELD-**CRETE®**

Heavy duty Weld-Crete® bonds portland cement plaster to any structurally sound surface. Also with delayed timing Brush, roll or spray.

Exterior & Interior



And now, from the name you've trusted for over 40 years, Larsen Products Corp. introduces Crete-Lox V.O.C. compliant

water based sealer...

IUX &

for sealing and protecting exterior & interior surfaces such as architectural

concrete, stucco, concrete pavers, terrazzo, block, tile & stone; also a good primer-sealer for wood, plaster, wallboard, masonry & other porous materials.

Exterior & Interior

ACRYLIC ADMIX 101™

Integrally added bonding agent to modify portland cement plaster. Excellent bonding and water and weather resistance.

Exterior & Interior

Originators of leading chemical bonding agents...worldwide for 40 years.

Circle No. 388 on Reader Service Card

ALUMINUM VENT LOUVERS

APPLICATIONS: Fresh air Intake/exhaust outlet and ventilation for interior and exterior installation for Homes, Condominiums, Apartments, Warehouses, and Commercial Buildings.



3" to 8" dia. duct



10" to 16" dia. duct



3" to 8" dia. duct

ALUMINUM SPOT LOUVERS

APPLICATIONS: Interior and exterior installation for Restaurants, Office Buildings, Factories, Shopping Centers, Retail Stores, Hospitals, Ships, Theatres, Driving Ranges, Stadiums, Studios.



- Air Volume Control
- Air Direction Control On/Off Operation
 - Air Shower for Particle

SIZES AVAILABLE MODEL DUCT OPENING 3 11/32" PK. 4 PK. 5 4 11/32 PK. 6 5/16" 7 15/32* PK. 8 PK.10 8 3/16" 11 1/32" PK.12 PK.16 12 17/32 16 23/32



INTERNATIONAL., INC. P.O. BOX 5338, PASADENA, CALIFORNIA 91117 PHONE (800)-248-0030 • FAX (818) 289-5713

Cedar Valley panels can put real cedar shingle siding back into the budget.

(That's what happened to the architect of this building.)

Putting shingles on panels cuts labor costs and the savings can get real cedar shingles back into your siding specs. But only one panel overlaps real tapered shingles. Only one has interlocking ends. Only one has 3 or 4 courses. Only one uses No. 1 Grade cedar shingles exclusively. Only one has the real shingle look.

Fax this page to 1-408-636-9035 and we'll send you more information.

__ State ____ Zip ___



943 San Felipe Road, Hollister, CA 95023 Phone 1-800-521-9523 or 1-408-636-8110

A Division of Marshall Manufacturing

Please mail your brochure to:

City _

lame _____

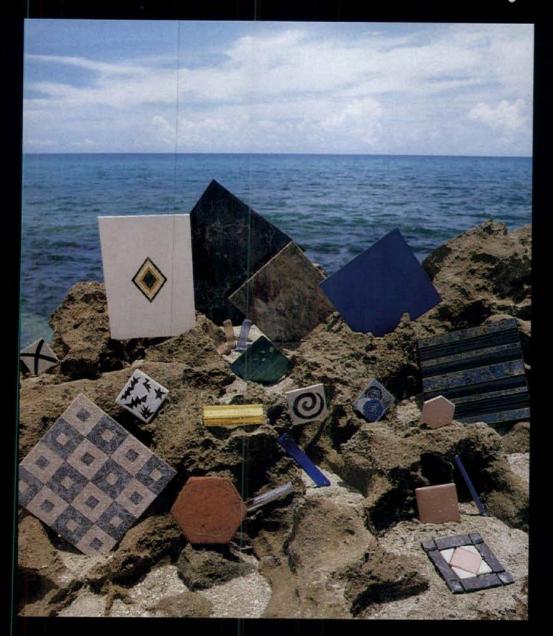
Firm _____

Address _____

Phone Fax _____

Circle No. 347 on Reader Service Card

Tile & Stone . . . Naturally



The Environment For Your Lifestyle...

See the best of the world of ceramic tile and stone. **International Tile Exposition** McCormick Place, Chicago, USA 25-28, June 1992

For Information: Phone 800-255-9745 / Fax 407-747-9466

Circle No. 342 on Reader Service Card

Vertex Electronic CADalogs can cut down on those skipped lunches and late dinners.



he design is just about done. Now you have to find the building products you need to make it work. You can spend hours searching through manufacturers' binders. Or you can stick a CADalog disk in your computer and find the information you need in minutes.

Accessible, **Up-To-Date Product** Information

Each CADalog contains product information, specs, and installation details for one product line. Designed by architects, CADalogs help you find the right building products for your projects by stepping you through the appropriate selection options.

You can view the specifications and drawings on your computer screen. Then, transfer them to your word processing and CAD software for incorporation in your construction documents. Used directly or modified, they can save you hours of research. redrawing and retyping.

▼ Substance, Not Just "Fast Food"

You might think of Electronic CADalogs as drawings and specs "to go," they are that convenient. But they are much more than that.

CADalogs provide you with valuable reference material right at your desk, on your PC. And, now part of System ASG, they work alongside our full line of AutoCAD® applications to offer you even more productivity.

V Order Your FREE **CADalogs Today**

The CADalogs are available free to qualified professionals. Call the Vertex Division of ASG at (415) 332-2123, or fill out and return the coupon to order.

VERTEX.

A DIVISION OF

The small print: CADalogs run on DOS-based PCs with 512K of RAM. They can be used from floppy disks or loaded onto your hard disk. They require a high density floppy disk drive (1.2Mb o [.44Mb); DOS 3.3 or later; and an EGA, VGA, o Hercules display. Specification text is in ASCII format; drawings in DXF format.



IPS STEVEN	ing .
FINESTONI Simplex Products Division	800-545-6555 Exterior Insulation & Finish Systems
PLEASE CALL AGA	IN

	coupon today.
	Name
	Title
	Company
	Address
•	City/ST/Zip
	Phone (
	Tel: 415 / 332-2123 * FAX: 415 / 332-2146

VERTEX * 4000 Bridgeway, Suite 309 Sausalito, CA 94965 in 1992, Archsoft Group ALL OTHER BRANDS

RIVIERA® MARK I



No! No! No!

No Light Gap!

No Visible Brackets!

No Unsightly Components!

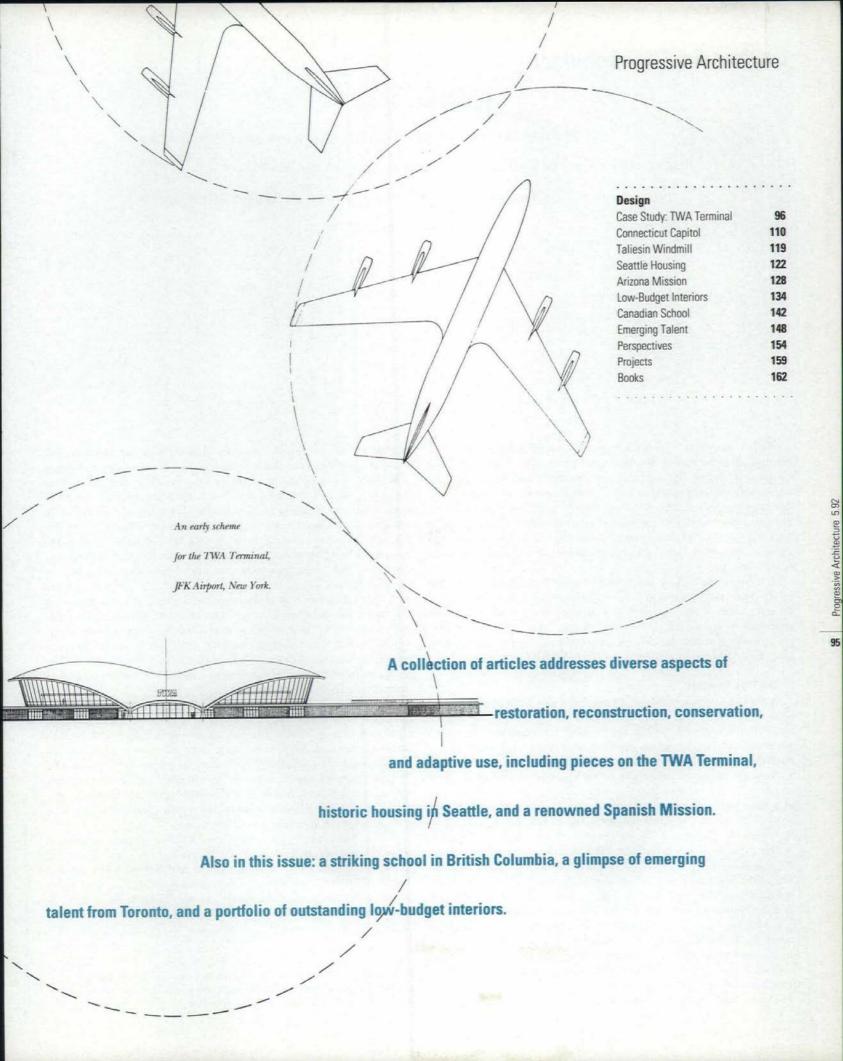
The Riviera® Mark I features an innovative contoured headrail and uniquely designed concealed mounting system. When specifying window coverings, insist on the award winning Riviera Mark I – only from Levolor.®

Call 1.800.222.8830.

Circle No. 383







are by Ezra

Landmarks: TWA Terminal

In this first of a series of articles on landmark buildings from the post-World War II era,

P/A examines Eero Saarinen & Associates' TWA Terminal at JFK Airport in New York,

assessing its current condition, discussing the development of the design,

and analyzing its shell structure.

When New York's Idlewild Airport (now Kennedy Airport) was completed in the early 1960s, it was unlike any other such place. Not only was it one of the largest airports in the world, but it took the unprecedented approach of having separate terminals owned and operated by various airlines. These privately operated terminals were, in turn, connected by an unusual amount of public space: generous parking lots, broad pedestrian plazas, plus fountains, pools, and chapels. Idlewild reflected the public confidence and corporate ambition of that era.

By comparison, JFK, in its current state, reflects the decline of that confidence and ambition in our own time. Where there was once an orderly traffic pattern, there is now an unbelievable tangle of roads seemingly in a constant state of semi-repair. Where once there were plazas and fountains and chapels, now there are overflowing parking lots, cracked pavement, empty pools, demolished structures.

The TWA Terminal

A similar fate has befallen the airport's one truly great work of architecture: the TWA Terminal, designed by Eero Saarinen & Associates. When completed in 1962, the building represented a high point not only in the design of air terminals, but in the exercise of corporate responsibility. Here, a private company took upon itself the creation of an inspiring public space. TWA turned to one of the best architects then practicing in the United States and let him explore the expressive potential of an air terminal to an extent never seen before or since. Saarinen sought, through the use of sinuous organic forms and lightweight vaulted roofs, to represent the building's function as a place of movement and of flight. (The inspirations for the design, as the following two articles point out, were many, including Minoru Yamasaki's design of the St. Louis Airport, Jørn Utzon's design for the Sydney Opera House, and the Expressionistic work of Erich Mendelsohn.) Saarinen also employed some of the newest airport technology just then being developed, such as movable jetways and baggage carousels. The terminal was an inspired work by a brilliant architect for an audacious client, but it also was of a piece with its era - a time in which progress seemed certain and the continued existence of corporations such as TWA assured.

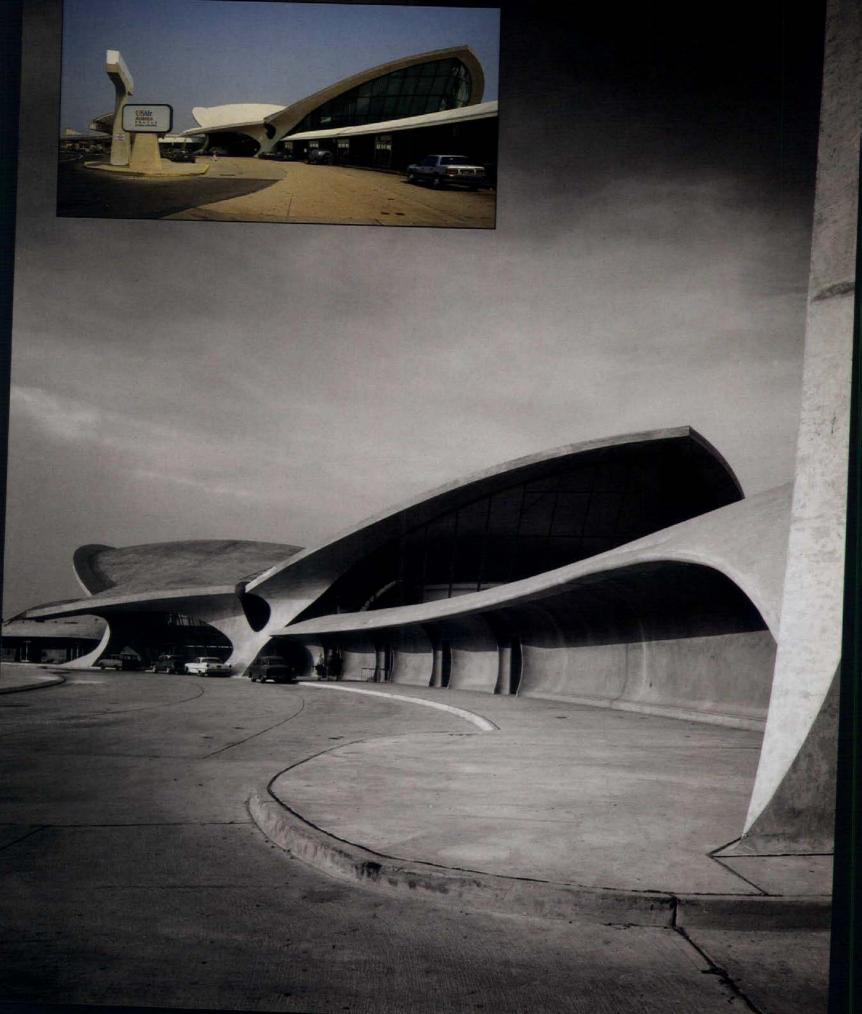
Things have changed dramatically in the last 30 years; the once

mighty TWA, for example, recently filed for Chapter 11 protection from its creditors. And this terminal bears witness to those changes. What you now notice as you approach the building from the parking lot is not just its diminutive size (a common perception we have of most structures in this age of wide-angle photography), but especially its tawdry condition. A temporary wood-framed walkway, which has been up for years, connects the adjacent I.M.Pei-designed terminal to Saarinen's building, obscuring part of the latter. (Both buildings now comprise TWA's New York hub, with most international flights arriving and departing from the Saarinen terminal.) Even more obtrusive is the glazed canopy that shelters people waiting for buses and other transportation that extends across almost the entire front of the terminal, appearing to cut it off at the knees. Finally, along the face of the ticketing wing, beat-up metal and glass vestibules protrude almost to the eaves, breaking the clean sweep of that façade. You quickly get the sense, standing in front of the terminal, that TWA has been blind to one of its most important assets.

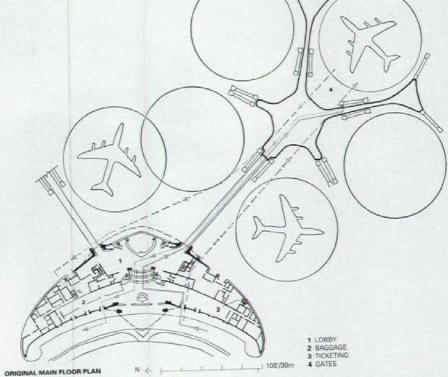
That lack of vision continues on the interior of the terminal. Just inside the front doors, a motley collection of metal detectors and x-ray machines occupies the front part of the main space. Just beyond them, a switchback ramp moves back and forth up the original stairs, a crude response to the need for handicapped accessibility and one that disrupts passenger movement. Beyond that stands a ticketing area whose floor has been laid over the original recessed waiting lounge and whose counters and backdrops obscure the glass wall which once gave passengers a sweeping view of the tarmac.

Add to those major alterations several minor intrusions: a Good Humor stand whose bulbous form stands right up against one of Saarinen's elegantly curved stanchions, a back-lighted advertisement that now fills the original flight information board (giving new meaning to the term commercial airline), and the cheap fast-food décor of the restaurant on one of the upstairs areas.

These two views of the TWA Terminal, in 1962 and 1992 (1), show the sculptural power of the original design and the clutter of later structures, including new signage and somewhat older vestibules along the ticketing wing.







The Difficulties of TWA

In all fairness to the company, it is dealing with a difficult building. Saarinen designed the terminal at the beginning of the jet age, before jumbo-sized planes, airline deregulation, and terrorism demanded an increase in the capacity and complexity of terminals. Also, the very things that make this terminal most compelling as architecture - the unity of surfaces, with floors, walls, and ceilings flowing into one another, or the continuity of form, with similar organic shapes used throughout - make the building difficult to add to or alter.

Although many of the changes that TWA has made to the terminal have not been particularly sensitive to the architecture, most would be easily reversible. And in a few places, the company has made an effort to work with the building rather than against it. For example, TWA, has built a structure at the point where new baggage conveyors penetrate the rear glass wall that recalls Saarinen's organic forms. (This structure, however, doesn't match the original surfaces, clad as it is in stucco rather than in the small round tiles that Saarinen used.) You can argue about whether those conveyors should be there at all - their steel trusswork runs along the exterior of the terminal's back side, looking like leg irons on this great bird of a building - but the conveyor housing at least fits the rest of the interior.

Likewise, the ramp for the handicapped, despite its unfortunate placement right over the main stairs, has a metal railing whose narrow balusters and thin grab bar mimic Saarinen's railing design. Yet, even here, with the best of intentions, TWA seems to misunderstand its own building. What was once a space that pulled passengers along from the entrance and ticketing area to the waiting lounge and concourses now is filled with metal railing that stands against the flow of people and that looks more like a gate blocking entry than an aid to our accessibility. Surely a lift off to one side could have been just as effective and much less obtrusive.

The Employees' Perspective

The people who work in the terminal generally see it in a slightly different light. They seem generally aware of the architectural quality of the building, and of its poor maintenance and the overcrowding. (Because TWA uses the terminal mainly for overseas flights, the afternoons and early evenings bring a torrent of passengers and large

amounts of baggage, making this small terminal appear even more inadequate.) Very few of the employees I spoke with laid the blame for these conditions on the building; most faulted the company. (It should be noted that TWA has had some long-running contract disputes with its employees, which some workers even mentioned as coloring their view of the building.) As one employee put it, referring to both the terminal and the company, "TWA needs to get its house

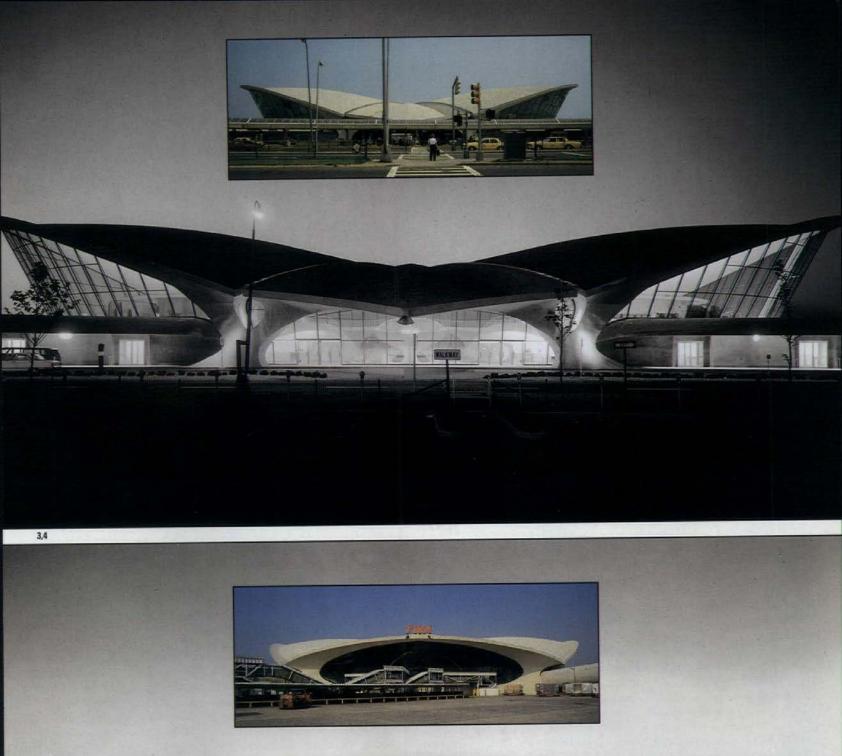
Still, the building is not blameless, as is obvious when you watch maintenance people struggle to operate, repair, and clean it. To wash the inside of the large inwardly sloping windows, for example, a maintenance person must balance a ladder against one of the narrow mullions, brush aside the large vertical blinds, and lean out rather precariously to reach the entire glass surface. The inward slope of the window has many advantages - it adds to the dynamic quality of the building's form and reduces the interior reflection at night to give people a better view of the tarmac - but easy maintenance is not one of them.

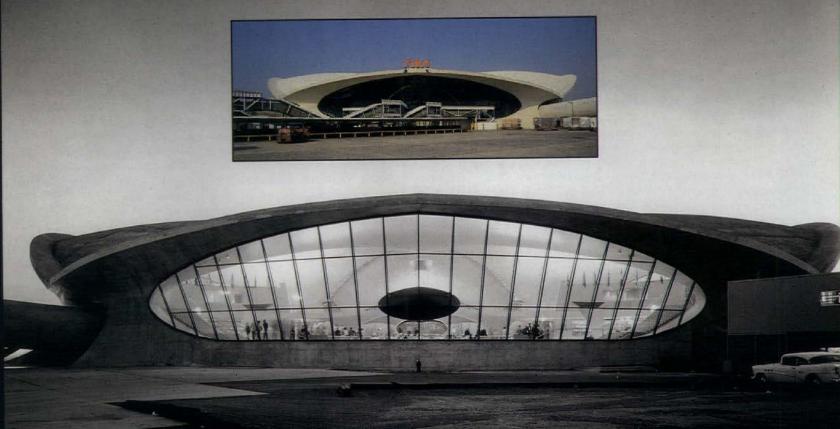
Other signs of the maintenance difficulty of the terminal also are apparent. The round white tiles that cover many of the interior surfaces have proved to be difficult to patch or repair. In places, maintenance people have had to use mismatched tile or the material of last resort: caulk. Also, adding something as simple as new pay phones creates problems of fit, so specific are the forms of this building.

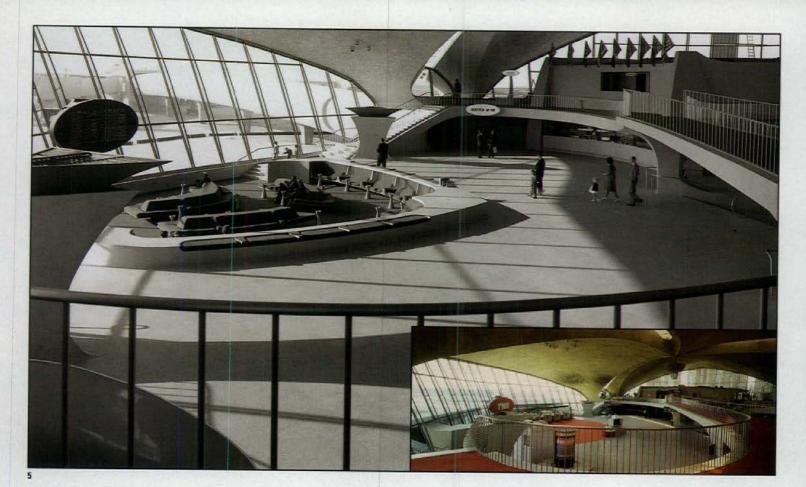
The Meaning of TWA

What is the relevance of this building today? What can we learn from its original design and its current condition? Saarinen, at the end of his short life, produced two of the greatest air terminals ever built - TWA, then Dulles - defining two possible directions for the design of airports. While the form of both expressed, each in its own way, the sense of lightness and buoyancy we associate with flight, their approach to function could not have been more different.

The clarity of the building's bird-like shape, apparent in the aerial view (2), has been compromised by a curved canopy that obscures the front of the building (3) and by baggage handling conveyors that intrude upon the tarmac side (4).







The Dulles terminal encloses a hangar-like volume that does not overly determine the use of the space or movement of people within it. The repetitive bays of this Classically composed structure also allow for easy expansion of the building lengthwise. In the TWA terminal, Saarinen had taken the opposite tack. It has a Baroque space tightly wrapped around the crisscrossing and spiraling circulation patterns of passengers. And its sculptural forms have an integrity and a completeness that almost preempt any attempt at altering or adding to the building. At TWA, Saarinen may have produced a more satisfying form and a more dynamic space, but there is no question, given the subsequent development of airports, that the approach at Dulles was better suited to the ongoing changes in the airline industry.

Dulles and TWA also employ very different formal languages, which have had a major impact on their subsequent use. Dulles, despite its sloped glazing and the elegant curvature of its columns and roof, follows a rectilinear geometry for most interior elements; the building has, accordingly, accommodated changes – both large and small – quite gracefully. At the TWA terminal, Saarinen had taken the bolder step of carrying the curvature of the exterior shell into the interior, down to the smallest elements: the built-in seating, the lighting fixtures, even the waste receptacles in the toilet rooms. Such "total design," in which all aspects of a building derived from the same formal rules, was much admired in the early 1960s, but it has not adequately allowed for change, making most alterations both difficult and expensive. A client is probably better served with a somewhat looser fit between form and function.

There are other, less architectural lessons for us in this terminal. When TWA, in the early 1960s, invested in the most daring and most technically advanced air terminal ever constructed, it did so, no doubt in part, because it had some assurance in what was then a regulated industry that it would still be in business in the years to come. With deregulation and the mergers and bankruptices that have followed in its wake, airlines such as TWA now seem less willing (and financially less able) to deal with architectural expenses. Also, the gradient is

which things now shift in the airline industry does not bode well for architecture, leading many companies to adopt ad hoc solutions to quickly changing needs. Deregulation may bring some benefits to consumers, but it does not create an environment well suited to architecture. Thoughtful design, in this context, may seem to be either too expensive or too slow.

Whatever the drawbacks in the original design or the limitations in current capacity, the TWA terminal remains one of the best works of architecture and surely one of the two or three best air terminals constructed in the U.S. in the last 30 years. Both the terminal and the airport are in a disgraceful condition and are not likely to improve much. (TWA did recently commission a study of how the terminal might be restored and expanded, but that is apparently on hold. A bold master plan for JFK recently prepared by Pei, Cobb, Freed & Partners also was recently dropped for budgetary reasons.) Both airport and terminal are being defaced, bit by bit, and they need an advocate before they are completely destroyed. The time has come for the architectural community to speak up. Thomas Fisher

Our thanks to Kevin Roche, Howard Lathrop, and other staff at Kevin Roche John Dinkeloo & Associates for their help in putting this article together.

Also unfortunate are some of the interior changes, including the covering of the lobby waiting lounge to gain more space for ticketing counters (5) and the insertion of a ramp



TWA's Influence

Peter Papademetriou, who is working on a book on Eero Saarinen & Associates, discusses with

P/A's Thomas Fisher the influences that led to the design of the TWA Terminal.

Fisher: Where did the organic forms of the TWA Terminal come from and what influenced its design?

Papademetriou: Saarinen's contact with Modernism is a very complex story. He did not follow the path that so many American architects took, of working with a Bauhaus influenced master. His father, Eliel,

was a very successful, world-renowned architect who, in his fifties, emigrated to the United States from Finland, and settled eventually in Detroit, which was hardly at the apex of cultural influences, at that time particularly. Eero's roots were primarily tied to the pre-Modern background of his father's practice, with its emphasis on the integration of arts and crafts with architecture. Also Eero always wanted to be a sculptor. He in fact did study sculpture for a period of time at the Académie de la Grande Chaumière in Paris, and he pursued sculpture at Cranbrook, executing a number of pieces.

Another influence was Norman Bel Geddes. In 1938, as he was working on one of the first jobs that he did with his father, a community center for the town of Flint, Michigan, Eero was invited to participate in the design of the GM Pavilion at the New York World's Fair, working as a designer in Bel Geddes's office. Eero had a very direct hand in the curvilinear form of the building. So he was tied into the idea, very early on, that streamlined design was an acceptable way of integrating technology and modern representation.

After the fair, Eero returned to Cranbrook and began to affiliate with Charles Eames. They were both committed to the idea of the representative power of architectural technology, particularly structural technology. This was clear in the 1939 faculty exhibition at Cranbrook, which Saarinen and Eames designed and which had a number of their curvilinear pieces in it. The famous "potato chip" furniture that they designed for the Organic Design in Home Furnishings competition of about 1940 also indicates their affinity to thin shell expression.

Fisher: Do you think that affinity came from Eames or Saarinen?

Papademetriou: I think it probably came from Eames and was seized upon, in a

and became symbiotically his. Thin shell construction was in the air, and many designers were appropriating it. But from the point of view of expression, Saarinen and Eames were unusual in that they cut these shells in very dynamic ways while retaining the inherent strength of the structure. That idea of cutting the shell, I think, can be traced

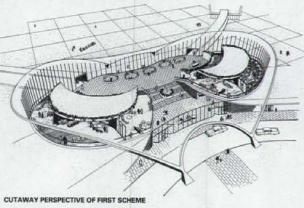
back to their furniture experiments.

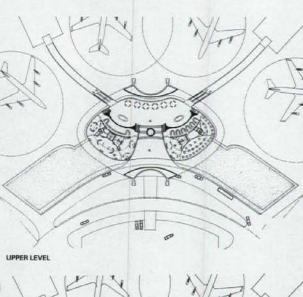
As for other influences, I think we have to go back to Eero's introduction to Modernism. He graduated from Yale in 1934, traveled in Europe, and returned to the United States in the summer of 1936. From 1936 to 1938, he worked with his father and then worked on the "Futurama" pavilion beginning in early 1938, when he met a number of industrial designers. So he was tied in to industrial design as well as architecture and sculpture. Those three disciplines had a lot to do with the type of objects he produced. The form of technology, I think, was constantly being investigated by Saarinen.

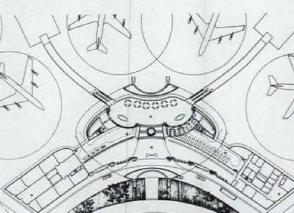
He had trouble making a transition from the streamlining of Bel Geddes and the austerity of the Bauhaus and International Style to an approach that was more appropriate to the post-war technology of America. Look at the early phase of the GM Tech Center in 1945, where he tries to make the transition from streamlining into an industrialized architecture that still refers to Bel Geddes's work, particularly the use of a curved or canted geometry. It's only in 1948 that Eero makes the switch to the Miesian mode, and that's a cathartic experience for him. He was trying to get past the decorative tendencies of streamlining and Art Deco to the more anonymous industrial production that Mies suggested. However, the use of the curve, I think, still remains with Saarinen, and the ability to use irregular geometries is something that he continues to explore.

Fisher: Where appropriate.

Papademetriou: And appropriateness is critical, I think. Saarinen was among those who believed that there was no single vocabulary that could be applied to the diverse problems of the 20th Century, and that one had to seek the answer from the inherent nature of the problem. He was also interested in enlarging the vocabulary of Modernism, and







the dead-end of the International Style.

Fisher: Did he visit much International Style work while in Europe? **Papademetriou:** He came in direct contact with Alvar Aalto; in fact, Eero used some of Aalto's furniture in a project when he returned in 1937. During his travels in Europe, Saarinen was looking over all architec-

tural history, not just the most recent buildings. He did watercolors of Classical buildings and the ancient monuments, but he also visited the latest Modern buildings. He very clearly states that architecture had to be of its own time, and yet he was always conscious of history.

Also, the Saarinens did not fall into any one theoretical camp, which allowed both Frank Lloyd Wright and Le Corbusier to visit them at Cranbrook. It was that kind of catholic environment that permitted Eero's accommodation of antithetical streams of thought. An example of this is the controversial Jefferson National Expansion Memorial, the so-called St. Louis Arch, which had possible roots in a Fascist design of the 1940s. Whether or not Saarinen saw this is hard to prove, but clearly he was interested in a formal geometry that was organic as opposed to rectilinear. The arch had several seemingly opposed qualities. It was at once representative and yet evocative, constantly changing in section and yet industrially produced, abstract and vet monumental, with its historical references to the arch form.

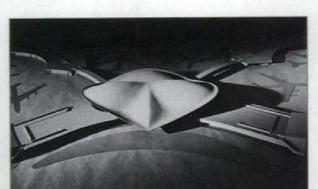
Fisher: Getting back to the TWA Terminal, it is, in some respects, a built circulation diagram, with flowing shapes fitting fairly closely to the movement of people as they go from the ticketing counters to the waiting areas. What was Saarinen's view of functionalism and did things such as circulation drive his design work?

Papademetriou: There was an interest on his part in programmatic analysis. To analyze passenger flow, Saarinen had people from his office go to other terminals with stop watches, looking at traffic counts and bottlenecks. He used this theoretical analysis of function to promote his totally new concepts of terminal design at TWA and Dulles. TWA, however, suffers in functional terms from the preexisting concept of Idlewild, now Kennedy Airport, with its notion that each major airline would have its own independent building. Also, TWA suffers from the fact that it was designed just before the technology of the jet plane was fully developed, while Dulles is one of the first all-jet airports.

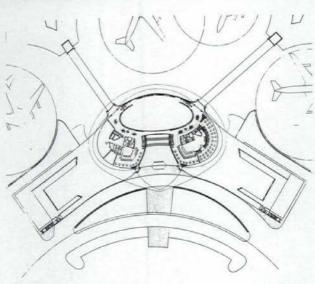
Fisher: What other influences are apparent in the TWA design?

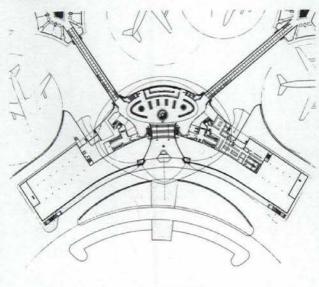
Papademetriou: Baroque architecture?
One could fault – and it was faulted in the

1960s – the revival of late 18th-Century referential architecture, the socalled *architecture parlante* idea, that architecture can somehow suggest an emotional feeling of some sort through a representational or symbolic move. On the level of cliché this can lead to the tail-of-the-pup hot dog stand in LA. But where does TWA stand on that spectrum?



MODEL OF AN INTERMEDIATE SCHEME





LOWER LEVEL

Fisher: Because of its bird-like form?

Papademetriou: Yes. One of the most critical things to me about TWA is its siting at the apex of the curve in the site plan of Idlewild, right on axis with the entrance drive. The terminal is divided about this transverse axis as a clear representation of that context. It is my understanding that the site was given, that Saarinen didn't have a hand in selecting it, so he was taking advantage of the moment.

Fisher: What about some of the technological advances made at TWA?

Papademetriou: It was one of the first terminals to use jetways and baggage carousels, both of which were ways of dealing with congestion. Saarinen was very concerned at TWA to create an experience for passengers that was other than one of congestion.

Fisher: In fact, didn't the baggage carousels come midway through the design because that technology was just being developed at that time?

Papademetriou: That was typical of what happened in Saarinen's office, which was always at the cutting edge of new developments.

Fisher: How might Saarinen have responded to the criticism that, by breaking the shell of the roof the way he did, he set up structural inefficiencies that required thick edge beams?

Papademetriou: Of course, structural engineers and structurally inclined critics would be concerned with the most efficient representation of shell dynamics, but that would not have concerned Saarinen. In a Horizon magazine interview, Saarinen said that "the fact that to some people it looked like a bird in flight was really coincidental. This was the last thing we ever thought about." That, of course, doesn't mean that one doesn't have the right to see it that way. Saarinen went on to say that "Baroque architects were wrestling with the same problem within the limits of the Classical order and the technology. They were trying to see how far they could go into a non-static architecture. At TWA we tried to take the discipline imposed by the concrete shell and give it this nonstatic quality." Actually, Saarinen does not describe the structure as being a thin-shell design. He specifically talks about it consisting of four interacting barrel vaults of slightly different shapes supported on four Y-shaped columns. The structural shapes of the columns were dramatized to stress their upward curving sweep, and the skylight bands that separate the vaults increase the sense of airiness and lightness. These are all aesthetic ideas that have nothing to do with the mathematical form of a thin shell.

Fisher: Saarinen started designing the TWA Terminal soon after returning from Australia, where he was a juror for the Sydney Opera House competition. What effect did Jørn Utzon's design have on the terminal?

Papademetriou: Saarinen intervened in the process of evaluating the opera house submissions, even though he showed up late. Saarinen himself produced a rendering of Utzon's design in its context, so he was clearly impressed by the impact the building's forms would have on the site. I think it's fair to say that that building had some influence on Saarinen's subsequent development. He was in Australia in January of 1957, and on his own desktop calendar during April, 1957, he doodled at the top margin sketches of what has got to be the TWA Terminal, with its vaulted roof form in four quadrants.

But let's also be clear that shell forms were in the air. Saarinen hired Matthew Nowicki, who produced the famous pavilion in Raleigh, North Carolina, with its hyperbolic parabola. His friend, Minoru Yamasaki, had done the St. Louis terminal, which also has a series of vaults separated by skylights. So the forms were around, but at TWA, they were contained within the aesthetic of Eero Saarinen.

Being free from an absolute commitment to the International Style, Saarinen could also be more open to the tradition of Expressionism that runs as a fertile undercurrent within the history of Modernism. And because of his familiarity with history and his catholic view of design, his affinity for Expressionism, particularly the more dynamic, formal aspects of it, is not surprising. The extent to which he knew Mendelsohn is unclear, but I believe there is a connection with Mendelsohn, Saarinen certainly would have been familiar with Mendelsohn's work, and you could argue that Saarinen's sketching style, with its great gestures, is very much in the Mendelsohn mode. At the same time, there are other buildings that are clearly related to his TWA terminal, one of them being, of course, Saarinen's own Ingalls Hockey Rink at Yale University, designed at about the same time.

It is interesting, by the way, to look at the architectural documents of TWA because the building's concrete roof is

made up from straight line components, with a grid underneath it to allow for the erection of the scaffolding by non-skilled carpenters prior to the making of the formwork. The tolerances were not only incredibly precise, but the ultimate deflection of the vaults, and I use the word vaults instead of the word shells, was incredibly small, something like

15/16 inches when they had anticipated upwards of 6 inches. Obviously, the engineers, Ammann & Whitney, significantly beefed up the design to avoid the problems they had had at MIT's Kresge Auditorium, where there was more settling than they had anticipated.

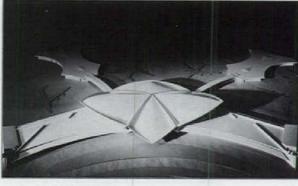
Fisher: What influence do you think the TWA Terminal has had on subsequent

Papademetriou: The literature identifies the TWA Terminal as one of Saarinen's signature buildings. However, the essential critique that Saarinen suffered during his career was the lack of theoretical consistency in his work. The unity within diversity in his architecture was a kind of

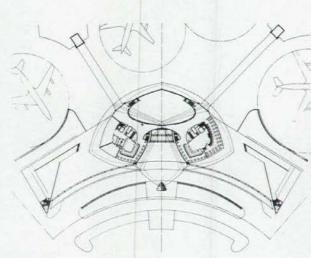
The powerful imagery that one finds, say, in the gestural paintings of 1960s

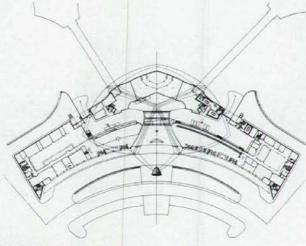
"Achilles heel" for him.

artists such as Franz Klein - the big splash on the canvas - was something that Saarinen was also seeking: a very clear idea, simply stated. The TWA Terminal offers two, maybe three such ideas. One is the notion that you can have a formal vocabulary for industrial production that is other than rectilinear. Second is the complete rethinking of the problem of the airport, something that Saarinen did at both TWA and Dulles. Third is his exploration of new technology such as the radial glazing system at TWA; it was one of the most successful attempts at neutralizing the impact of glazing in terms of reflections and transparency. One of Saarinen's lasting contributions, amply evident at TWA, is his showing how we can modify technology to meet particular needs.



MODEL OF FINAL SCHEME

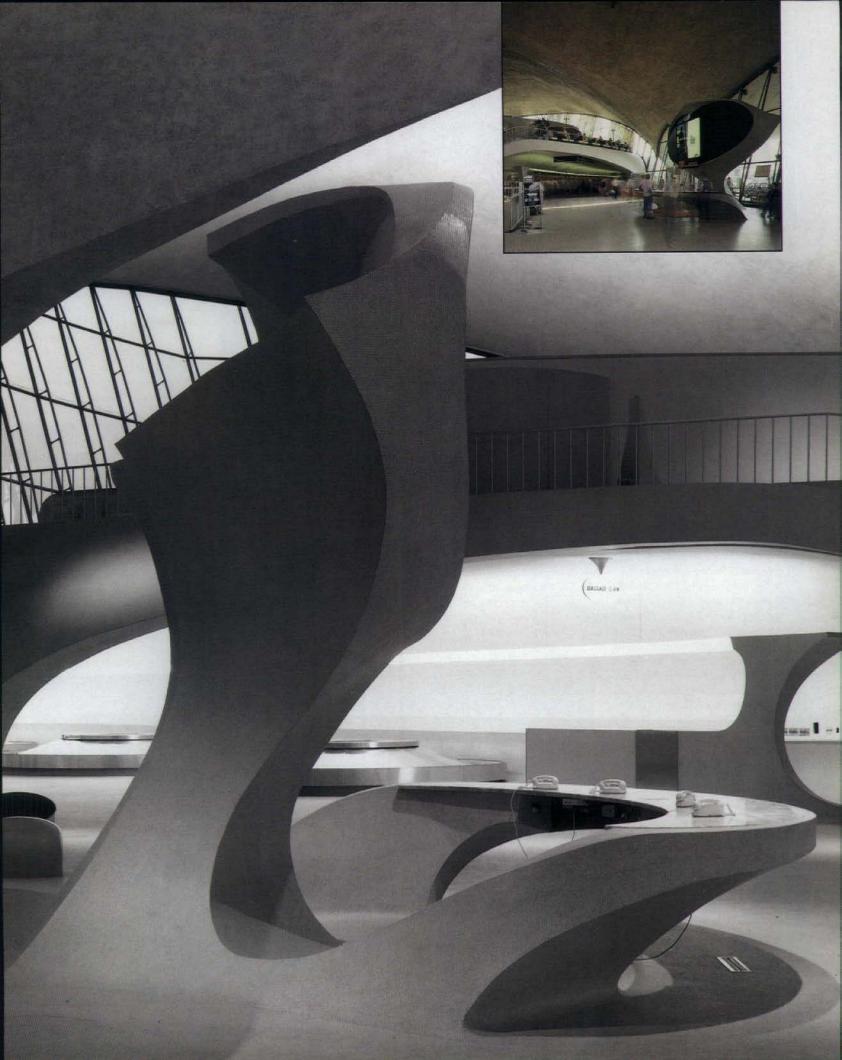




LOWER LEVEL

Peter Papademetriou, P/A's correspondent at large, heads the graduate program at the School of Architecture at the New Jersey Institute of Technology in Newark. For the last several years, he has been archiving the drawings and papers of Eero Saarinen & Associates in preparation for a book on the firm's work.

The original flight information desk (7), recalling the profile of some of Saarinen chair designs, is now used as a place for advertising. TWA has also placed x-ray and metal-detecting machines next to this desk, further cluttering the space.



Form Swallows Function

Christopher Hart Leubkeman of the ETH in Zurich analyzes the TWA Terminal's roof and places it in the context of shell technology.

Imagination has been necessary in every period, but perhaps never so keenly as in our own, when science and industry constantly pile up a perturbing mound of new materials. Some of those are seductive but dangerous to employ; others call for imagination that may give birth to "things unknown." – Siegfried Giedion. "The State of Contemporary Architecture," Architectural Record, February 1954.

stant tension or compression stress across the section. The more these membrane stresses are replaced by bending stresses, such as those found in a beam, the less efficient a shell is. To the shell engineering purist there were four design criteria: a shell must be thin, it must be curved, it must have a continuity of structure in which the principal dimensions are in a nice mathematical relationship, and it must be

properly supported. The shape (or form) of the shell and what happened along its edges were the two basic design issues for structural engineers.

There are two families of shells: geometric and organic. The 1950s were the decade of the geometric shell. The circle, the straight line, or combinations of translations or rotations of the two generated these shell forms (hyperbolic parabolas, spherical segments, conoidal segments, barrel vaults). These forms were not only easily described by mathematical formulas, but more important, they were the

simplest to build. Unfortunately, geometrically generated shells do not completely utilize the strength inherent in the structural form. Very few people saw this in the 1950s, and even fewer understood why.

It was often assumed that simple shapes lent themselves to simple structural analysis, but the literature shows that this was rarely true. For example, the membrane analysis of a cylindrical shell was much

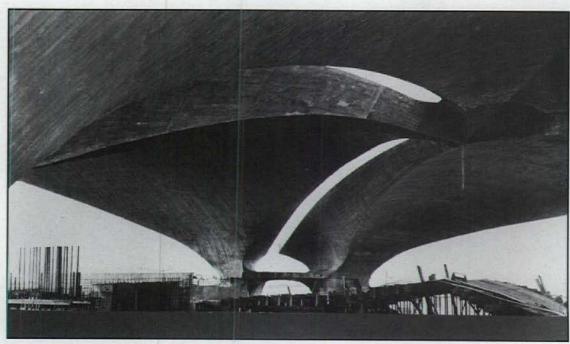


The Kresge Auditorium at MIT by Eero Saarinen & Associates.

"Eero Saarinen was interested in pushing the boundaries of architecture out of its Miesian restraints," Kevin Roche said in a recent conversation. "Eero searched for, and developed, a vocabulary that clearly and consciously took a direction away from the simplistic beam and column concept of architecture. He was testing the bounds of its legacy; finding a new aesthetic outside of the Bauhaus strictures." Did Saarinen test the

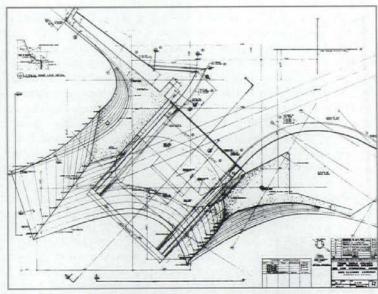
formal or technological bounds in his design of the TWA Terminal at Idlewild (Kennedy) Airport? Or did his formal design desires bind him, not allowing the utilization of the technical knowledge of the decade? Eero was said to have "bent structure, space, function, and technology to his will, seeking new results." Was the shell structure of the terminal a "new result" or as Giedion said, a "thing unknown"?

To address these questions, it helps to understand, first, the nature of shell construction. The purpose of every structure is to transfer its loads to its supports. The efficiency with which this is accomplished depends upon the type of structural system, its physical properties, and its supports. The thin shell transfers all of its loads through membrane stresses, which implies either a con-

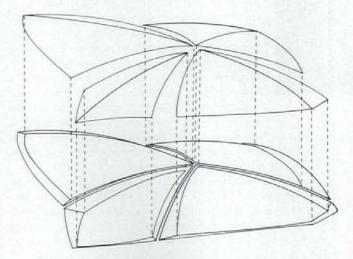


Construction photo of TWA shell .

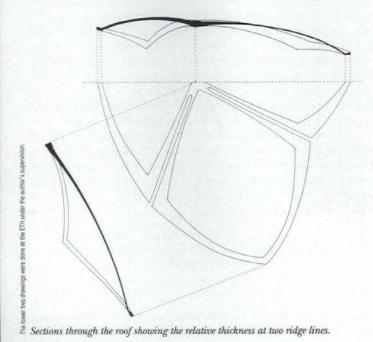
George Adams Jones



Working drawing showing how the TWA supports were represented as a series of contours.



Exploded axonometric showing the barrel shells sitting on edge beams.



more involved than the membrane analysis of the hyperbolic paraboloid (even though in the 1950s much of the calculation time in cylindrical shell design had been eliminated through the use of tables). It was also common to analyze certain shells on the basis of equivalent beam and arch action. This resulted in "shells" designed as they had been at the turn of the century, as curved flat slabs: inefficient and working in bending.

The real problem with most geometric shells is their so-called edge disturbance. Along the edges, the uniform distribution of the membrane stresses in the shell begin to be distorted. One of the easiest ways to solve this problem is to choose a different type of shell geometry, but another option is to stiffen the structure by the addition of an edge beam. An edge beam, which collects the forces along its length and carries them to its support, is oriented out of the plane of the shell's tangent, and its dimensions vary depending upon the type of support. The edge beam is so important that it was recommended that "...every effort be made by the designer to prevent appreciable deflections of edge members." This warning had dire effects on the appearance of many shells, giving them an overly heavy appearance.

The Development of Shell Construction

Contrary to the popular belief that column and beam were the singular archetype of architecture, shells have been present ever since we began to create shelter. The thin shell as a structural alternative, however, did not become commercially viable until the 1920s when Dr. Bauersfeld of the Zeiss Optic Company (the inventor of projector equipment for planetariums) designed a lightweight dome of thin plate steel elements, fabricated to a tolerance of 1/1000 of their length, which screwed together to create a spatial skin of triangles. The large German engineering/contracting firm of Dyckerhoff & Widmann sprayed concrete onto steel reinforcing wire mesh to weatherproof the dome. The first reinforced concrete thin shell was born.

Dyckerhoff & Widmann continued to experiment with shells, searching for the most economically advantageous construction methods and geometries. They sent the young Viennese engineer, Anton Tedesko, to the United States in the late 1920s to expand their market and to look for possible collaborators. This they found in the Chicago engineering firm of Roberts & Schaefer. Tedesko recalls that "Introducing reinforced concrete shells to the American building profession was a great struggle. The steel industry was firmly entrenched and wanted nothing to do with this new development. Contractors, and even other engineers, really fought us. Then came World War II. That changed everything." The war machine demanded inexpensive, efficient, and rapid methods of construction. The thin shell is a very efficient structure, and with the evolution of reusable formwork, it became widely used. The experience gained during World War II laid a foundation for the explosive growth of shell construction that was to come.

In the 1950s, shell structures began to be used even as gas stations and hamburger stands; their design was no longer a mystery understood by only the chosen few. Tables, charts, and strong advertising supported by concrete producers helped shell design become a commonplace occurrence. At the same time, large and incredibly thin shells were being designed by Sarger in France, Candela in Mexico, Nervi in Italy, Torroja in Spain, Isler and Hossdorf in Switzerland, and Bradshaw, Tedesko, and Ammann & Whitney in the United States. As the twilight achievements of the Classic Modernists were being built, shells began to be chosen for major public buildings, such as the St. Louis Airport Terminal with its large barrel vaults (120-foot span, minimum thickness of 4.5 inches), the May Company department store in Denver (132-foot span, minimum thickness of 3 inches), and the University of Illinois Assembly Hall with its folded plate shell (400-foot span, minimum thickness of 3.5 inches).

The TWA Terminal

Eero Saarinen began the design of the TWA terminal in 1956. Its design should be seen in the lineage beginning with the 3.5-inch-thick spherical segmental dome of Saarinen's Kresge Auditorium at MIT, followed by his suspended roof at the Yale Hockey Rink, then the sculptural TWA terminal, and finally the suspended roof of the Dulles Terminal. The TWA terminal's predecessors were not without structural fault. The spherical shape and continuous section of the MIT Auditorium structurally doomed it from the start; its edge beams were not stiff enough to support its load, and structural mullions had to be inserted. The lessons learned from that structural mishap were (overly) compensated for in the TWA terminal's design.

"The first design (of TWA) was an oval shell resting on four points with an edge beam." Roche recalled. "Eero found this awkward (he



The Fabrikhalle by Heinz Isler, in Ghent.

called it 'pigeon-toed'; he later dubbed it 'Leonardo da Vinci's flying machine') and decided to break the shell into four parts. If you draw a line through the axis of Idlewild's overall oval site plan and continue it to the TWA site, you see that Eero created a 'terminal' for the axis; he broke the shell at that axis to emphasize this and created a depression there to receive the axis. Have you heard the 'Squashed Grapefruit' story? Eero was eating breakfast one morning and was using the rind of his grapefruit to describe the terminal shell. He pushed down its center to mimic the depression that he desired, and the grapefruit bulged. This was the seed for the four bulges of the shell."

The consulting engineer for Ammann & Whitney, Boyd Anderson, recalls that "some found Eero a difficult man to work with. Each time he got a new project he would call us specialists to come and sit together with him so that he could probe us for ideas. Sometimes this would go on for days or weeks! Many found it very difficult due to the fact that Eero had absolutely no problem in simply throwing out a design and starting anew. It was difficult, but fun."

Roche describes this design process: "After the sketches were made, Eero began to make models in clay. The clay models were very time consuming and were soon left for larger cardboard models. Eero was a very competent sculptor, but an even better draftsman. As the design developed, we built larger and larger cardboard scale models by cutting 'ribs' to describe the correct profiles. The form of the shells is consciously not smooth. Eero thought that smooth shells would be a bit boring. He worked with the clay models to develop the ridge, like a Norseman's helmet or the way the two halves of a clam's shell come together. It was purely a formal consideration: the spine/ridge gave the shells much more drive."

At first glance, the TWA structure appears to consist of four structurally efficient translational shells whose surfaces are generated by sliding one curve along another curve. But, the cross-section is ridged so that there is not just one second radius, but two. At second glance the structure appears to consist of barrel vaults or cylindrical shells. But again, the ridge seen in the cross-section adds stiffness to the vault

(like a fold in a piece of paper) in the wrong place. A single continuous shell would not have such a ridge.

In fact, the structure of the TWA terminal consists of four lobes or segmental domes. Each lobe stands alone, resting on the ground at only two supports and they all meet at the center of the terminal (where Saarinen's finger depressed the grapefruit), providing the necessary third structural support for stability. The two large lobe-domes consist of two 19-inch-thick segmental barrel shells "leaning" against each other along the ridge. Barrel shells transmit considerable loads to their edges, and these forces must be resisted by edge beams to maintain equilibrium. This explains the varying width of the TWA terminal's edge beams, as seen in plan. The beams are widest (8 feet) and thickest (2 feet) at the supports where they have collected the greatest amount of load from the shells. The front edge beams are

also cantilevering out over 75 feet, so one can understand the need for additional stiffness. The consequences of Saarinen's formal decisions are clearly expressed in the structure's final form.

The moment the shell was broken into four pieces, its function was swallowed by its form. The structural continuity and logic of the large shell was taken over by Saarinen's formal design intentions. His goal at TWA was not to explore the technological possibilities of shell construction, but to "bend" the structure to his will. Is this wrong? The resulting structure could be described as a bit "clumsy," and in this sense, it was a failure. But structural elegance in the engineering sense was not his intention. There

is a tendency to evaluate Eero Saarinen as an engineer, but we must judge him as an architect who used engineering principles to confirm the role of the architect as more than an organizer of grids.

Although Saarinen did not exploit the progress that had been made in shell design, the TWA Terminal stands as a manifesto, proclaiming and illustrating the architect's role as something other than and distinct from the engineer. It called on architects to reclaim the formal, expressive facet of their profession, and on engineers to enter into a dialogue with architects about the constraints of structures.

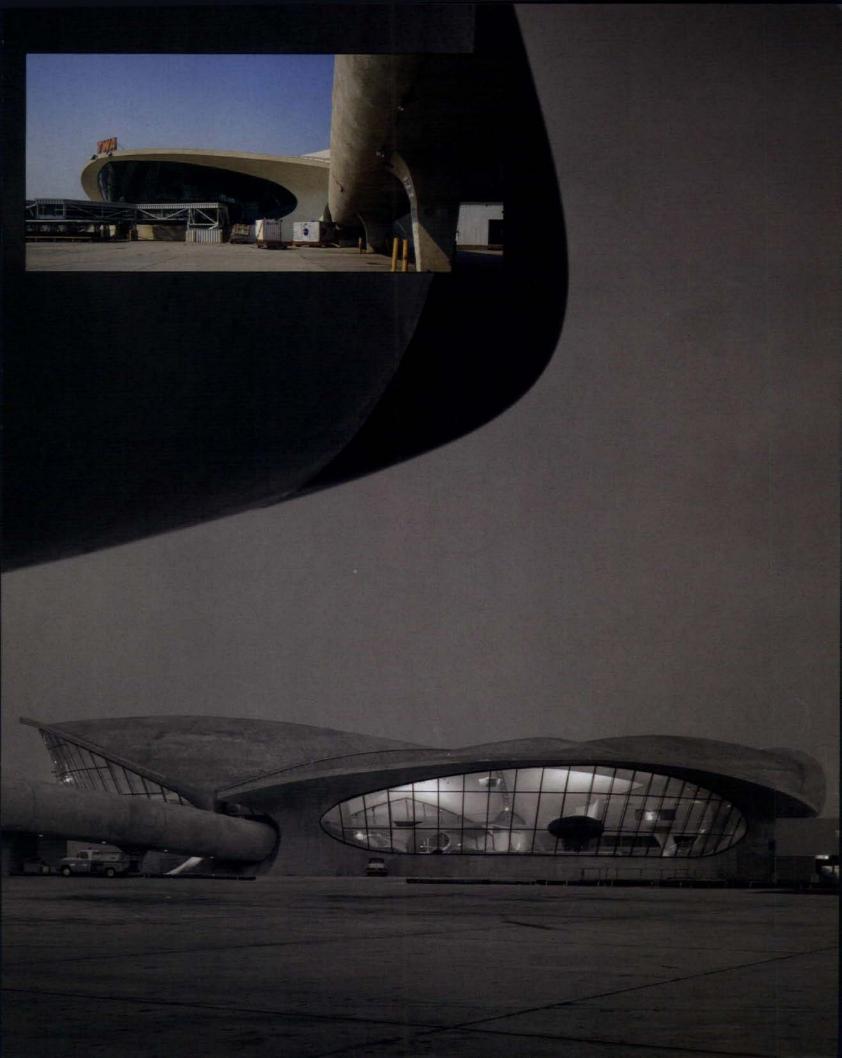
The terminal was both an end and a beginning. It was the last of the large reinforced concrete shell structures to be built without the benefit of prestressing, and one of the last to be burdened with the baggage of strict geometry in its use of the almost archaic barrel vault. The terminal also expressed the formal desire to do more with the shell than simple geometry allowed, and it presaged the liberated era of free-form organic shell design that was introduced by the Swiss engineer Heinz Isler.

Saarinen described himself as "a child of my period. I am enthusiastic about the three common principles of modern architecture: function, structure, and being part of our time." The TWA Terminal is a formal expression of these three principles. There is no right or wrong, true or false, in the design. Saarinen designed a vital piece of the history of architecture that must be understood in the context of the phenomena of its time. It was a child of the 1950s.

Christopher Hart Leubkeman

The author teaches structural design at the School of Architecture ETH in Zurich, Switzerland, where he also has a firm, 2nd Generation, Structural Design. He will be teaching next year at the University of Oregon in Eugene.

Preservationists tend to focus on buildings over 50 years old, but more recent monuments such as the TWA Terminal (11), which have little protection and few advocates, are among the most threatened structures.



Church and State

Fully restored, Richard M. Upjohn's Connecticut State Capitol reminds us

that not all seats of government were created Classical.

To enter the Connecticut State Capitol is to realize how firmly the timeless Classical model for government buildings is planted in American minds. For Connecticut's capitol, designed by Richard M. Upjohn and completed in 1879, is one of the few state capitols in the country to deviate from that model. It is instead a flamboyant house of mysteries, its motifs borrowed from the Gothic Revival church architecture of the day. Climbing its stairs and walking its corridors, views appear and disappear amid openings, columns, and buttresses; the building's picturesque intricacy is a far cry from the Classical clarity we have come to associate with American democracy.

The recent restoration of the capitol, under the direction of Hartford architects D.C. Cimino & Associates and Design Group One, heightens the building's anomalous quality. With its decorative stenciling restored and its Gothic stonework cleaned and repaired, the building seems ever more a part of the 19th Century. One almost expects legislators to appear in Victorian costume and denounce each other as "blackguards."

As peculiar as the choice of style may seem to modern eyes, the Gothic was riding a crest of popularity in 1872, when Richard Mitchell Upjohn won the competition to design the capitol (beating out, among others, H.H. Richardson). Upjohn, like his father Richard Upjohn, subscribed to the principles of English architects John Ruskin and A.W.N. Pugin, who held that while Gothic architecture represented Christian ideals and honest structural expression, Classicism was barbarous and pagan. The elder Upjohn, living in a time when churches were among our most important buildings, rose to fame with a practice almost exclusively devoted to religious structures, designing such landmarks as Trinity Church in New York (1846). The Gothic

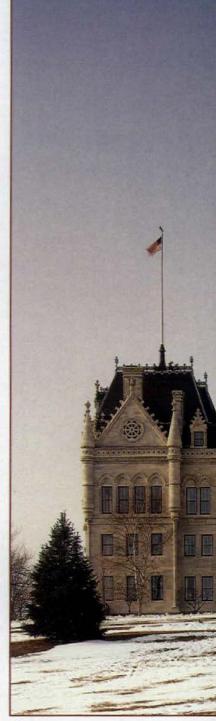
acquired sufficient aesthetic and moral authority that when the younger Upjohn took over the practice in 1872, he was able to adapt the style to a secular building with little protest.

Upjohn made some concessions to the traditional parti of capitol buildings, giving the building a symmetrical plan and essentially Classical massing. At the demand of a group of prominent Hartford citizens, he replaced the slender rectangular clock tower of his first design with a Classical drum and dome, still somehow managing to make it look suitably Gothic.

The capitol quickly became a period piece as Classicism swept back into favor at the turn of the century, and its unpopularity may have contributed to the decline in its maintenance over the years. By the 1970s, modernization and neglect had left much of the building unrecognizable. Increasing demands for space led to a maze of subdivided rooms. (One legislator managed to build an office in a capitol corridor; it became known as "Hooley's Hovel" and stayed up for ten years.) The building's original stenciling had been painted over or blackened with dirt. And the exterior marble was dirty and decaying.

The drive to restore the building began in the early 1970s, when an ad hoc committee was formed. This effort led to an \$8.5-million appropriation from the state and the establishment of the Commission on the Preservation and Restoration of the State Capitol. D.C. Cimino & Associates, a Hartford

The Connecticut capitol's peculiar tower/dome (1) is the result of a 19th-Century compromise: architect Richard M. Upjohn planned a Gothic tower for the building, but Hartford residents felt that a state capitol must have a dome. The pointed arches above the entrance contain eight-pointed stars, a motif that recurs throughout the building.

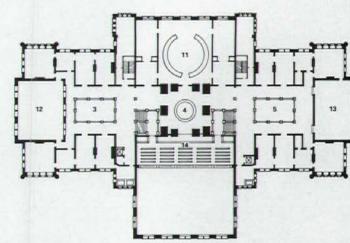




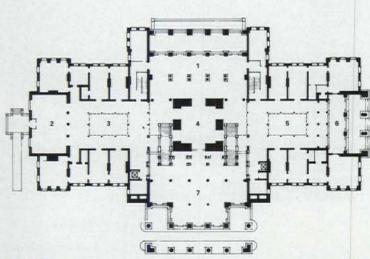
As part of the restoration, a tunnel was built connecting the capitol to a new Legislative Office Building on an adjacent site. Escalators from the tunnel rise into the south entrance lobby (2) one of two low, horizontal lobby spaces. From these lobbies, one passes into the narrow, soaring rotunda under the dome (3).



- 1 SOUTH ENTRANCE LOBBY
 2 EAST ENTRANCE LOBBY
 3 EAST LIGHT WELL
 4 ROTUNDA
 5 WEST LIGHT WELL
 6 HALL OF FLAGS
 7 MAIN ENTRANCE LOBBY
 8 OPEN TO LOBBY
 9 HOUSE LOBBY
 10 HOUSE CHAMBER
 11 SENATE CHAMBER
 12 APPROPRIATIONS ROOM
 13 JUDICIARY ROOM
 14 HOUSE GALLERY

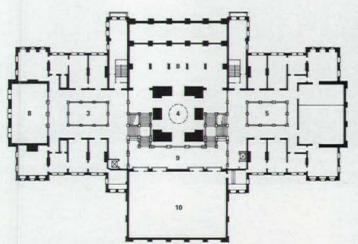


THIRD FLOOR PLAN



FIRST FLOOR PLAN





SECOND FLOOR PLAN









As these before-and-after photos indicate, the capitol restoration process was necessarily extensive. Many of the building's decorative features had never received conscientious maintenance. Most notable was the restoration of the time- and weather-ravaged exterior marble sculpture, executed by sculptor Christian Paine. Carbon encrustation was removed from column capitals (a, b), and eroded details were recarved. Dentil-like details above the main entrance (e, f) were replaced where necessary.

The capitol has a number of statuary figures. Some, like those surrounding the dome, are allegorical figures (atop the dome is "Genius of Connecticut"), while others are figures from the state's history, the most recent of which is 1970s governor Ella Grasso. These figures received special attention from Paine. In one case, where a statue's face had decayed beyond repair (g), Paine carved a new face (h), using a cast of the existing statue as a model (i).

Inside, decorative painting consultant John Canning repainted stenciling that had been lost, and cleaned other areas. In the House chamber, Canning restored a frieze with medallions (c, d) that had been obscured beyond recognition.

Light wells (4) punctuate each of the building's wings, adding to the rhythm of large and small spaces established in the entrance and rotunda. The elaborate ornament, painted and covered with gold and silver leaf, was restored to its original condition.













notos this page: D.C. Crmino

g





Two grand staircases (6) on either side of the rotunda lead visitors through a variety of spatial experiences (5, 7), with changing views framed by columns, stairs and openings.

architectural firm specializing in preservation, was hired in 1977. (Cimino died in 1987, with about 80 percent of the restoration work complete. His firm was succeeded by Design Group One, which now acts as consulting architect for the capitol.) But by all accounts, the restoration effort didn't really get off the ground until Father Joseph Devine was appointed chair of the Commission in 1978. Devine, a Roman Catholic priest, used his energetic personality – and, some say, the deference afforded him because of his clerical collar – to cut political knots and move the restoration forward.

The first \$10 million of what became a \$40-million restoration went for repairs to the building envelope, repairs that became more extensive at every turn. In the process of replacing copper roofing, workers discovered that the steel frame roof structure had corroded and needed replacing. An effort to repoint the chimneys revealed that they needed to be rebuilt entirely. Slate-covered dormers had to be repaired, and copper finials had to be replaced. Soon, the entire building was covered with scaffolding to allow for the installation of new African mahogany windows, and to facilitate the cleaning and treatment of the marble walls with barium hydroxide (to arrest "sugaring" or decay). Finally, the gold leaf dome was regilded.

Even more complex was the job of restoring the building's interior while working around the schedule of the legislature, which meets for six months annually. The private offices were tackled first, in two phases. Most of the energy, though, went into the capitol's elaborate public spaces and legislative chambers, where decorative painting consultant John Canning restored or replaced the extensive decorative stenciling and gold and silver leaf.

Some of the space demands on the building were relieved first by the placement of temporary

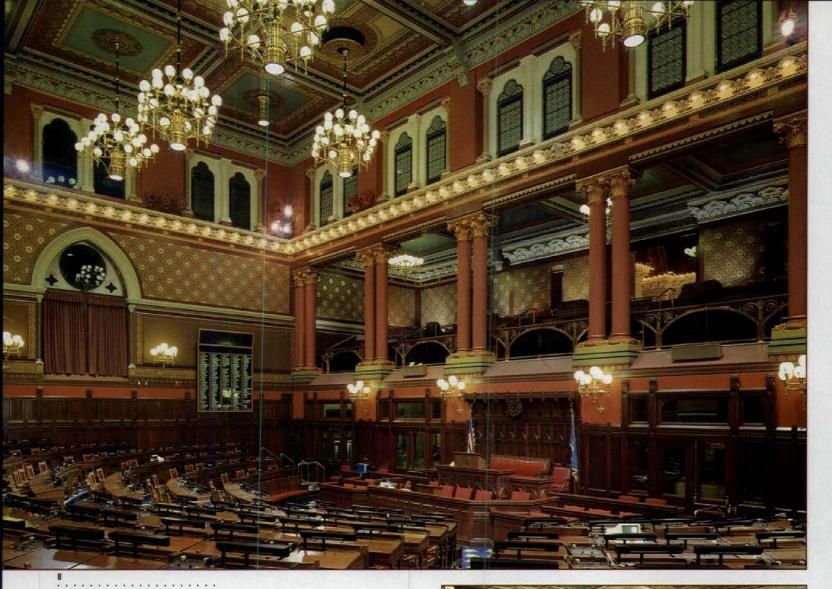


buildings on the capitol lawn (from 1984 to 1988), and then by the 1988 dedication of a new Legislative Office Building – connected to the capitol by a tunnel – by the Hartford firm of Russell Gibson von Dohlen.

On the whole, the restoration is faithful and surprisingly free of political compromise. Conversations with the architects and Father Devine, though, reveal a few sore points. One episode that clearly sticks in their craw involves the House chamber's blue carpet. The restoration team, with the help of old photographs and consultants from Columbia University, produced a mock-up of the chamber's original carpet: a geometric design in the earthy tones prescribed by Gothic Revival theorists such as Ruskin and Owen Jones. But the Speaker of the House thought the design "looked like a brothel," and chose instead a royal blue carpet with a repeating pattern of Connecticut state seals. The restorers were further frustrated when the custom-made carpet arrived from England with twice the number of seals specified. "We thought we were getting seals on a blue field, but instead we got a field of seals," laments David Ogle, who helped oversee the restoration as director of the Joint Committee on Legislative Management.

That and a few other anachronisms aside, the restoration is responsible and enlightening. The restored capitol gives us a living monument to a unique period of history, when an architecture resurrected on the grounds of religious superiority was employed in the service of the state. As such, and for better or worse, the Connecticut capitol is probably the clearest architectural diagram of the influence of Christian values on American government, Perhaps it's no wonder that it took a priest to get it restored. Mark Alden Branch





Project: restoration of the Connecticut
State Capitol, Hartford, Connecticut.
Architects: D.C. Cimino & Associates,
Hartford (Dominic Cimino, Dave Cimino,
Burt Findlay, Sal DeDominicus); succeeded by Design Group One Architects
(Nicola D. Ferzacca, Jack M. Krafjack,
Neil B. Clark).

Client: Joint Committee on Legislative Management (David Ogle, director); Capitol Restoration Commission (Father Joseph Devine, chair).

Site: a knoll overlooking Bushnell Park near downtown Hartford.

Program: authentic restoration of 200,000-sq-ft capitol building, including legislative chambers, offices, and public spaces.

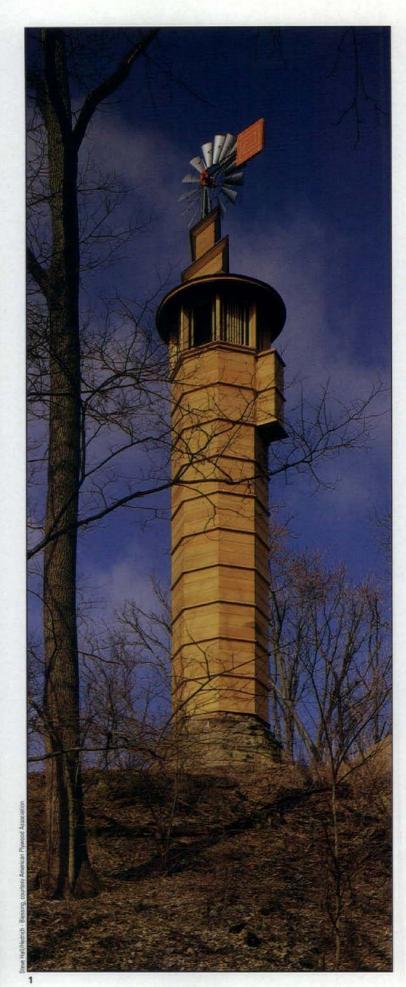
Structural system: solid masonry bearing walls, steel frame roof. Major materials: marble exterior walls, African mahogany windows, copper and slate roofing, oak entrance doors, granite and marble floors, plaster interior walls.

Consultants: Raymond Jefferson, landscape; John Canning, decorative painting; Savage Engineering/ Legnos & Cramer, mechanical; Ralph Gibson, sound system.

General contractor: C.M. Morganti. Costs: approximately \$40,000,000. Photos: Robert Benson, except as



Elaborate stenciling enlivens the House chamber (8). The Speaker of the House vetoed a recreation of the original earth-toned carpet, resulting in the rather incongruous blue state-seal pattern. Craftspeople restored stained glass windows in the Senate chamber (9) that had been covered with drywall in a past modernization. The chamber was originally a full story higher; it is unlikely that its full height will be restored.



Romance Resumed

Complete restoration of a venerable Taliesin landmark to its 1938 condition marks the first step in the preservation of the Wisconsin complex.

There has always been something inspirational about the first glimpse of Frank Lloyd Wright's Romeo and Juliet Windmill, the land-locked Pharos of Taliesin East and the Hillside Home School. Anyone who has ever approached this incomparable complex from the Spring Green road will never forget the structure that announces one's arrival here. The only trouble was, until this spring the tower had been overgrown with shrubbery and trees, making it all but impossible to see at all; and it was in a state of disrepair, in danger of collapsing.

Built in the autumn of 1897 for Wright's aunts, Jane and Ellen Lloyd Jones, over doubts from his uncles, the structure embodies a poetry of both form and meaning. In an undated letter cajoling his aunts to proceed with construction, Wright good-naturedly rebuffed arguments that the tower would fail, saying, "Romeo and Juliet will stand twenty-five years, which is longer than the iron towers stand around there. I am afraid all of my uncles themselves may be gone before Romeo and Juliet. Let's go."

Ascribing to the compound diamond-and-octagon [Romeo-and-Juliet] plan of the tower the symbolism of Shakespeare's tragic figures, Wright said, "Each is indispensible to the other...neither could stand without the other. Romeo, as you will see, will do all the work and Juliet cuddle alongside to support and exhalt him. Romeo takes the side of the blast and Juliet will entertain the school children."

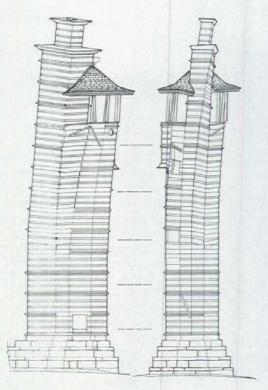
His creation vindicated him, and it was over 40 years before any work was done on it; in 1938, Wright, with leftover materials from other projects, replaced the original shingles with boards and battens. Also added at that time was a loudspeaker enclosure for broadcasting music to the surrounding valley. In the 1960s, the last windmill mechanism was removed and, since the structure was badly twisted and leaning by that time, cables were attached to stabilize it. After failed attempts in 1973 to kindle restoration interests, deterioration continued until 1989. That year, Wisconsin Governor Tommy Thompson created a commission to take on the preservation of Taliesin, and the windmill was its first priority.

The Frank Lloyd Wright Foundation and the Wisconsin History Foundation, funded by donors, produced preliminary record drawings and a historic structure report, which were reviewed by an advisory group of preservation professionals. While it was the intent of all involved to reuse as much of the original construction as feasible, much of it proved to be severely deteriorated. Only the stone base, observatory roof, and a few other components were reusable.

The tower was dismantled in 1990, and has since been rebuilt; reopening ceremonies are scheduled for early June, honoring the 125th anniversary of Wright's birth. In addition to the actual reconstruction of the windmill itself, the surrounding area has been partially cleared, making the site almost as it was in the 1800s, and restoring visual prominence to this citadel. Jim Murphy

Once again standing straight on the hill overlooking the Hillside Home School, Romeo and Juliet (1) has been restored to its 1938 form; a cypress board and reverse batten skin covers \(^{1}/_{2}\)" and \(^{3}/_{4}\)" plywood sheathing donated by the American Plywood Association. Because cypress is now an endangered species, the wood was recovered from wine vats.

Drawings done to record the distortion of the tower illustrate the sad condition it was in prior to 1990 (2). It both leaned and twisted and had to be supported by cables, even without its windmill equipment, as documented by the elevations and plans on this page. A new windmill replaces the last one, removed in the 1960s. The section shows the water reservoir below the stone base. At twilight (3), the glow emanating from Juliet signals her return from certain demise.



2 SOUTH AND WEST ELEVATIONS PRIOR TO 1990 10'/3m 1 OBSERVATORY LEVEL FIRST LEVEL STONE BASE 4 SHAFT 5 TOP OF BEDROCK 1 STONE BASE BASE LEVEL OBSERVATORY LEVEL 4 TOP LEVEL COMPOSITE TOWER PLAN SHOWING DISTORTION 1 ROOF ABOVE 2 4 X 4 WINDMILL END ROD GUIDE ASSEMBLY 3 SHEET METAL FLOORING TOWER OPENING SPEAKER ENCLOSURE ROOF ABOVE 8 2 X 10 OUTRIGGER OBSERVATORY LEVEL ROMEO TOWER 1 STEEL LADDER 2 CONCRETE PIER 3 WELL SHAFT OPEN 4 CONCRETE SLAB 5 BOARD & BATTEN 6 INTERIOR SHEATHING 1-4/1m SECTION LOOKING NORTH FIRST LEVEL

Project Romeo and Juliet Windmill restoration, Taliesin East, Spring Green, Wisconsin.

Architect: Frank Lloyd Wright. Restoration architects: Taliesin Associated Architects, Spring Green, Wisconsin and Scottsdale, Arizona (Tony Puttnam, principal in charge, Denise Weiland, project manager, Cathy Briel, Laurie Granfund, Sharon Monar, Paul Wagner, Gus Weiland, and Louis Wiehle & Architectural Alliance, architectural staff)

Major materials: plywood sheathing, cypress exterior board and batten skin, and redwood interior sheathing.

Acknowledgments: Wisconsin History Foundation, Division of the Wisconsin State Historical Society (Nickolas Mueller, Director, Jeff Dean, State Historic Preservation Officer, James Sewell, Senior Preservation Officer). Historic structure report: Wilbert R. Hasbrouck (consultant), William Marlin and Sidney Robinson (historians), E. Thomas Casey (structural analysis), Marshall Erdman, George Meyer, and David Uthlein. Historical Advisory Group: Tim Turner, Jeff Dean, William Hasbrouck, Don Kalec, Russell V. Keune, John I. Mesick, Sidney Robinson, Theodore Anton Sande, and James A. Sewell. General Contractor: Kraemer Brothers, (Martin Kraemer)

Budget: approximately \$150,000.



Seattle Affordability

The rediscovery of two housing groups leads to renewed life and new hopes in two Seattle neighborhoods.

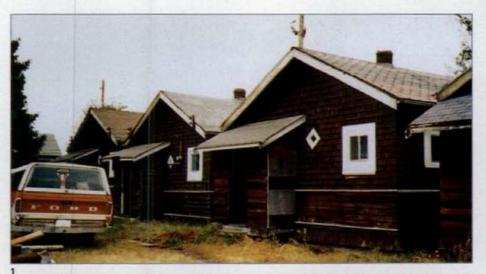
Pine Street Cottages

In 1916, ten tiny cottages were built on a threeacre site in central Seattle. Long abandoned, they were until recently a blight on a neighborhood in the process of positive change. But John Kucher, a developer with an eye for architecture, saw in them craftsman character and possibilities for becoming an unusual residential community. The possibilities have been resplendently realized. The little houses have been thoroughly renovated and joined by fences to enclose a central courtyard, forming the Pine Street Cottages condominium.

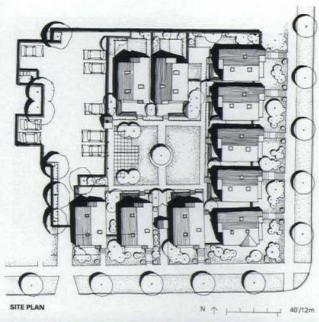
As Kucher recognized, behind the decay the houses were perky and attractive, with multiple gables and well proportioned façades. So he left the street façades alone except for painting them in individual but coordinated colors. Each has a bright door, the color repeated on its mailbox inside the main courtyard gate. From the street the cottages read almost as a single building, cheerfully wrapped around a corner. There is a similar unity inside the courtyard, where the decks are cheek by jowl and the trellises seem almost continuous. It is as if the houses have joined hands around the central green. There is a sense of both community and security. On the courtyard, he gave each a generous deck. The Eighth-Street-facing units include decks opening through glass doors from the kitchens. In the two interior units on the north side of the courtyard, the deck opens from the living room and there is a small paved patio behind the kitchen.

Kucher gutted the awkward, cramped interiors and set about the search for a plan that would make the 400-plus square feet in each unit feel larger. He called in Marcia Gamble Guthrie, a friend and the executive director of the non-profit King County Housing Partnership, as critic of the schemes, and gradually she was drawn into a central design role.

Originally opening directly into the living room, unit entry doors were relocated at right angles to the front, in a small foyer formed by containing part of the original exterior porch.







Before they were reclaimed, the Pine Street Cottages were a negative element in the community (1), suggesting little other than demolition to most observers. What developer John Kucher saw was something else, and he and Marcia Gamble Cuthrie transformed them, re-creating an upbeat compound around common open green space (2) accessible from all units. Though small, the houses form a familiar row along the street (3) that speaks of community-style living, and brings a considerable uplift to the neighborhood.



The houses were given new roofs and hardwood floors, and ceilings were removed to give rooms tall volumes. Inside, it is hard to believe that the houses are as small as they are. The white walls are luminous and the central volume is shared by all of the interior spaces. The living rooms are large enough for a sofa and several chairs, and the bedrooms are tight but not cramped. Each unit has a single bedroom with a ladder to a loft that can be used for storage or sleeping space for a small person. Windows are generous front and back and there are three skylights in each house, two operable. Where possible, the original windows were painstakingly repaired and rehung. Kitchens are tight but wellequipped, and every inch is used efficiently. The counter forms an L where three people can be seated; there wasn't enough space there for a microwave, so one was built in. Shelves pull out so that all their limited depth is accessible.

The decks have built-in benches outside the kitchen and enough clear space outside of the bedroom for a lounge or table and chairs. Next to the kitchen door is an exterior closet housing the water heater, and usable as storage for tools, skis, or other gear. Decks include a craftsman-style trellis which, in Guthrie's words, mediates between the private and the shared open spaces. Each trellis bears a vine, alternating clematis, rose, and wisteria. The courtyard is treated as a garden, with a central lawn, a brick seating area, and perimeter planting, much of it culinary herbs. There is a sense of both community and security.

Guthrie describes the complex as a "village" and says it is not an enclave because it retains significant relationships to the streets on each side. The units sold quickly for \$85,000 to \$87,000, mainly to people who had been renting elsewhere. They are an attractive alternative to apartment living and an asset to the neighborhood. There has been a visible acceleration in renovations and other improvements nearby.

Designer: Marcia Gamble Guthrie.

Client: Kucher/Rutherford (developer).

Site: cottages built between 1916 and 1919 on a flat parcel in a previously blighted residential neighborhood.

Program: remodel decayed original cottages to provide living units within reach of downtown office and retail workers earning \$30,000 to \$35,000 annually.

Structural system: standard wood construction.

Major materials: cedar siding, asphalt shingles, skylights, and double-pane casement windows (see Building Materials p. 184).

Mechanical system: gas forced-air wall furnaces and gas cooking

and water heating, individual unit security alarms.

Consultant: Mike Lee, landscape.

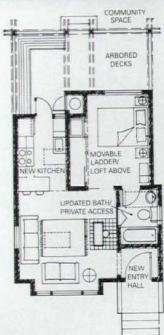
General contractor: Kucher/Rutherford, Inc. Costs: Approximately \$50,000/unit.

Photos: Michael Skott/Metropolitan Home © 1992.

Interior spaces at Pine Street open off the living areas (4); the interiors benefit immensely from their light surfaces, high ceilings, skylights, wood floors, and ample windows.







NEW FLOOR PLAN

Like the others on the block, building A (5) was in severe need of major reconstruction which, when finished (6), provided 16 single room occupancy (SRO) studios and one one-bedroom apartment.

Belmont-Boylston Houses

Like the Pine Street Cottages the Belmont-Boylston Historic Houses in Seattle were "found" buildings remodeled into affordable housing unified by a central courtyard. But there the similarities end. The Belmont-Boylston houses are stately rather than perky, having been built around the turn of the century as single-family residences and duplexes in the then-fashionable First Hill district. They were constructed individually over a ten-year period for different families.

There are two sets of three houses, back to back on parallel streets, Belmont and Boylston Avenues, a block apart. They were rediscovered in 1987 by Historic Seattle, a municipal preservation and development authority always on the lookout for buildings to rehabilitate and put to new use. The houses were thoroughly dilapidated, but Historic Seattle quickly recognized that they presented an unusual opportunity as an entire ensemble of buildings.

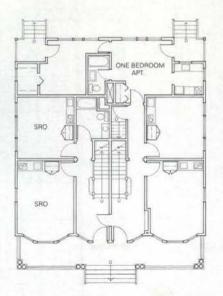
Then followed a two-and-a-half-year period of assembling funding for the \$2.4 million project, eventually involving the city, three local banks, the non-profit Local Initiatives Support Corp, and the National Trust for Historic Preservation. The houses were to be converted into 47 apartments for low-income residency, with as little damage to their original character as possible. There were no construction drawings, so the architects, Stickney and Murphy of Seattle, had to measure them top to bottom. The houses were full of surprises, and many design decisions had to be made on site. "We just had to open them up and go at it," remarks Ron Murphy.

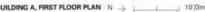
One benefit of years of neglect was that the houses at least had not been subject to modernization, so much of their original detail and decoration was intact. The architects' overall approach was "to restore rather than replace wherever possible."

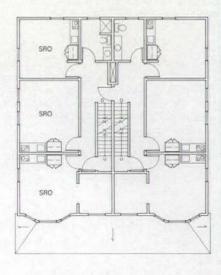
The resulting apartments are enriched by the original dark wood trim, bay windows, and high ceilings; one of the buildings contains 16 single-room-occupancy units with shared baths. The others are varied mixes of studios and one-bedroom units renting from \$210 to \$395 a month. Each building asserts its individuality in design and color. Exterior paint was chipped away layer by layer to reveal the original color of each building, which then was matched. The result is some discord but also a great deal of exhuberance.











BUILDING A, SECOND FLOOR PLAN

The sole disappointment in the project concerns the generous midblock courtyard between the two sets of buildings. The city insisted that it include some offstreet parking. While the parking is surrounded by pleasant landscaping, it is not the same as if the courtyard had been left a pedestrian preserve. "It could have been a wonderful place for children to play in safety and security in the middle of the city," the architect laments. Otherwise the project is a highly successful and unusual combination of preserving the past while meeting pressing present needs. Donald Canty

Project: Belmont-Boylston Historic Houses, Seattle, Washington. Architects: Stickney & Murphy Architects, Seattle, Washington (Ronald F. Murphy, partner in charge; David Fergus, project architect; Betsey Verd Heber, job captain).

Client: Historic Seattle Preservation & Development Authority -Bel-Boy Limited Partnership (Catherine Galbraith, Executive Director).

Site: six houses, built between 1893 and 1902 on 30,000 square feet east and west between Boylston Avenue and Belmont Avenue, the site sloping down 15 feet to the north along the 150-foot frontages.

Program: rehabilitate the exterior of six turn-of-the-century houses as accurately as reasonably possible, while developing a maximum number of SRO units with shared baths, studios, and onebedroom apartments. Landscaping was to use planting materials available at the turn of the century. Total gross square footage in all six buildings is 22,080, and the number of SRO, studio, and one-bedroom apartments provided is 47.

Structural system: standard wood framing on existing masonry foundations in most cases; some on concrete foundation walls with spread footings.

Major materials: new and reused wood siding, framing, wood trim, and new gypsum board interior walls, new insulation, and new asphalt shingles (see Building Materials, p. 184).

Mechanical system: electrical resistance heat and hot water typical, steam heat in building A; mechanical ventilation of kitchens and bathrooms.

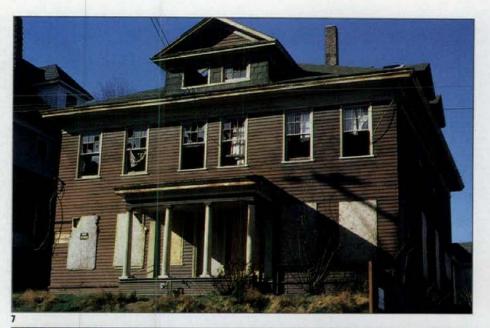
Consultants: Ratti Swenson Perbix Clark, structural; McKinstry Company, mechanical; Atkinson Associates, electrical; Summit Technology, civil; Cathleen Carr, development consultant; Thomas Rengstorf, landscape.

General contractor: J.M. Rafn Company.

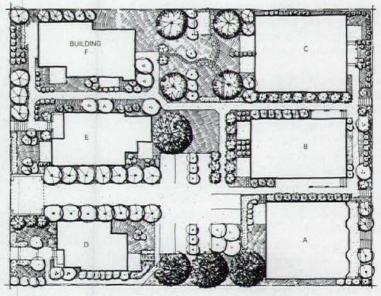
Costs: \$1,275,000 (\$58/sq ft, including sitework, landscaping, and interior finishes).

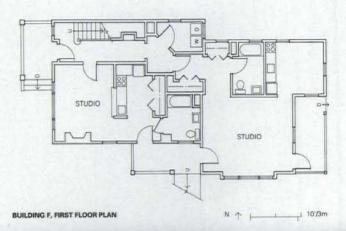
Photos (current): Michael Romine.

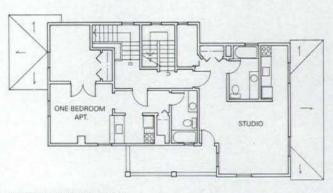
Also fronting on Boylston Street, building C (7) was in even worse condition than A; it has become one of the most cheerful on the block (8), reconstructed and cloaked in red siding and white trim. Building F (9) is among the most handsome of the six reconstructions and it now, deceptively, houses three studios and two one-bedroom apartments.





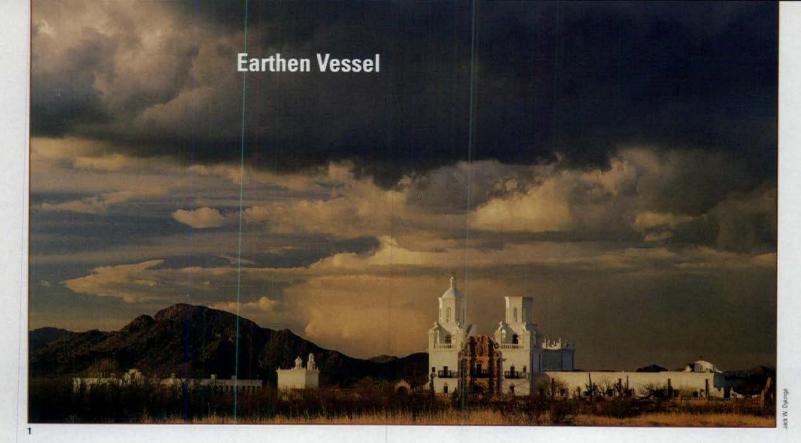






BUILDING F, SECOND FLOOR PLAN





San Xavier del Bac, America's premier Spanish church, approaches its bicentennial fortified by building techniques both new and old.

By virtue of its setting on the Tohono O'odham Native American Reservation, San Xavier del Bac is unencumbered by recent development. The white mass of the church is at once graceful and rugged, an iridescent monument in the desert (1). The volutes of the parapet, like those that bracket the twin towers, are ornamental flourishes (2). Red channels on the tower are storm drains similar to those of southern Arabia, and the earth-tone portal resembles more voluptuous Churrigueresque counterparts of Mexico and Spain. One tower was never finished (money ran out); the asymetrical result enriches the façade composition.

I want light to screech on the surface of domes which swell the heap of milky cubes...and the sky must be blue...Under the bright light, I want a city all white... –Le Corbusier, Journey to the East, 1911.

This rhapsodic vision of Istanbul has a counterpart in Arizona – the Mission Church of San Xavier del Bac. It stands in isolation, a white ship on the desert plain, as sublime as anything Le Corbusier described on his pilgrimage in 1911. For contemporary Americans San Xavier is a shrine of a mythic frontier: this is architecture at its most solid, with 3-foot-thick walls of baked clay crowned by parapets, towers, and a domed crossing, an image akin to the Islamic architecture that fascinated young Le Corbusier.

San Xavier's affinities with Muslim architecture are not mere coincidence. It is a sturdy rendition of the flamboyant *Churrigueresque*, a style that grafted Islamic ornamental sensibilities to the Classical massing of the Baroque. To the Indians who first saw the church when it was completed in 1797, it was an awe-inspiring emissary of a foreign culture, an apparition in the desert. The effect was intentional. The Franciscans who built San Xavier knew

that architectural display could win converts at least as effectively as sermons. This is architecture in the service of propaganda, in the original sense of the word.

To our modern, secularized sensibilities the strength of San Xavier lies in its simplicity. Like any work on a frontier, it is chastened by a sense of the imperative – the desert does not accommodate extravagance. Nevertheless, it was built as a mission church, with motives both strategic and transcendental. The friars who established the parish were in a holy alliance with the Spanish crown, with an evangelical program (now under scrutiny by revisionists) as ambitious as their architectural agenda. They built the church in anticipation of winning converts to fill it.

Accounts of missions like San Xavier easily lapse into folklore, but it is almost certain that this church was designed by architects (some cite Ignacio Gaona) who accompanied the friars. Construction was in the hands of artisans with the help of Pima tribespeople. Today our preconceptions of the Spanish missions veer to primitive imagery, a tangent inspired by Georgia O'Keefe's paintings and Ansel Adams's photographs of New Mexican examples. Thus it comes as a surprise to many that Mexico's Royal Academy of San Carlos established an architectural academy in the early 1780s; its graduates (as well as their self-taught precursors) built churches as sophisticated as those in Spain. San Xavier, a vernacular version of these prototypes, has the fundamentals of a Counter Reformation church, with vaulted bays and a domed transept. It is the most sophisticated Spanish building in the American Southwest.

A New Imperative - Conservation

San Xavier looks more immutable than it is.



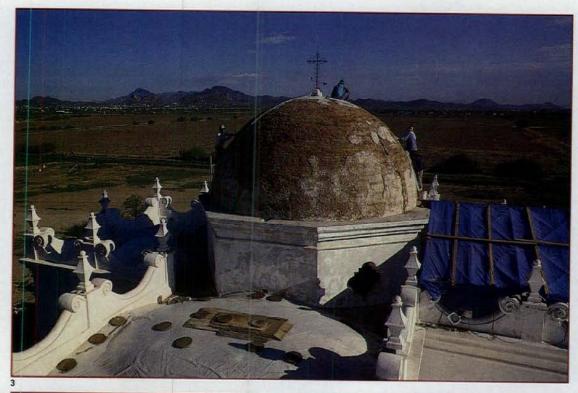
"Boil cactus till tender..."

As it was 200 years ago, so it is today: the architects for San Xavier came from Mexico; so does the best information about restoring earthen structures.

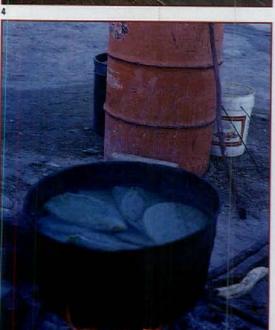
Robert Vint's mentor was Jorge Olvera, part of a circle of Mexican architects who have tackled problems that we are only beginning to address in the United States.

An earthen structure suffocates when sealed in cement and epoxy – this was the case at San Xavier, where moisture was trapped beneath the surface. When applying modern coatings, one assumes that they won't crack in the desert heat (they inevitably do) and that water absorption is lethal (it isn't, as long as the surface is maintained).

Olvera advised Vint to strip away the cement veneer (3, 5) and replace it with a traditional "skin" (4) - a plaster of lime and sand, bound by mucilage extracted from lobes of the nopal or prickly pear cactus. Common to the Tucson area, the cactus assumed cult status during the restoration project: in newspaper articles the Patronato San Xavier offered to trim homeowners' prickly pear cactuses in order to collect lobes for their pectin. Once boiled (6), they were mashed (7) and the gooey extract was mixed with mortar and smoothed on the vaults. (Most of the artisans are members of the Tohono O'odham Nation, on whose reservation the Tucson Catholic diocese operates the Mission Church.) Next the roof was burnished with river stones to reduce the size of the surface pores and the rate of water absorption. The results look as pristine as the epoxy-coated roof did. But more important, it no longer leaks, and repairs to the paintings inside are now under way (8).





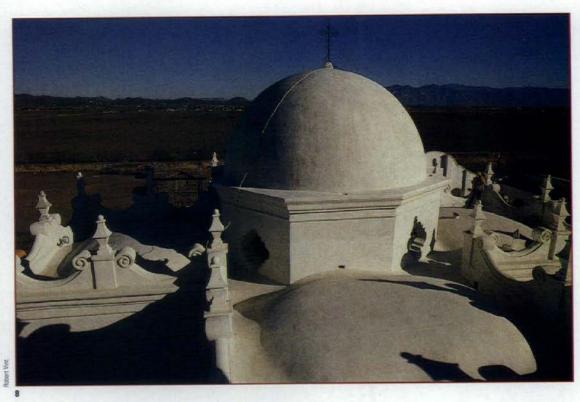






votos Robert Vir

6



1 EXISTING WOOD CASEMENT 2 NEW STEEL FRAME WINDOW

3 OUTFLOW OF WARM AIR 4 STONE RUBBLE CORE

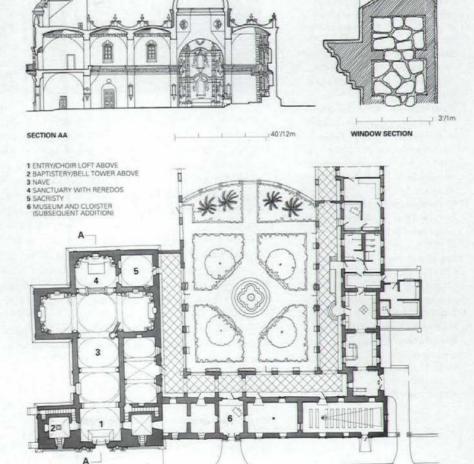
5 BAKED CLAY BRICK

S I IME PLASTER

Built of clay bricks fired under low heat (it is not adobe, because the bricks are baked), the building's nemesis is rain, which falls in sporadic torrents in the Sonoran desert. Optimally, water seeps into the walls and roof with little consequence; it evaporates in the arid heat before it can disintegrate the earthen bricks. But there were insidious problems at San Xavier: the ceiling has been leaking chronically. In 1984 the parish decided to resolve the problem so that they could stabilize and clean the 18th-Century paintings on the walls and ceiling, an exceptional collection of dry frescos.

The Patronato San Xavier, a not-for-profit community group, funded studies by conservators and engineers and turned to Robert Vint, a Tucson architect, to correct the leaks. In collaboration with the Morales Construction company, which has worked on the mission over the past four decades, he showed that moisture was trapped in the brick, a consequence of well-intentioned "improvements." In 1893, 1906, and the 1950s, the mission was repaired with techniques that proved faulty in the long run: the church was sealed with cement stucco and epoxy coatings, ostensibly the most reliable seal for an earthen structure. But the intense heat of the desert made cracks in these modern veneers inevitable. Water seeped in, but could not evaporate; the bricks began to crumble.

In 1989 the Patronato began a comprehensive conservation program, a first for San Xavier. Within two years, the roof vaults were repaired. New catch basins and rain leaders were installed along the foundation to keep rain runoff from penetrating the earthen walls. A passive ventilation system was added: solar powered roof fans circulate air in the domical side chapels, computer-programmed fans draw cool air into the towers at night, and steel and glass windows will be added to the clerestory case-



FIRST FLOOR PLAN

The dome of the crossing rests on an octagonal drum, a form with sacred connotations to Christians and Muslims (9). The flat triangles centered over the four columns have Turkish precedents, while the figural painting of the dome is related to illusionistic frescos of the Counter Reformation. Repair of the paintings entails removing the incursions of interim "restorations"; these dry frescos will not be restored, but simply cleaned and stabilized (10). According to Paul Schwartzbaum, Chief Conservator at the Guggenheim Museum, no other Spanish church in America has a nave as richly synthesized as that of San Xavier (11). The reredos that rises behind the altar, one of the latest examples of the Spanish Baroque, has a surface as richly textured as Islamic ornament.

Project: conservation of Mission San Xavier del Bac, Pima County. Arizona (10 miles south of Tucson). Architect: Robert Vint, Tucson. Client: Patronato San Xavier (not-forprofit community board). Site: Tohono O'odham Native American Reservation.

Program: an ongoing, multiphase program to stabilize and consolidate the load-bearing structure, "liberate" vaults and walls from impervious exterior coatings, and restore original

Structural system: unreinforced, loadbearing masonry walls and roof vaults, foundations of basalt laid in lime mortar.

Major materials: hydrated mason's lime and screened/washed sand for mortar and plaster, which have an organic adhesive prepared from nopal (prickly pear) cactus; low-fire clay masonry bricks (see Building Materials, p. 184).

Mechanical system: photovoltaic-powered ventilators for side chapels; computer-controlled electric fans for twin towers.

Consultants: Paul Schwartzbaum, Chief Conservator, Solomon R. Guggenheim Museum, mural painting conservation; Dr. John Peck, University of Arizona Environmental Research Laboratory, mechanical. General contractor: Morales

Construction.

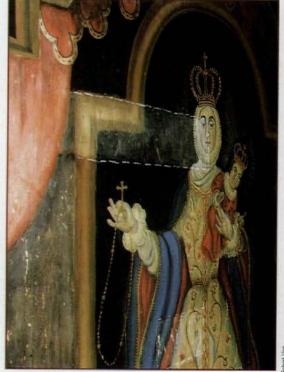
Costs: \$2 million budgeted in 1990; actual costs may vary.

Photos: James Brett, except as noted.



ments to create a gentle draft through the nave. Repairs to the exterior walls and foundation drainage are partially complete, and an international team of conservators has begun to clean the art inside. Robert Vint's strategy follows the advice of Dr. Jorge Olvera, a restoration architect and archaeologist who has studied and repaired comparable Mexican churches over the past three decades. Forensic studies showed that the church is built of parallel walls of baked brick with a rubble-filled cavity, a technique common in Ancient Rome. While these walls do not require the periodic resurfacing essential for rammed earth adobe, (San Xavier survived three decades of abandonment in the 19th Century), the proper surface porosity is crucial. Relying on Olvera's experience as well as on research studies, Vint opted for a finishing method like the one San Xavier originally had (the process is described on page 130). This allows the walls to "breathe" once again and adds a poetic anecdote: archaic technology has returned to usher the Mission Church into its third century.

Philip Arcidi





First Class Economy

Four interiors demonstrate a wealth of strategies for building quality on a restricted budget.

Neighborhood Defender Service of Harlem

Architects: McBride & Associates Architects

The offices for the Neighborhood Defender Service of Harlem embody one of the most gratifying challenges a low budget project can present these days: applying one's knowhow in the service of a worthy cause.

In this, one of a string of commissions for nonprofit and public organizations, New Yorkbased architect Nate McBride was charged with designing a new type of law office to house an alternative legal practice.

The Neighborhood Defender Service (NDS) was founded by the public-funded Vera Institute for Justice (VIJ), and is the brainchild of VIJ deputy director Christopher Stone. Its main objective is to find more equitable, comprehensive, and cost effective alternatives to the existing, flawed system of courtappointed legal aid. Seven legal teams comprising lawyers, paralegals, and community workers, each handle 100 to 120 cases at any given time.

A new kind of legal practice required a new type of law office. "There was no precedent from which to draw," McBride says. The stakes were high: to a great extent, the success of the fledgling operation would depend on how much the physical setup expressed and enabled its groundbreaking charter.

In organizing the plan
McBride had to perform a complex balancing act: on one hand,
the team structure called for an
open plan. On the other, it was
necessary to create an environment sufficiently comfortable
and "territorial" to attract top
talent from the private sector. As
McBride puts it, "There had to

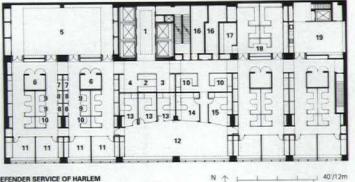




- 1 ELEVATOR LOBBY
- 2 RECEPTION
- 3 WAITING 4 DAYCARE
- 5 MOCK COURT/ COMMUNITY MEETING ROOM INTERVIEW ROOM INVESTIGATOR

- **B** COMMUNITY WORKER
- 9 COUNSEL 10 ADMINISTRATIVE ASSISTANT 11 TEAM LEADER/TEAM MEETING
- 12 CONFERENCE ROOM 13 DEPUTY DIRECTOR
- 14 DIRECTOR
- 15 PROGRAM DIRECTOR 16 EXISTING RESTROOM
- 17 COPIER
- 18 ADMINISTRATIVE OFFICES 19 STAFF ROOM

MAIN FLOOR PLAN, NEIGHBORHOOD DEFENDER SERVICE OF HARLEM









be certain 'icons of officeness' to meet some of their expectations about being lawyers.

Since the NDS relies on walkin clientele, the office had to broadcast an upbeat, accessible image, "with none of the architecture of intimidation usual in law offices," McBride says. At the same time, it had to be serious, to inspire confidence.

The balance was struck by using high-end workstations, carpet, and acoustic tile - all identifiable elements of the corporate landscape. These are relieved by bold color accents, drywall construction that defines more figural spaces, and steel and glass partitions that admit daylight deep into the building.

In addition to insightful planning, McBride stayed on budget by avoiding customizing of any kind. "Nothing is invented," he says. "It's a kit of parts. How they are put together is unusual."

Project: The Neighborhood Defender Service of Harlem, Inc., New York. Architects: McBride & Associates Architects, New York (Nate McBride, principal and project designer; Phillip Turino, project architect; Kan McCabe, interior furnishings) Client: The Vera Institute of Justice Inc., New York (Christopher Stone, deputy director). Site: second floor of loft building overlooking 125th Street. Program: 14,000-sq-ft headquarters for nonprofit legal defense operation Major materials; carpet, painted drywall, steel and glass partitions. Mechanical systems: forced-air cooling central steam heating. Consultants: Jack Stone Engineers, P.C., mechanical and electrical; Omar E. Fenik, permits liaison. General contractor: Kahn-Snyder Co. Costs: construction, excluding fees and furnishings, \$43.70/sq ft. Photos: Eduard Hueber, except as

McBride organized the plan with two main internal "streets," running parallel to 125th Street outside, with the main conference room (1) overlooking the teeming sidewalks - an effective reminder of the NDS constituency. Each structural bay of the onetime industrial loft accommodates two teams (2); at one end, facing an internal street (3), is a red cube of an interview room, which is shared by two teams. At the other end, along the building's window wall, are team meeting rooms (4).

noted.

The Tenderloin AIDS Resource Center

Designers: FACE

The AIDS counseling and resource center designed by Katherine Lambert and Mark Kessler of FACE, San Francisco, is another example of "architectural activism," where professional resourcefulness enabled an otherwise less-than-viable project to happen.

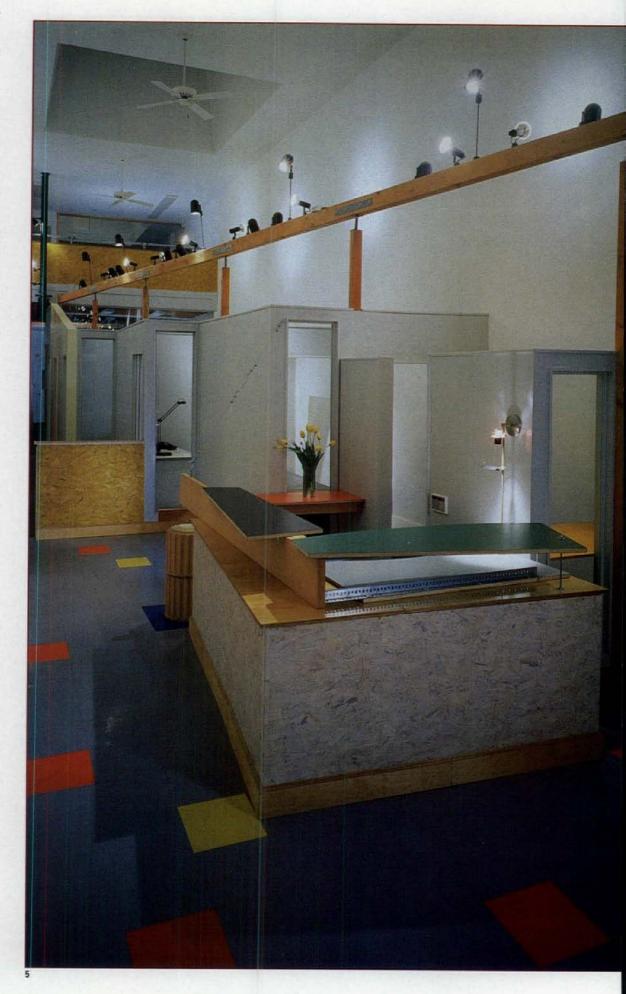
Operating on a shoestring, the design partners were charged with transforming a dark and dingy former clinic (and erstwhile porn studio) in a disreputable part of town into a storefront facility which would provide counseling, blood testing, and AIDS education. In addition, the 2300-square-foot center would become the base for an outreach program.

In another proactive measure, the nonprofit Tenderloin AIDS Network, which commissioned the project, stipulated that unemployed, unskilled people from the area be brought in for the construction, during which they would acquire marketable skills. This was done, under the guidance of contractor Alan Sweetman, and a revolving crew of about ten workers "graduated" from the project. (On one or two occasions the experiment was less successful, and stolen tools had to be recovered from a pawnshop.)

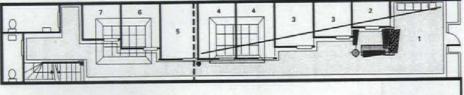
The use of unskilled labor dictated key decisions in the design, affecting choice of materials and method of construction. "We had to design and detail the space so that anyone could build it," explains Lambert. "It was the converse of trying to find crafts people. We had to design so that lapses of craftsmanship would not be apparent."

Maximizing the limited assets of the existing structure, the designers uncovered two large skylights that had been obscured by a dropped ceiling. Removing a large expanse of plywood on the street façade yielded a glazed storefront that was preserved, adding at no extra cost to the natural light entering the 18-foot-tall space.

Kessler and Lambert arrayed staggered offices along one wall of the 100-foot-deep building. Up front, these rooms have no ceilings, thus benefiting from the

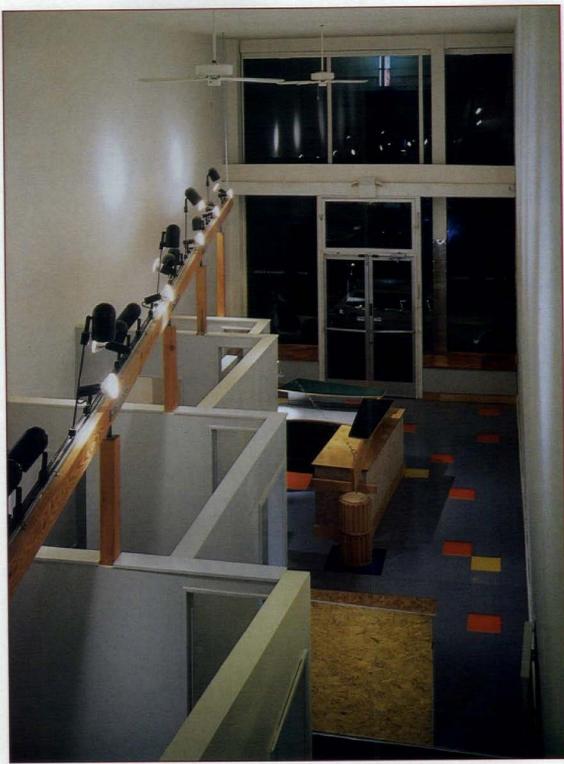


- 1 RECEPTION
- ADMINISTRATION OFFICES OUTREACH STAFF
- 4 OFFICES
- 5 CONFERENCE ROOM 6 COUNSELING 7 BLOOD TESTS



MAIN FLOOR PLAN, TENDERLOIN AIDS RESOURCE CENTER





light and air of the open space. (The project budget did not allow for heating and cooling systems, nor for lighting individual offices.) The counseling and testing rooms, where acoustical privacy is required, are fully enclosed and located beneath the mezzanine that houses the director's office and a conference room for the center's staff of six.

A wood beam, outfitted with a halogen power track on top and drawn diagonally across the open space, became a major organizing element and a money-saving device. It solves the ambient light needs of the offices, since pendant lighting was not affordable, and lights the wall, where AIDSrelated art is to be shown.

Cost was not the only consideration in selecting the palette for the project. "We looked very carefully at the messages that materials send out," says Kessler. The choice of common, off-theshelf, unpretentious materials such as strand board, douglas fir, vinyl tile, and plastic laminates, seemed appropriate for an AIDS center, he adds. "It says something about the sameness of people on the inside."

Project: The Tenderloin AIDS Resource Center, San Francisco. Designers: FACE, San Francisco (Mark Kessler, architect, and Katherine Lambert, designer, partners; Lee Bloom, Kathy DeFehr, Dona Garner, design team).

Client: Tenderloin AIDS Network. Program: a 2288-sq-ft storefront facility offering free counseling, testing, and information on AIDS, and a base for an outreach program.

Major materials: drywall, vinyl tile, stock lumber and hardware, oriented strand board, plastic laminate.

Mechanical systems: no budget for overall heating and cooling system. Individual electric baseboard in private offices, ceiling fan.

Consultants: Charles Routhier of Earl Office, graphic design.

Contractor: Alan Sweetman. Costs: total, \$63,000 (\$27.53/sq ft).

Photos: Sharon Risedorph.

Lambert and Kessler designed and built the reception desk (5), using stained oriented strand board, wood, and plastic countertops they laminated in their office. The elongated space is enlivened by the rhythmic stepping of the open office walls (6) and the bold color accents of the vinyl flooring.

The Children's Book Council

Designers Office of J.M. Reynolds

Sometimes, what distinguishes one low-budget interior from many others is a degree of articulation that results simply from a designer's resolve to go beyond competent problem solving. In designing new offices for the Children's Book Council in Soho, New York, J.M. Reynolds, a Los Angeles-based alumnus of Columbia's graduate school of architecture, had to combat not only a restricted budget but his clients' low expectations as well.

Given a 4000-square-foot space in a landmarked loft building, his challenge was to house offices for five staffers; a library to hold about 5000 volumes with adjacent space for visitors' use; a small staff conference room; and a larger conference space that could accommodate various events. "The client was very function-oriented, until I started to talk to them about the excitement the space could have," Reynolds recalls.

With his hard-gained "poetic license," Reynolds looked to the Manhattan grid to generate a more engaging geometry within the gutted loft space. The diagonal of Broadway is echoed in the plan, which is otherwise rational and rectilinear. Added interest comes from the interaction between the original columns and right-angled forms that march across the space at odds with the existing bays.

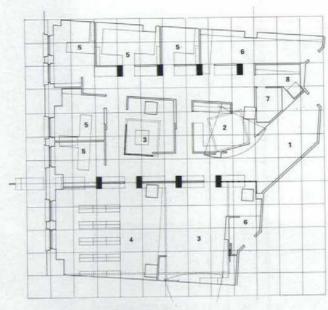
The L-shaped forms, which Reynolds nicknamed "totems," are useful devices on several counts: they define a rhythm of offices along one wall of the loft, framing an interior partition that holds built-in filing cabinets. A second row of totems defines the boundaries of the public spaces. Both sets, outfitted with uplighting fixtures, distribute the ambient lighting and help to bring out the intricacies of the original and new structure.

The designer wishes he had had just a bit more to spend on the lighting. All the same, the sculptural qualities of the space are augmented by the diversity of fixtures he used, including pendant square halogen tracks, which offset the suspended soffits of the freestanding reception structure and conference room.









FLOOR PLAN, THE CHILDREN'S BOOK COUNCIL N

- 1 ENTRANCE 2 RECEPTION 3 CONFERENCE ROOM
- 4 LIBRARY
- 5 OFFICES 6 STORAGE 7 BATHROOM



Another means of eking quality out of the project lay in the unexpected richness of certain material applications. Particularly sensuous are two large expanses of seamless (although somewhat scratched and dented) aluminum, salvaged from an auto body shop, which Reynolds had artist Larry Wood fashion into a gleaming wall for the reception area and a buffet for the main conference room. Likewise, perforated metal sheets, electrostatically painted black, provide a softer, more mysterious facing for humdrum metal library shelves.

"One of the ways to get higher quality was to work with a good contractor who understood my ideas," Reynolds says. "Since I hadn't built anything in New York, I looked at magazines, at work I admired, to find one."

Pushing a project beyond "mere" functional requirements is a dangerous pursuit. Happily, low-budget interiors rarely allow for the kind of outscaled and self-conscious gestures to which such ambition gives rise. The offices of the Children's Book Council illustrate the virtues of both imagination and restraint.

Project offices for The Children's Book Council, New York.

Designer: Office of J.M. Reynolds, Los Angeles (J.M. Reynolds, Marcus Jansson, design team).

Client: The Children's Book Council. Program: 4000 sq ft offices.

Major materials: wood veneers, aluminum sheets, perforated steel panels, laminated glass.

Mechanical systems: existing radia tors with window air conditioners. Consultants: Larry Wood, Studio

Source, aluminum fabricator. Contractor: Purdy Construction Corp. Costs: \$145,750 excluding furnishings and fees (\$36/sq ft).

Photos: Janek Konarski, except as

The sleek aluminum wall of the freestanding reception structure (7, and 9, right) is offset by the rhythm of the right-angled forms (9, left) used throughout the loft space. Shoji screens made of painted wood and laminated glass provide an angled enclosure for the small conference room (10) and an accent at the entrance. Drywall construction and recessed lighting (8) add sculptural intricacy to one corner of the main conference room.

Printed Concepts Inc.

Architects: Direction

Resourcefulness, the upstanding cousin of opportunism, is the trait essential to any successful low-budget project. It's about making something from nothing - and knowing when not to do anything.

RECEPTION

5 VIEWING ROOM KITCHEN OPEN TO BELOW

UPPER FLOOR PLAN

In creating the new studio for a Chicago graphics firm, local architect Stanley Anderson of Direction displayed an adroitness that enriched the project on many levels.

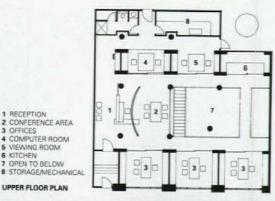
Recognizing the potential of a derelict machine room, Anderson convinced his client to undertake the renovation of two floors in a onetime leather manufacturing loft building in the West Loop.

The expressive forms of the abandoned boiler equipment there were so seductive that the hitherto unrentable basement became an integral part of the office plan. A portion of the first floor was removed to reveal the machinery, allowing natural light to filter down to the lower floor.

Anderson's approach to planning was pragmatic: "The layout was straightforward, functional, and conscious of where money should be spent to have the most impact," he says. "The most costly details and finishes were concentrated around the reception, conference, and atrium spaces."

The choice of details was driven by the decrepit machine, inspiring what Anderson calls a "post-industrial aesthetic," which was carried through the project down to the firm's new logo and stationery. This included highvisibility elements such as the steel and wire railings, and metal-grate stair and catwalk.

Further artfulness lay in recognizing the appeal of found materials and finishes. The fourinch wood planks of the existing floor needed no more than a thorough planing to yield a rough-hewn, richly hued surface. (The ceilings are of the same wood, laid over the existing structure's boxed-out steel joists and beams.) Similarly, the spalling concrete and corroded steel collars of the existing columns were left as found. "A lot of people pay a lot of money to get the aged look," the architect notes wryly. "The whole space was about decay. The















client liked it that way."

When it came to furnishing the renovated space, Anderson came up with a consistently resourceful stratagem: high-end office furniture, manufactured by the likes of Steelcase, Herman Miller, and Vecta, refurbished, refinished, and supplied at a third of the original cost by a Chicago-based second-hand furniture company.

In building the concrete, granite, and glass reception desk, Anderson adds "client participation" to his deadpan list of costsaving measures: the president of the company himself built the form, and poured and troweled the concrete.

The desk, representative of the entire project, illustrates a useful adage to bear in mind when resources are limited: You make what you have

Ziva Freiman

Project: Printed Concepts, Inc., Chicago.

Architects: Direction, Chicago (Stanley Anderson, principal; James Mohn, architect).

Client: Printed Concepts, Inc. Site: former leather manufacturing loft building.

Program: renovation of 5000-sq-ft industrial space to house graphic design firm with offices, studio, conference space, computer and viewing rooms on two floors with atrium.

Structural system: existing steel frame and brick load-bearing walls.

Major materials: steel handrails, metal-grate stair and bridge, wood floors, drywall partitions, curved plywood conference partition, concrete, steel, glass, and granite reception desk. Mechanical system: forced air HVAC

on each floor.

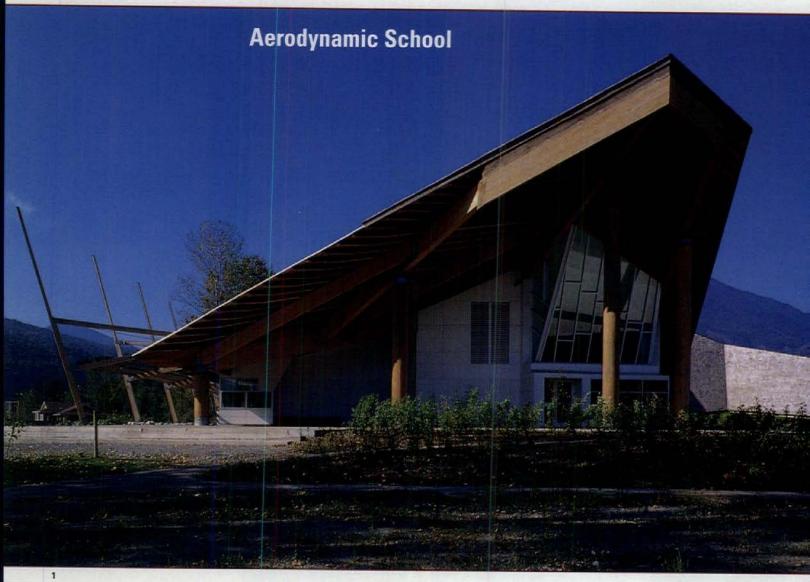
Contractor: Annie Properties, Inc.

Costs: total \$125,000 including construction, all systems, furnishings, and fees (\$25/sq ft).

Photos: James Yochum.

The glass, granite, and concrete reception desk (11) is joined to a curved oak-paneled partition, which screens off the conference space (12). Heavy-duty threaded rods and botts spaced one foot on center penetrate this partition to create a chart rail for the firm's client presentations. The conference room overlooks a spectacular atrium (13), with its derelict boiler centerpiece.





A schoolhouse for a Canadian Indian community appears

to have just alighted in its bucolic valley.

The assertively angular Seabird Island school is the centerpiece of its community. It serves a band (tribe) of Coastal Salish Indians at the north tip of British Columbia's beautiful and fertile Fraser Valley, inland from Vancouver. It is also the flagship of a remarkable school-building program by the Canadian Bureau of Indian and Northern Affairs in British Columbia.

The program is using some of the province's most talented architects, many relatively young, to

produce a series of notable if modest buildings (one of which, by Peter Cardew, won a P/A Award, Jan. 1991, p. 112). An important goal of the program is to make the native bands feel that the schools are their own, through participation in the programming, design, and construction.

Administrator of the program is Marie-Odile Marceau, a French-Canadian architect of searing dynamism and enthusiasm. She leaves many significant decisions to the bands, but they know she is ultimately responsible for the spending of the federal money, and she guides them with a firm hand. Architect selection is done through requests for proposals, and the choices are made by the bands on the basis of her analysis of the respondents.

When the proposals for this school came in, the chief of the band looked at them and said to Marceau "I don't know what's in those things; you make the choice." She replied "No, I'll go through them with you and the band will make the choice." At first some band members thought the Patkaus were too intellectual and were swayed by another contender. But in the end they chose the Patkaus.

Then followed four months of meetings between the architects, the school staff and students, and the



community at large, extending into the early stages of design. The educational program, devised by the band, combines basic skills with teaching of the Salish culture and language, which is dying out. The school was to serve 290 kindergarten to l0th grade students, some bused from nearby communities, with eventual expansion to the l2th grade. Secondary and elementary students were to be clearly separated.

During the meetings "the children actually were listened to," says John Patkau in wonderment. "The band made decisions by consensus. This is not an authoritarian society." The Patkaus set out to give them a distinctly non-institutional building. A key shaping factor was the site.

The Seabird Island community is at the convergence of two mountain ranges. An island in more than one sense, it is an absolutely flat tract of delta land cut off from the rest of the valley by broadshouldered hills.

The Patkaus saw the site as a large outdoor room. They concluded that the school "needed to be a figure in space. A thing rather than a building – somewhat zoomorphic." Marceau says that "the building seems to have grown out of the ground."

"No," responds a listener, "it seems to have gotten to the site under its own power, either by crawling or flying."

The Patkaus also wanted the school to help physically define the community. Its historic pattern had been to leave the center of the island open for agriculture and to put dwellings along the lightly wooded perimeter. At the south end was a rough U of community buildings; workshops, a meeting hall, a church, the old school, and a pair of portable jails that were used as auxiliary classrooms. The new school was placed at the open north end of the U, so that it completed the enclosure of a kind of village green.

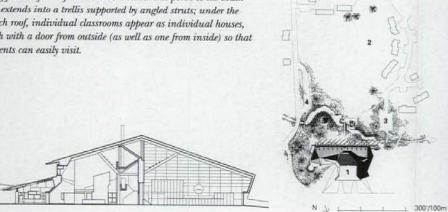
Another shaping factor was the climate. On the valley floor it is mild, but down from the meeting of mountains to the north comes a prevailing winter wind so severe that it sometimes halted construction. So the architects used the mass of the building as a windbreak, "allowing a more favorable microclimate to develop on the southern, community side of the school." They made the northern façade all but windowless, "hunkered down against the wind," meeting it with sculptural, shingled forms designed partially with aerodynamics in mind.

The school's bold roof forms play against the silhouettes of surrounding mountains. At the east end (1), this canopy swoops high over a play space outside the kindergarten – ironically giving a cathedral-scaled space to the smallest students. From the west (2) the opposite end of the classroom block is seen clasped between the gym to the north and the wide porch to the south. The trellis projecting beyond the building at this end can be used as a salmon drying rack.

FLOOR PLAN

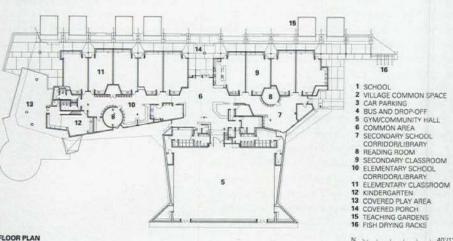


In a view from the north (3), the bermed gym is seen against the long fishlike form of the classroom block. The porch to the south (4) extends into a trellis supported by angled struts; under the porch roof, individual classrooms appear as individual houses, each with a door from outside (as well as one from inside) so that parents can easily visit.



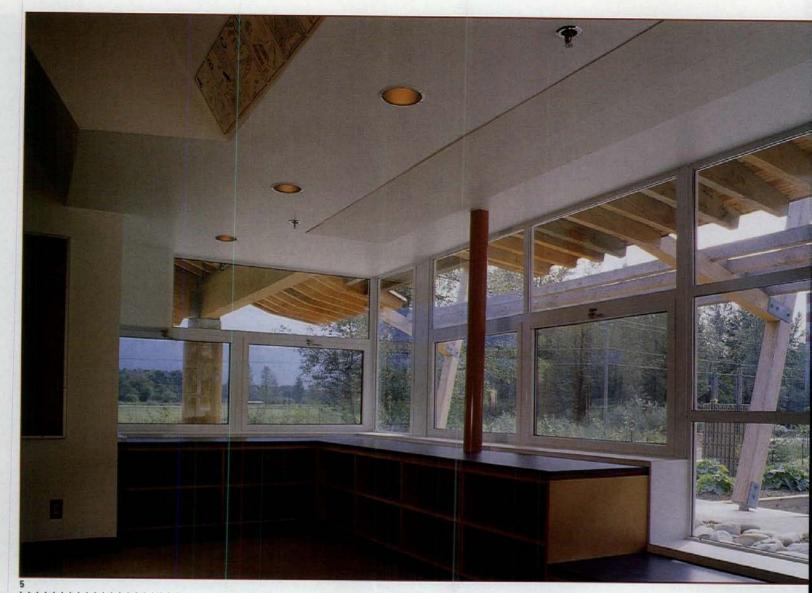
SECTION LOOKING WEST SITE PLAN











The view out of a classroom (5) is modulated by the sweeping porch roof and the trellis beyond. The classrooms are reached from the central commons by way of corridors (6) that double as libraries - one for the elementary wing, one for the secondary; these spaces flow around cylindrical reading rooms and ascend to the lofty roof peak. Openings cut into the faceted building envelope (7) introduce light from unexpected angles. The prominently exposed structural members are glulams fabricated from plywood chips, except for circular columns (see also photo 1), which are natural timbers.

The south façade is vastly more welcoming, underscoring the close interface between school and community, which was emphasized from the beginning. The school gymnasium was to be a community hall, and there was to be space for adult education and crafts. Further, the community's "active participation in the school's daily operation" was to be encouraged.

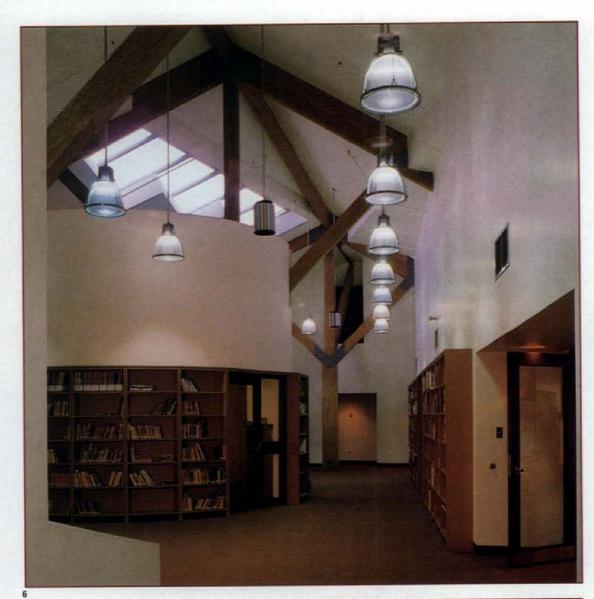
Along the path to the school is a traditional carved Salish figure signifying welcome. Beside the front door is a panel (carved by a member of the band) that pivots to make a wider entry when the building is used by large groups. A stout column in front of the entry will be similarly carved. Inside the entry is the commons, which divides the elementary portion of the school on the east from the secondary portion on the west. It is a soaring, dramatic volume, at its apex the equivalent of four stories in height. Corridors opening from the commons reach similar heights, making them more galleries than mere circulation slots.

Staff and common-use areas such as the separate elementary and secondary libraries are "sketched into" the corridors so that students encounter them naturally in the course of moving through the building. The corridors are punctuated by two round rooms, a counseling office, and the secondary library's reading room.

Past the commons from the entry is the very large, irregularly shaped gymnasium with a canvas that covers the hardwood floor on the frequent occasions when it is used as a community room. Here too there is a pivoting panel for easy access by large groups. Windows look into the gymnasium from community rooms that the Patkaus tucked into the commons' upper reaches, stretching the bureau's program slightly.

Everywhere there are dramatically exposed wood structural members. Most are a special kind of glulams made with plywood chips instead of boards, which have highly interesting texture and resemble real timbers more than the standard kind do. The sturdy post and beam construction is the traditional building technique of Pacific Northwest Indians, just as the cedar shingles on walls and roof are a traditional material.

The band did all of the work of construction except mechanical and electrical and fabrication of the windows. They had the help of a construction manager, a standard practice in the Canadian



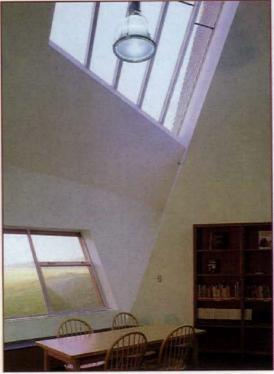
school building program.

It was a highly complex structure with "complicated geometries intersecting in space," in John Patkau's words. So the architects made a large structural model to help guide the work. They feel that the band did a better job than a conventional contractor, who might have been intimidated by the complexities.

The building is a dynamic composition, constantly changing as one moves around it. The abstract, somewhat idiosyncratic, forms and fenestration recall Bruce Goff at least as much as traditional native buildings.

Some other bands find it too "radical", but the Seabird Island students and staff show great pride in the school. There has been virtually no vandalism. "All of the interesting schools around here are being built by and for the natives," said a science teacher with obvious satisfaction. Donald Canty

The author, former editor of Architecture magazine, is P/A's correspondent in Seattle.



Project: Seabird Island School, Agassiz, B.C., Canada Architects: Patkau Architects, Inc., Vancouver, B.C. (project team: John Patkau, Patricia Patkau, Greg Johnson, Elizabeth Shotton, Tom Van Driel).

Client: Seabird Island Band (Daryl McNeil, band manager).

Site: on flat land, part of a group of community buildings on an island in the Fraser River.

Program: a school "to promote the culture, language, and way of life of the Salish Indian community," with 10 classrooms (expandable to 14), a kindergarten, administration, and gym/community hall; 23,573 sq ft (2910 sq m) gross.

Structural system: plywood-sheathed timber joists on heavy timber (Paralam) frames, with reinforced concrete grade beams on timber piles.

Major materials: cedar shingles, stained fir plywood (exterior cladding); thermally broken aluminum window frames; extruded polystyrene roof insulation; fiber batt wall insulation; gypsum board interior walls; sealed medium-density fiberboard gym walls; carpet, linoleum, and hardwood floors.

Mechanical system: two natural-gasfired boilers; three separate constantvolume reheat air-handling units; systems capable of free-cooling with 100 percent outdoor air.

Consultants: Christopher Phillips & Associates, landscape; C.Y. Loh Associates, structural; D.W. Thomson Consultants, mechanical and electrical; NovaTec Consultants, site development.

Construction manager: Newhaven Projects, Ltd.

Costs: \$3,204,000 Canadian (budgeted, 1988, and actual, 1991) = \$2,697,000 U.S. (1991); \$136 per sq ft = \$114 U.S. – includes interior finishes and furnishings.

Photos: James Dow.

Emerging Talent: Shim & Sutcliffe

This young Toronto firm has explored, in two small projects,

both the sensuous and the intellectual aspects of architecture.

A price we pay for living in a high-tech world is a certain deadening of the senses. Too much time spent watching television and computer screens weakens the eyesight; too much time spent listening to amplified sound dulls the hearing; too much time spent in air-conditioned buildings lessens our feel for the natural world. Architecture has a part to play in this growing insensibility. How many buildings have become simply containers of hermetic, uniform space? But architecture, which engages more of our senses perhaps more than any other art, can resist this trend, reawakening us to the world and literally bringing us back to our senses.

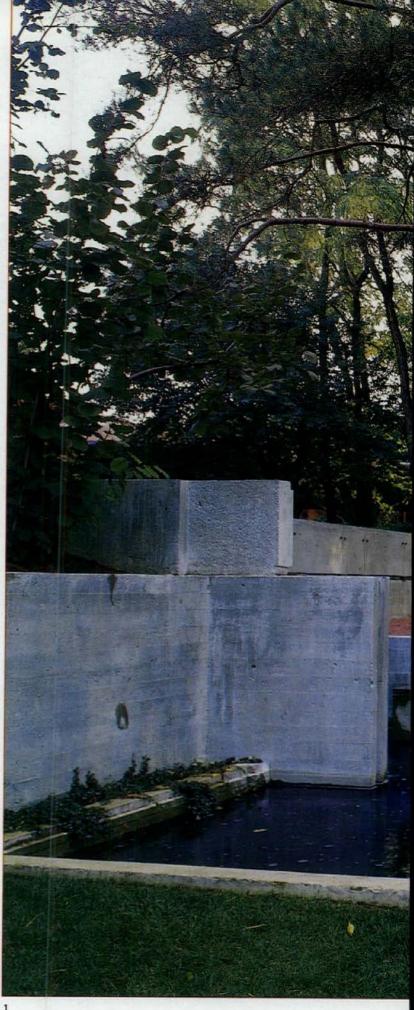
Brigitte Shim and Howard Sutcliffe have pursued such a course. Running a small practice in Toronto, they have begun to explore the sensuous potential of architecture in two projects: a small pavilion and reflecting pool they designed and helped build for a television interviewer in suburban Toronto; and a two-bedroom house they designed for a film-maker-turned-bookstore-owner and his wife on a private lake in northern Ontario. In both projects, they have used sound, color, form, odor, and texture in thoughtful and sometimes surprising ways, while retaining formal and intellectual rigor in their work.

A Sense of History

Both the pavilion and the house make knowing references to Japanese vernacular architecture. You approach the shelter along a zigzag route, down a series of stone steps and over a wooden plank bridge spanning an artificial pool - all of which recall the miniature and highly symbolic character of Japanese gardens, where crooked paths, precarious bridges, and moving water represent the passage of time and the tenuous balance between life and death. Likewise, the house, with its steep wood-shingle hipped roof and wood-clad interior ceilings, is reminiscent of vernacular Japanese farmhouses, with their broad sheltering roofs.

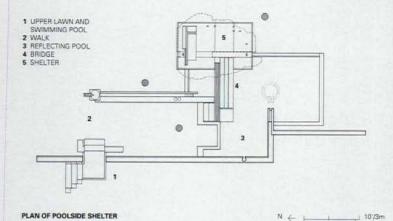
Yet, in both projects, Shim & Sutcliffe's admiration of Modern architecture also emerges. The house, with its tall roof, low eaves, and cavernous top-lighted interior, brings Gunnar Asplund's Woodland Chapel to mind. And the pavilion's retaining walls, with their variegated concrete surfaces and their circular cutouts (in one place, designed to hold wine bottles for chilling in the cold water) show the influence of Carlo Scarpa, while the steel-framed shelter itself, with its irregular column spacing (like the trunks of the surrounding trees) and its seemingly weightless steel roof, recalls the work of both Aalto and Mies. "Our intent," notes Shim, "was to make space with a minimum of gestures." (Both she and her partner, by the way, think that Mies has been misunderstood and misrepresented by Post-Modernists and that his minimalist architecture was not a bore, but among the richest work ever produced.)

Standing between a manicured lawn and an overgrown ravine, this poolside shelter offers a Modernist interpretation of a Japanese garden: the traditional gravel walk, stepping stones, wooden bridge, reflecting pool, and pavilion are rendered in a minimalist design vocabulary (1).









Project: garden pavilion and reflecting pool, Toronto, Canada.

Designers: Brigitte Shim & Howard Sutcliffe, Toronto.

Client: names withheld at client's request.

Site: near private residence and outdoor
pool at edge of ravine in a suburban area.

Program: garden pavilion for contemplation and viewing of the landscape, with a
reflecting pool and fountains.

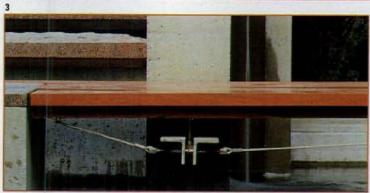
Structural system: concrete retaining walls and slab, steel-framed pavilion.

Major materials: weathering steel, cast-inplace concrete, granite, mahogany, copper (see Building Materials, p. 184).

Consultants: Ned Onan, Onan & Hayta, structural.

General contractor: Gerald Porter.
Photos: James Dow, Dow Associates.





__ 1º /.33m

The garden suggests the metaphor of life's journey – of the crooked paths and difficult steps we must take, and the precarious bridges we must cross before reaching our destination (2). The garden also is a kind of timepiece, in which time is marked by the regular fall of the water dipper (3), by the slow weathering of materials such as mahogany and copper-bearing steel, even by the periodic adjustments of the cables under the bridge to compensate for its gradual sagging (4).

A History of the Senses

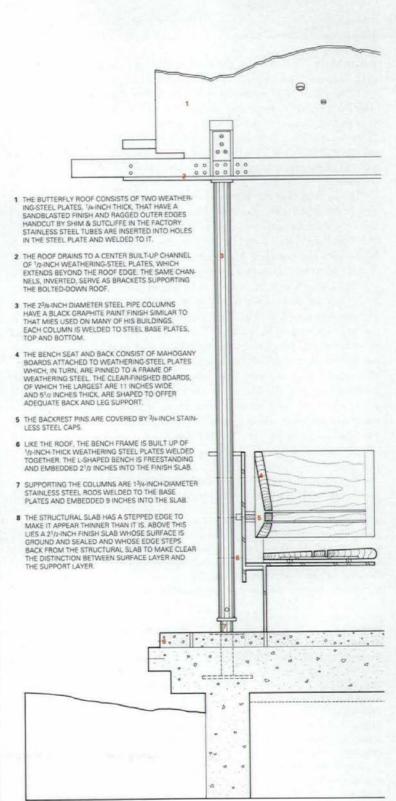
In making such historical references, though, Shim & Sutcliffe have avoided viewing past architecture as merely a set of images that can be appropriated and combined at will. Such an approach, they argue, places too much emphasis on the visual sense, which architects are perhaps better at than most of their clients. Shim & Sutcliffe, instead, approach architecture as a set of historically and culturally grounded phenomena that address all of our senses.

Consider, for example, the way these two projects play upon one's sense of touch, smell, and hearing. As you walk toward the poolside shelter, you can run your hand along the concrete retaining wall, with its chiseled, bush-hammered, and board-textured surfaces representing the strata of the earth behind it; you can mark your progress with the textures under your feet: the crunchiness of the granite-chip walk, the unevenness of the split-face granite steps, the slickness of the polished-stone step and the mahogany bridge; and you can feel, upon arrival at the pavilion, the warm smoothness of the mahogany seat, the cold powderiness of the weathering steel bench, and the slight abrasiveness of the graphite-painted steel columns. All the while, the damp woodland odors are wafting up from the adjacent ravine, and the sound of water - pouring out of the copper dipper, rushing down its concrete channel, and splashing into the reflecting pool - almost drowns out the traffic noise from a nearby road. These sensualities cause the outside world to seem far away, appropriately for a pavilion meant as a place for contemplation.

The house differs in its context and intention. Buried within 75 acres of forest, it has almost no ambient human noise. Accordingly, the house itself becomes a kind of auditory vessel, whose open interior, high sloping ceiling, and hard interior surfaces – acrylic stucco walls, maple floors, birch-plywood ceiling panels – echo the welcome sound of human activity in that wilderness. Textures, too, play a different role in the house. The interior surfaces – the smooth stucco, sanded wood, glass walls – offer a desirable contrast to the roughness of the surrounding trees and boulders. One thing the house shares with the pavilion is the rich odor of rotting leaves and new growth borne upon a cool damp breeze.

Both projects also share a playfulness of scale. The pavilion, for example, looks large when viewed from above, with its butterfly steel roof whose ragged edge and irregularly spaced holes suggest both a forest canopy and a constellation of stars. But that steel-framed representation of nature is, in fact, quite diminutive, capable of sheltering only a few people comfortably. The small two-bedroom house, too, appears larger than it is. On the exterior, an undersized dormer makes the hipped roof look huge, and on the interior, the wood-paneled cathedral ceiling, within which floats a studio loft, seems to stretch on for an indeterminate length.

Both projects employ a technique, common in Japanese gardens, of cutting out the foreground to make distant objects appear larger and nearer. From the pavilion, the trunks of relatively small trees are obscured by the retaining wall so that they appear quite large. Likewise, inside the house, a series of stuccoed and concrete-block walls



SECTION THROUGH SHELTER



partly block the view from the living room and the slope down to the lake, making the water seem closer than it is.

Color, however, is handled differently in the two projects. The pavilion retains the natural finish of its materials - concrete, mahogany, copper-bearing steel - so that, as Brigitte Shim puts it. "they will weather and mark the passage of time." Even materials that weather slowly, such as the granite steps, should change with the growth of lichen or moss that seems inevitable in such a shady, watery location.

The house takes a different tack, using intense paint colors to respond to the cycles of nature. Blue soffits visually feather the edge of the roof into the winter sky; purplish interior walls visually recede into the dominant hue of the summer forest; yellow-ochre exterior walls blend into the color of the autumn foliage. The house itself doesn't change so much as it acts as a mirror to a changing nature.

Although Shim & Sutcliffe's work is noteworthy for its attention to detail and its sensuous quality, there is more to it than that. It manages to strike a difficult balance between the intellectual and the sensuous, Modernism and the vernacular, building and nature. And therein lies its real power: however Modern or Western it appears, this work is fundamentally Eastern in its sensibility, not trying to resolve differences in some new synthesis, as so often happens in Western architecture, but allowing those differences to coexist in a balanced state, a Yin and Yang. In the unbalanced, high-tech world in which we now find ourselves, such a sensibility has value not only for architecture, but for everyday life. Thomas Fisher

The hipped-roof house, which backs into a slope above a private lake, plays upon our sense of scale, with small dormers that make it look larger than it is, and oversized windows that do just the opposite (6). The combination of materials - wood slats, exposed block, an exposed steel column - make references to various Modernist work, including that of Aalto, Kahn, and Mies (5). Inside, a plywood-paneled ceiling contrasts with the subtle blue and purple colors of the walls and soffits. A series of low walls accommodates the change of level between the living and dining areas and were thought of, says Howard Sutcliffe, as "an artificial landscape or a ruin around which we built the house" (7,8). Solar panels, a propane generator, and a woodburning stove provide all energy needs.

Project: house on Horse Lake, Haliburton, Ontario

Designers: Brigitte Shim & Howard Sutcliffe, Toronto (John Czechowski, modelmaker).

Client: Stephan Patrick and Holly Hutchison.

Site: 75 acres of forest surrounding a private lake on the Canadian Shield.

Program: 1800-square-foot house containing two bedrooms, a studio, and living. dining, and kitchen.

Structural system: wood frame on concrete block foundation.

Major materials: concrete block, birch plywood, cedar shingles, exposed steel, flamed granite (see Building Materials, p. 186). Mechanical system: solar panels and

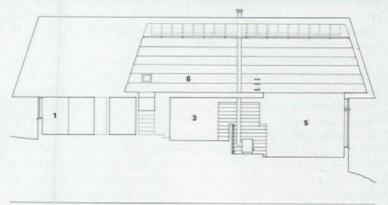
propane-powered generator feed batteries for electricity; propane-powered furnace, stove, and refrigerator; woodburning

Consultants: Ned Onan, Onan & Hayta, structural; Frank Toews, mechanical; Margaret Priest, colors.

General contractor: Michael Sheedy

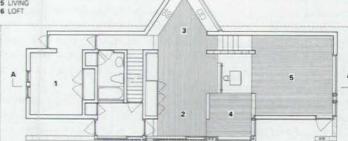
Photos: James Dow, Dow Associates.





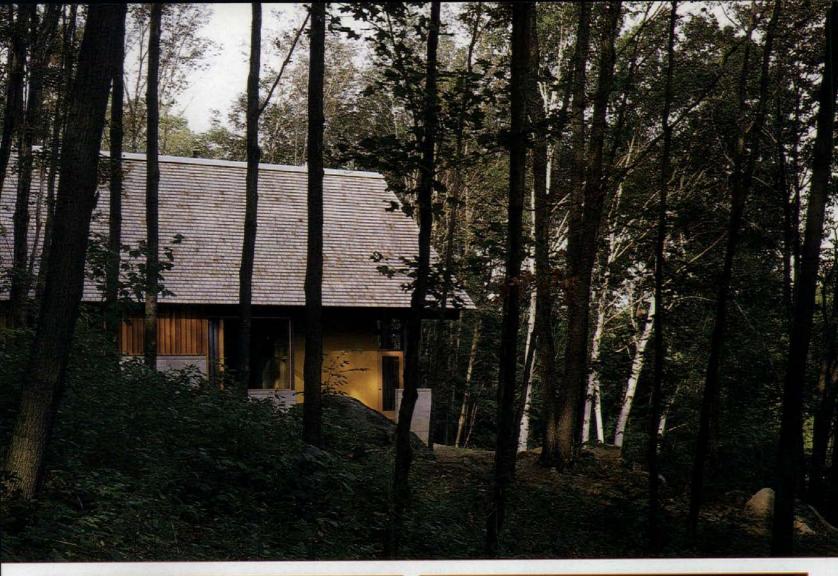
SECTION AA

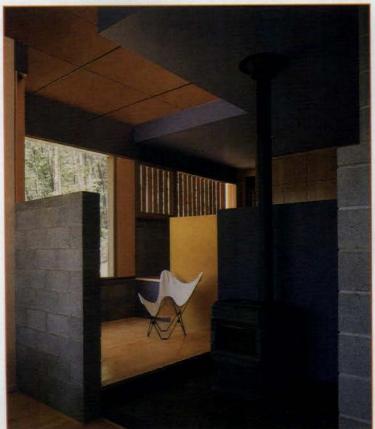
- 4 STUDY

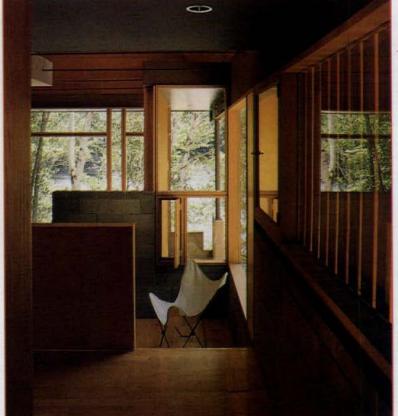


FIRST FLOOR PLAN









Foreign Brief: Finland

To call a Finnish architect traditional is no small thing. Above all, the art of building in Finland is the construct of an inheritance. What has been handed down through centuries of repetition is beyond fashion and the arbitrariness of personal expression. Tradition has nourished an extraordinary building ethic in Finland - one that has attained the force of a moral imperative.

In an age that thrives on celebrity, that prefers the complicated to the unaffected, the startling to the subtle, that favors novelty rather than a considered relation to culture, and that generates noise all around us, it is astonishing that Finnish architects have maintained a tradition of asceticism, simplicity, and silence.

Juhani Pallasmaa, the firm of Heikkinen & Komonen, and the architectural group MONARK represent three generations of contemporary practice. Their work is Modern in appearance with hardly any surface traces of the past. But in Finland modernity and the past are reconciled by the bridge that is tradition. In fact it is the struggle for the simultaneous appearance of modernity and memory that reverberates so profoundly in these architects' work. Their architecture is bound to European culture and at the same time it is fixed in its place. It is poised between a knowledge of certain universals and the inflection of its locality.

What is clear in this work and in that of many other Finnish architects is a capacity for self-restraint. It is a legacy of the humble and anonymous objects that fill the landscape and the collective memory. These objects, which are often made of a single material, which have surfaces that reveal nothing more than the simple, repetitive imprint of a tool, which depend upon an unassuming form for their endurance, and which are fitted for their purpose, have become icons from an ancient forest culture - the very image of modesty and discipline.

A rational approach has been another source of self-restraint. At the turn of the century, regional insularity was perceived as an intellectual impediment to Finnish architecture. In their pamphlet of 1904, Architecture: A Challenge to Our Opponents, Gustaf Strengell and Sigurd Frosterus argued for an architecture of rigorous reason to balance the arbitrary fantasy of National Romantic forms. As Strengell emphatically stated, "We have plenty of decorative and artistic talent in Finland at the present. What we need is some guiding, clear, and rational force."

Geometry, measure, and relation - in short, the normative rules essential to Classical composition, have guided the work of Juhani Pallasmaa, whose generation began their careers in the late 1950s in the shadow of Aalto, and in opposition to his strong artistic identity. Pallasmaa's collaborations in the early 1960s with his former teachers, Aulis Blomstedt and Aarno Ruusuvuori, reinforced the severity of his rational approach and encouraged an architecture that by 1970 revealed little more than the silence of construction. Precision, purity, and deep meditations on a right-angled world were more than an aesthetic framework; they were a means to unify art and life, and to reveal truth in a work of art.

Pallasmaa's more recent work reveals an interest in the imagination. The treatment of the door is the most obvious manifestation of this preoccupation in his work. For Pallasmaa doors are masks of provocation, instruments of mystery and seduction. For example, in his renovation of the Rovaniemi Art Museum, the brass entrance doors are set apart from the brick-walled building with a cleverly detailed glass enclosure that makes it appear as though the doors are standing alone between the building and the street.

By the time Mikko Heikkinen and Markku Komonen were beginning their studies at the Helsinki Institute of Technology in the 1960s, Constructivism, minimalism, and purism dominated the architectural discourse in Finland, both in practice and in the university. After graduating in the mid-1970s and moonlighting together for ten years, Heikkinen and Komonen shared the first prize in the design competition of Heureka, the Finnish science center, and were awarded the commission in 1986.

Rational construction, the juxtaposition of repose and tension, and the physical simulation of natural phenomena were themes that emerged in this first work. Throughout the science center the simultaneous existence of discrete ordered entities and fragmented sequences creates what the architects describe as a sense of "harmony at the edge of chaos." While this building may superficially resemble

"[The Finnish architects'] capacity for self-restraint... is a legacy of the humble and anonymous objects that fill the landscape and the collective memory."

the so-called Deconstructivist style, the collisions and juxtapositions of volumes within the science center only disguise the fact that these individual elements are often as austere, straightforward, and compositionally disciplined as their Constructivist predecessors. Its organization of distinct functional entities around a large room or a courtvard is characteristic of a traditional type of Finnish farmhouse.

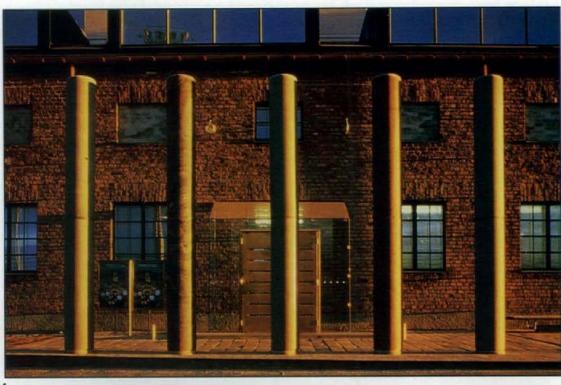
Paring away excess has become increasingly critical to Heikkinen and Komonen's architectural development. Singular, decisive gestures are typical in their most recent work. With sharp scalpels they open a void between the rationally clear and the ambiguous. The cuts are precise and clean, like the vast horizontal lines of trees in the Finnish landscape that sever earth from sky. With a taut, straight line or a sweeping arc, they separate the world from the content of their architecture. It is a universe of solitude, one that overcomes remoteness with the nearness of silence.

Silence is a force present also in a recent project by MONARK. This group of students, including Juha Jääskelainnen, Juha Kaakko, Petri Rouhiainen, Matti Sanaksenaho and Jari Tirkkonen, won the competition for the Finnish pavilion at the 1992 Seville World's Fair. Beginning with two masses and a void, the architects carved out a space of inwardness. Between these two volumes there is an enormous distance, in touch, texture, and time: the one building, a bulging, curvilinear box entitled "keel," evokes traditional ship-building methods with its handcrafted wood construction, redolent of Finnish charcoal tar. The other structure, an elongated, precisely drawn bar, is industrially fabricated steel, cold rolled and lacquered. In the void there is nothing. Nothing but a bridge between memory and imagination. What we can see are two things - but what is not there is also something. Scott Poole

The author, an associate professor of architecture at Virginia Tech, lived in Finland as a Fulbright Scholar during 1983 and 1984. His book, The New Finnish Architecture, was published last month by Rizzoli, New York.

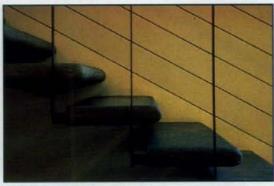
154

Progressive Architecture



Juhani Pallasmaa's renovation of the Rovaniemi Art Museum (1) features brass entrance doors, encased in glass, which the architect drew out of the building plane onto the sidewalk. Cantilevered stairs of steel and stone (3), added to the museum interior, epitomize Pallasmaa's stark meditations on material and structure. In the Heureka Science Center in Helsinki (2), architects Mikko Heikkinen and Markku Komonen built a "spectrum wall" (4), which simulates the phenomenon of light refraction. MONARK's competition-winning proposal (6) for the Finnish pavilion at the 1992 Seville World Fair was mocked up by the young architects in a 4-foot-long model (5).









5

Roundtable: Preservation in Minority Communities

In early March, P/A convened a panel to discuss the complex issues surrounding preservation in minority communities and the role minorities can play in the preservation movement. The conversation, of which excerpts follow, was moderated by Executive Editor, Thomas Fisher.

Fisher: What is the relevance of preservation in minority communities, particularly in poor communities that have high rates of unemployment, homelessness, and drug-related crime? Is preservation in that context simply a nicety, or is there a role that preservation can play in helping such communities?

Washington: Preservation is obviously not uppermost in people's minds

when they are trying to survive, but in a lot of minority neighborhoods, you have old buildings, many of them vacant, and it is often easier to preserve those structures than to tear them down and wait for the funding for new buildings. So just in terms of helping people obtain housing, communities have to think of preservation as an important way to go.

Kelly: And whether you're working-class or middle-class, there's some level of personal self-worth gained in being able to maintain an older building of quality.

Narvaez: Preservation is important also in economically depressed areas because it offers a means by which people can stabilize their neighborhood and show some sense of pride in their community.

Adams: Yet I am frustrated living in Harlem and seeing so many buildings simply thrown away by those outside the community, because they figure it doesn't matter, and by people within the community, out of their own sense of frustration at having been forced to live in old, rundown, falling-apart buildings. Poor people are particularly victimized by the Madison

Avenue notion that anything new is inherently better than the old.

The Forces For and Against Preservation

Fisher: If there are these two camps in minority communities, those who argue for saving the existing building stock and those who would tear it down for something new, which group is prevailing?

Washington: There has been a perception problem with older buildings, but I think that is changing. Although it has taken us generations to get to this point, more and more people are likely to rehab a building than to tear it down and build anew.

Narvaez: If you can peel away the layers of modern accretions in older buildings and get back to the interesting original spaces, people do respond very quickly. They will recognize it as a special place and value it greatly, but they have trouble seeing it.

Adams: In many poorer neighborhoods, though, a lot of the real estate is owned by the city and a lot of it is being warehoused or demolished out of neglect. Some people worry about gentrification in these neighborhoods, but the greater worry, it seems to me, is what is kept from being gentrified because it is being demolished. If you get rid of the

old buildings, you get rid of the poor black people and you end up with perfect development sites.

Kelly: Yet, I think there has been a big change since the 1950s in the general culture, and in minority communities as well. In the fifties, people equated getting ahead with getting something new, and that new meant it was better. Since the 1970s, people now see the value of neighborhoods, of old buildings, or something that lasts and that has quality. The problem right now is that there is less money available to do anything, public or private.

Narvaez: Also, a lot of what happens in these neighborhoods is economically driven, and not necessarily because minorities live there. I've run across some of the same problems among German steelworkers in Western Pennsylvania, in Italian neighborhoods in Queens, in

Cuban and Puerto Rican neighborhoods.

Adams: But the common denominator is class. You're right, it doesn't matter what color they are, but it's the economic condition these people find themselves in. If you have a family of ten crowded into a three-bedroom apartment in an older building, they're going to have a negative view of that building, rather than of the more abstract forces that sent them there.

The Panelists

Michael Adams, a graduate of the University of Akron, who studied in the preservation program at Columbia University, is an architectural historian and President of The Upper Manhattan Society for Progress through Preservation, an advocate group seeking greater recognition and landmarking of buildings in upper Manhattan.

Emanuel Kelly, a partner in the Philadelphia architectural and planning firm of Kelly Maiello, is the President Elect of the Philadelphia Chapter of the AIA and an Associate Professor of Architecture at Temple University. He has an architectural degree from Drexel University and a city planning and urban design degree from Harvard.

Alfonso Narvaez, an architectural conservator with an urban studies degree from Cornell and a master's degree in preservation from Columbia, works for John Milner Associates, a multidisciplinary firm of architects, conservators, archaeologists, historians, and planners in West Chester, Pennsylvania.

Roberta Washington has her own architectural firm in Harlem, New York. She has an architectural degree from Howard University and a master's degree in hospital design from Columbia. Most of her practice involves rehabilitation work, much of it in Harlem.

Community Preservation

Fisher: We've been talking a lot about community preservation, and yet the tradition in the preservation movement has been to focus on high-style architecture? Does that tradition have any relevance in minority communities?

Narvaez: More and more, preservation efforts are addressing vernacular structures, buildings that have no obvious architectural merit, but are culturally significant, and a lot of these are in depressed areas. The problem is that the costs of restoration, whether working on a highstyle or a vernacular building, are similar. The key question is how to use that inten-

sive infusion of money into one building to stimulate economic renewal in the community.

Adams: But there are a lot of powerful people in communities such as Harlem who see preservation as somehow opposed to economic development. In fact, the landmarks law is one of the few mechanisms by which people who live in a minority community can hold the owners of properties accountable for maintaining them. The powers-that-be latch on to these issues – that preservation means gentrification, that preservation is too costly – to perpetuate negative stereotypes.

Washington: The whole idea of preservation, though, is something you have to prove, and until now, it hasn't been sufficiently proven in many minority communities. There are local preservation groups organized in Harlem who are interested and want to do things, but cost is really important.

Narvaez: It might be useful, here, to distinguish between preservation as the restoration of high-style architecture and preservation as the maintenance of a community. Maintenance can be very cost-effective, whether it is fixing a roof or repointing a wall or even not throwing away the elements of a building that have value. All come under the

"In fact, the landmarks law is one of the few mechanisms by which people who live in a minority community can hold the owners of properties accountable for maintaining them"

banner of preservation.

Kelly: If a community is trying to get started and has a lot of vacant buildings, they need some kind of strategy to sustain the neighborhood. They might start with partly stabilizing the big, high-style build-

ings, and sealing them up for the future, while they work on some of the smaller things. It's like putting a puzzle together.

Narvaez: It's important that it not leave major gaps.

Washington: And that it not cost too much. Fisher: How do you deal with the depopulation of certain inner-city neighborhoods, where the demand for all that space in the existing buildings is just not there? Also, what do you do about the invisibility of these neighborhoods to the politicians, the bankers, even the establishment preservation groups?

Narvaez: Those problems, by the way, are not just urban ones. They occur in rural communities as well, where you have a lot of depopulation of rural centers and no economic where-with-all to preserve what

they've got. It's true in the Virgin Islands and in Southeastern Colorado, not just in the major cities.

Adams: But the difference between those places and a place like Harlem is that, here, it's not an arbitrary thing. The city, which owns so many buildings, will gut them and turn them into a halfway house or a drug rehabilitation center, even if they are immediately adjacent to a stable, middle-class neighborhood. These actions are deliberate.

Narvaez: But they occur in a lot of other neighborhoods, too. It is the not-in-my-backyard syndrome.

Adams: But I think there is a superabundance of these things in Harlem and other communities like it. In Cleveland's University Circle area, institutions in tandem with the city government have been demolishing buildings and displacing people to get development sites for medical facilities. This has happened despite the total opposition of the people who live there and vote

Kelly: Whole sections of any city have vacant buildings, and so the community has to start to make decisions. What do you need to preserve the community? Since you can't save all of the buildings, how do you prioritize? And the cities are caught: they have all of these properties, they don't want them, and they dare not give them away to outsiders lest they be accused of encouraging gentrification. They become the scapegoat for everything.

Narvaez: It's a problem of scale. If you have 100,000 buildings to maintain, where do you begin?

Kelly: It's also a matter of public commitment. When you go to Berlin now and see that it is being rebuilt – buildings much the same age as those in the inner cities here – you realize what is possible when there is a public commitment.

Adams: But if white people were able to come and take over a community such as Harlem, you would see that same sort of commitment. I'm saying that there has to be that commitment without the displacement of people.



Between 1984 and 1990, John Milner Associates conducted an archaeological investigation of an early 19th-Century cemetery associated with Philadelphia's First African Baptist Church, built by the free African-American community in 1816.

Kelly: At different scales, that is happening in every major city. What is important is that the leaders in a neighborhood not fight among each other, because they must vie with every other community for the same resources. People have to act in concert, and develop networks with the city council, the mayor, the deputy mayor.

The Activist Professional

Fisher: What is the role of the architect and the preservationist in helping that happen? Washington: Well, you have to be an advocate for preservation and make sure things happen for the community. You also have to make sure that projects that do happen serve the needs of the people who live there, and that the work be done by minority architects, minority contractors.

Kelly: A community has to be organized and have political clout. If one leaves the free market to itself, we all know what slum landlords want: low maintenance and high rents. So there has got to be a strategy of working together with a lot of people, and there is a leadership role there for architects. It's outside the normal role; it's a commitment of time and effort to help a community work with the lawyers, the council people.

Fisher: How exactly might architects help people organize themselves?

Kelly: Well, there are a couple things that can be done. One is recogni-

tion, at the local, state, or national level, of preservation achievements in these communities. That recognition really helps because part of the problem lies in changing perceptions about a community and in building self-esteem for the people. Another thing is to get political pressure applied to local banks and institutions so they begin investing in these communities, funding the non-profit groups and the churches that are putting projects together.

Adams: More than that has to be done. Local tax credits or deferments, for example, offer a real incentive to people to maintain their property.

Kelly: There's got to be a renewed commitment, at the state and national levels, to reinvest in older communities, older cities. At the AIA, various chapters are working together to press for a national

agenda on reinvestment in cities and for the national AIA to dedicate resources in Washington to work on that problem.



In the ongoing Point Breeze pilot project of the Philadelphia Neighborhood Conservation District, John Milner Associates are working to formulate planning and design guidelines intended to stabilize and arrest the slow decay of the low and moderate income neighborhood.

The Role of the Minority Professional

Fisher: What are some of the problems that you've faced as minority practitioners in this field and what roles should you play?

Adams: One thing we can do is to get those who control the landmarks

laws to stop marginalizing the culture of people who are not rich, white, Protestant males. There is all this talk about multiculturalism in preservation, but at the same time, it is controlled by a little select group.

Narvaez: What we need to do as practitioners is to be active in a range of organizations and associations, not only to make people sensitive to buildings that are a multicultural resource, but to be visible as a model for other minorities interested in this field. With any disenfranchised person, you're dealing with a tremendous number of deep-rooted insecurities that build up over time. They need advocates to say, "You're doing the right thing, this is a great route to go, and there are others who will help you once you get here." For minorities entering the field, we have to serve as an "open door" to the network of architects and preservationists.

Fisher: Is the architectural and preservation community doing enough to encourage minority people or is there too much of a laissez-faire attitude?

Narvaez: There are minority professionals out there, but they often don't maintain a high profile. That's in part the nature of the field; both architecture and preservation attract individualists.

Kelly: To many in minority communities, the mainstream professions are education, dentistry, law, and medicine. There are role models for each. Architecture is over to one side and unless you happen to come in contact with an architect, you don't have any role models. But there are fewer minorities of all kinds in the exotic professions in school right now than there were in the 1970s.

The cost of education is higher, there is less financial aid, fewer jobs.

Washington: There was a reaching out to minorities on the part of the white universities in the 1970s. The commitment and consciousness of the universities has changed and they are slacking off.

Narvaez: But that reaching out is also something we must do, as minority professionals. We cannot depend upon others to do it for us. One difficulty I have discussing this field with minority students is rationalizing a very large expenditure in education – say \$80,000 for school – when you're rarely going to break \$20,000 as a starting salary. You have to love what you do.

Kelly: That raises the issue of how the architectural profession promotes itself and its value to the larger society.

Narvaez: It's true. Not just minority architects, but architects in general have got to get out there and be visible.

Kelly: Lawyers and doctors have clearly done that. With those professions, people feel that they're getting something they need and can't do themselves.

Fisher: Is the cost of education going to turn architecture and preser-

vation back to being professions for a wealthy elite?

Washington: We can't afford to let that happen. Although there has been a slippage in terms of what it costs to become an architect versus what you can make as an architect, many people choose this career

because there is nothing else they'd rather do. They see value in it apart from the money. We need to figure out how we can better our incomes, but that's not the real reason that people choose this field. It's something that needs to be done.

Narvaez: There are ways to draw minority people into preservation other than going to an Ivy League school. Cathedral Stoneworks at the Cathedral of St. John the Divine, for example, is teaching stone carving and related skills – skills that are relatively rare in the construction industry – to people from the neighboring minority communities. There are, in other words, a lot of different routes to go to enter the field.

Fisher: Are there some large public policy ideas in that, for example, converting a place like Harlem into an enterprise zone

where development companies that rehabilitated buildings and taught skills to the people who lived there would have tax-free income?

Adams: Such grass-roots efforts are not going to make any difference unless there is a meaningful response from the governments and institutions that control the resources.

Kelly: But you can't put the responsibility off on someone else. The only way we got the historic tax credits reinstated was through the leadership of the architectural community who lobbied, petitioned,

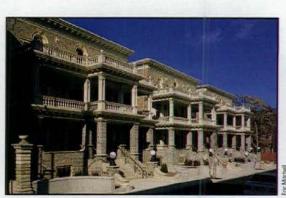
and pushed the legislatures. We need to continue to do that.

Washington: And when you look at what institutions are doing for minority people, it came about through advocacy. There was a push from us.

Kelly: The entire architectural profession must become advocates for ourselves, proving to the larger community that there is something of value here, that there are insights that we bring, experiences we have that, on a lot of levels, are just as valuable to sustaining a community as anything a doctor or a lawyer does. It requires a continual effort to change perceptions.

Adams: And as long as preservation continues to be this elitist preoccupation, it's going to be considered a luxury. There are groups continually trying to overturn landmarks laws, and unless preservationists can

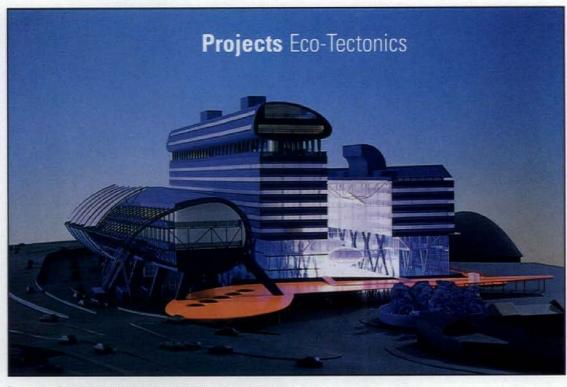
broaden their constituency and get ordinary people, minority people, to see that preservation is something that is meaningful in their lives, the field is not going to grow.



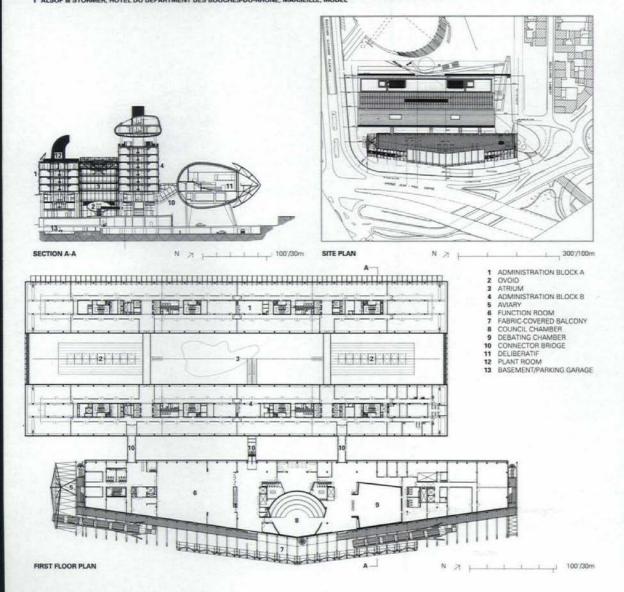
The rehabilitation of the Regent Terrace Apartments in Philadelphia by Kelly Maiello, Inc. (P/A, June, 1991, pp. 88, 89), entailed the conversion of large apartments in six 1908 buildings into 80 units of low-income housing. Cast stone columns, fiberglass cornices, and wood balustrades replaced the deteriorated original materials.



Roberta Washington, Architect, has prepared plans for the rehabilitation of Astor Row, a landmarked series of 28 semi-detached houses built in Harlem from 1881 to 1883 by the Astor family. The wooden porches will be rebuilt, masonry and roofs will be restored, and vacant units will be rehabilitated.



1 ALSOP & STÖRMER, HOTEL DU DEPARTMENT DES BOUCHES-DU-RHONE, MARSEILLE, MODEL



Low-tech energy savings and high-profile design animate the buildings of two firms from London.

At first glance, the work of Alsop & Störmer and Future Systems seems urbanistically irresponsible, with attention-grabbing forms that suggest High Tech gone mad. Their projects redefine high-profile tectonics with a flamboyance that is easily misunderstood. But if you broaden the definition of urbanism to include human and natural ecologies, then the exposed structures and nearly transparent skins in this work are not gratuitous. They become crucial to the relationship of these buildings to the environment and the people within.

Alsop & Störmer's regional government office in Marseille, France, and Future System's "Green Building" and Acropolis Museum competition entry (shown on these pages) are responses to site, climate, program, and human and natural ecologies. Together, the projects demonstrate the architects' distinct philosophies and common goals of energy efficiency.

Alsop & Störmer

William Alsop and Jan Störmer, consider form and function separate entities. The Hôtel du Département, a competitionwinning design to house the local government for the Conseil Général des Bouches-du-Rhone in Marseilles, culminates their investigation of animated architecture

and benevolent energy sources. The 860,000-square-foot structure, designed with structural consultants Ove Arup & Partners, comprises two rectilinear blocks mounted on giant X columns and a "sausage-shaped" assembly wing; each volume is interrupted and enlivened by organic forms.

The site, currently a parking lot, is bordered by a major roadway, industrial buildings, and housing blocks. This noisy intersection and the strong winds and heat of Marseille's Mediterranean climate determined the diversified energy strategies: it is a building of (dis)connected pieces, each powered by various decentralized energy systems. Offices in Administration Blocks A and Bdesigned as flexible spaces that anticipate changes in the program - have operable windows and require little heating or cooling. A central atrium between the two blocks has adjustable roof vents that let hot air escape while cool air is drawn from shaded areas on the perimeter. The air-conditioned Délibératif assembly hall will be sealed to block the noisy traffic outside. Alsop admits that the Délibératif's "stealth bomber" form is "not subtle." Viewed from the motorway at high speed, the cylinder becomes an active, rather than a passive, urban object. He explains that he is excited by movement and action, the qualities that, one imagines, will provide a dynamic workplace for Marseille's administrators. (The building will be completed in December 1993.)

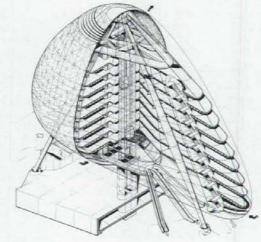
Future Systems

While Alsop & Störmer detach form from function, Jan Kaplicky and Amanda Levete of Future Systems believe that technology should define a building's form. The organic massing of their work is not entirely incidental: the partners look to nature to inform the building's profile and, literally, to fuel its ventilation systems. Kaplicky argues that "rooms don't have to have eight corners" to be inhabitable; "in nature," he adds, there are "no straight lines."

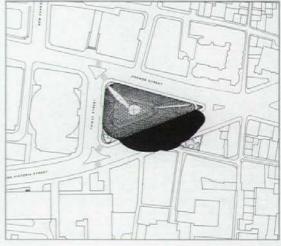
The Green Building exemplifies the firm's belief that environmentally responsible architecture can be designed with existing technology. In this study for a speculative office building in the City of London (a research project with Ove Arup & Partners), a double-layered skin is wrapped



2 FUTURE SYSTEMS, GREEN BUILDING, MODEL



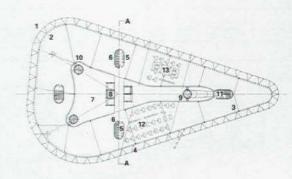




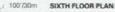
SITE PLAN



- 1 GLAZED OUTER SKIN 2 ADJUSTABLE GLASS FINS
- 3 FLOOR SUSPENSION HANGERS
- BRACING SUPPORTING OUTER SKIN
- MAIN VERTICAL RISER
- ATRIUM
- LINEAR INDUCTION MOTOR LIFTS
- STEEL TRIPOD LEG HORIZONTAL FLOOR BRACING EMERGENCY EXIT STAIR
- OPEN PLAN OFFICE LAYOUT
- PRIVATE OFFICES AND OPEN PLAN

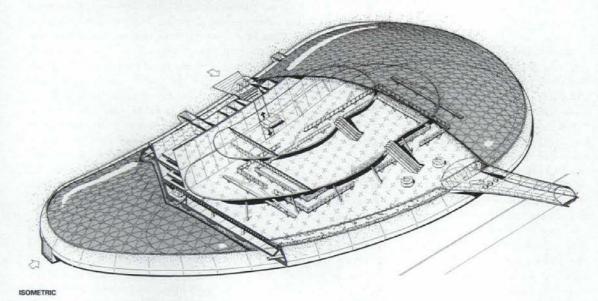


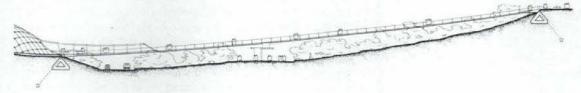
SECTION A-A



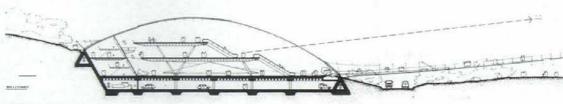


3 FUTURE SYSTEMS, ACROPOLIS MUSEUM COMPETITION ENTRY, BUILDING SUPERIMPOSED ON SITE





SECTION THROUGH BRIDGE



SECTION THROUGH MUSEUM

40'/12m

around a tripod structure in the most aerodynamic configuration possible. Suspension ties at the apex distribute the weight of floors and skin, and the underbeily floats 17 meters above ground to provide a park and to separate workers from the noise and pollution of the traffic below. A natural ventilation system (without operable windows) draws in cool air at the atrium's base and expels stale air through louvers at the top of the building. Air between the fully sealed outer skin and the inner skin of "openable glass fins" is heated by solar radiation. The natural heating and cooling system is flexible and can be tailored to various climatic conditions as necessary.

Like the Green Building, the firm's Acropolis Museum competition entry depends on maximum transparency. Both projects capture natural light and solar energy to create an interior engaged with conditions outdoors. The Museum, set on a slope just below the Acropolis, appears to be submerged in the landscape, in deference to its historic neighbor. The building (with engineering services supplied by Ove Arup & Partners) has a gridded, singlespan steel structure supported at the perimeter by a compression ring beam; there are no columns to obstruct views of the Acropolis. The Museum's ground-hugging design uses the earth "as an infinite-capacity heat sink," a natural cooling system for the interior, while a thermally efficient displacement air system discharges conditioned air. In addition, solid, perforated, and clear panels form "shading zones" adapted to a variety of exterior conditions. A single-span pedestrian ribbon bridge, supported by two steel tension cables, connects the Museum to the Acropolis. Abby Bussel

Who is responsible for edge city? According to Joel Garreau, developers create its assets,

and architects its pitfalls - a view contested by Joel Warren Barna.

Books of Note

City Sense and City Design:
Writings and Projects of Kevin
Lynch edited by Tridib Banerjee
and Michael Southworth, MIT,
Cambridge, Mass., 1990, \$55.
Spanning 32 years, this collection of articles — not all previously published — illustrates
Lynch's perspective on the way
we perceive cities, a method
that is scholarly, but far from
academic.

Ulm Design: The Morality of Objects edited by Herbert Lindinger, MIT, Cambridge, Mass., 1990, \$45.

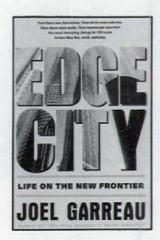
This account of the Hochschule für Gestaltung Ulm traces the legacy of the Bauhaus's successor, where rationalized design reigned from 1953 to 1968.

Architecture from Without: Theoretical Framings for a Critical Practice by Diana I. Agrest, MIT, Cambridge, Mass., 1991. \$30.

With a range from semiotics to cinema, these articles parallel Agrest's design ventures; all are based on the problem of representation in the modern city.

Daniel Libeskind: Countersign by Daniel Libeskind, Rizzoli, New York, 1992, \$45. In drawings, models, and buildings for a world without equilibrium, Libeskind postulates that architecture is in its "end condition," where meaning in the built environment is permanently destabilized.

Edge City: Life on the New Frontier by Joel Garreau, Doubleday, New York, 1991, 546 pp., \$22.50.



Joel Garreau, a senior writer for the Washington Post, sings the praises of the half-full glass in this cheery, tendentious, and informative book. Garreau's subject is the wave of suburban development that reordered the geography of countless North American cities in the 1970s and 1980s. He assesses the expanses of new office and retail space that were built among freeway intersections and exurban office parks.

The edge city of Garreau's title is outside a traditional downtown; has at least five million square feet of office space and 600,000 square feet of retail space created out of vacant or sparsely used land during the last 30 years. In edge cities, Garreau says, jobs shifted from the old inner city, closer to the homes of suburban workers, just as retail did with shopping malls.

Garreau describes the morphology of various edge-city types (e.g., "node," "pig in a python") and he lists the economic and social factors that order their development, from automobile access to physical and political "insurmountability" (e.g., mountains or national parks in the way of development) to the shift to service-employment in the American economy. He interviews developers and people who have benefited from edge-city development, and those who oppose it vehemently. Garreau argues persuasively that the suburban development that culminated in edge-city nodes during the 1980s was usually a force for good, offering greater physical and social mobility to people previously excluded from the American mainstream - women, workingclass families, and a growing number of Hispanics and African-Americans. And, again persuasively, he argues that a continuation of the edge-city development pattern is probably inevitable.

Much of the argument about urban form and suburban development among designers and historians has been couched in terms of aesthetic preferences; one thinks of Leon Krier or of Kenneth Jackson's *Crabgrass Frontier* (1985). Were Garreau to have stopped here, he would have offered a useful corrective.

Unfortunately, Garreau has wrapped his findings in a soggy rhetoric only one step removed from the leasing brochures of the developments he is describing. According to Garreau, all developers are bluff yeomen who risk their livelihoods to provide people with exactly what they want. More than that, they are social revolutionaries: suburbs are not just land-use arrangements that fit Americans' late 20th-Century patterns of mobility. They are places where "people light out for the territory" like Huck Finn, "landscapes of the free," created by "sons of the pioneers ... [whose] thirsts ... are those of Everyman." He cites Frank Lloyd Wright's writings on Broadacre City as "anticipating with stunning accuracy many of the features of Edge City," condemning downtowns as "the gravestone of civilization," and "urging the citizen to go where he enjoys all the city ever gave him, plus [the] freedom, security, and beauty of his birthright, the good ground," Adds Garreau: "How about that. We've done it."

Actually, "we" haven't. Garreau misstates Wright's intentions: Broadacre City looks familiar, but it was conceived more like a socialized farmer's cooperative than a suburb. Wright longed for the end of the power of banks and other forms of concentrated capital as workers diffused into the landscape. This has simply not happened. The social changes of the last 20 years that relate to real estate development (many of them positive) are still no social revolution. The people who mow their lawns in the suburban twilight and punch keyboards in mirrored office buildings are not the same as the pioneers of the plains, however flattering the comparison.

This is because the glass is also partly empty. Millions of homeowners have found in the past few years that buying a house is not always a ticket to security, increased wealth, and happiness. Come the recession, and a house can also be a hobble, tying workers down while concentrated capital is moving jobs to another region or country. Office parks, conceived as the highest and best use of land, can turn out to be white elephants. And a financial sys(continued on page 188)

"MicroStation helps us eliminate repetition of work and increases productivity and profits without sacrificing quality."

Gary Whitney
The Whitney Group

"We chose MicroStation for the real-time integration among our engineers running MicroStation on PCs, Macintoshes, and Intergraph workstations. It's clear that a lot of foresight went into enhancing MicroStation PC for productivity and compliance with industry standards."

David Wesch Sverdrup



MicroStation, Version 4.0

The CAD Standard Of Excellence

MicroStation. The new CAD standard for power...speed...ease of learning...ease of use... and real-time integration across multiple platforms.

Tap MicroStation's power easily with new graphical user interface and online help.

View your co-workers' changing designs as reference files — even across different platforms.

Draw independently defined parallel lines with MicroStation's multi-line tool.

Eliminate tedious dimensioning updates with true associative dimensioning. Create real-world models with NURBS surfacing.

Visualize your designs with sophisticated, built-in rendering. Customize MicroStation for your particular needs or choose from hundreds of third-party applications.

For the location of your nearest MicroStation dealer and a FREE PC demo disk, call 800-345-4856 today.

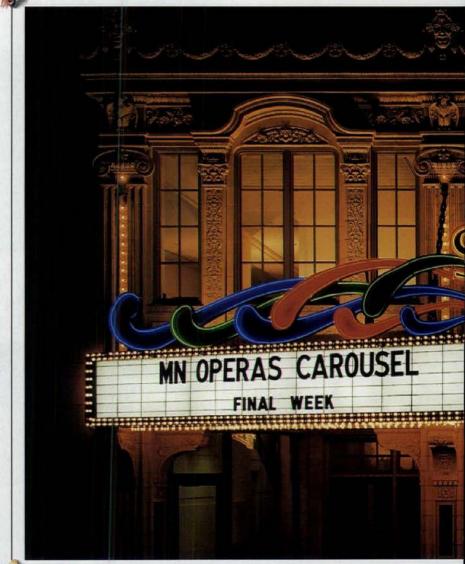




Intergraph® is a registered trademark and Everywhere You Look is a trademark of Intergraph Corporation. MicroStation is a trademark of Bentley Systems Inc., an Intergraph affiliate.

Other brands and product names are trademarks of their respective owners.

THEY DON'T MAKE THEATRES LIKE THIS ANYMORE. WHICH IS WHY THEY



When it opened in 1921, the State Theatre in Minneapolis was hailed as the most luxurious showplace between New York and San Francisco. Sixty years later however, when planning began for a \$130 million office/retail complex for the site, it appeared this grand old theatre would go the way of the silent films it once screened.

But in 1985, a determined group of preservationists succeeded in getting the State placed on the National

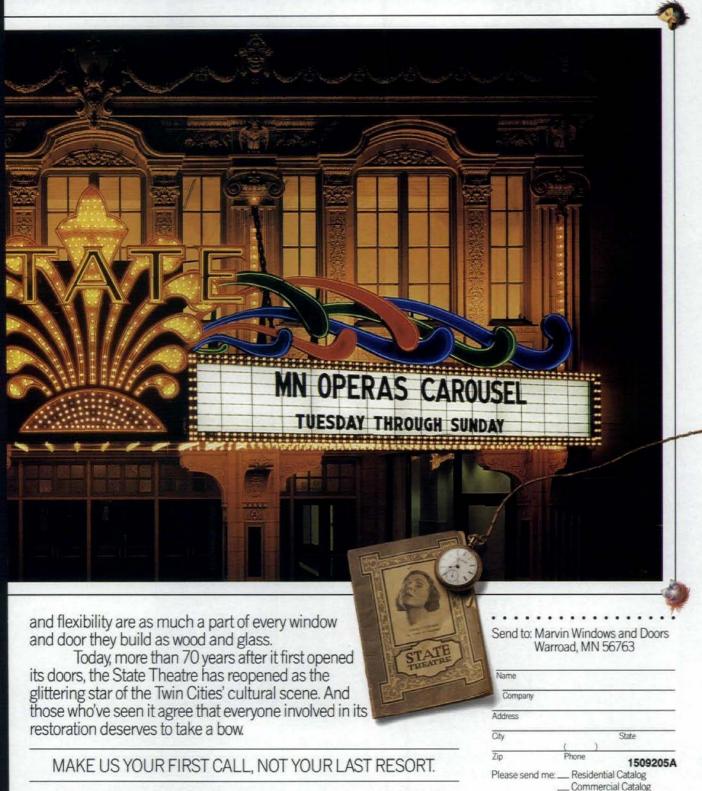
Register of Historic Places. And one of the first companies to become involved in its restoration was Marvin Windows and Doors.

You see, the windows above the theatre's marquee posed a twosided problem. Not only would they have to fit perfectly and look exactly like the originals, they'd also have to be durable and maintenance-free. And Marvin was the only manufacturer willing to make these unique windows and stand behind them.

And so, working from measurements of the existing openings, Marvin built the 3'x 10' windows and 6'x 10' double-width units with custom divided lites and the same gently rounded frames as the originals. In addition, each window received a commercial grade exterior finish in a color that matched the look and style of the building.

As a result, the State got windows that look like the originals but actually feature the newest ideas in design, craftsmanship and energy efficiency. And Marvin got the opportunity to prove once again that responsiveness

ASKED US TO MAKE THE WINDOWS.



If you have a request for a special window or a problem you just can't solve, call the one company you know will have the perfect solution. Call Marvin Windows and Doors at **1-800-346-5128** (1-800-263-6161 in Canada). Or mail the coupon for a free catalog featuring the entire line of made-to-order Marvin windows and doors.

WINDOWS & DOORS MADE TO ORDER.

Remodeling and Renovation Literature Digest



A new 32-page catalog from Adams Rite describes exit devices and exterior trim accessories. Rim, mortise, concealed, and surface rod devices are shown in 10 finishes using bronze, stainless, and aluminum. Entry trim includes a unique new lever, called a Pullever, that pulls straight out to operate. Adams Rite. Circle No. 355



Your lighting system can make a dramatic impact on the bottom line when you upgrade with high-efficiency retrofit products from EYE Lamps. EYE's new Retrofit Catalog has an innovative product for nearly every fixture, including H.I.D. lamps, screw-in reflectors, and all-inclusive retrofit kits. Most products qualify for utility rebates.

C.E.W. Lighting, Inc. Circle No. 358



The C/S Group has an 8-page brochure describing their improved Pedimat® entrance mats. Pedimat has all-aluminum hinged tread rails with plush 100 percent nylon carpet treads in 25 designer hues. And now your carpet Pedimat can easily be personalized with your logo or trademark.

The C/S Group. Circle No. 359



At least 50 percent larger than other shingle siding panels, Cedar Valley panels cover more area for faster application and resulting lower labor costs. Five exclusive features make them better: real tapered shingles; No. 1 Grade cedar; overlapping shingle courses; interlocking end joints, no shorts. Cedar Valley Shingle Systems. Circle No. 356



A new 16-page catalog provides complete descriptions, specifications, and applications of fiber glass insulation products for office buildings and other light commercial work. Information includes availability, sizes, R-values, and other thermal data.

CertainTeed Corp. Circle No. 357



Drafting, Plotter, and Graphic Supplies. The new *Dataprint 1992 Catalog* offers a complete selection of brand name drafting, plotter, and graphic supplies at discounts up to 60 percent—with same day shipment. This free, 80-page catalog features new plotters, new drafting/art tables, an expanded graphics section, and more.

Dataprint Corp. Circle No. 360



DURAFLAKE FR is a smooth, grain-free, Class-1 fire-rated particleboard designed to meet fire code regulations. It is an excellent substrate for fine wood veneers, high and low pressure laminates, and vinyls in all wall systems. It is also appropriate for furniture and fixture applications, where fire codes, public safety, or reduced insurance rates are a factor. **Duraflake Div., Willamette Industries, Inc.** Circle No. 361



This recently updated catalog includes full descriptions, photographs, drawings, and photometrics for Edison Price Lighting's Standards. Highest quality specification-grade product line. Sections include: compact fluorescent, low voltage, A-lamp, Par lamp, and HID. All products are energy efficient and have excellent performance characteristics.

Edison Price. Circle No. 362



Inspired by homes of the rich and famous, GAF's Slateline® non-laminated dimensional asphalt shingles add a designer-like appearance, yet they are tough enough to come with GAF's 30-year warranty. Brochure includes information on colors, hip and ridge accent shingles, and SYSTEMROOF® Component Roofing System.

GAF Building Materials Corp. Circle No. 365



Attractive electronic occupancy sensing switches from Lightolier Controls save 30 to 70 percent of lighting energy consumed in commercial or residential applications. The 120/277V switches are ideal for new construction or retrofit, they are simple to wire, and are occupant-controlled—user turns switch on, and Insight turns lights off automatically when the room is vacated.

Lightolier Controls. Circle No. 368



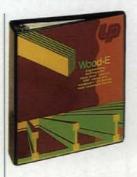
If you have a 'pet' project, Flexco has the floor you have imagined. Our line of rubber and solid vinyl flooring products are created with designers in mind—the varied color palettes and styles encourage aestheticism while accommodating heavy traffic. An international network of over 125 distributors brings Flexco's functional beauty as close as your drawing board.

Flexco Company. Circle No. 364



This brochure describes product and application uses and guidelines as well as product specifications. Using our sloped roof underlayment membrane is the most costeffective, long-term protection against damage from ice dams and wind-driven rain you can use. It is a tough, flexible, self-adhering membrane that installs easily under virtually every kind of roof.

W.R. Grace & Co. Circle No. 366



Louisiana-Pacific's engineered wood products are designed to eliminate the common problems of solid sawn lumber. Gang-Lam LVL, Inner-Seal I-Joists, and GNI Joists are stronger, more stable, and easier to handle. L-P offers complete in-house design capabilities with Wood-E[®] engineering software and engineering review services.

Louisiana-Pacific. Circle No. 370



Plaster In A Roll[®] wallcovering covers concrete block, tile, paneling, damaged plaster, and other surfaces. Durable pre-finished gypsum/fabric applies like wallpaper. Another option is Faster Plaster[®] wall or ceiling liner; it can be painted, plastered, or covered with wallcovering. Meets all wallcovering fire codes. GSA Contract No. GS-07F-3679A.

FlexiWall Systems. Circle No. 363

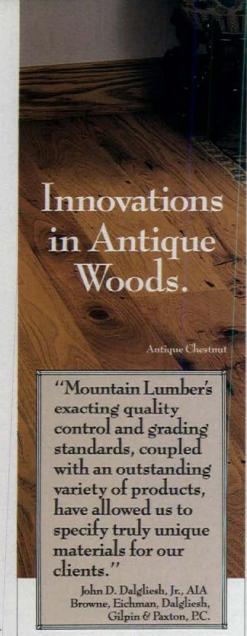


The 1992 Catalog includes information on Levolor's full line of horizontal and vertical blinds, specialty shaped blinds, and architectural shades. Installation drawings and performance characteristics make the 27-page catalog a complete source for those specializing in commercial renovation or new construction.

Levolor Corporation. Circle No. 367



FiberBond is a fiber-reinforced gypsum panel for use in interior walls and ceilings in both standard and fire-rated applications. The panels provide solid, impact-resistant surfaces and offer excellent sound control, thermal insulation, and moisture resistance. Panels are ready for final decoration without joint taping; only joint compound application. Louisiana-Pacific. Circle No. 369



Mountain Lumber Company is proud to present antique oak and antique chestnut. These are new selections available in our product line of antique wood.

Mountain Lumber Company is renowned for providing the finest antique heart pine flooring and architectural details for use in new and restoration projects. Antique oak and antique chestnut are produced to the same high standards architects and fine builders have come to expect from Mountain Lumber.

Call today for our new products brochure.

1-800-445-2671

P.O. Box 289DC • Ruckersville, Virginia 22968

MOUNTAIN LUMBER

Providing the Finest Antique Heart Pine, Antique Oak, and Antique Chestnut



The complete line of exterior products made from Inner-Seal OSB include: panel sidings, soffit panel, trim, and fascia board, all with a protective overlay that is pre-primed to hold paint and stain longer. The products have a strong and consistent composition and have exceptional moisture resistance to prevent warping, splitting, and buckling.

Louisiana-Pacific. Circle No. 371



This flooring brochure contains helpful illustrations and specifications on fire safety and other floor and stair tread systems; many different marbleized or plain raised and surface designs are available in decorator colors. Included are entry tiles—such as Disco, low disc, square, diamond, fluff cord—and traffic tiles, each with adhesive recommendations.

Musson Rubber Co. Circle No. 373

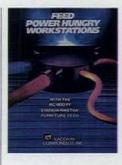


Commercial Division. . . . High Performance Products—High Performance Service. For the customer building or renovating a non-residential structure, Pella Commercial Product line combined with the Pella Commercial Services team is the optimum choice. The Commercial Division offers high-performance products combined with the reliability and responsibility of superior service. Rolscreen/Pella. Circle No. 375

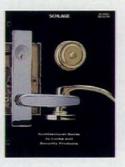


Solid Phenolic toilet, shower, and dressing compartments are designed for durability and low maintenance. They will not warp or delaminate and are perfect for hose-down cleaning. Strong, corrosion resistant stainless steel door hardware and brackets are standard. A variety of installation methods, mounting attachments, colors, textures, and patterns is available.

Metpar Corp. Circle No. 372



The Raceway RC-900-FF 'Station Master' disguises the largest capacity of any Furniture/Partition Feed Fitting: ten #12 power; five four-pair communication; and five IBM class II data cables. 'Station Master' has a total of 0.1014-square-inches of copper cross section tested in a single fitting. Three possible head configurations each contain a variety of performance options. Raceway Components, Inc. Circle No. 374



The Architectural Guide to Locks and Security Products from the Schlage Lock Company is a complete mini-catalog featuring quality commercial, residential, and retail products. This guide to the Schlage product offering also includes design, finish, and function descriptions as well as our complete line of cylinders.

Schlage Lock Company. Circle No. 376















Western Michigan University Library Kalamazoo, MI

Architect: WBDC Group

COLLECTION

Introducing a new Millennium of spirited design. It starts with your inspiration and culminates with Stark Ceramics' Millennium Collection. A peerless structural glazed ceramic wall product for exteriors that lets you design a building that's modern and sleek Stark Ceramics, Inc. or warm and inviting. Create your next masterwork with Millennium: 1 800 321 0662

Circle No. 317 on Reader Service Card



New Products and Literature

Preview: NeoCon® 92 **Building Products** 177 Computer Products 181 **Building Materials**

New Products and Literature

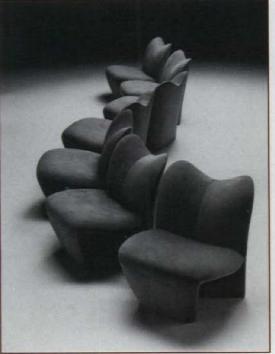
Preview: NeoCon® 92

Organizers have evaluated NeoCon's® position on the contract furniture trail, and have remolded its events to more accurately reflect issues facing design professionals. NeoCon® is at The Merchandise Mart in Chicago, June 8-10.

The schedule of events is extensive. Some highlights are: "Architectural Design and Specification on CD-ROM" presented by Michael Chusid of Chusid Associates, Oklahoma City (June 8, 10:30-11:30 a.m.); "The Future Office: New Designs for New Ways of Working" presented by Martha Whitaker of Helmuth, Obata & Kassabaum, St. Louis (June 8, 4:00-5:00 p.m.); "Americans With Disabilities Act's Impact on Office Design" presented by Cynthia Leibrock of Easy Access, Aurora, Colorado (June 9, 2:30-3:30 p.m.); "International Symposium on Modern Architecture" with recipients of the 1992 Chicago Architecture Award (June 10, 8:30-9:30); "Computer-Aided Lighting Design and Energy Management" presented by Harvey Bryant, building technology consultant, Belmont, Massachusetts (June 10, 10:30-11:30 a.m.); "International Trends in Intelligent Building Design" presented by Dr. Volker Hartkopf, Center for Building Performance & Diagnostics, Carnegie Mellon University, Pittsburgh (June 10, 2:30-3:30 p.m.).

Three of the ten exhibitions planned are: "The History and Future of the Office"; "All Plans are Politics"; and "The Danish Style."







1 Wood Table

"Eva" is an occasional table by British designer Matthew Hilton. It may be ordered in two sizes (381/2" × 173/4" × 153/4" and 351/2" × 351/2" × 153/4") and produced in American cherry or cherry legs with a tempered glass top. Palazzetti. Circle 100 on reader service card



"Multipla," designed by Jane Dillon and Peter Wheeler, is a modular system with a flexible ganging system. Kron u.s.a. Circle 101 on reader service card

3 Chairs and Tables

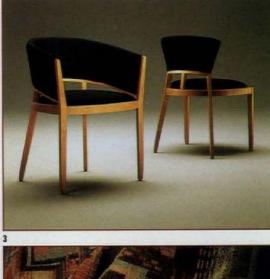
The "Citrus Chair and Table Group," designed by David Ritch, includes arm and armless chairs, a settee, a side table, and a coffee table in maple or cherry. Charlotte. Circle 102 on reader service card

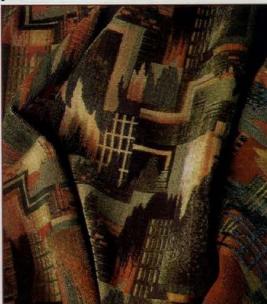


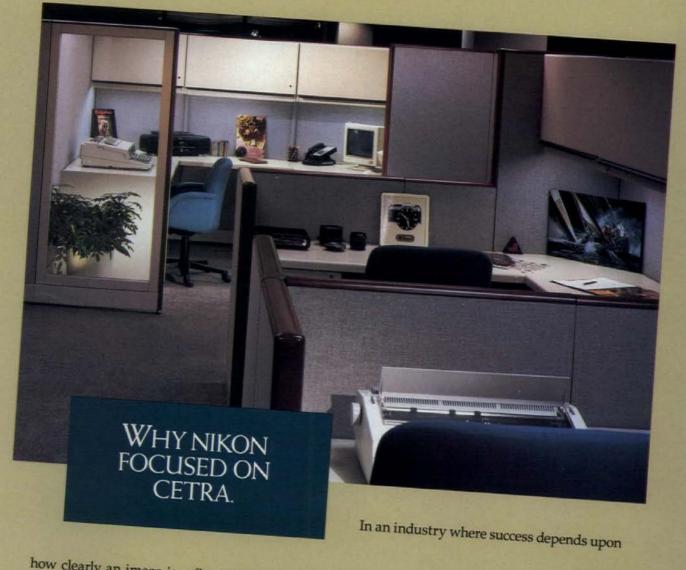
"Metropolis" is a cotton and viscose velvet available in three colorways. Schumacher®. Circle 103 on reader service card

(continued on page 172)









how clearly an image is reflected, the image of choice for Nikon was the Cetra* System. Nikon conducted a thorough search, seeking a balance of intelligent construction, value-conscious pricing and corporate aesthetics. In Cetra, Nikon discovered specific standards of quality matching their own. A total system able to reflect their corporate image. The combination of product and cost resulting in real value. The Cetra System. Creating the picture-perfect atmosphere for every office environment.



Articulating Chair

The "Girsberger 91" chair, designed by Dieter Stierli in honor of Switzerland's 700th anniversary, comes in three versions, each with different backrest and cushion options. Leather or fabric-covered cushions and a perforated, anodized aluminum backrest are among its features. Girsberger.

Circle 104 on reader service card

Passive Ergonomic Chair

Designed in collaboration with Don Chadwick and Du Pont, the "Evo" chair employs flexible resins rather than steel mechanisms to achieve passive support. Unibody construction and a cantilevered spring work together, readjusting to accommodate movement and weight of the user. High- and low-back and sled-base models; four colors and four fabrics are available. American Seating. Circle 105 on reader service card

Seamless Wallcoverings

"Quantum II" wallcoverings are woven in 106-inch, floor-toceiling rolls and are applied horizontally, "creating virtually seamless" room and corridor surfaces. MDC Wallcoverings.

Circle 106 on reader service card



Furniture by Lauren Rottet

Architect Lauren Rottet of Keating, Mann, Jernigan & Rottet, Los Angeles, has designed her first collection of furniture. "Evaneau" ottomans, settees, sofas, and chairs recall early Hollywood set designs. Brayton International. Circle 107 on reader service card

Stainless Steel Chair Constructed of solid stainless steel rod and wire grid, is an adaptation of a previously in-

troduced "vee-legged" chair. It

is suitable for interior and exte-

rior applications. Forms + Surfaces.

Circle 108 on reader service card

(continued on page 174)

BUY OR SPECIFY ELIASON® **EASY SWING® DOUBLE ACTION IMPACT DOORS**

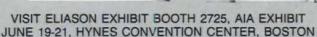
....CUSTOM BUILT, NO SPRING, MINIMAL MAINTENANCE DOORS













for use in...

- STORES
- SUPERMARKETS
- RESTAURANTS
- FOOD SERVICE
- DRUG
- DEPARTMENT
- SHOPPING MALLS
- HOTELS
- HOSPITALS

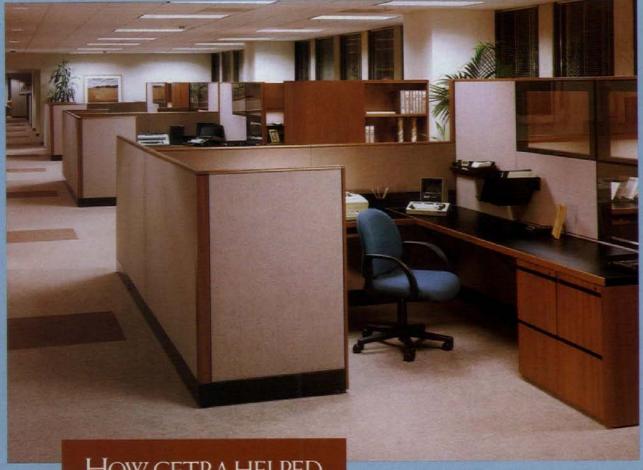
Eliason Easy Swing® doors utilize gravity and offset pivots to facilitate a safe, gentle swinging action. Just a light nudge opens the door and the closing action is positive and automatic. No springs, no cam castings, no mechanical devices to fail. Doors can be specified in a variety of lightweight tempered aluminum, rigid polymer core, solid core or foam insulated models. Use in light, medium or heavy traffic doorways. Many decor options.

SPECIFY & PURCHASE DIRECT CALL TOLL FREE 1-800-828-3655

OR SEND FOR YOUR NEW FREE PRICE/SPEC CATALOG



P.O. BOX 2128, KALAMAZOO, MI 49003, Ph: 616-327-7003, FAX 616-327-7006 ORPORATION P.O. BOX 1026, WOODLAND, CA 95695, Ph. 916-662-5494, FAX 916-662-5192



HOW CETRA HELPED MAKE THE CORRECT CHANGE.

When it was time to select the furniture for

Security Pacific National Bank in San

Francisco, the designer preferred an architecturally-oriented system. A system that would function well with the overall form and light of the building. And of course, a system that would complement the individual space it occupied. The designer chose the Cetra System. Sectional glass panels helped create the desired architectural effect. And Cetra's diverse laminates, finishes and fabrics fulfilled the necessities of both the designer and the bank by combining functional design with a refined sense of style. The Cetra System. Bank on it.

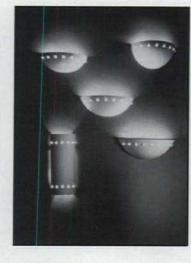
(continued from page 172)



Active or Passive Chairs

The "4 O'Clock" chair, designed by Jeff Cronk, comes in two versions: "A.M." (Active Mechanism) and "P.M." (Passive Mechanism). Both versions are compliant with ANSI/HFS 100-1988 standards for VDT seating and meet or exceed existing and proposed legislation for office seating. A variety of mechanical options, finishes, and materials are available. Vecta.

Circle 109 on reader service card



Wall Fixtures

Fixtures in designer Charles Swerz's "Stellar Collection" are produced with cast resin and Strauss crystal. Fixtures vary in size from 14- to 18-inch widths and from 41/2 to 9 inches in diameter. Many finishes are available. Sirmos.

Circle 110 on reader service card

Hand-knotted Rug

"Hellas" is a hand-knotted rug with a brightly colored field and frieze bands on two ends. Sizes include: 4'7" × 6'7"; 6' × 8'; 6'7" × 9'10"; 8'2" × 11'5". Larsen Carpet.

Circle 111 on reader service card

Wool Carpet/Rug

"Athena" is a 100-percent worsted wool rug or carpet. Medallions on a beige and gray patterned field play off the coordinated border design. Saxony Carpet Company. Circle 112 on reader service card

Seating Upholstery

"Angles" is a nylon and polyester jacquard weave offered in three patterns - "Abstractions," "Blocks," and "Geometry" and 12 colors. Steelcase. Circle 113 on reader service card

Geometric Damask

"Calypso" is a 54-inch-wide damask; it is available in eight colorways. Pollack & Associates. Circle 114 on reader service card

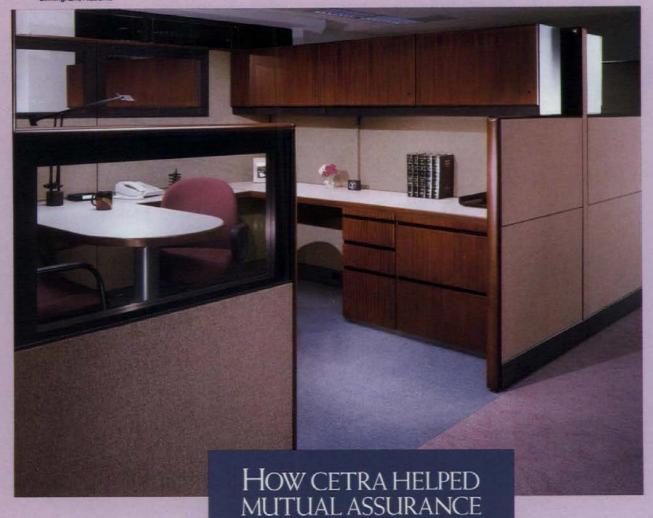


Mohair Velvet

"Brighton Mohair Velvet," designed for corporate or hospitality applications, is 50 percent cotton and 50 percent mohair. Nine colors are available. Brunschwig & Fils.

Circle 115 on reader service card (continued on page 177)





When Mutual Assurance

Incorporated of

Birmingham began redesigning their work space, they decided that each systems office would reflect an atmosphere of privacy. Singular areas where work could be efficiently conducted. Yet accessible enough that employees could express their individual styles and openly interact. Their designer chose the Cetra System. Cetra's integration of spaciousness and privacy, along with its availability in warm wood accents and an array of fabrics and finishes assured Mutual of the atmosphere they desired. The Cetra System. Mutually beneficial.

CETRA GOES EVER

INSURE THEIR FUTURE.

118 Years of experience

The largest selection of wall and floor ceramic tiles (140.000.000 sq. ft. manufactured per year)



our U.S.A. offices: IMOLA MARKETING & SERVICES 306 Alcazar ave. 3b - Coral Gables Fl. 33134 - Tel. 305-445-6433, Fax 305-445-8266 527 Industrial Way West - Eatontown NJ. 07724 - Tel. 908-389-3010 , Fax 908-389-3015

Regional Sales Representatives: W.V.S. Enterprises: 2350 Coral Way - Suite 401, 33145 Miami, Fla., Tel. 305 858 4744, fax 305 858 5664. Sales for Florida & P. Rico. - Jim March, Mid-West Sales: Vernon Hills, Ill. - Tel. 708-918-7090. - Ellen Eisen, West Coast Sales: Santa Monica, Ca. - Tel. 310-397-3496 - James Malkin, South-East sales: Lithonia, Ga. - Tel. 404-985-1581



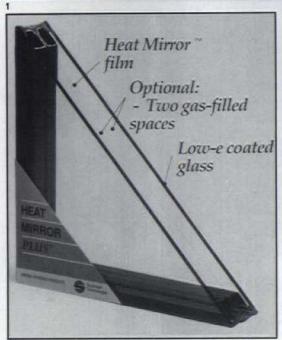
dal 1874

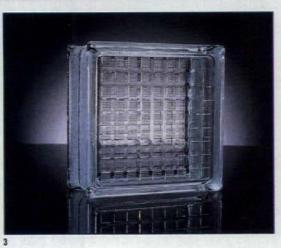
COOPERATIVA CERAMICA D'IMOLA

Via V. Veneto, 13 - 40026 IMOLA - ITALY - Tel. (0542) 601601 - Telex 510362 IMOLA 1 - Telefax (0542) 31749

Building Products







1 Flush Glazing Panels

"Polyclip" glazing panels – for skylights, windows, and solariums – have an integral fastening system and are said to be watertight. Panels are attached to support structures and are snapped together progressively, without gaskets, sealants, or special tools. A hollow core gives the panels the same insulation value as sealed insulating glass. The 5/8-inch-thick panels are stocked in two-foot widths in several colors. Polygal®.

2 Super-insulating Glass

"Heat Mirror Plus" insulating glass achieves an R-value between 5 and 7 with suspended film technology, low-e glass, and gas-filling in various configurations. It is designed to be a mid-range, cost-effective product, between Heat Mirror and the Superglass system. It can be filled with argon or krypton for higher values. Southwall Technologies.

Circle 117 on reader service card

3 Patterned Glass Block

"TEXTRA® Pattern," a new glass block, "combines the sparkle and distortion of repeating multiribbed squares with transparent open areas." It is a dynamic pattern, changing with the viewpoint, light, and movement. It is produced in 8-inch-square, 37/8-inch-thick regular series units.

Pittsburgh Corning.

Circle 118 on reader service card

(continued on page 178)

Building Products



Concealed Fastener Metal Panels

"Flush Face" concealed fastener metal wall and liner panels have smooth or fluted surfaces, available in six 11/2-inch profiles; they are offered in galvanized steel or aluminum. Twelve-inch widths are standard, though other sizes may be specified. N.A.T. Industries.

Circle 119 on reader service card

Door Sealing System

"Sound Trap" door sealing system is installed around the perimeter of a door to provide sound control of up to 53 STC. The system combines the "High Sound" automatic door bottom, a bronze door saddle, mitered head and jamb protective seal, and the self-adhesive bronze spring seal attached to the frame top and door bottom. Zero International.

Circle 120 on reader service card

Fire Barrier System

Smoke, flames, toxic gas, and water can be blocked from passing through electrical and plumbing penetrations and sprinkler systems with the "USG® Fire Stop System." "THERMAFIBER® Safing Insulation" is placed around the opening by hand and "FIRE-CODE® Compound" is then troweled into place; the latter can be painted. USG. Circle 121 on reader service card

Roof Window Line

"Andersen® Stationary Roof Window," "Andersen® Venting Roof Window," and "Andersen Vent Tilt Roof Window," together with the new "Andersen® Skylight," comprise a new roof window line. Each has a solid wood frame and sash and may be ordered with "Andersen® High-Performance" tempered glass for cool climates or 'Andersen® High Performance Sun" tempered glass for sunny, warm climates. Andersen Windows. Circle 122 on reader service card

1990 Architectural Index

The 1990 Architectural Index, published and edited by Ervin I. Bell, is now available; it is the 41st edition. Articles from nine American architecture and design magazines are indexed. Contact The Architectural Index, P.O. Box 1168, Boulder. CO 80306 (303) 449-7031. Cost: \$23.

Roofing Products/Systems Catalog

A new 72-page, illustrated catalog includes information on built-up roofing, modified bitumen roofing, single-ply roofing, roof insulations, and roof accessories. Manville.

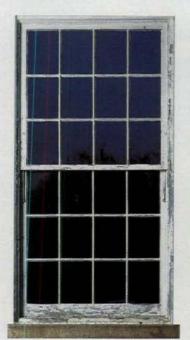
Circle 200 on reader service card

Rustically Styled Shingles

"Roofmaster Series" shingles have random edges, shadow bands, and embossed vertical lines. An extra-thick waterproof coating is standard on "Roofmaster Plus" shingles. BPCO.

Circle 123 on reader service card

THE PELLA ARCHITECT SERIES. BECAUSE THERE'S NO SUCH THING AS



DRAFTY ORIGINAL



ENERGY EFFICIENT, NOT HISTORICALLY CORRECT COMPETITOR, 1992.



ENERGY EFFICIENT. HISTORICALLY CORRECT PELLA WINDOW, 1992.



Classical Columns

Accurate replications of Doric, Tuscan, Ionic, Corinthian, and Composite columns are based on the specifications of the Italian Renaissance architect Giacomo Barozzi daVignola. Columns are of Clear Heart Redwood, Ponderosa Pine, and other wood species in solid board and finger-joint form; capitals are of wood and composition fiberglass/ plaster. Chadsworth.

Circle 124 on reader service card

Grout Admixture

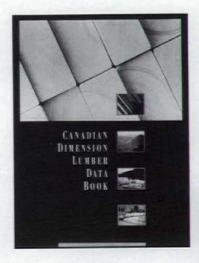
When used with sanded and unsanded grouts, "Hydroment Flex-Grout Admixture #428" provides flexibility and enhanced adhesion. It is suitable for heavily trafficked, indoor or outdoor ceramic tile, marble, and dimensional stone installations at residential, commercial and industrial sites. Bostik.

Circle 125 on reader service card

Southern Pine Lumber Guide

Circle 201 on reader service card

The Southern Pine Use Guide has been revised and now includes the new empirical design values for Southern Pine dimension lumber. Standard sizes and seasoning requirements, grade descriptions, specification guidelines, and span tables are also included. Southeastern Lumber Manufacturers Association.



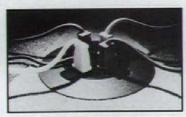
Canadian Lumber Data

The Canadian Dimension Lumber Data Book has been revised with new design values on bending, tension, compression, and modulus of elasticity. Typical marks of all Canadian lumber grading agencies by the American Lumber Standards Board of Review are illustrated. Contact Canadian Wood Council, P.O. Box C-88880, Seattle, WA 98138 (800) 531-3122. Cost: \$6.

Historic Fixtures

This series of historically inspired pendant fixtures admits 80 percent indirect and 20 percent direct light. Solid polished brass, chrome, or painted trim are available; the translucent bowl ranges from 24 to 51 inches in diameter. Visa Lighting.

Circle 126 on reader service card



Electrical Furniture Feed

"Station Master", a furniture/ partition feed fitting, includes 10 #12 power, five 4-pair communication, and five IBM class II data cables.

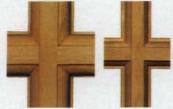
Raceway Components. Circle 127 on reader service card

(continued on page 181)

SORT OF ARCHITECTURALLY CORRECT.

Any other divided glass window design with double glazing also comes with unwanted side effects. Most noticeably, muntins that are a full 1/2" wider than the originals. Which isn't a small problem. In fact, it's the one that you can easily see from the curb.

The Pella Architect Series[™] is a technologically advanced divided light window that looks like it was built in 1795, but can keep your house so snug it can withstand desert heat, arctic temperatures, torrid rain and hurricane winds. And we've thrown them into environmental chambers to be absolutely certain.



ONE DIFFERENCE BETWEEN THEIR REPLICA AND OUR DUPLICATE IS A SIZABLE 1/2".

So whether you intend to restore an older home or build a new classic, our architecturally

correct period replicas clearly can withstand anything mother nature throws their way.

Call Pella at 1-800-524-3700 for the Pella Architect Series.

After all, why try to approximate a classic, when you can duplicate it?

For ideas and more information, ser	id for a free	Pella	Windowscaping
booklet, or call 1-800-524-3700.			

I plan to: Build Remodel Replace

Name____Address____

Mail to: Pella Information Center, Dept. A017E2 P.O. Box 308 Moline, IL 61265-0308. Also available throughout Canada, Japan and Australia. Coupon answered in 24 hours. ©1992 Rolscreen Company.



TANDAPDS

BUILT TO IMPOSSIBLY HIGH STANDARDS.

Ducale 1991 from the VeArt venetian handblown glass collection

and over one hundred * wall . lighting fixtures original italian american world design leadership technology innovation performance energy saving u.l. listing quality warranty service investment

the one stop

Circle No. 354

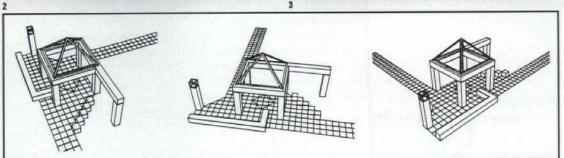
Computer Products

New software tools can be used to enhance the performance of AutoCAD.









AutoCAD Accessories

1 AutoCAD for Windows

The Extension for Windows complements AutoCAD Release 11, allowing the software to run in the Windows environment on a PC. Also included is the User Reference Manual. Autodesk.

Circle 128 on reader service card

2 Interactive Rendering

"Renderize" is a new tool for AutoCAD Windows or Sun SPARCstation users that permits them to combine 3D DXF files with high-quality raster images of materials. The visual characteristics of objects, such as color and reflectivity, can be edited without re-rendering. Visual Software.

Circle 129 on reader service card

3 AutoCAD Modules

"Estimating," "Facilities," and "Landscape" are AdCADD® modules that work within Auto-CAD to add specific capabilities for designers. Both the estimating and facilities packages provide database links to dBASE®. Softdesk.

Circle 130 on reader service card

4 3D Database and Animation

VuMode® Software allows users to create a series of 3D views from AutoCAD drawing data by setting up a series of "camera" movements. Once a database is created, files can be sent to Animation Outsource®, a service bureau that will create a continuous motion animation on VHS videotape in three to five days. Howard Associates.

Circle 131 on reader service card

(continued on page 182)



areas of the gym pictured at left above, and the back walls of the auditorium shown at top. Why are they better? Because under that attractive fabric is the Tectum acoustical wall panel that has proven itself in some of the most abuse prone places, (penitentiaries, for example), for over 40 years. We've just dressed it up with a pretty face, so you can use it in even more places. Contact us for specification literature.

40 YEARS OF PERFORMANCE PRODUCTS BY THE PERFORMANCE PEOPLE AT



P.O. Box 920 · Newark, OH 43058 · 614/345-9691 · FAX 614/349-9305

Circle No. 378 on Reader Service Card

SETTLING YOUR DIFFERENCES SHOULDN'T BE A MAJOR TRIAL.

The American Arbitration Association's alternative dispute resolution (ADR) procedures can help you avoid costly, time-consuming litigation.

Voluntary ADR methods settle disputes expeditiously, confidentially and fairly. We provide expert neutrals, efficient arbitration and mediation administrative services and practical education and training programs. As well as help in writing effective ADR clauses for your contracts.

And everything we do can make a major difference to you.

American Arbitration Association

35 Offices Nationwide

140 West 51st Street New York, N.Y. 10020 Phone: (212) 484-4040 Fax: (212) 765-4874



(continued from page 181)

Computer Products AutoCAD Accessories

Text Editor

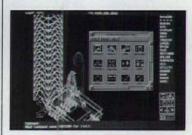
A text editor for AutoCAD release 11 can be used to edit a bill of materials, drawing text, script files, menus, and AutoLISP routines. Features include global search and replace, and file merging. KETIV. Circle 132 on reader service card

User Interface

AUTODRAW 6.0 claims to increase the speed of AutoCAD by 30 to 90 percent and allows users to customize a graphic user interface. Display features include real-time pan and zoom. A.I. Systems. Circle 133 on reader service card

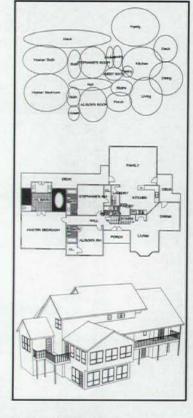
Interior Software

Planning and Specifying Software (PASS) provides graphic libraries of furniture for Auto-CAD to aid in the layout and specification of contract furniture. New features of version 3.3 include window and door insertion, an automatic product tally, new elevation formats. and faster retrieval. Data One. Circle 134 on reader service card



Graphic Interface

"AutoMate PRO/4.0" works with a graphics controller board to enhance AutoCAD's user interface. The software allows users to create icons to run their own macros, provides real-time zooms and pans, sizable bird's-eye views, magnification, and high-resolution rendering. Vermont Microsystems. Circle 135 on reader service card



Design Visualization

A new version of Thumbnail 3D accommodates the design process in AutoCAD from bubble diagrams to sketch plans to 3D conceptual models. Users can export drawings to rendering packages. New features include increased speed and more drawing tools. ICG. Circle 136 on reader service card

Display Accelerator

Version 3.1 of "Lighting Zoom!" claims to offer a zoom and pan speed of more than twice the previous version. Other "AutoCAD enhancement" features include multiple bird's-eye views, and high-resolution support for some VGA monitors, Martin Sales. Circle 137 on reader service card

(continued on page 184)

Gain a floor-to-ceiling perspective on change.



TrendWall™ movable walls from Trendway™ offer you some eyeopening advantages over site-built walls.

To start, Trendwall arrives completely finished. You gain the integrity of conventional construction while preserving your ability to change easily with minimum waste.

Once on site, you'll find other advantages as well. TrendWall is fully compatible with Trendway's system of panels and components.

And unlike with site-built walls, you get plenty of options: glazing, curved panels, even pre-hung doors.

When you need to keep pace with change, set your sight on TrendWall. Our four week shipping won't keep you waiting. For more information, call 800/748-0234.

III TRENDWΔY...

P.O. Box 9016, Holland, MI 49422-9016

Circle No. 321

Eight Utilities

A text editor, file manager, drawing history manager, and a programmable calculator are four of the eight applications included in "CADmagic," an inexpensive AutoCAD utilities diskette. Haestad Methods.

Circle 138 on reader service card



viewing and management package for AutoCAD is now available for Sun SPARCstations.

The software allows users to view AutoCAD, DXF, and slide files, and allows them to mark revisions without altering the original files. Versions are also available for DOS, Windows, and for the DEC Ultrix System. SoftSource.

Circle 139 on reader service card

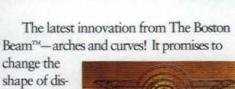
Major materials suppliers they were furnished to P/A by architects for buildings featur month.

Project: Pine Street Cottages, tle, Washington (p. 122). Desig Marcia Gamble Guthrie, Seatt Asphalt shingles: GS Co. B insulation: Manville. Doubl pane casement windows: W ervane Windows. Fixed and erable skylights: Velux. Do Western Cabinet, Paint: Ke Moore. Front door locksets Baldwin. Kitchen door lock Schlage. Bath door locksets Gainsborough. Window has ware: Ives. Kitchen applian and compact washer/dryer: Site lighting: Kim Lighting. Tubs, lavatories, water close plumbing fittings and show heads: American Standard. Bath accessories: Franklin I Gas wall heater: WW Grain Mini-blinds: Ladd Draperie

Project: Belmont-Boylston His Houses, Seattle, Washington 125). Architects: Stickney & M phy, Seattle, Washington. Wir dows (existing rehabbed an new): Pozzi Windows. Door (existing and new): Ceco C poration. Floor coverings: . strong Flooring. Asphalt sh gles: Johns Manville. Batt insulation: Owens-Corning terior acrylic latex paint: Pr ervation Paint Company. In rior latex and alkyd paint: Fuller O'Brien. Hinges, loc sets, door closers, exit device (existing and new): PDQ Ir tries. New appliances: Kenn Modern Aire. Voice commi cation and door release: Te tone. Smoke detectors: Not New plumbing fixtures: An can Standard. Bathroom ac sories: Franklin Brass. Carp Wellco. Cabinets: Triangle cific. Mini-blinds: Carey-Mo Corporation.

Project: Mission San Xavier de Bac Conservation, Pima County Arizona (p. 128). Architect: Rob Vint, Tucson. Custom steel sa wrought-iron gates: design, (continued on page 186)





change the shape of display merchandising and open a whole new world of design possibilities for your retail space.



Replace

your right angles with flowing rounded corners. Create graceful vaulted columns or add a striking arched entranceway. Then watch your sales take a dramatic turn for the better.

Our shades are every bit as exciting as our shapes. The Boston Beam comes in every color you can think of as well as new textured metallic and hammertone finishes.

TO CREATE A MORE DYNAMIC DISPLAY WE HAD TO BEND THE RULES A LITTLE.

What's more, The Boston Beam's unique twist connector system makes your set-up quick and easy. So it's ideal for your retail displays, exhibits or trade shows.

As always, our Boston Beam is backed with the same friendly customer service and superior custom design capabilities that you find with all our products.

To find out more about how The Boston Beam's curves can round out your merchandising set-up and revolutionize the entire look of your store – call Boston Retail Products at 1-800-225-1633.

We're your retail partner.



Boston Metal Products Corp

Boston Retail Products 400 Riverside Avenue Medford, MA 02155 Tel: 1-800-225-1633 FAX: (617) 395-0155

Circle No. 348

rotring 600

STATE OF THE ART

rotring quality and styling. Fountain pen, ballpoint, triopen, rollerball, and pencil. Solid brass with matte-black or satin, silvertone finish. Technology in operation.

The tool for writing





r@tring

Distributed by KOH-I-NOOR INC. Bioomsbury, NJ 08804 Toll Free: (800) 877-3165

Circle No. 335 on Reader Service Card





1 800 I READ PA :

(800 473 2372)

Progressive Architecture now has an 800 number to answer questions concerning your subscription, change your mailing address, or even enter a new, personal subscription by phone! Use this easy, convenient number for all your P/A subscription inquiries.

(continued from page 184)
Robert Vint; fabrication, Saul
Olivares. Aluminum stearate
water repellent: ProSoCo.
Photovoltaic ventilators: ARCO
single crystal panels. Greenhouse ventilating fans: W.W.
Grainger.

Project: Garden Pavilion, Toronto (p. 148). Designers: Brigitte Shim & Howard Sutcliffe, Toronto.

Cast-in-place concrete with superplasticizers: KVN Concrete. Weathering steel: Stelco Steel. Bridge: mahogany. Granite: Smith Monuments. Concrete sealer: Sternson. Graphite paint: DelGraco. Stainless steel cables and turnbuckles: Port Credit Marina. Exterior step light: Rab. Bronze underwater light, reflecting pool pump: Defo. Paper lamps: Akari.

Project: House on Horse Lake, Haliburton, Ontario, Canada (p. 152). Designers: Brigitte Shim & Howard Sutcliffe, Toronto. Concrete block: Bancroft Block. Wood framing and flooring: Canadian lumber. Acrylic stucco: Durabond. Wood doors and windows: Charles Sammut & Co. Skylights: Velux. Flamed granite tiles: Highland Granite. Cedar shingles: Western Red Cedar. Fiberglass batts: Fiberglas Canada. Paint: Paint Colours Unlimited. Door hinges: Stanley. Deadbolt and passage set: Schlage. Sliding door track: Crowder. Exterior and interior recessed lighting: Halo. Interior dimmers: Lutron, Systemalux. Interior light: Cosmos. Bathtub and toilet: American Standard. Showerhead and faucet: Moen. Sinks: Waltec. Woodburning stove: Jotul. Propane-powered furnace: Grimsby Furnace. Paper lamps: Akari. Cabinets: Copacetic Woodworking.

THE CARLISLE DIFFERENCE



Architect: Developer:

Arrowstreet, Inc., Somerville, MA

er: New England Development Co., Newton, MA

Engineering Management Consultants, Inc., Newton, MA
The Hartford Roofing Co., Inc., Glastonbury, CT

"... quality field representatives, services and customer support."

"We specified Carlisle SynTec Systems as a quality roofing standard," said Peter Belford, architect, Arrowstreet, Inc., Somerville, MA. "They usually are our first choice because of the quality of their field representatives, service and customer support. "The technical back up available provides us with a solid base for drawings and specifications assuring a quality installation."

When the fast-tracked \$150 million, Cambridge-Side Galleria shopping complex near Boston was kicked into overdrive by New England Development Co., The Hartford Roofing Co., Inc., of Glastonbury, CT, recommended a combination of Carlisle's Fully-Adhered and Mechanically-Fastened systems for the 167,000 square foot roofing project.

"Two of the beauties of this roof are it goes down fast and is essentially watertight right away. That helped us fast-track the work going on below," said Bill Daigle of Engineering Management Consultants, Inc., Newton, MA.

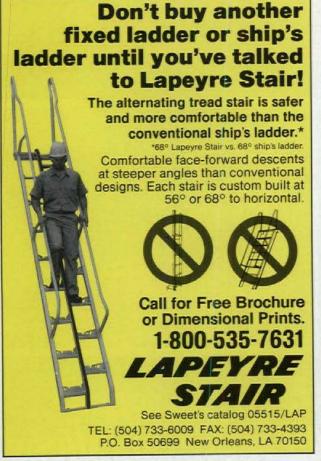
Carlisle's design professionals also set quality standards for you, the specifier, in other areas; conducting informative regional and in-house design conferences and delivering quick responses to your inquiries. Carlisle's technical representatives conduct the most demanding inspections resulting in the issuance of meaningful membrane system warranties.

When you look at roofing design conferences, services, systems, products and warranties, Carlisle Really Has No Equal. Let us help you with your next roofing project. Call us for additional information about the Carlisle Difference (USA) 800-233-0551; (PA) 800-932-4646; (Canada) 416-564-5557.

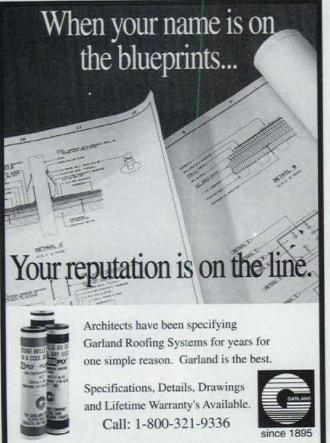
THERE Really IS NO EQUAL.



P.O. Box 7000 Carlisle, PA 17013-0925 Circle No.



Circle No. 329 on Reader Service Card



(continued from page 162)

tem rigged to funnel money into real estate speculation can turn into a \$500-billion experiment in lemon socialism. Garreau's paean to the edge city would have been a lot more convincing if he had included anything about the profoundly counter-revolutionary effects of the edge-city boom.

If developers are angels, it is clear who Garreau's demons are. They are the country's architects. "When I started reporting on Edge Cities," he writes, "one of my first genuine surprises was to discover just how little architects usually have to do with the appearance of these places.... It is stunning how completely it was the developers who turned out to be our master city builders."

Few people in the design and construction industries would guarrel with that, however much they find it regrettable. But Garreau draws from this discovery a puzzling conclusion. It is that architects are at fault, not only for being left out of the Deal, but for the resulting ugliness of the edge cities. Writes Garreau: "It is not so much that these designers had been banished from playing a role in the major decisions about Edge City. As often as not, they had exiled themselves If [bistros, second-hand bookstores, cobbler shops, and other signs of] ... civilization were having a rough time in Edge City, I couldn't help wondering to what extent it ... had something to do with the intellectual absence of so many people I had always viewed as the guardians of the built environment."

As proof, Garreau offers the comments of architects and planners who are willing to bash the profession, from John Portman (by whose lights other architects have failed to live in the real world of developers and deals) to Christopher Alexander (who blames other architects for selling their souls to developers). Both of them can't be right in the absolute terms Garreau chooses for the debate, but that doesn't matter. Garreau caps it off with this nugget: "In the midst of reporting this chapter, I was asked to address the American Institute of Architects, which was holding its convention in Houston. After the talk, one architect came up and basically said, Okay, fine. I want to examine an Edge City; how do I get there?" Garreau told him to drive westward on Westheimer Boulevard. "And he got this stricken look on his face. Car? he asked. Car? My God, he said. Can you get a cab in this town?" From a chance conversation with a single unnamed person, Garreau says architects are "part of the problem, not part of the solution." Worse, they are Maoist control freaks.

Garreau cites parking lots as a particular problem. "Why are they so ugly?" he wonders. "Could there conceivably be something inherent in Edge City parking lots that requires them to be that way? Or is it simply that most designers have not considered them worthy of study?" Inexplicably, Garreau leaves out the other possible explanation, which is that economic considerations dictate that architects have no say in cost-engineered parking-lot designs.

But even in their "exile," architects can't help but wreak havoc. In an appendix on "The Laws" of suburban development, Garreau offers the rule for "The most probable explanation of why the first thing a developer usually does is bulldoze everything flat," which is "because architects use T-squares. Therefore, when designing a building, the first thing an architect usually draws is a horizontal base line, which in turn gets incorporated into the final building by the work of a bulldozer."

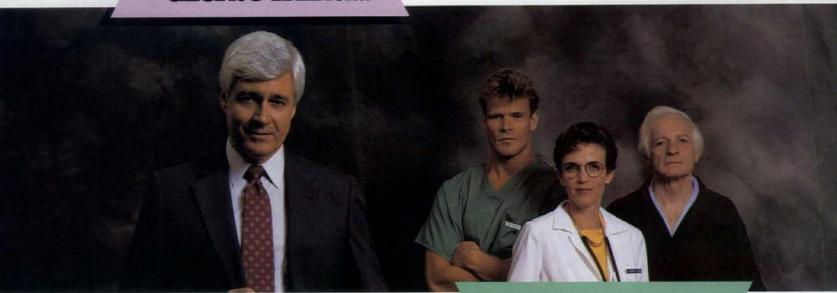
Right. Architects will find much of interest in *Edge City*, but to get to it they'll have to wade through the parts where they are scapegoated.

Joel Warren Barna

The author, P/A's Austin correspondent, is editor of Texas Architect and the author of The See-Through Years, a history of architecture in Texas in the 1980s to be published in the fall by Rice University Press.

High Performance Roofing Systems.

When quiet comfort is on your client's mind...



When you're challenged with a healthcare facility project, Eminent Acoustiflor will give you the freedom to satisfy your most discriminating client and, more importantly...yourself.

Eminent Acoustiflor brings today's healthcare facilities enduring style and cushioned comfort not found in other sheet vinyl flooring. Mix and match eight inspiring colors for imaginative floor designs. It brings together cushioned comfort, like carpet, and the easy maintenance of resilient flooring. It also muffles silence-piercing noise on impact and recovers from point-load indentation. Most hospital chemical spills are easily wiped clean, eliminating offensive odors and bacteria.

Now, touch the difference yourself. See why Eminent Acoustiflor should become your flooring of choice for healthcare facilities. For FREE samples and product literature, call Speed Swatch toll-free 1-800-225-6500, Monday-Friday, 8:30 AM - 5:00 PM EST.

Eminent Acoustiflor should be on their floor.

Enlarged cross-section shows homogeneous wearlayer, high density foam interlayer and vinyl backing.

Tarkett

©1991, Tarkett Inc.

THE TOTAL COMMERCIAL ELOOPING COMPANY

P.O. Box 264, Parsippany, NJ 07054

Q: What would you do with this site?

A: We at P/A decided to let you, our readers, tell us. Last year, we sponsored a competition for affordable housing on this site, in Cleveland, and over five hundred of you submitted over 600 entries. The range and ingenuity of the solutions was astounding.

We are actively working to get exposure for the largest possible number of entries by holding symposiums and exhibits in various cities, and by planning a book on the competition. And on that lot, we are building the first-place scheme, by Abacus Architects, which will be published in the August issue.

Our efforts here will not solve the housing crisis in this country. But we are demonstrating to the public and to policy makers that the architectural profession is committed to help find a solution. All this from wondering what to do with this site.

P/A Classified

SITUATIONS OPEN

Government Organization seeks Assistant Director to manage the design construction and openspace portfolios for its Housing & Neighborhood Development unit in Boston. Job responsibilities: Supervision of 18 staff, inc 6 Architects; 8 Construction Managers; 2 Landscape Architects. Provide Urban Design direction to Division: Portfolio management: Maintain key relationships. Ensure quality/cost control for housing; Develop open space policy & programs. Job requirements: Masters of Architecture/Urban Design; Experience 4 yrs architect, inc. 2 yrs supervisory. Knowledge of - construction, architecture & landscape design fields and practices; local zoning, building codes & regulations; Urban design techniques; Ability to make large group presentations. Excellent managerial, communication skills and familiarity with local neighborhoods, organizations & funding programs pref. 35 hrs/wk. Rate of pay \$23.27/hr. Boston residency required, must be willing to relocate. 2 copies of Resume coverletter to:

> Job Order #2628 P.O. Box #8968 Boston, MA 02114

Advertising Rates

Situation Open advertisements: \$200 per column inch, per your layout. Maximum 30 words per column inch. Maximum 6 column inches. Display style advertisements are also available in fractional page units starting at ¼ page and running to full page. Commissionable to recognized advertising agencies. No charge for use of box number.

Situation Wanted advertisements: \$85 per column inch. Maximum 30 words per column inch. Noncommissionable. No charge for box number.

Check should accompany the advertisement and be mailed to Lynne McLaughlin, Progressive Architecture Classifieds, 1100 Superior Ave., Cleveland, OH 44114. Telephone: 216/696-7000, Ext. 2524. Ads may be telecopied: 216-696-1267.

Insertions will be accepted no later than the 1st of the month preceding month of publication. Copy to be set due seven days earlier. The University of Texas at Austin offers an opportunity for a qualified professional to serve as Dean of the School of Architecture.

The School of Architecture offers the accredited B. Arch., first professional and postprofessional M. Arch., MSCRP degrees, and BSAS and MSAS degrees to an enrollment of 350 undergraduate and 200 graduate students with a faculty of 37 full-time and 9 partitime members. Desired qualifications of the Deap.

- Advanced professional degree & credentials for appointment at rank of professor w/tenure.
- Evidence of distinguished scholarly, professional & research record w/ national recognition.
- Significant administrative experience.
- Capability to bring the School greater national recognition.
- Experience in fund-raising for research and education.

Position becomes available September 1, 1992. Applications accepted until May 31, 1992; the Committee may then consider nominations from responsible sources. Nominations and letter of application, accompanied by a curriculum vitae, references, and other supporting materials should be mailed to:

Chairman, Consultative Committee for the Selection of the Dean School of Architecture The University of Texas at Austin Austin, Texas 78712-1160

The University of Texas at Austin is an Affirmative Action/Equal Opportunity Employer.

Architectural illustrators, Perspective draftsmen. Specific information on receipt of samples. Art Associates Inc., 4635 W Alexis Rd., Toledo, OH 43623.

Nations premier architectural illustrators and model builders seeking to establish representatives in all major cities. Knowledge of architecture, rendering, models, computer graphics preferred. Send resume for specifics. **Art Associates Inc.**, 4635 W Alexis Rd., Toledo, OH 43623.

THE UNIVERSITY OF WESTERN AUSTRALIA PERTH CHAIR IN ARCHITECTURE

Applications are invited for appointment to the Chair in Architecture at The University of Western Australia. The Department of Architecture has an innovative academic programme with an emphasis on design. Four undergraduate degrees are offered; the Bachelor of Environmental Design, Bachelor of Architecture, the Bachelor of Landscape Architecture and, jointly with the Department of Fine Arts, the Bachelor of Fine Arts. Students within the Department may work towards the degrees of Master of Environmental Design, Master of Architecture and Master of Building Science and PhD.

The Professor will provide leadership within the Department and participate actively in the teaching programme. Applicants should possess professional and academic qualifications in architecture with a distinguished record of academic and/or professional accomplishment together with a demonstrated commitment to excellence in design education.

A remuneration package will be based on the professorial salary of A \$77,900 per annum. Benefits include generous superannuation, study leave with travel assistance after three years, long service leave, assistance toward removal expenses and fares to Perth for the appointee and dependants. The opportunity also exists to undertake professional and consultative work in addition to academic activities. The post is full-time and tenurable although consideration will be given to a fractional or shared appointment. Further information concerning the conditions of appointment may be obtained from Mr. S E Wiles, Personnel Services 61 9 3803070. Information concerning the Department of Architecture may be obtained from the Dean of the Faculty, Mr. Simon Anderson, telephone 61 9 3802589 or fax 61 9 3801082.

Applications addressing the selection criteria stating full personal particulars (including work and home addresses, telephone and facsimile numbers), qualifications and experience together with the names and addresses of three referees should reach the Director, Personnel Services, The University of Western Australia, Nedlands WA 6009 by 12 June 1992.

The University reserves the right to make no appointment or to fill the Chair by invitation.

Equal Employment Opportunity is University policy.

SR. ARCHITECTURAL FACILITY PROGRAMMERS

SH&G is accepting applications from degreed and registered architects for positions within its expanding Programming & Planning Group.

These are highly visible positions with exposure to senior executives within client organizations. The successful candidates will participate in programming interviews/workshops, data base development and analysis, execution of project programs, report writing, and business development.

Candidates must have a minimum of 5-7 years architectural and facility programming experience for large office, research labs and/or health care projects. Excellent presentation, leadership, people, and analytical skills, in addition to report writing and production, and PC spreadsheet and word processing experience required.

If you are a self-starter and desire to be challenged, please send your resumes, in confidence to:

Human Resources Smith, Hinchman & Grylls Assoc., Inc. 150 W. Jefferson, Suite 100 Detroit, MI 48226

Equal Opportunity Employer M/F/H/V.

P/A Consultants Connection

Lighting Design

Design Decisions, Inc. 35 Seacoast Terrace, #19L Brooklyn, New York 11235

Jeffrey A. Milham, FIALD

718.769.7796 718.769.7868 Fax 212.420.0377



CIRCLE 351 ON READER SERVICE CARD

Architectural Signage

KLEMZ DESIGN OFFICE

Architectural Signage Programs



Craig W. Klemz

13403 Colorado River Road Gypsum Colorado 81637 303 524 9420

CIRCLE 352 ON READER SERVICE CARD

YOU'LL GET RESULTS...

When you place your Consultant Ad in Progressive Architecture. Reach over 70,000 architectural design professionals each month, starting with the January issue.

For more information or to reserve space, contact Lynne McLaughlin at PA Classifieds, (216) 696-7000, ext. 2524.

Don't Wait . . . FAX YOUR ORDER NOW!

To reserve space, FAX your order to Penton Classifieds,

FAX: (216) 696-1267

RECRUIT TOP TALENT

by advertising in the P/A Job Mart.

For rates and closing dates call Lynne McLaughlin

at (216) 696-7000.













Furniture. Lighting. Floor Coverings. And, this year, Textiles and Decorative Accessories.

They all come together under one roof.

MAY 17-20, 1992 • JACOB K. JAVITS CONVENTION CENTER • NEW YORK CITY

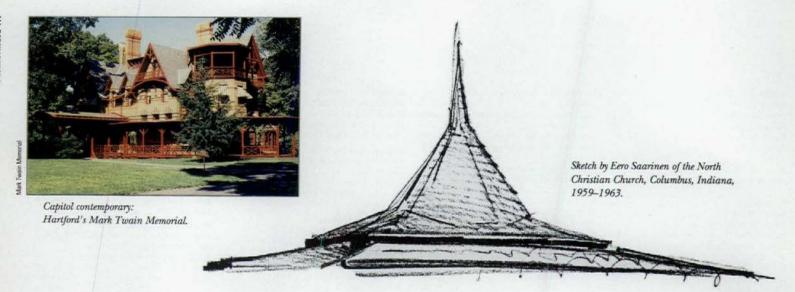


P/A ADVERTISERS' INDEX MAY 1992

Adams-Rite Manufacturing Co 166 American Arbitration Association 182 American Gas Association 6, 7 American Marazzi Tile, Inc 10	Leviton Manufacturing Co., Inc	Assistant to the Publisher Richard A. Strachan Sales Manager James J. O'Brien, Thomas K. Healy,	St. Louis/Kansas City: 2 Illinois Center Bldg., Suite 1 Chicago, IL 60601 312-861-0880 Fax. Timothy Shea, District Mana
American Seating Co 74, 75	Louisiana-Pacific Corp 167, 168	Charles B. Selden, District Managers	
Artec, Div. of Kimball	Lutron Electronics Corp	Atlanta, Georgia 30326:	Australia:
Int'l 171, 173, 175	Marble Institute of America 37	3400 Peachtree Road, NE-Suite 811	Media Developments Australia 26 Tower St., Suite 6
Artemide, Inc	Marvin Windows &	Lennox Tower	Vaucluco Sidney 3030
Autodesk, Inc 23, 24, 25	Doors 42, 43, 164, 165	404-237-5528 Fax 404 237 1372	Telephone: 02-388-7482
Beghelli Inc	Metpar Corp	Harmon L. Proctor, Regional Vice President	Telex: AA-72566 Fax:
Belden Brick Co	Metropolitan Ceramics 184	Ronald L. Miller, District Manager	Michael Soker, Director
Julius Blum & Co., Inc	Mita Copystar America, Inc 79	Boston, Massachusetts:	Hong Kong, China:
Bobrick Washroom Equipment, Inc 26	Mountain Lumber Co 168	600 Summer Street, P.O. Box 1361	China Consultants Internation
Boston Retail Products Corp 185	Musson Rubber Co 168	Stamford, CT 06904 203-348-7531	Suite 905 Guardian House
		Thomas K. Healy, District Manager	32 Ol Kwan Road, Happy Va
C.E.W. Lighting, Inc 166	Nevamar Corp 2, 3	Chicago, Illinois 60601:	Hong Kong, China
C/S Group	Nixalite of America	2 Illinois Center Bldg, Suite 1300	Telephone: 5-833-2181
Carlisle Syntec Systems 187		312-861-0880 Fax 312 861 0874	Fax: 852-5-834-5620
Carlon, A Lamson & Sessions	Panel Concepts, Inc 62, 63	Brian Keenan, Timothy Shea	Tom Gorman, President
Co	Petersen Aluminum Corp 31	District Managers	Italy:
Cedar Valley Shingle Systems 91, 166		Joan Willse	Publizeta
Celotex Corp 82	Raceway Components, Inc 46, 168	Market Development Manager	Via Corticella, 216/6
CertainTeed Corp 92R, 166	Rejuvenation Lamp & Fixture Co 90	Cleveland, Ohio 44114-2543:	40128 Bologna
Cooperativa Ceramica D'Imola 176	Roberts Step-Lite Systems 174	1100 Superior Ave.	Telephone: 051/320309-3254
	Rolscreen/Pella Windows & Doors 32, 33, 168, 178, 179	216-696-7000 Fax 216 696 8765	Fax: 051-320309
DPIC Companies, Inc 72, 73	Doors	John F. Kelly, Western Sales Manager	Roberto Zucchini
Dataprint Corp	Schlage Lock Co 168	Dallas, Texas:	Paris, France:
Dover Elevator Systems, Inc	Seiho International, Inc 90	2 Illinois Center Bldg, Suite 1300	Technomedia Ltée
Duraflake Div., Willamette	Sherwin Williams Co 34, 35	Chicago, IL 60601	58 Rue Pottier
Industries, Inc 166	Siedle & Sohne 60, 61	312-861-0880 Fax 312 861 0874	78150 Le Chesnay, France
industries, inc	Stark Ceramics, Inc 169	Brian Keenan, District Manager	Telephone: 331-39-6-33232
EFCO Corp			Telex: 696-373 Fax 3
Edison Price, Inc 167	Tarkett, Inc 189	Denver, Colorado 80224:	Yvonne Melcher, Manager
Eliason Corp 172	Tectum, Inc 182	3215 South Newport Street 303-753-1901 Fax 303 753-1902	Spain:
	Tischler Und Sohn 64	Albert Ross, District Manager	IDG Communication France
Flexco Co	Trade Commission of Spain 54	Albert Ross, District Manager	Immeuble La Fayette
FlexiWall Systems 167	Trendway Corp 183	Los Angeles, California:	CEDEX 65 Paris La Defense
Forms + Surfaces 8		16255 Ventura Blvd, Suite 300	France
	Vertex, A Division of ASG 93	Encino, CA 91436	Telephone: 49-04-78-00
GAF Building Materials Corp 167	W 0 W C 1 T 1 91	818-990-9000 Fax 818 905 1206	Fax: 0-11-33 149 047 878
G.E. Lighting	W & W Sales, Ltd	Michael T. Grennan, District Manager	Francois Xavier Chaussonnier
Garland Co	Weather Shield Mftg., Inc 58, 59	New York, New York 10168:	Claude Bril
W.R. Grace & Co 167	Weiser Lock, A MASCO Co 86 Weyerhaeuser Architectural Doors 89	Chanin Building, Suite 900	Tokyo, Japan 101:
	weyernaeuser Architecturar Doors 85	122 East 42nd Street	Bancho Media Service
Homasote Co	Zero International, Inc 22	212-867-9191 Fax 212 867 5893	Dai-Ichi Nisawa Bldg 5th Flo
	Zero mermadonal, mer	James J. O'Brien, Charles B. Selden,	3-1 Kanda Tacho 2-chome
Intel Corp	Note: B after number denotes material that	District Managers	Chiyoda-ku
Intergraph Corp 163	Note: R after numbers denotes material that appears in Regional editions only.	Philadelphia, Pennsylvania:	Telephone: 011-81+3+3252 Telex: J-25472
International Contemporary	appears in Regional editions only.	Chanin Building, Suite 900	Fax: 011-81+3+3252+278
Furniture Fair		122 E. 42nd Street	Isao Murakoshi, President
International Tile Expo 92	A decadistra Calas Offices	N.Y. N.Y. 10168	
Kimball Office Furniture	Advertising Sales Offices	212-867-9191 Fax 212-867-5893	United Kingdom: Wood Cottage, Shurlock Row
Co 18, 19, 20, 21	Stamford, Connecticut 06904:	Charles B. Selden, District Manager	Reading, RG10 OQE, Engla
Koh-I-Noor Rapidograph, Inc 186	600 Summer Street, P.O. Box 1361	San Francisco, California 94010:	Telephone: 0734-343302
and the same same same same same same same sam	203-348-7531 Fax 203 348 4023	840 Hinckley Road, Suite 233	Telex 848800 Techno G
LaPeyre Stair 188	Robert J. Osborn	Burlingame, CA 94010	Fax 011-44-734-343848
Larsen Products Corp	Vice President and Publisher	415-692-1381 Fax 415 692-7406	Malcolm M. Thiele,
Lees Commercial Carpets	Paul McKenna	Susan M. Werner, District Manager	Managing Director, U.K.
Lees Commercial Carpets 4			

te 1300 ax 312 861-0874 anager dia Limited Fax: 02-337-4314 tional (H.K. Ltd.) Valley 25452 x 331-39-6-33120 nse 5 niere Floor 252+2721 2780

Subscription information: Send all subscription orders, payments and changes of address to Progressive Architecture, P.O. Box 95759, Cleveland, OH-44101 (216-696-7000). When filing change of address, give former as well as new address and zip codes, and include recent address label if possible. Allow two months for change. Publisher reserves right to refuse unqualified subscriptions. Professionals include architectural and architectural-engineering firm personnel and architects, designers, drafters employed in allied fields. Subscription rates for U.S. professionals are \$48 for 1 year (\$65 in Canada, \$130 for foreign); \$90 for 2 years (\$125 in Canada, \$255 for foreign); U.S. student subscription for 1 year is \$48. Single copies are \$7.50 in the U.S., \$8 in Canada, and \$12 for foreign except Information Sources issue and two issues of P/A Plans, \$10 in the U.S., \$12 for Canada, and \$20 for foreign Can. GST #R126431964. Permission to photocopy is granted for users registered with the Copyright Clearance Center Inc. (CCC) to photocopy any article, with the exception of those for which separate copyright ownership is indicated on the first page of article, provided that the base fee of \$1 per copy of the article plus \$0.50 per page is paid directly to CCC, 27 Congress St., Salem, MA 01970. (Code No. 0033-0752/92 \$1.00 + .50) Written permission must be obtained for other copying; contact Agi Muller at P/A, 600 Summer Street, Stamford, Ct. 06904, (203) 348-7531. Indexed in Architectural Index, Architectural Index, Architectural Index, Engineering Index, Second class postage paid at Cleveland, Ohio, and additional mailing offices. Editew Responsable (Belgique), Christian Desmet, Vuurgatstraat 92, 3090 Overijse, Belgique. Volume LXXIII, No. 5. Printed in U.S.A. Copyright © 1992 by Penton Publishing, Inc. POSTMASTER: Send address changes to PROGRESSIVE ARCHITECTURE, 1100 Superior Avenue, Cleveland OH 44114-2543.



The Adventures of Mark Twain

To better understand the context in which the flambovant Connecticut State Capitol was created (page 110), consider a visit to another Hartford landmark of the age, the Mark Twain Memorial. The Memorial, Twain's home from 1874 to 1891, demonstrates that Richard M. Upjohn's capitol was in sync with the tastes of the upper class. The most notable feature of the home, designed by Hartford architect Edward Tuckerman Potter, is the decorative stenciling executed by Louis Comfort Tiffany's Associated Artists. Although the architecture alone certainly warrants inspecting, nothing compares to the feeling of occupying the same space where Twain conjured up Huckleberry Finn and Tom Sawyer.

Arrest that Sentence

Writing isn't easy. And we, at P/A, are the last to claim that we have never misplaced a modifier or let a participle dangle. Still, it seems to us that the writing about architecture, especially that emerging from the pens of professors, has never been worse.

Consider the following passage, selected randomly from the justpublished proceedings of a conference at SUNY-Buffalo last September:

Although as the bearer of a destructive or deconstructive "effect," it is with "apparent presence" that Ruskin and all the other theoreticians of this discoursive tradition take issue, what is at stake in this discourse, is not "apparent presence," but "real presence." It is the desired transparency of appearance to being, or what amounts to same, the desired mastery of appearance in the name of being that impels forth this theoretical dis-

Say what? Now, we realize that professors have a certain license to write this way, since their colleagues are paid to read it and their students, ever concerned about grades, are afraid not to. But what effect does this writing have on students once they leave the academy and become architects? Is it a coincidence that much of the litigation involving contractors, owners, and architects stems from poor communication?

A Trip to Saarinen's Office

. On the top floor of the Jacobean mansion that houses the offices of Kevin Roche John Dinkeloo & Associates, in Hamden, Connecticut, there is a small room with the name Eero Saarinen & Associates on the door. And inside that room there is a veritable architectural treasure: the ample paper trail that Eero Saarinen left behind as he grew to become one of the great American architects of the postwar period. P/A's correspondentat-large, Peter Papademetriou, has spent years following that trail. (see p. 108 for some of what he has learned en route). That one small room doesn't contain the complete paper trail; the Saarinen working drawings are kept in the "vault" in the mansion's basement. Nor is every document in the room paper: a large wooden model of the St. Louis arch seems to rise out of an alcove as if it were a rainbow that had found its pot of gold. But you leave that room realizing how important it is for every office to maintain its old drawings and project records. Do it not for the lawyers, but for the historians and their readers who may one day thank you for it.

P/A in June ...

What is "organic architecture"? Next month P/A considers the term as it relates to a particular group of American architects, philosophical descendants of Frank Lloyd Wright and Bruce Goff. We'll publish recent work by Bart Prince, Mickey Muennig, and James Hubbell.

Also in June, we'll look at two different takes on traditional urban planning: infill housing by UDA Architects and Windsor, Florida, a luxury community by Duany & Plater-Zyberk.

The Technics department will feature an article on measuring and documenting existing buildings in preparation for remodeling and renovation. In Technics Topics, a number of consultants will respond to February's Technics article on brick veneer and steel studs.

A special Focus on computers will include articles on getting up-and-running with CAD, on working with computer consultants, on alternative design software, and on integrating new hardware and software into existing systems.