CIRRUS: THE SOFT TOUCH IN CEILINGS.

The most extensive collection of lightly textured ceilings. Includes Syllables® (multipaneled ceiling systems, two with grid accents) and Classic Motifs. Stepped, chamfered or beaded edges. Seven colors.

For a brochure on all your design options, call 1 800 233-3823 and ask for Cirrus Collection.
"First you find
the list price. Add more
money for the options
that you want."

"Then you multiply.
Then divide a little.
Then subtract some."

"You do all this, and
BOOM, you gotta the
price."
This is the sad story of Office Furniture and the Inflated List Price.

In fairness to everybody, Father Sarducci, List Price Discounting has become very complex. Deep discounts, daily discounts, and cost effectiveness over time are just a few of the complications and misconceptions involved in creating the right office environment solutions. For a full explanation of “discounting,” and a booklet, “50+ ways to get more office furniture for your money,” call your Steelcase Dealer, or 1-800-333-9939, Ext. 99.

Circle 2 on inquiry card

If you're not buying Steelcase, you're not getting your money's worth."
ARCHITECTURAL RECORD

LETTERS

It's Time . . . continued

Congratulations on the first two editorials that you wrote for RE-
CORD, [June 1990, pages 56-57, and July 1990, page 45]. They are truly on-point and hit hard at the central issue facing archi-
tects today: how does the profession, once and for all, begin to combine quality design with first-class management?

You are clearly off to a great start, and I look forward to see-
ing the design profession respond to the challenges you have addressed.

BARRY B. LE PATNER

Le Patner, Block, Passo & Rivellis, Law Offices
New York City

In your June 1990 editorial, you predict that the 1990s will see a leaner firm that depends heavily on CADD. I believe that the leaner firms will depend heavily on the manipulation and processing of information aided by computer. This includes CADD, but also includes expert systems for specifications, materials research, building-code analysis, and other construction-related applications. The leaner architectural practice will further demand that principals and staff be proficient in these emerging technologies.

One result of these technologies is that the levels of service and professionalism demanded of architects by the marketplace will increase. I believe that our services to the public will need to become more comprehensive, considering a client's needs from inception through construction, and then continuing to facilities management.

You predict that the economics of the medium-sized firms will become increasingly unstable, and that the future belongs to small specialized firms and large firms. The revenue volume in the medium-sized firm does not allow the organization to build and retain the diverse range of high-caliber staff that complex projects require. Small "idea" firms, with established reputations in specific areas of practice, will be able to offer clients a high level of professional service. On more complex proj-
ects, I believe you will see the "idea" firms working together with large comprehensive ser-
vice architectural organizations, either in association or in joint-
v venture.

You note that the architectural profession should cease back-
ing out of responsibility for con-
struction contract administration. The maxim that authority requires responsibility cannot be applied in this situation. I feel that if architects want to maintain a leading role in the con-
struction process, then they must assume that responsibility. It is naive to assume that the marketplace will tolerate archi-
tects' demand for leadership if they attempt to allocate respons-
bility to others. If we continue our present trend, we have no one but ourselves to blame should our role in con-
struction be relegated to that of a "design subcontractor."

Your final point noted that ar-
chitects need to take a tougher stand in fee negotiations. Excel-
 lent professional service is not produced on the cheap. Firms that cannot charge reasonable fees will, long-term, be unable to produce the quality of service that the marketplace will demand. Our fees should reflect value for money. The more-
value that we can bring to a project, the stronger our position at the bargaining table will be.

LESTER KORZILIS,
ARCHITECT
New York City

Ecological paranoia

After listing the many environ-
mental problems facing the world, James Wines, in his ar-
ticle "Green Architecture" [RE-
CORD, April 1990, pages 78-79], appro
cached with "paranoid guilt" the "subject of architec-
ture and nature." Surprisingly, the only ecological contribu-
tion he could claim for architecture and his work was "how vegetation can function as environmen-
tal commentary," and he is prob-
bly right. For example, in Japan we find an architect help-
ing to eliminate a forest with a golf course and then building a tower of tree trunks to assuage his guilt. But as with any other monument, the tower does not bring back the dead.

FRED L. OSMON, ARCHITECT
Carefree, Arizona

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, and WESTERN ARCHITECT AND ENGINEER) is published monthly except for two issues in February and August. (ISSN 0003-0635) September 1990, Vol. 178, No. 10. Title reg. in U. S. Patent Office, copyrighted 1990 by McGraw-Hill, Inc. All rights reserved. Indexed in Readers' Guide to Periodical Literature, Art Index, Applied Science and Technology Index, Engineering Index, The Architectural Index and the Architectural Periodicals Index. Every possible effort will be made to return material submitted for possible publication (accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.


Offices of McGraw-Hill, Inc: Chairman, President and Chief Executive Officer: Joseph L. Donno; Executive Vice President, General Counsel and Secretary: Robert N. Landis; Executive Vice President: Walter D. Serwatski; Senior Vice President, Treasury Operations: Frank D. Pengase; Senior Vice President, Editorial: Ralph R. Schutz.

Associated Services: Sweet's Catalog Files, Dodge Reports and Building, Dodge/SC Johnson Microfilms, Dodge Construction Statistics, and other construction newspapers (Chicago, Denver, Los Angeles, San Francisco). Subscription rates for personnel of Architectural, Engineering, Interior Design, Design and other related fields and students thereof, as follows: In the United States: $42.00; Canada: $42.00; Europe: $105.00; and all other foreign: $125.00. Single copy price for Domestic and Canadian: $7.00; Foreign: $10.00. For Subscribers: (608) 467-0700. Publisher reserves right to accept or reject any subscription.

Subscription List Usage: Advertisers may use our list to mail information to readers. To be excluded from such mailings, subscribers should send a request to ARCHITECTURAL RECORD, Mailing List Mgr., P. O. Box 555, Hightstown, NJ 08520.

Copyright and Reprinting: Title © reg. in U. S. Patent Office. Copyright © 1990 by McGraw-Hill, Inc. All rights reserved. Where necessary, permission is granted by the copyright owner for libraries and other registered borrowers.

Copyright Clearance Center (CCC) to photocopy any article hereinafter for personal or internal reference use only for the base fee of $1.00 per copy of the article plus ten cents per page. Payment should be sent directly to the CCC, 27 Congress Street, Salem, MA 01970. Include with request ISSN 0003-0635. $0.50. ($0.50). Written permission must be secured for any other copying. Write Reprint Manager for such permission at address below, or to obtain quotations on bulk orders.

Subscription List Usage: Advertisers may use our list to mail information to readers. To be excluded from such mailings, subscribers should send a request to ARCHITECTURAL RECORD, Mailing List Mgr., P. O. Box 555, Hightstown, NJ 08520.


ARCHITECTURAL RECORD is published monthly except for two issues in February and August. Subscription forms ISSN 0003-0635/90 published monthly by McGraw-Hill, Inc. Postage paid at New York, NY and additional mailing offices. Postage paid at Windsor, Ontario, Canada. Registration Number 9127.

Postmaster: Please send address changes to: ARCHITECTURAL RECORD, Subscription Manager, P. O. Box 555, Hightstown, NJ 08520.

This ISSUE is published in national and separate editions. Additional subscription rates and special editions are available for as follows: Eastern Editions through 9/4/90; Western Editions through 9/4/90; Northern Editions through 9/4/90;
“Libbey-Owens-Ford’s commitment to the future can be summed up in three words...”

— Ronald W. Skeddle
Chief Executive Officer,
Libbey-Owens-Ford Co.
light years
The beginning of an exciting new era in the history of glass is about to begin.

A time when advanced glassmaking technology completely revolutionizes architectural trends. A time when flat glass products can no longer be considered a simple commodity.

For today, Libbey-Owens-Ford is shaping the future of the glass industry. With breakthrough improvements in such product performance areas as solar control, aesthetics, optics and insulation. And with the introduction of several new light- and heat-managing glass innovations from our first family of glass:

- **EverGreen™ Glass**, the first high-performance tinted glass created with the interior environment in mind.
- **Energy Advantage™ Low-E Glass**, a high-performance, completely neutral color low-emissivity glass for commercial applications.
- **ECLIPSE® Clear Reflective Glass**, the newest member to join our popular ECLIPSE Reflective Glass family.

Over the next several months, we invite you to learn more about these unique glass products, as well as others LOF currently has under development. Once you do, you'll understand why architects, builders and fabricators throughout the world consider LOF to be Light Years Ahead in today's glass industry.


Circle 3 on inquiry card
CONTENTS

BUILDING TYPES STUDY 683

RECORD INTERIORS 1990

69 INTRODUCTION

70 PLAIN AND FANCY

78 THROWING A CURVE
   The "industrial Baroque" furniture designs of Arthur Cotton Moore.

80 CULTURAL EXCHANGE
   Restoration of the Beurs Van Berlage, Amsterdam; Pieter Zaanen, Architect.

88 COMPANY MANNERS
   Dean Witter Financial Services Group, Riverwoods, Illinois; Lohan Associates, Architects.

94 ANYTHING BUT STANDARD
   American Standard Showroom, New York City; Tigerman McCurry, Architects.

98 NOUVEL HOTEL
   Hôtel St. James, Bouliac, France; Jean Nouvel, Architect.

104 CHANGE IN SCENE
   Hemdale Film Corporation, Los Angeles; Hodgetts & Fung, Architects.

110 PENTHOUSE SUITE
   Manhattan Triplex, New York City; Steven Forman, Architect.

FEATURES

122 COMPUTER TALK
   Kliment & Halsband's computer science center at Princeton establishes a friendly dialogue among a diverse group of campus neighbors.

128 REGIONAL TRANSIT
   Rob Quigley's Escondido Transit Center embraces its Southern California climate with outdoor rooms organized around tilt-slab structures. By Dirk Sutro

132 AT HOME IN SAN JOSE
   Don Cnty examines how an architect-directed urban-renewal program has transformed the center of California's third largest city.
CORRECTIONAL FACILITIES: PRISON EXPLOSION
Amid an unprecedented boom in correctional-facility construction, architects are working on designs that look less and less like prisons. This month's Building Types Study features four state-of-the-art examples in Sheridan, Ore.; Boston, Mass.; Santa Rosa, Calif.; and Austin, Texas.

BUILDING TECHNOLOGY

ACCESS FLOORS: A WAY TO HANDLE THE CABLING MESS
Computers and telecommunications media are proliferating, but cable size is shrinking. Wire management is the issue.

WHEN THERE’S NO PLACE TO GO BUT UP
How architects and engineers are working together to build over, around, and through existing buildings.

NEW PRODUCTS
169 Aerodynamic Curves 173 Preview of Designer's Saturday
171 Under the Rug 175 Modular Cells A La Carte

COMPUTER PRACTICE
Computer-Generated Video Explains Design. A model at the University of Arkansas could be a model for stronger client presentations. By Karen Cordes

COMPUTER TECHNOLOGY
Software reviews for architects. Fast graphics for AutoCAD. By Steven S. Ross

PRACTICE

PRACTICE NEWS
37 Starting Your Own Firm. Successful firms started within the past 10 years reveal how they did it. This first of two parts discusses how to begin. By Bradford Perkins
41 Construction Volume Update. While construction bottoms at a higher level than in 1982's recession, regional differences will be apparent. By George A. Christie
47 Making It In a Changing Economy. What do you do when you find business-as-usual more difficult? Expand your horizons, say four experts.

OBSERVATIONS
Finland After Aalto. By Gerald Moorhead

BOOK REVIEWS
4 Letters 228 Classified Advertising
25 Design News 229 Calendar
121 Editorial 232 Advertising Index
193 Product Literature 235 Reader Service Card
195 Manufacturers' Sources

COVER: Manhattan Triplex Apartment, New York City; Steven Forman, Architect;
Photographer: @Paul Warehol
Dave Mahowald Will Bend Over Backwards to Get You the Answer.

In fact, he'll do anything it takes to answer even your toughest questions about coatings.

You see, Dave Mahowald coordinates the Paint DataBank® at Sherwin-Williams. Every week, hundreds of architects and spec writers avoid costly mistakes with the help of Dave and the other coatings experts. You can, too.

Stuck on how to prepare a substrate? Or how to choose the best topcoat? Call Dave.

Unsure about which primer to use? Or whether to use a primer at all? Dave knows.

Concerned about a product meeting V.O.C. compliance? Dave has the industry's most current product regulatory information.

Bring Dave's 31 years of experience to your next project. For free. Just dial 1-800-321-8194 between 8:30 a.m. and 5:00 p.m. EST, Monday-Friday. In Ohio, call 1-800-362-0903. Or return the reader service card for your free 1990 Paint Specification Catalog, the most complete coatings specifying guide in the industry.

Call soon. And see just how far Dave will go to help you.
Neopariès is changing the face of building design by combining the classic beauty of natural stone with the timeless durability of crystallized glass ceramic. For a state-of-the-art wall cladding that will endure for generations.

Specify Neopariès... when performance counts.
Table your notions of compromise when it comes to a roof. It either works, or it doesn’t. You find out soon enough either way.
For a roof system that performs the way it’s supposed to right from the start, come to the company with over 130 years’ experience. Manville.
We supply the most complete systems package: membranes, insulations and accessories.

We train and support the Manville Approved Roofing Contractors who will install these roof systems.
And we give you the option of the industry’s most comprehensive guarantee program to back up your investment.
When it comes to shutting out the elements, nobody does it better. For more information, contact Manville, P.O. Box 5108, Denver, Colorado 80217-5108.

Keeping the water out.
That’s what this business is all about.
YOU'LL FIND SUNBRELLA HANGING AROUND ALL THE BEST PLACES.

The Phoenician Resort, Scottsdale, Arizona
Sunbrella acrylic fabric and Sunbrella Firesist® fabric make a beautiful place like this even more beautiful. And there are so many uses for Sunbrella. From cabana covers to awnings to canopies to dividers and more. You can specify it for indoors or out too. And fire codes aren’t a problem, because Sunbrella Firesist meets the requirements of the National Fire Protection Association and the California Fire Marshal’s test.

Sunbrella Firesist is available in 22 beautiful styles. Regular Sunbrella fabric is available in 88. But beauty is only part of the story. Our fabrics are incredibly tough.

They retain their colorfastness and strength for years, even under the most extreme conditions. They have superior water repellency characteristics too. And they resist damaging mildew and mold attacks. So it’s no wonder we offer the best five-year limited warranty in the business.

And it’s no wonder Sunbrella is the number one selling canvas fabric in America.

So look in the Yellow Pages under “Awnings & Canopies” for the name of a dealer near you. And start specifying Sunbrella, around the pool, and everywhere else too.

Sunbrella Firesist

Glen Raven Mills, Inc. Glen Raven, NC 27705
®Registered trademark Glen Raven Mills, Inc.
CALL FOR ENTRIES

BUILDING TYPES STUDIES 1991

ARCHITECTURAL RECORD published its first Building Types Study in 1937: a 56-page special section on the design of department stores, small shops, and restaurants. The purpose of these studies, according to the editors at that time, was “to review authentic current practice with respect to plan, construction methods, materials, and equipment... giving a fair idea of modern trends in design and of the practical considerations motivating the trends. It is our belief that there is a distinct need by architects and others for practical planning information, collected together in convenient and usable form.”

Over 50 years—and nearly 700 issues—later, the Building Types Study remains the cornerstone of RECORD's monthly editorial calendar. The wisdom of presenting completed works of architecture by functional type as a way of revealing how different architects use different esthetic and technical solutions to solve related programs is as viable today as it was in 1937.

In order to publish the best possible material in this section of the magazine, RECORD invites architects to submit completed buildings for editorial consideration in 1991. Here's the list of Building Types Studies scheduled for 1991:

<table>
<thead>
<tr>
<th>Building Types Study</th>
<th>Editor-in-charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Buildings</td>
<td>Margaret Gaskie</td>
</tr>
<tr>
<td>Commercial Interiors</td>
<td>Karen Stein</td>
</tr>
<tr>
<td>Day-Care Centers</td>
<td>Margaret Gaskie</td>
</tr>
<tr>
<td>Design for the Aged and Handicapped</td>
<td>Margaret Gaskie</td>
</tr>
<tr>
<td>High-Tech Industrial or Research Labs</td>
<td>James Russell</td>
</tr>
<tr>
<td>Mixed-Use Projects</td>
<td>Donald Canty</td>
</tr>
<tr>
<td>Primary Health-Care Facilities</td>
<td>Clifford Pearson</td>
</tr>
<tr>
<td>Record Interiors</td>
<td>Karen Stein</td>
</tr>
<tr>
<td>Record Houses</td>
<td>Paul Sachner</td>
</tr>
<tr>
<td>Renovation/Adaptive Use</td>
<td>Paul Sachner</td>
</tr>
<tr>
<td>Schools</td>
<td>Clifford Pearson</td>
</tr>
<tr>
<td>Sports and Recreation Facilities</td>
<td>Karen Stein</td>
</tr>
<tr>
<td>Transportation Centers</td>
<td>Donald Canty</td>
</tr>
</tbody>
</table>

ELIGIBILITY:
Buildings must be completed and available for professional photography at least four months prior to publication date (e.g., January for the April issue). Entries should consist of good-quality slides or professional 4-by-5 transparencies of the building; reduced versions of floor plans, site plan, and sections (not plan rolls); and a one-page or less text outlining the client's goals and the architect's technical and design solutions. You may send submissions throughout the year. Send projects to the appropriate editor-in-charge at ARCHITECTURAL RECORD, 1221 Avenue of the Americas, New York, NY 10020. For additional information, phone RECORD'S editorial offices at 212/512-2594.
Nothing Gets Under Your Skin With YKK's Anodized Plus.

Conventional anodized aluminum finishes are known for their beauty and weatherability. But YKK goes one step further. Our Anodized Plus finishes add protective coating to the anodized surface, providing superior protection from alkali and mortar contact on all our Storefront Systems. The composite coating combines the features of an anodized surface with the corrosion and chemical resistance of a resin coating. Available in gloss or satin finish, and with color consistency and uniformity assured. For information on how YKK can help solve your design problems, contact your YKK representative, or call (404) 344-2981.

YKK Architectural Products Division
Storefront Systems For Innovative Designs
5610 Gwaltney Drive
Atlanta, GA 30336
(404) 344-2981

YKK AP International:
Tokyo, Singapore, Taipei, Hong Kong, Jakarta, Melbourne and Sao Paulo.

Conventional anodized surface
Anodic oxide
plus electrolytic
pigmentation coating
Aluminum

YKK Anodized Plus™ finish
Electro-deposition
resin coating
Anodic oxide
plus electrolytic
pigmentation coating
Aluminum
FREE ADMISSION! Preregister NOW for the 3rd Annual

Mid-Atlantic Construction Expo & Conference

MAIL IN COUPON BY SEPTEMBER 17. AVOID LONG LINES.

OCTOBER 3-5, 1990
PHILADELPHIA CIVIC CENTER

- Over 300 Exhibits of Construction Materials, Equipment & Services!
- Cash Prizes, Giveaways & Skill Contests for Fun & Excitement!
- Fast On-Site Entry System: 20-Session Conference & Workshops
- Construction Equipment & Trucks, Concrete, Masonry, Doors, Windows, HVAC, Metals, Pools, Finishes, CADD, Associations, Publications & Much More!
- REMODOCN '90 Featuring The Product Showcase.
- See The Aisle of Tile, World of Wood, Plus Thousands of New Product Ideas You Can Use!
- Visit CON-STRUCT '90 Computers, The Concrete Connection and Get F.W. Dodge/DataLine Free Job Leads!

FREE ADMISSION COUPON • PHOTOCOPIES ACCEPTED • SAVE $5 • MAIL BY SEPT. 17

Avoid Lines! Save $5! Mail by September 17 to register for FREE exhibits admission - you will receive a notification in the mail to pick up your badge at the registration desk. After September 17, bring this coupon, or a photocopy to the show entrance for FREE admission. (Price without this coupon is $5.) OPTIONAL SPECIAL SERVICE: For maximum convenience, send $5 by September 17 to receive your completed badge in the mail. (See payment instructions below.)

Use photocopies for multiple registrations. Mail coupon to: Slater Expositions, 1502 Providence Highway, Norwood, MA 02062.

For more information call 1-800-289-0667. PLEASE PRINT CLEARLY.

Type of Firm (check one)
A □ Architectural/Eng.
B □ Design/Specifying
C □ General Contractor
D □ Subcontractor
E □ Owner/Developer
F □ Supplier/Vendor
G □ Consultant
H □ Facilities Dept.
I □ Real Estate
J □ Government
K □ College/University
L □ Other

OPTIONAL BADGE MAIL-IN: Enclose $5 for badge mail-out service. Make check to "Mid-Atlantic Construction Expo," or complete information below.

CHECK ONE: □AMEX □MasterCard □VISA
Card Number __________
Exp.Date __________
Signature __________

EXHIBIT HOURS
West, Oct. 3 12 noon - 7 p.m.
Thurs., Oct. 4 12 noon - 5 p.m.
Fri., Oct. 5 12 noon - 5 p.m.

THE BIG SHOW • Mail Coupon to Slater Expositions, 1502 Providence Highway, Norwood, MA 02062 • 1-800-289-0667

THE BIG SHOWS OF AMERICA • Boston • New York • Chicago • Los Angeles • Philadelphia • San Francisco • San Diego • Washington, D.C. • Cleveland • Atlanta

16 Eb • ARCHITECTURAL RECORD SEPTEMBER 1990
Think about it. For over 30 years, interior designers and architects have depended upon Marble Modes for a large variety of beautiful quality products. Marble Modes manufactures and imports over 170 selections of travertine, granite, marble, slate and onyx from five continents for the East Coast. All can be seen at the Marble Modes showroom. Call or write for more information.

Exclusive Area Distributors of Slab and Tile for:

DAKOTA GRANITE  ROCK OF AGES  VERMONT MARBLE

15-25 130TH STREET, COLLEGE POINT, NY 11356  718/539-1334  FAX 718/353-8564
Businesses all over are cashing in on the

You've got to light, cool and power your building in New York or Westchester County. You want equipment that will provide reliability, long life and lower operating costs. High-efficiency equipment meets your needs, and now Con Edison will give you cash rebates for installing it.

The ApplePower Rebate Program awards cash rebates to businesses of all sizes for installing energy-efficient equipment. You can qualify for rebates on lighting, electric motors, electric, gas and steam air conditioning and cool storage systems that produce cooling energy at night for daytime use.

The way it works is simple. Get approval from us before you order any high-efficiency equipment.

Once it's installed, we send you a rebate check. It's that easy.

Don't be the only one missing out on cash rebates and lower energy bills. Fill out the attached coupon or call our toll-free number. We'll send you one of our brochures with specifics about the program and how you can qualify.

Circle 10 on inquiry card

Call:
1-800-343-4646, ext. 02
(Monday through Friday, 9 a.m. to 5 p.m.)
Con Edison ApplePower Rebate Program.

Yes, I want cash rebates from Con Edison.

Name ____________________________

Title ____________________________

Company Name ____________________

Address __________________________

City __________________ State ______

ZIP __________________ Phone ( _ )__

Please send me brochures on high-efficiency:
☐ lighting
☐ electric motors
☐ electric air conditioning
☐ gas air conditioning
☐ steam air conditioning
☐ cool storage systems
  (produce cooling energy at night
  for daytime use)

Mail to: Con Edison ApplePower Rebate Program
  298 Fifth Ave., Box 700, New York, NY 10001
HEALTH RISKS SEEN IN BLOOD PRESSURE EVEN SLIGHTLY ABOVE NORMAL

ORGAN DAMAGE SEEN

By SALLY J. ROBERTS

A new study reveals that blood pressure levels previously thought to be safe can lead to permanent damage of the heart and blood vessels, and increase the risk of a heart attack.

The results suggest that people with mild hypertension should be monitored more closely and treated more aggressively than is the case today, some experts say.

"We are seeing people with blood pressure levels today not considered dangerous or even deserving of treatment suffering some organ damage," said Dr. Alexa Culman, physician and author.

Others say that these findings are too preliminary to warrant a reevaluation of current treatment procedures.

Study Reveals More

Hypertension has long known to damage the heart, the kidneys and major blood vessels, often leading to heart attack and stroke.

But these new findings are the first to suggest a link between borderline hypertension and major organ damage.

None of the physicians contacted would say whether or not these findings would radically alter the treatment procedures for what is today considered "mild" hypertension, but all agreed that these procedures should be reviewed in the very near future. One added "The tactics for avoiding hypertension remain the same, but now it is not considered safe to do so."
Please choose your office furniture dealer carefully.
Cocaine lies.

After nearly a decade of being America's glamour drug, researchers are starting to uncover the truth about cocaine.

It's emerging as a very dangerous substance.

No one thinks the things described here will ever happen to them. But you can never be certain. Whenever and however you use cocaine, you're playing Russian roulette.

You can't get addicted to cocaine.

Cocaine was once thought to be non-addictive, because users don't have the severe physical withdrawal symptoms of heroin—delirium, muscle-cramps, and convulsions.

However, cocaine is intensely addicting psychologically.

In animal studies, monkeys with unlimited access to cocaine self-administer until they die. One monkey pressed a bar 12,800 times to obtain a single dose of cocaine. Rhesus monkeys won't smoke tobacco or marijuana, but 100% will smoke cocaine, preferring it to sex and food—even when starving.

Like monkey, like man.

If you take cocaine, you run a 10% chance of addiction. The risk is higher the younger you are, and may be as high as 50% for those who smoke cocaine. (Some crack users say they felt addicted from the first time they smoked.)

When you're addicted, all you think about is getting and using cocaine. Family, friends, job, home, possessions, and health become unimportant.

Because cocaine is expensive, you end up doing what all addicts do. You steal, cheat, lie, deal, sell anything and everything, including yourself. All the while you risk imprisonment.

Because, never forget, cocaine is illegal.

There's no way to tell who'll become addicted. But one thing is certain.

No one who is an addict, set out to become one.

C'mon, just once can't hurt you.

Cocaine hits your heart before it hits your head. Your pulse rate rockets and your blood pressure soars. Even if you're only 15, you become a prime candidate for a heart attack, a stroke, or an epileptic-type fit.

In the brain, cocaine mainly affects a primitive part where the emotions are seated. Unfortunately, this part of the brain also controls your heart and lungs.

A big hit or a cumulative overdose may interrupt the electrical signal to your heart and lungs. They simply stop.

That's how basketball player Len Bias died.

If you're unlucky the first time you do coke, your body will lack a chemical that breaks down the drug. In which case, you'll be a first time O.D. Two lines will kill you.

Sex with coke is amazing.

Cocaine's powers as a sexual stimulant have never been proved or disproved. However, the evidence seems to suggest that the drug's reputation alone serves to heighten sexual feelings. (The same thing happens in Africa, where natives swear by powdered rhinoceros horn as an aphrodisiac.)

What is certain is that continued use of cocaine leads to impotence and finally complete loss of interest in sex.

It'll make you feel great.

Cocaine makes you feel like a new man, the joke goes. The only trouble is, the first thing the new man wants is more cocaine.

It's true. After the high wears off, you may feel a little anxious, irritable, or depressed. You've got the coke blues. But fortunately, they're easy to fix, with a few more lines or another hit on the pipe.

Of course, sooner or later you have to stop. Then—for days at a time—you may feel lethargic, depressed, even suicidal.

Says Dr. Arnold Washton, one of the country's leading cocaine experts: "It's impossible for the nonuser to imagine the deep, vicious depression that a cocaine addict suffers from."

Partnership for a Drug-Free America
Vent-Axia exhaust fans guarantee a first rate performance in more ways than one.

Choice, style and quality combine to bring you a range of exhaust fans ideal for commercial, industrial or residential applications.

High on performance but low on energy consumption, Vent-Axia exhaust fans are quiet, resilient and easy to install. Features include a choice of intake and exhaust air flow plus a useful "shutter open – fan off setting".

Suitable for installation in walls, roofs, ceilings or windows, or as part of an in-line system, Vent-Axia exhaust fans boost the latest advances in blade design and a unique 3-speed control gives a choice of performance levels to suit your particular ventilation requirements.

Vent-Axia exhaust fans come in four sizes with a readily available range of controllers, automatic sensors and accessories.

Circle 16 on inquiry card
You can order reprints of articles that have appeared in Architectural Record within the last two years, whether in color (if the article was published in color) or black-and-white (if published in black-and-white), in whatever quantities (minimum 100) you need, for use in your own mailings and presentations.

For more information, price quotes and help with layout and format of your reprints, write or call:

Janice Austin
ARCHITECTURAL RECORD
Princeton Road
Hightstown, NJ 08520
(609) 426-5494
More Stirrings on the Antitrust Front

Invoking the 100-year-old Sherman Act, once used as a club against 19th-century robber-baron monopolies, the Justice Department in early July filed—and immediately settled—an antitrust suit against the AIA.

Both the suit itself, alleging unreasonable restraint of price competition, and the proposed consent decree were filed in tandem July 5 in the U.S. District Court in Washington D. C.. The verdict will become final after a 60-day comment period.

The suit alleged that under Section 1 of the Sherman Act the AIA and “co-conspirators”—specifically, the Chicago Chapter—had entered into an illegal agreement prohibiting members from engaging in competitive bidding, discounting fees, or providing free services by adopting, in September 1984, a compensation and fee-policy statement to this effect.

The consent decree, in addition to requiring the AIA to pay $50,000 to the government for the costs of the investigation, orders the AIA to institute a “comprehensive” antitrust-compliance program, including annual written statements for 10 years from AIA officials that they agree to comply with the decree.

The decree supersedes a 1972 anti-trust judgment against the AIA that prohibited it from adopting policies restricting competitive bidding. The new decree would extends to discounted or free services.

The AIA is not prohibited from lobbying in favor of architect selection for public projects by additional criteria—talent, experience, qualifications—under the Brooks Act. Said architect Hugh Newell Jacobsen: “If you interview us, select us for our ability, our experience, or our necktie, but never talk about fees” [RECORD: August 1990, page 36].

PETER HOFFMAN. Washington, D. C.

What It Takes To Get Ahead Abroad

Large U. S. firms continue to be called in for big, complex, technically demanding jobs, as they have since Daniel Burnham’s pioneering corporate practice made “no little plans” for Manila. Today, though, these firms’ specialties—such as Swanke Hayden Connell’s in preservation technology, recently applied to several City of London landmarks—may be as highly prized as their mainstream services like high-rise office planning. And today’s international owner is more likely to mix and match consultants than to buy an all-U. S. package.

According to ENR magazine, the 500 largest U. S. architects, engineers, and planners that do business abroad increased their international billings by 35 percent last year. Of these, the top 50 designers in foreign markets (including CBG, SOM, DMJM, Pei Cobb Freed, Perkins & Will, Heery International and HOK) took in over 85 percent of the total, or about $3 billion.

Europe/UK has been the hottest big-firm market, but the Pacific Rim is catching up. The ENR 500’s $1.3-billion income in Europe, while double 1988’s, was only about 20-percent higher than that in Asia/Australia, which in turn was twice that in the Middle East.

With England’s office-building market reportedly starting to resemble New England’s, this year’s excitement has shifted to Japan and Western Europe, and beyond to Eastern Europe and the Soviet Union.

RTKL’s Harold Adams, now primarily an international marketer after having set up firm offices in the U. K. and Japan, doesn’t see a “gold rush” comparable to the 1970s Midwest or early ‘80s London. “American firms that offered full-service capability were valuable in helping [those economies] through a surge of work,” he says. The Soviets or Japanese, with fewer urgent, big jobs, are more likely to require a limited alliance with local firms and language usually makes this a practical necessity.

Add the impediments of professional licensing, building U.S. architects abroad: site in Spain (top), Algerian Pavilion, Expo 1992; Swanke Hayden Connell in London (above), Wren House office building; William McDonough in Warsaw (right), Warsaw Trade Center.
Choosing the right floor for a busy school can be a real education. That's why Azrock offers a tile like Classic Granite.

This exclusive Azrock tile combines the elegant look of granite with the durability and economy you expect of vinyl composition tile. Its genuine appearance is achieved with a through-chip pattern that won't "walk off."

You'll like Classic Granite's practicality. And you'll find it a great way to get that classic granite look without the classic granite price. Plus, you can combine Classic Granite beautifully with other Azrock tiles to create custom designs for any interior — commercial, institutional or residential.

Classic Granite is just one of a colorful array of tiles available from Azrock in vinyl composition tile, luxury vinyl tile and rubber products. So put Azrock to the test. To examine the complete line, contact your Azrock flooring contractor or write: Azrock Industries Inc., Dept. 428A, P.O. Box 696060, San Antonio, Texas 78269.

©1990 Azrock Industries Inc.
PRACTICE NEWS

codes, and styles of doing business. Hungary, says SOM's John Winkler, is still struggling with how to ascribe worth to property. The Soviet Union lacks corporate legislation, conventional real-estate leases, and planning and zoning regulations. In much of Eastern Europe, reports Swanke's Theo Prudon: "The infrastructure problems go well beyond buildings. If you don't have a good sewage plant, there's no point in building a good hotel."

Kohn Pederson Fox's Eugene Kohn quoted AIA conventioners a $2-million price tag for a full-scale overseas office. Good project-by-project relationships with local architects or design-contract companies, says Adams, may be a more cost-effective alternative.

Not always is it U.S. efficiency that foreign clients want

Says EDOW's Joe Brown: "The global demand for American design and planning values, images, and themes is dramatic and increasing, particularly in a unified Europe and the Orient."

At the new Euro Disneyland outside Paris, EDOW is doing site design for a five-hotel resort center. Part of the attraction: "name" American architects.

It's a neat reversal of the days when Yankee millionaires shipped whole Spanish castles and Japanese teahouses to Locust Valley or Sarasota. At Euro Disney, Robert Stern's palatial hotel and tapiss vert will recycle Edith Wharton-era francophilia back to the source—at premium prices. Nearby are a Southwestern oasis by Antoine Predock, sleek towers by Michael Graves, a Cheyenne townscap by Stern, and a shopping and entertainment center by Frank Gehry.

Just around the globe lies an even more avid market for American dreams. "U.S. designers find bright horizons in Japan," trumpets a recent New York Times article, seeking light in the city's dismal economy. SIT's James Wines, with several projects in Tokyo, is quoted to the effect that the Japanese "want to be with it."

One of the latest West Coast firms to open an office in Tokyo, finds Japan responding to a whole range of media-fed desires. In Singapore, where ELS is designing a five-block, riverfront retail center, "there are many technically fine architects, but many look to the U.S. for imagination," says ELS's Carol Shen. What is wanted seems to be the whole American leisure gestalt—historic sites, real and imagined; shopping and sports facilities; museums and recreational eating places.

A command of imagery can also serve weightier ends. At least two American firms have explored work at Auschwitz, both in stabilizing and interpreting the camps themselves, and in creating new memorials. In Warsaw, William McDonough's project for a Polish-American developer's skyscraper embodies related concerns, recycling rubble from the Warsaw ghetto in its stone base.

The opportunities aren't coming to everyone. Still, amidst the giants and celebrities, there are more niches for firms with adequate capital, one or two sought-after specialties, and persistence. As whole countries open up, the possibilities can range from prefabricated conference centers on the steppes, to museums for developing countries. Among recent directions:

• A new AIA committee on international architectural practice plans to hold its first meeting in November in Hawaii. Meanwhile, such U.S. client groups as the Urban Land Institute are airing topics like the current Canadian developer "invasion" of Moscow and Leningrad.
• The U.S. Department of Commerce, pleading budget cuts, now claims to get its best information on U.S. professional-service activity from ENR. Commerce hopes to offer more support in the future, however, as the export of services become more significant in the overall trade picture.

Swanke Hayden Connell in London, MHT office interiors.

• An established design reputation and prior work for an internationally active client are constantly cited as the biggest factors in getting overseas jobs. However, the don't-find-us-we'll-find-you rule shows signs of bending, even in Japan. "It's now becoming possible to get on a marketing expedition," says RDKL's Adams, although the indispensable face-to-face meeting with the right person still takes time. To outfit the search, some marketing firms are producing print materials and videos keyed to the specific styles of foreign businesses.

Growing media interest is improving chances for visibility abroad. U.S. journals are carefully scanned by overseas clients. Japanese publishers find portfolios of U.S. design work highly profitable. Potentially the most important long-term trend is a gradual liberalization of foreign regulation of U.S. firms. As SOM's Winkler notes, nations hoping to be closer to the global economic centers are making it easier for U.S. professionals to start offices and become full partners in local projects. The long-term promise is of an integrated, truly international architectural culture, very different from that in boom times past.

ROBERT L. MILLER


Making Documents for a Global Market

Different codes, materials, construction, and labor practices, language, and dimensioning are among challenges architectural firms face when producing construction documents for overseas projects.

Specifics cited by a panel of architects and specifications writers at this summer's Chicago convention of the Construction Specifications Institute:

• If the U.S. designer isn't licensed in a country, carry drawings through design development and have a local architect do the contract documents.
• If the local language is other than English, get the best possible translation of correspondence, shop drawings, product literature, and specs, but state that the original English takes precedence over translations.
• Dimension original drawings in metric units, using millimeter-only to avoid accidental misplacement of a decimal point.
• Recognize that the owner may often hire different trades, such as painting or interior partitions, separately, so that trade contracts may need to be broken out accordingly.
• Trade practices themselves may differ. For example, in Europe, rebar fabricators don't produce rebar drawings and lists; in the U.S., they do.
• Training a local labor force can be frustrating. One speaker cited a test that involved assembling a nut with a bolt. It took the candidates an average of 21 minutes to figure it out.
• The panel consisted of Rodney Lind, an associate in the Chicago office of SOM; Mickey Kupperman of A. Epstein International, Chicago, and Terry Wadsworth, of The Oak Tree Group, Austin.

S. A. K.
If you’re doing business like this,

This little book, *How to Buy a Personal Computer for Your Small Business*, is one of the best ways to understand the benefits of having a PC. You can do typing, accounting, inventory, forecasts, filing and more—all on one computer and without leaving your desk. You’ll be better organized, so you can save money by saving time.

The book tells you what to look for, where to shop, the right questions to ask, and how to understand the answers. The more you know, the smarter your buying decision will be.

Read it, then visit an IBM Authorized Dealer for a demonstration. Their experience and knowledge of the IBM family of Personal System/2® desktop computers can help you decide which model is best suited for you.

A PS/2® computer can make your business more efficient, effective and competitive. It’s easy to use, easy to install, and affordable, starting as low as $1,350. A PS/2 can grow as your business grows. Ask your dealer how you can add power to your PS/2, as you need it, instead of buying a new computer. And there are hundreds of software applications tailored by IBM Business Partners for different types of businesses and professions.
maybe you should be reading this.

How to buy a personal computer for your small business

For a free copy of the book and the location of an IBM small business dealer, call 1 800 445-2IBM, ext.5.

Call 1 800 445-2IBM, ext.5, for your free copy of How to Buy a Personal Computer for Your Small Business or send this completed coupon to IBM Corp. PO Box 92835, Rochester, NY 14692.

Name

Address

City

Company  No. 5

How're you going to do it? PS/2 it!

IBM. Personal System/2 and PS/2 are registered trademarks of International Business Machines Corporation. © 1990 IBM Corp.

For a sales call or catalog material ☏ 1 800-359-7040
Your warm relationship with gas is about to get cooler.

Gas-fired chillers, double-absorption, dessicant systems, gas cogeneration... today's new gas technologies give you so many more options for cooling commercial projects. And, with the additional benefit of unbeatable economy. Now, year 'round, gas is your client's best energy value.

Circle 20 on inquiry card
Gates House: High-Tech Domestic Laboratory

It’s not often we see competitions for houses, even those in the 57,000-square-foot range, but William Gates is not a typical client. The founder of Microsoft Corp., the largest software vendor in the microcomputer field, Gates, 35 years old, is not only the country’s youngest billionaire, his company has repeatedly broken new ground in the software field. The residence, to be erected on a waterfront site east of Seattle, is not just a sybaritic retreat in the rich-and-famous mode (although creature comforts are hardly ignored). Gates charged the competing architects to provide a domestic laboratory for some free-form speculations on the future of computing.

Michael Doss, an architect in Seattle who has made a specialty of running competitions for large residential commissions, asked 22 firms to submit qualifications. Three firms were paid to submit preliminary designs, including Peter Forbes of Boston, who proposed that the most private spaces occupy a separate pavilion at the top of the site with more “public” functions set at lakeside (bottom right), and Charles Moore and William Turnbull, in whose scheme linked pavilions step diagonally down the site (bottom left). Gates selected a design by a joint venture of Bohlin Powell Larkin Cywinski of Wilkes-Barre, Pennsylvania, and James Cutler, of Bainbridge Island, Washington.

As yet, little is known about Gates’s vision of the future (areas for computers are simply blocked-out in plan), but he intends to take computing well beyond a box on a desk. A melding of high-definition television technology and software is being discussed in which wall-sized computer images could be manipulated from across the room with voice commands or devices akin to TV remote controls. Light-sampling devices may permit screens to revert electronically so that they match surrounding paneling, including appropriately “cast” shadows. State-of-the-art devices will control every mechanical and electrical system, but much of this is already on the market.

The job of BPLC and Cutler is more prosaic. To shore up the wooded but unstable and steeply sloping site, a vaulted underground parking structure and other private spaces (including an arcade-game room) are set deeply into the hillside, which they also support. These spaces are linked by a series of wood-framed, distinctly non-high-tech “public” pavilions (top photo) for receptions and dining spaces to accommodate large groups. Gates’s personal living area is housed in a separate pavilion. An intense reforestation effort will further reduce the visible bulk of the project. J. S. R.

Chicago Architect Takes This Year’s Ferriss Prize

This year’s Hugh Ferriss Memorial Prize for excellence in architectural drawing went to architect Gilbert Gorski of Chicago. The prize, given by the American Society of Architectural Perspectiveists and the Van Nostrand Reinhold Company, honored Gorski’s color-pencil rendering of Trojan’s Forum in Rome, which was done on commission for an archaeological study by Professor James Packard of Northwestern University. Gorski’s drawing and 53 others, including runners-up by Frank Costantino of Boston and Martin Myers of Toronto, will be shown in ASAP’s exhibit “Architecture in Perspective V” at the State Transportation Building in Boston for three months from November 14. They will also be seen next spring in Washington, D. C., at the AIA convention and around the same time at the National Building Museum.

Jurors were architects Robert Campbell, architecture critic for the Boston Globe, Jean-Paul Carhiann, a partner of Shepley, Bulfinch, Richardson & Abbott, and Lebbeus Woods, illustrator.
Color... Texture... Excitement.

With MBCI's Preformed Metal Roofing Systems.

Luxury homes on Sanibel Island are more colorful than ever before... thanks to Naumann & Rhonehouse and MBCI. Our involvement with these elegant projects included preconstruction technical conferences, meticulous component fabrication including a custom paint job, pinpoint scheduling, and the widest choice of textures and colors in the industry.

For more information on the colorful alternatives MBCI's preformed metal roofing systems can bring to your next project, just give us a call.

MBCI

Metal Roof And Wall Systems
Houston 713/445-8555
Lubbock 806/747-4291 Atlanta 404/948-7568
Oklahoma City 405/672-7676 Tampa 813/752-3474
San Antonio 512/661-2409 Richmond 804/526-3375
Dallas 214/988-3300 Indianapolis 317/398-4400

Project: Colony Beach Estates/Developer: Naumann & Rhonehouse, Inc.

Designer: Hernandez/Annacone Residential Designers/Roofing Contractor: Camp/Rigby Roofing-Sheet Metal, Inc.
Briefs

• Gordon Bunshaft died August 6 at the age of 81 in New York City. Long the chief designer in Skidmore, Owings & Merrill’s New York office, Bunshaft designed Lever House, among many other buildings, and was widely recognized as the man who established the International Style as the architecture of choice for corporate America. He won the Pritzker Prize in 1988. RECORD will publish an analysis of Bunshaft’s life and work next month.

• At the ballet: architects Robert Venturi and Steven Izenour of Venturi, Scott Brown & Associates have been commissioned for the décor of a new ballet, Franklin Court, which will be choreographed by Christopher d’Amboise for the Pennsylvania Ballet. In 1976, Venturi designed a memorial to Benjamin Franklin at Philadelphia’s Franklin Court.

• The 1990 Design Awards presented by the New York State Association of Architects went to: Hoffman O’Brien Look & Taube for Student Agencies, Inc. in Ithaca; Pifield Flaker & Associates for 215 Park Avenue South, New York City; Robert A. M. Stern for a house on Fishers Island; Steven Forman Architect for a Manhattan triplex penthouse [see RECORD’s cover this month]; Fox & Fowle for an addition to Spence School in New York City; Smith-Miller + Hawkinson for the Moss loft in New York City; Iffland Kavanagh Waterbury for Cullum Hall at West Point; Paul Segal Associates for the Children’s Museum of Manhattan [RECORD, July 1990, pages 68-71]; Fox & Fowle, Architects, for 1675 Broadway in New York City; Kohn Pedersen Fox Associates for 1525 Avenue of the Americas, New York City; and Beyer Blinder Belle/Notter Finegold + Alexander for the restoration of buildings at Ellis Island [RECORD, July 1990, pages 46-57].

• Architectural commissions: Mesick-Cohen-Waite Architects have been named by the American Architectural Foundation as restoration architects for the Octagon, the William Thornton design built in 1801 in Washington, D.C., and the former headquarters of the AIA.

A Training Ground for the Pursuit of the Gold

Athletes who wish to pursue the rigors of the Summer Olympics will have an official place to train beginning in 1993. Swimming, cycling, and tennis are among 27 sports to be accommodated in indoor and outdoor facilities, currently under construction on a 15-acre site in San Diego.

Architects Tucker, Sadler & Associates are working with Skidmore, Owings & Merrill in Washington, D.C., on the project. The first training center in this country for warm-weather Olympic sports, it will be donated to the U.S. Olympic Committee by the San Diego National Sports Training Foundation.

The Visitors Center marks the entrance to the project and is the site’s highest point. By standing at the observation platform on top of the Visitors Center, one will be able to see the entire complex. Housing for 300 people (center and left in photo), a steel and glass dining hall (lower left in photo), and nine playing fields with natural and artificial surfaces are included.

The two-story Court of Champions, a circular trellis of redwood that surrounds a tile map of the United States, is located in the Visitors Center. Within the representation of each state, medallions will be installed for each medalist from that state.

Susan R. Blenck

Affordable Housing for Brooklyn

The affordable single-family house is a disappearing building type in many American cities. In recent years, nobody has replenished the low-rise housing abandoned or demolished by private landlords. Stuyvesant Mews (above) will help fill this vacuum in Brooklyn’s Bedford-Stuyvesant neighborhood.

Architects Stephen B. Jacobs & Associates designed the prototypical factory-built row houses for DeLuxe Houses of Pennsylvania, developer of the 132-unit complex for the New York City Housing Partnership, a nonprofit group that serves as a conduit for state and city housing funds.

Modeled on the serviceable developer housing erected throughout the country before World War II, the design offers a pleasant aluminum-clapboard facade to the street, with individual gardens and parking lots at the rear. Meant to sell for about $150,000, each will include a two-story, three-bedroom owner’s apartment and a two-bedroom, third-floor rental apartment.

Chamfered Tower for Atlanta

To be built in Atlanta’s New Midtown commercial district, the octagonal shape of Rhodes Center Tower, with its sharp chamfered corners, helped architects Fox & Fowle to take advantage of several axial views at once: views of the city’s downtown in one direction and other views of its suburbs in the diagonal direction.

Because the tower is surrounded by historical buildings, the New York City architects gave special care to the materials and scale of the base—particularly to the design of the arcade, which corresponds to the porches of neighboring Rhodes Hall, an 1830s mansion now the headquarters of the Atlanta Historical Society. The strong verticals of the tower’s stone ribs will be crowned by a dome with lantern and finial.
ARCHITECTS AROUND THE WORLD ARE USING TENSIONED MEMBRANE STRUCTURES TO CREATE EXCITING NEW SOLUTIONS TO AGE-OLD SHELTER REQUIREMENTS. THE FESTIVE, RED MEMBRANE STRUCTURE (ABOVE) SHADES CHILDREN’S CLIMBING APPARATUS AT DISCOVERY PARK IN COUNCIL BLUFFS, IOWA. VIRTUALLY NO OTHER TYPE OF ROOF OR SHELTER COULD ACCOMMODATE THE PLAYGROUND’S FREE-FORM LAYOUT, AND ITS BRIGHT, SOARING DESIGN MAKES IT A HIGHLY VISIBLE LANDMARK.

THE WHITE MULTI-LEVEL FABRIC MEMBRANE STRUCTURES AT A LARGE BUS TERMINAL (ABOVE) DEMONSTRATE THEIR VERSATILITY IN MEETING UTILITARIAN NEEDS. HERE THEY PROVIDE SUN AND RAIN PROTECTION FOR PEDESTRIANS ON OVERHEAD WALKWAYS, STAIRWAYS, AND BOARDING AREAS FOR INDIVIDUAL BUS ROUTES.

THE VARIETY OF APPLICATIONS FOR TENSIONED FABRIC MEMBRANES IS AS WIDE AS YOUR IMAGINATION. THEY ARE IDEAL AS STAGE SHELTERS FOR ALL TYPES OF PERFORMING ARTS FROM SYMPHONY ORCHESTRAS TO ROCK CONCERTS AND EVERY SORT OF DANCE OR THEATRICAL PERFORMANCE. THEY ARE EQUALLY USEFUL AS AUDIENCE SHELTERS FOR AMPHITHEATERS BECAUSE OF THEIR ABILITY TO SPAN VAST SPACES WITH A MINIMUM OF INTERIOR SUPPORT POSTS. SMALLER MEMBRANE STRUCTURES ARE POPULAR AS POOLSIDE SUN SHELTERS, AS OVERHEAD SHELTERS FOR OUTDOOR RESTAURANTS, AS ENTRANCE GATEWAYS AT THEME PARKS OR EXPOSITIONS, OR SIMPLY AS SHADE STRUCTURES IN PARKS.

HELIOS INDUSTRIES, INC., THE INTERNATIONAL OPERATIONS DIVISION OF TAIYO KOGYO CORPORATION, IS A WORLD LEADER IN DEVELOPING NEW TECHNOLOGIES IN THE DESIGN AND UTILIZATION OF FABRIC MEMBRANE STRUCTURES ALL AROUND THE GLOBE. OUR EXPERTISE AND EXPERIENCE IN MEMBRANE STRUCTURES IS READY AND AVAILABLE TO ASSIST YOU.

FOR MORE INFORMATION OR ASSISTANCE WITH A SPECIFIC PROJECT, PLEASE CALL OR WRITE:

HELIOS INDUSTRIES, INC.
20303 MACK STREET
HAYWARD, CALIFORNIA 94545
U.S.A.
FACSIMILE (415) 887-0134
TELEX 176226
TELEPHONE (415) 887-4800

HELIOS INDUSTRIES, INC. HAS LOCAL REPRESENTATIVES IN THE FOLLOWING COUNTRIES:

**SPAIN**
ROICHTER Y NAVARRO, S.A. (Bryna) C.T.N. (COMMERCIAL TECNOLOGIAS RECREATIVAS) AVDA. DE ANDALUCIA, KM. 9 28001 MADRID, SPAIN FACSIMILE: (1) 796-8892 TELEFON 47956-97934 TELEPHONE: (1) 797-8266

**HONG KONG**

HELIOS INDUSTRIES, INC.
INTERNATIONAL OPERATIONS DIVISION
TAIYO KOGYO CORPORATION

Circle 22 on inquiry card
Three Romantic Conservatories for a Public Garden

The proposed gardens at Bloemendaal near Richmond, Virginia, required intensive planning efforts by both Pittsburgh landscape architects Environmental Planning and Design (EPD) and Richmond architects Marcellus Wright Fox & Smith. The 80-acre Lewis Ginter Botanical Gardens, surrounded on three sides by residential neighborhoods, will accommodate extensive planting as well as the existing Bloemendaal farmhouse. In the words of principal-in-charge Frederic H. Cox, Jr., “botanical and horticultural considerations were the primary concepts,” while the buildings were designed mainly as complementary accommodation for plants and people.

Drawing on romantic images of Edwardian conservatories and Virginia’s Classic Revival, the architects designed three large greenhouses: a circular Tropical House and two octagonal structures—a Floral Display House and a Desert House. Connecting galleries display ferns and orchids, and outdoor displays will include such special installations as a rose garden and a rhododendron collection.

Visitors enter beneath a glass cupola, proceeding by a covered semicircular colonnade to the auditorium, the library, and the conservatories, or walking through a circular garden surrounding a lily pond. The entry building will also house a gift shop and cafeteria.

Back-of-the-house activities take place in production greenhouses and soil-mixing facilities out of sight at the back of the conservatories.

A Look at What’s Happening in Interior Design

Architects and designers will have a chance to examine the latest in the interior design market at two New York City shows in October. “Design New York ’90” will take place at two design centers in Manhattan, and “Designer’s Saturday 1990: Crosscurrents” will be seen at the International Design Center in Long Island City, Queens.

From October 11 through 13, visitors can see numerous exhibits at more than 100 IDCNY showrooms. Designers from the United States and abroad will participate in IDCNY’s annual fall show of contract furnishings for interiors. On October 12, Aldo Rossi, winner of the 1990 Pritzker Prize, will speak at IDCNY about his most recent projects.

On October 10-12, 240 showrooms will be on display at “Design New York ’90,” Manhattan’s sixth annual fall residential interior furnishings market. Located in the Decoration & Design Building (979 Third Avenue) and at the New York Design Center (200 Lexington Avenue), the program will feature speakers as well as viewings of new products. Bus service between the two buildings will be available.

S. R. B.

A Park on a Historic Site

A two-acre urban park with waterworks, designed by John Burgee Architects, is under construction in Houston on the site of the Shamrock Hotel, a local cultural monument built in 1949 and demolished in 1988.

Situated on a triangular corner at a major intersection, the Gus S. and Lyndall F. Wortham Park is part of an expansion of the Texas Medical Center, which occupies several hundred densely built acres across the street.

The park design emphasizes the diagonal of its site with a procession of water pillars of progressively taller jets, repeating the historical axis of the hotel. Colonnades of uniform spouts line the sides of the street, isolating the interior lawn from automobile traffic. The rear boundary is formed by a linear grove of trees providing shade but effectively disconnecting the park from any future development. The site has no master plan, and buildings now under construction ignore the diagonal established by the Shamrock and reiterated by the park; the visual line of the water jets will lead to nothing.

The park is being funded by the Wortham Foundation. Associate architects Richard Fitzgeral and Associates of Houston and Martha Schwarz Ken Smith David Meyer Landscape Architects of San Francisco participated in the scheme.

Houston is known for destroying its past before it can become history. The Shamrock Hotel was history from its beginning, a heritage that is at present being discarded with piecemeal, unplanned development. The diagonal waterworks of Wortham Park, splashing the occasional pedestrian, make a small gesture toward taking symbolic advantage of the legend of the Shamrock Hotel.

GERALD MOORHEAD, HOUSTON

Competition Calendar

- A call for entries in the 1990 Concrete Building Awards competition has been issued by three sponsors: the Canadian Portland Cement Association, the Portland Cement Association, and Instituto Mexicano del Cemento y del Concreto. Buildings eligible for the biennial competition may be located in Canada, Mexico, or the United States, may be new or remodeled using cast-in-place concrete, concrete masonry, or precast masonry, and must have been completed between September 1988 and September 1990. The deadline for entries is September 23. For information: Glen Simon, PCA, 5420 Old Orchard Road, Skokie, Illinois 60077 (708/966-6200).
- The Construction Specifications Institute seeks entries in its annual Specifications Competition, which includes two groups—Concepts and Coordination, and Specifications—in a number of categories for various building types. According to the jury’s discretion, awards may include one Honor Award in each category, plus honorable mentions and Merit Awards. The deadline for entries is November 6. For information and forms: CSI, 601 Madison Street, Alexandria, Virginia 22314-1791 (703/684-0300).
G-P WOOD I BEAMS HAVE THE ADVANTAGE.

Some design possibilities are impossible with 2 x 10s. But not with G-P Wood I Beams. And that's their advantage.

Start with the photographs above. As you see, it takes more 2 x 10s than G-P Wood I Beams to hold up the same floor. That's because G-P Wood I Beams have more load-bearing capacity per pound than dimensional lumber (and even many other I joists). This allows you to design larger rooms (rec rooms, game rooms, etc.) without requiring posts for support.

The patented flange-web joint construction of G-P Wood I Beams creates a greater bonding surface than on other wooden I joists, so the joint has excellent strength and stability. The wider flange provides more nailing and gluing surface. So your floor is stiffer, sturdier, and less likely to squeak.

Another design bonus: you can run duct work right through G-P Wood I Beams; you can't do that with dimensional lumber. The result is more efficient use of space and a cleaner overall look. That's especially advantageous when you're designing a basement, as it eliminates the need for drop ceilings.

Engineering and design flexibility for you, a quieter (less squeaky) home for your customer.

That's why it's possible you may never ask for anything else but G-P Wood I Beams.


"Wood I Beam" and "Georgia-Pacific, Ask for it" are trademarks of Georgia-Pacific Corporation. ©1980, Georgia-Pacific Corporation. All rights reserved.

**Table:**

<table>
<thead>
<tr>
<th>JOISTS</th>
<th>12&quot;</th>
<th>16&quot;</th>
<th>19.2&quot;</th>
<th>24&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x10 SYP #2</td>
<td>18'-0&quot;</td>
<td>16'-5&quot;</td>
<td>15'-5&quot;</td>
<td>14'-0&quot;</td>
</tr>
<tr>
<td>WI 43.5&quot;   (G-P Wood I Beams)</td>
<td>21'-5&quot;</td>
<td>19'-4&quot;</td>
<td>18'-0&quot;</td>
<td>16'-7&quot;</td>
</tr>
</tbody>
</table>

*From "Span Tables for Joists and Rafters" (NFPA) and "Southern Pine Maximum Spans for Joists and Rafters" (SFPA).
Classic colors triumph in an award-winning palette of 15 colors. A depth of hues, in honed and polished finishes, enables you to create a visual feast in design.

For details, contact your local Armstone distributor; or contact ArmStar, Box 820, Lenoir City, TN 37771
(615) 986-4040
LET'S TALK
TEAMS...
OUR READERS MAKE BUILDING POSSIBLE.

"It's time to honor architectural teams, not just the 'stars.' More than ever, the building industry, in all its specialties, demands skilled people with solid technical information." ▲ Speaking is Stephen A. Kliment, Editor of ARCHITECTURAL RECORD.

Our readers are professionals, covering the whole spectrum of architectural activity. And our editorial content is designed to meet their many information needs." ▲ Highlighting the upcoming October issue are wide-ranging reports on high-rise office buildings, an array of residential and commercial architecture in San Diego, and more. ▲ You're putting to use a wealth of profitable information from the RECORD. You're using the latest in design innovations, updates on building technology, valuable advice on management and marketing. ▲ ARCHITECTURAL RECORD.

Filled with working ideas that you’re putting into daily use.

Coming in the October '90 issue...


Uptown District (San Diego). Low-rise residential and commercial buildings form virtually a new town within an existing city neighborhood.


Library and Children's Museum (Las Vegas). Described as an “oasis in a brittle desert environment.”

Building Technology. One article updates indoor air quality; another looks into the engineering of tall, extremely slender buildings.

Architectural Practice. Includes articles on small-firm marketing; photographing architecture; information management in the office.

And more!

ARCHITECTURAL RECORD
WORKBOOK OF THE ACTIVE ARCHITECT

Circle 26 on inquiry card
USG® CAVITY SHAFT WALL

LOW RISE . . . HIGH RISE . . .
THERE IS NO EQUAL!

USG® Cavity Shaft Wall Systems enclose more elevator, stairwell and mechanical shafts in megastructures and low rises nationwide. For solid, cost-effective reasons. No other masonry or drywall system gets elevators running sooner to speed job completion and occupancy. No competitive system delivers all the critical test numbers demanded by strict building codes. And, no other “working wall” gives you so many design options to work with . . . or so much systems expertise . . . from start to finish. Little wonder USG Cavity Shaft Walls are preferred by the shaft-enclosure market. Get the facts:

- **Light weight easy installation, minimum components, simple drywall techniques all combine to expedite erection from floor side of shaft.**

- **Wide choice of system performance:**
  - 1, 2 and 4-hour fire ratings:
  - Acoustical performance available to 51 STC.

- **Entranceways achieve 1½ hour B-rating in UL Design U438 2-hour rated shaftwall.**

- **High speed flex testing for positive/negative shaft pressures of one million oscillation cycles proves systems integrity. Exclusive USG designs for 5, 7½, 10 and 15 lb./sq. ft. loads.**

Innovative design of our C-H Stud and 24 ga. J-runners help keep USG Cavity Shaft Wall the systems of choice. For specifics, contact your United States Gypsum Company representative. See section 09250 of Sweet's General Building & Renovation File. Or write to us at 101 S. Wacker Drive, Chicago, IL 60606-4381.

United States Gypsum Company

Circle 27 on inquiry card
STARTING YOUR OWN FIRM

Successful firms started within the past 10 years reveal how they did it. This first of two parts discusses how to begin.

By Bradford Perkins

Having one's own practice is the goal of most young architects. A new practice that is successful and achieves its founders' basic goals is often the most satisfying way to pursue a career in the field.

While the rewards (in self-expression if not income) can be significant, so are the risks. Most new businesses—whether architectural firms or restaurants—never get off the ground. Some get going and survive, but never really achieve much more than a modest success and a few of the founders' goals. A few, however, manage to surmount the inherent problems and not just achieve success as a business, but also success on the basis that most architects hope for—as a respected design firm.

Many architects feel that achieving distinction as a successful new design firm is as much public relations as substance, but this is not always the case. Some do it the old-fashioned way; they earn it by the consistent quality of their work. For a growing firm with the type of projects that a young firm can get, achieving success as a design firm without compromising to achieve other goals (such as making payroll) requires both talent and commitment. I draw here from my experience and even more from other young firms.

Many of the interviewed firms followed one of 10 proven start-up scenarios:

1. The major client as first-stage booster rocket
The firm is founded or taken beyond the start-up with the support of a single client willing to gamble on a young firm. The combination of the client and the work of the firm acts—as one architect put it—as a booster rocket that lifts the firm up above the crowd to where it can be seen. Most successful firms can trace their history back to one or two important early clients or projects. A rare variation on this is the firm that wins a major, open competition. This is what happened to Acheson, Thornton and Doyle, a new 20-person firm in New York, and my firm as well.

2. The house for mother
For some, the booster rocket has been a project for a family member or one done with family money. Gwathmey, Siegel & Associates, Robert Venturi, and Philip Johnson are only a few examples of well-known architects who became visible with the help of such projects.

3. The academic incubator
Many of the best-known design-firm principals have relied on their teaching positions to provide them with the basic income, time, credibility, and exposure to build up the base of a practice. Only when their practice becomes too demanding do they leave their academic ties. Thom Mayne and Michael Rotundi of Morphosis relied on their Southern California Institute of Architecture teaching salaries until their practice finally took off in the last few years.

4. The better mousetrap
Some firms see an unmet need and set out to fill it. In past years, this has included firms that first focused on specialties such as recycling historic structures, or smaller projects in communities not served by local strong designers or, sometimes, any.

5. The supersalesman
A few firms—Kohn Pedersen Fox being the best-known of the recently founded firms—get off the ground due in large part to the exceptional sales skills of a founder. All successful architects have some sales skills, but there is only a handful who can convince clients to hire a new firm for major projects instead of known-quality, established competition.

6. The sponsor
There are a few firms—including some of the best-known—that have had other established architects act as their booster rockets. There are many forms:

- Established firms pass on work, leads, or strong references to new offices.
- Well-known architects—Charles Moore being the most prolific—lend their names and skills to young firms.
- In a few cases, elder statesmen—among them Philip Johnson—promote emerging stars. Philip Johnson's role in Michael Graves' winning the Portland competition is a well-known example.

7. The golden handshake
Sometimes the sponsor is the architect's former employer who provides the new firm's initial work. When my grandfather had to leave his position as head of the drafting room of Burnham and Root in the contraction after the 1892 Columbia Exposition, Daniel Burnham got him his first commission. A short time after they started, Voorsanger & Mills (recently reorganized into two firms, Voorsanger & Associates Architects and Edward I. Mills & Associates) received a major subcontract from I.M. Pei, their former employer, which sustained their start-up.

8. The spinoff
Among the most common models are the spinoffs—firms that break away from es-
Stock Options

*Alternat*"*Faucets.* Choose the faucets with all the options — Alternat faucets by Kohler. And create color coordination between faucets, fixtures, and decor with unique ceramic inset options available in 24 Kohler colors. Plus the new secure inset system comes in a wide array of additional materials including woods, metals, onyx, and semi-precious stones, exclusive Champlève and custom monogram. Choose from a variety of spouts and five beautiful finishes. Kohler’s System C™ ceramic washerless cartridge assures years of dependable performance. With Alternat faucets by Kohler only two things are not optional — Kohler quality and dependability.

See your Kohler® distributor or write: Kohler Co., Dept. TB5, Kohler, WI 53044.

© 1989 by Kohler Co.

Circle 28 on inquiry card
established ones in which the new-firm members have built their reputations, skills, and potential client base. Kohn Pedersen Fox (founded by the former leadership of John Carl Warnecke’s New York office) falls also into this category. Acheson, Thornton and Doyle is a more typical example, however. The founders of ATD spent their early years rising to senior positions in their former firms, in which they built strong personal reputations and reference lists as well as a modest base of moonlight clients too small for their former employers. This background and the successful competition got them going.

9. The phoenix

The converse of the spinoff is the takeover. In a few cases, a new young leadership takes over a declining or moribund existing organization and revives and reshapes it into a new, vibrant firm. Johnson, Pain and Pereira Associates is rapidly becoming a well-known example of this model.

This model is very complex because—as it did at JFPA—it involves assuming substantial financial liabilities, an established image, and an established senior-organizational structure. JFPA had to deal with all these while reshaping the design direction of a large practice.

10. Starting small

Some firms are content to do small projects and build on that base. For Tod Williams Billie Tsien and Associates, a small dormitory at Princeton finally gave them credibility at an institutional level. After several smaller earlier projects had been published, Princeton included them on a list of alumni architects to be interviewed for what was to be a small addition. Instead, it became a new building, which won several awards and was widely published.

The importance of motivation

Selecting an appropriate model is, of course, not enough. First of all, while none of the interviewed firms had one when they first started, there should be a plan. The basics:
• Assembling the resources for a startup;
• Getting work;
• Doing it well;
• Making enough money to survive, get more projects, and do them well.

Still, many practices start by one or more people jumping into the deep end of the pool and starting to swim. For one reason or another, they know it is better than working for someone else. In the interviewed firms the motivations differed:

Although each had done well and were generally happy with respective employers, Acheson, Thornton and Doyle all decided that the structure of their former offices limited their growth.

Tod Williams’ motivations were in some ways similar. In addition to having found a project of his own, he felt that he had to have his own firm if he was to understand and be involved in all the constituent parts of the creative process of architecture—landscape, structure, business, interior design, etc.

Thom Mayne of Morphosis said that he just did not fit into a large corporate practice. For him, there was “no other way” except to go on his own.

Bill Fain and Scott Johnson, on the other hand, had large-firm backgrounds and saw the opportunity to reshape the Pereira firm in their own image.

Having been a senior principal in two large international practices, I was motivated by a desire to control the quality and direction of my own practice.

Everything—every client, contact, reference, etc.—leads somewhere.

While everyone—looking back—advises against leaping into the pool unprepared, many do. These firms survived, but it was unnecessarily hard.

Assembling the resources for start-up

Being prepared typically includes:
• Being licensed and capable of providing the services you plan to offer;
• Having a clear idea where the initial work will come from;
• Having enough money—or a supplementary source of income—to pay the start-up costs and survive long enough to get going.

Each of the firms interviewed for this article approached these issues differently:

Acheson, Thornton and Doyle jumped into the pool as soon as they had their first major client, setting up in one of the principals’ apartments. Looking back, they said they should have set up in a real office immediately.

The founders of Morphosis did competitions and submitted early projects to awards programs. When they received the first of their many awards, their firm suddenly became credible.

In my case, I had already run offices for two large firms and had dealt with most aspects of an established practice. I also had a number of ongoing clients who, I felt, would give me enough support and momentum to get the practice going.

But since I was starting with a sizable staff (over 20 people), finances were a major worry. My father had advised me to have the equivalent of three- to four-months’ operating costs as working capital, but (just as he had) I started with far less than half that—the product of mortgaging my house and using all my savings.

Getting the first projects

Most firms can trace their success back to one or two projects. My father and his partners traced theirs back to one school board in Winnetka, Ill., willing to gamble on his young firm because of my grandfather’s reputation in school design and because of family friend and quasi-sponsor Eliel Saarinen’s willingness to serve as an adviser. The firms in this article have a similar story. For Morphosis, it was the first competition award won; for Johnson, Pain and Pereira Associates, it was a high-rise office building, Fox Plaza, and for Voorsanger & Mills, it was an award-winning interior for New York University’s Real Estate Institute.

In general, getting significant projects requires creativity. Among the established techniques are:
• To parlay a lead into a joint venture with a major firm in order to get the project;
• To focus on clients—especially ones for which one person makes the choice of the architect—that will consider your firm’s individuals rather than its brochure. Past clients, privately owned firms, and others are typical of this group. Committee selections are heavily weighted against new firms.
• To focus on building as wide a network of friends and contacts as possible and not to be shy about asking for their help in getting work.
• To create your own projects by extending planning and programming studies, feasibility analyses, and other front-end assignments into architectural projects.
• To pick off the stragglers—the major projects that for one reason or another do not attract a lot of interest from the established competition. There are always some projects that are considered too difficult, off-beat, or out of fashion to be of much interest to quality competition. In our early years, virtually all of our most interesting assignments came from these sources.

With a base of projects, contacts, and references, getting the second and third round of projects is much easier. An often-repeated axiom on this subject is: “Everything—every client, contact, reference, etc.—leads somewhere.”

Mr. Perkins founded his firm, Perkins Geddis Eastman, in 1983. Today it has grown to 55 people, with a varied practice largely based in the eastern U.S.

Next month in RECORD, Perkins will explore how to navigate when the new firm is off the ground.
Carlisle... Top Performance for Top Performers.

Top performers in the world market rely on the top performer in single-ply roofing...Carlisle. Besides supplying fully integrated roofing systems of top quality, you the specifier, receive unparalleled design assistance.

Carlisle conducts informative regional Design Conferences, delivers quick responses to your design and technical inquiries, and carries out the industry’s most demanding inspections. Factor in the Carlisle warranty and all this adds up to peace of mind for you and your top performers.

Carlisle has a roofing system to meet your every design need in black or white, reinforced or non-reinforced, EPDM or CSPE plus support services.

Find out why top performers have chosen Carlisle for over 80,000 warranted roofing projects. Call toll-free, 800-233-0551; in PA, 800-932-4626; in Canada, 416-564-5557.

The companies listed have had single-ply roofing systems by Carlisle installed on one or more of the buildings they utilize. This list is for information only and it no way reflects endorsement by these companies.

Carlisle is a trademark of Carlisle Corporation © Carlisle Corporation 1990

Carlisle SynTec Systems
Division of Carlisle Corporation
P.O. Box 7000 • Carlisle, PA 17013-0925
Circle 29 on inquiry card
CONSTRUCTION VOLUME UPDATE

While construction bottoms at a higher level than in 1982’s recession, regional differences will be apparent. By George A. Christie

So far in 1990, the construction sector has shown us two speeds: down fast and down slower. By midyear this left the cumulative value of the year’s newly started construction 8-percent short of 1989’s first half, with all three major categories of projects bearing minus signs. The setback interrupted a seven-year period of continuous expansion of new construction activity.

A look over the shoulder at midyear showed that the free fall was confined pretty much to the first quarter. A firming of contracting through the second (June’s Dodge Index, at 153, was actually an improvement over April’s 148, and close to May’s 156) left the impression that the building market was stabilizing in the 150s—roughly 15-percent below its 1989 third quarter peak of 175.

If the President can change his mind about taxes, surely the Chairman of the Federal Reserve Board is entitled to modify his stand on monetary policy. But twice in less than a month?

As recently as June, official Fed dogma held that there was no credit crunch. (Well, maybe a selective credit crunch confined to construction and real estate, but nothing to get excited about.) By July, the Fed concluded that restrictive credit conditions did, in fact, pose a threat to the economy’s continued expansion, announcing that it would move rates down in order to offset overly cautious lending practices by banks. Later in July, Chairman Greenspan recanted, declaring that “stable credit-market conditions . . . would be appropriate.”

Ironically, anything the central bank might do to nudger interest rates down (and it is the style of this Fed to make only small changes) would be mostly of indirect benefit to the faltering construction sector where the availability of credit, not the rate of interest, is the current concern. Still, if monetary relaxation helps to accelerate the sluggish pace of general economic activity, the construction industry is bound to be better off for it.

Lack of funding was the last straw

The recent evaporation of funding for real estate development and construction—a by-product of the savings-and-loan scandal—is but one of several problems plaguing the construction industry in 1990. It appears, however, to be the one that finally toppled the building business from its lofty, but precarious, perch.

For two years—from mid-1987 through mid-1989—construction contracting rode the peak of a cyclical expansion that had developed during the early and middle years of the 1980s. This rare condition of stability at a high level was the result of a delicate balance of positive and negative forces acting on the market. The oversupply of commercial space and a tight lid on federal public works were enough to prevent further expansion of total construction after 1987, while supportive demographics and workable credit conditions, in an environment of sustained economic growth, let single-family housing and institutional building flourish.

It wasn’t long after passage last fall of FIRREA, the Financial Institutions Reform, Recovery, and Enforcement Act, that contracting for new construction lost its balance and fell hard. Over the next three quarters the Dodge Index plummeted from its peak of 175 to its current 152.

Cause and effect? Perhaps, as long as it is understood that the 1990 credit crunch was not the whole cause of the collapse of the construction boom of the 1980s. Rather, it was one more handicap to an already troubled market.

For small-and medium-sized builders, the consequences of a decade’s abuse of deregulation of the thrift industry go beyond the loss of more than a thousand failed S & Ls as their major source of ADC (acquisition, development, and construction) loans—the upfront money that gets projects started. It is worth noting, however, that “lack of financing” was the reason most frequently cited by far by Dodge reporters for the failure of projects to advance from planning to foundations during the early part of this year.

To make matters worse, the disposition of the assets of the defunct thrifts by the Resolution Trust Corporation at drastic writedowns is discouraging construction by depressing residential and commercial real-estate markets, particularly in the economically shaky Northeast. And for the surviving majority of savings institutions, re-regulation of the industry via FIRREA now means tougher lending standards and tighter solvency requirements. A dollar of deposits doesn’t support as much lending as it used to.

With construction contracting stabilizing at midyear, it appears most of the adjustment to the S & L crisis—in the form of reduced building—has by now been made. However, replacement of the discredited S & Ls as a source of ADC lending will be a gradual process.

Why little further decline is expected

After three successive quarters of declining contracting, is it safe to say that the worst is over? And if it is, what will a revised set of 1990 estimates look like?

Every decline has its limit, and this one seems to be settling, in terms of the Dodge Index, somewhere in the low 150s. Each of four major categories of construction offers its own reason why little, if any, further decline should be expected:

• Commercial construction (office building, in particular) is down sharply this year, the expected continuation of an established trend. But after more than four years of reduced building, commercial starts have shrunk to a level that is finally low enough to enable the absorption, over the next couple of years, of the surplus left over from the mid-1980s boom. Whereas commercial building is usually at its peak at the onset of a construction downturn, and therefore highly vulnerable, this time most of the cutback has already happened, leaving this category close to bottom.

• Public-works construction, which has been capped at approximately $44 billion per year ever since the Gramm-Rudman deficit targets took effect, now faces the risk of a secondary setback as the impending budget crisis is (or isn’t) resolved. But with 1990 budget-authorizations largely committed by now, the stress being caused by the suddenly ballooning deficit will be greatest in 1991 (not in 1990) when state governments will find themselves unable to offset the deeper cuts that lie ahead for federal infrastructure programs.

• Institutional building, on the other hand, remains a source of support for the foreseeable future, albeit just about alone.
### 1990 National Estimates
#### Dodge Construction Potentials

<table>
<thead>
<tr>
<th>Floor Area (millions of square feet)</th>
<th>1990 Preliminary</th>
<th>1990 Forecast</th>
<th>Percent Change 1990/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Buildings</td>
<td>239</td>
<td>165</td>
<td>-28</td>
</tr>
<tr>
<td>Stores and Other Commercial</td>
<td>559</td>
<td>490</td>
<td>-12</td>
</tr>
<tr>
<td>Manufacturing Buildings</td>
<td>151</td>
<td>130</td>
<td>-14</td>
</tr>
<tr>
<td><strong>Total Commercial and Manufacturing</strong></td>
<td><strong>940</strong></td>
<td><strong>785</strong></td>
<td><strong>-16</strong></td>
</tr>
<tr>
<td>Educational</td>
<td>128</td>
<td>141</td>
<td>+3</td>
</tr>
<tr>
<td>Hospital and Health</td>
<td>71</td>
<td>68</td>
<td>-4</td>
</tr>
<tr>
<td>Other Nonresidential Buildings</td>
<td>147</td>
<td>136</td>
<td>-7</td>
</tr>
<tr>
<td><strong>Total Institutional and Other</strong></td>
<td><strong>356</strong></td>
<td><strong>345</strong></td>
<td><strong>-3</strong></td>
</tr>
<tr>
<td><strong>Total Nonresidential Buildings</strong></td>
<td><strong>1,296</strong></td>
<td><strong>1,130</strong></td>
<td><strong>-13</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contract Value (millions of dollars)</th>
<th>1990 Preliminary</th>
<th>1990 Forecast</th>
<th>Percent Change 1990/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office Buildings</td>
<td>$21,756</td>
<td>$16,850</td>
<td>-22</td>
</tr>
<tr>
<td>Stores and Other Commercial</td>
<td>25,419</td>
<td>22,800</td>
<td>-10</td>
</tr>
<tr>
<td>Manufacturing Buildings</td>
<td>10,652</td>
<td>8,125</td>
<td>-24</td>
</tr>
<tr>
<td><strong>Total Commercial and Manufacturing</strong></td>
<td><strong>$57,827</strong></td>
<td><strong>$47,775</strong></td>
<td><strong>-17</strong></td>
</tr>
<tr>
<td>Educational</td>
<td>$14,336</td>
<td>$15,925</td>
<td>+7</td>
</tr>
<tr>
<td>Hospital and Health</td>
<td>8,744</td>
<td>8,875</td>
<td>-1</td>
</tr>
<tr>
<td>Other Nonresidential Buildings</td>
<td>14,552</td>
<td>18,825</td>
<td>-5</td>
</tr>
<tr>
<td><strong>Total Institutional and Other</strong></td>
<td><strong>$37,632</strong></td>
<td><strong>$37,825</strong></td>
<td>+1</td>
</tr>
<tr>
<td><strong>Total Nonresidential Buildings</strong></td>
<td><strong>$95,459</strong></td>
<td><strong>$85,600</strong></td>
<td><strong>-10</strong></td>
</tr>
</tbody>
</table>

### Residential Buildings

<table>
<thead>
<tr>
<th>Dwelling Units* (thousands of units)</th>
<th>1990 Preliminary</th>
<th>1990 Forecast</th>
<th>Percent Change 1990/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-Family Houses</td>
<td>969</td>
<td>900</td>
<td>-7</td>
</tr>
<tr>
<td>Multifamily Housing</td>
<td>412</td>
<td>325</td>
<td>-21</td>
</tr>
<tr>
<td><strong>Total Housekeeping Residential</strong></td>
<td><strong>1,381</strong></td>
<td><strong>1,225</strong></td>
<td><strong>-11</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Floor Area (millions of square feet)</th>
<th>1990 Preliminary</th>
<th>1990 Forecast</th>
<th>Percent Change 1990/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-Family Houses</td>
<td>1,674</td>
<td>1,598</td>
<td>-5</td>
</tr>
<tr>
<td>Multifamily Housing</td>
<td>442</td>
<td>351</td>
<td>-21</td>
</tr>
<tr>
<td>Nonhousekeeping Residential</td>
<td>74</td>
<td>56</td>
<td>-24</td>
</tr>
<tr>
<td><strong>Total Residential Buildings</strong></td>
<td><strong>2,190</strong></td>
<td><strong>2,005</strong></td>
<td><strong>-8</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contract Value (millions of dollars)</th>
<th>1990 Preliminary</th>
<th>1990 Forecast</th>
<th>Percent Change 1990/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-Family Houses</td>
<td>$93,811</td>
<td>$90,900</td>
<td>-3</td>
</tr>
<tr>
<td>Multifamily Housing</td>
<td>22,426</td>
<td>18,050</td>
<td>-20</td>
</tr>
<tr>
<td>Nonhousekeeping Residential</td>
<td>6,507</td>
<td>4,825</td>
<td>-26</td>
</tr>
<tr>
<td><strong>Total Residential Buildings</strong></td>
<td><strong>$122,794</strong></td>
<td><strong>$113,775</strong></td>
<td><strong>-7</strong></td>
</tr>
</tbody>
</table>

### Nonbuilding Construction

<table>
<thead>
<tr>
<th>Contract Value (millions of dollars)</th>
<th>1990 Preliminary</th>
<th>1990 Forecast</th>
<th>Percent Change 1990/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation Construction</td>
<td>$24,859</td>
<td>$24,700</td>
<td>-</td>
</tr>
<tr>
<td>Environmental Construction</td>
<td>19,006</td>
<td>19,250</td>
<td>-1</td>
</tr>
<tr>
<td><strong>Total Public Works</strong></td>
<td><strong>$43,865</strong></td>
<td><strong>$44,000</strong></td>
<td><strong>-1</strong></td>
</tr>
</tbody>
</table>

| Utilities                            | $4,349           | $3,700        | -15                    |
| **Total Nonbuilding Construction**   | **$48,214**      | **$47,700**   | **-2**                 |

### All Construction

<table>
<thead>
<tr>
<th>Contract Value (millions of dollars)</th>
<th>1990 Preliminary</th>
<th>1990 Forecast</th>
<th>Percent Change 1990/89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Construction</td>
<td>$266,967</td>
<td>$247,075</td>
<td>-7</td>
</tr>
</tbody>
</table>

*F.W. Dodge basis.

**Residential construction.** With nonresidential construction behaving much as expected in 1990's opening half, it was the loss of support of housing that was the catalyst for the bottom-line collapse of construction. This leaves housing as the make-or-break category during the second half.

Unless this year's total of housing starts falls short of 1,225,000 units (the current Dodge estimate for 1990, consisting of 900,000 single-family units and 325,000 apartments/condos), residential building in the second half of the year will be having a neutral rather than the depressing effect on total construction it had during the first half of the year. At midyear, starts of both single-family and multifamily units were at rates below their expected totals for all of 1990, and are more likely to improve slightly than to weaken further in the remaining two quarters of the year.

A mid-1990 appraisal of the strengths and weaknesses of several major categories of construction suggests that the Dodge Index of total construction-contract value is now reaching equilibrium in the low-to-middle 150s. And for the time being, stability—not recovery—is the most that circumstances have to offer. The combination of a first-half decline followed by firming in the second half will leave total 1990 construction-contract value at $247 billion, down 7 percent from the 1989 high.

Compared with the last cyclical trough (1982), the 1990 decline will bottom out at a level 15 percent above its predecessor in constant dollars, and 60 percent higher in current dollars.

How it plays in Peoria

A Regional comparison of contracting in the first half of 1990 with the same period of 1989 gives the impression that the decline of construction activity since last fall has been mostly an Eastern event. Through midyear, when the national total of newly started construction read -8 percent, three regions accounted for all of the shortfall, though with varying degrees of decline. While the Northeast, with its gap of -24 percent was capturing the headlines, the Southeast, at -13 percent, was also down in double digits and the South Central ran 7 percent behind 1989 contracting. The other two regions would seem to be unaffected. The West held virtually even with its yearago level of contracting at midyear, and the North Central was ahead of 1989 by 5 percent after the first six months.

A look at seasonally adjusted rates of construction gives a different and more meaningful interpretation of the major regional markets. Some were experiencing more difficulty than others at mid-1990, but by this measure, all five regions have turned down since the start of the year.

By any measure, the Northeast is the hardship case. For this region, in which financial-services and computer industries...
Automation Lets You Reach New Heights

The Best Automation Conference & Exhibition For
Building Design and Construction

The best thing about computers is they give you more time to focus on what you do best: design, construct, manage. The AEC Expo Show and Conference gives you more time to focus on the best productivity-building ideas...the best computer tools... the best automation suppliers.

50+ Interactive Sessions provide practical guidance on: Architectural Design; Construction Computing; Presentation Graphics; Workgroup Productivity; Integration of Multi-Disciplines; and much more.

Plus, the NY/NJ Regional Conference on Computing in Civil Engineering.

FREE Keynote Address
Dr. Malcolm Davies,
Senior VP Marketing & Sales, Autodesk, Inc. 10,000 AEC automation products. Lots of hands-on demos. Call for FREE Conference and Show Preview.

FREE Show Tickets Call 800-766-EXPO (9-5 EST)
### 1990 Regional Estimates

**Dodge Construction Potentials**

#### NORTHEAST

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonresidential Building</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and Manufacturing</td>
<td>$10,834</td>
<td>$8,350</td>
<td>-22</td>
<td>$13,319</td>
<td>$10,500</td>
</tr>
<tr>
<td>Institutional and Other</td>
<td>8,130</td>
<td>7,675</td>
<td>-5</td>
<td>8,778</td>
<td>3,025</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$18,960</td>
<td>$16,025</td>
<td>-15</td>
<td>$19,997</td>
<td>$14,025</td>
</tr>
<tr>
<td><strong>Nonbuilding Construction</strong></td>
<td>$11,399</td>
<td>$10,250</td>
<td>-10</td>
<td>$49,456</td>
<td>$40,300</td>
</tr>
</tbody>
</table>

#### NORTH CENTRAL

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonresidential Building</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and Manufacturing</td>
<td>$13,920</td>
<td>$13,175</td>
<td>-5</td>
<td>$17,974</td>
<td>$18,750</td>
</tr>
<tr>
<td>Institutional and Other</td>
<td>8,026</td>
<td>8,660</td>
<td>+8</td>
<td>5,825</td>
<td>5,825</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$21,952</td>
<td>$21,835</td>
<td>-1</td>
<td>$23,609</td>
<td>$24,075</td>
</tr>
<tr>
<td><strong>Nonbuilding Construction</strong></td>
<td>$10,302</td>
<td>$10,350</td>
<td>—</td>
<td>$55,863</td>
<td>$56,250</td>
</tr>
</tbody>
</table>

#### SOUTHWEST ATLANTIC

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonresidential Building</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and Manufacturing</td>
<td>$12,035</td>
<td>$8,775</td>
<td>-27</td>
<td>$22,988</td>
<td>$21,875</td>
</tr>
<tr>
<td>Institutional and Other</td>
<td>8,040</td>
<td>7,725</td>
<td>-4</td>
<td>7,509</td>
<td>5,275</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$20,073</td>
<td>$16,500</td>
<td>-18</td>
<td>$30,197</td>
<td>$27,150</td>
</tr>
<tr>
<td><strong>Nonbuilding Construction</strong></td>
<td>$8,541</td>
<td>$8,200</td>
<td>-4</td>
<td>$58,181</td>
<td>$51,850</td>
</tr>
</tbody>
</table>

#### SOUTH CENTRAL

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonresidential Building</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and Manufacturing</td>
<td>$7,274</td>
<td>$5,425</td>
<td>-25</td>
<td>$10,488</td>
<td>$11,300</td>
</tr>
<tr>
<td>Institutional and Other</td>
<td>5,520</td>
<td>5,125</td>
<td>-7</td>
<td>1,549</td>
<td>1,025</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$12,794</td>
<td>$10,550</td>
<td>-18</td>
<td>$12,037</td>
<td>$12,325</td>
</tr>
<tr>
<td><strong>Nonbuilding Construction</strong></td>
<td>$8,161</td>
<td>$7,925</td>
<td>-3</td>
<td>$32,992</td>
<td>$31,200</td>
</tr>
</tbody>
</table>

#### WEST

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nonresidential Building</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and Manufacturing</td>
<td>$13,770</td>
<td>$12,050</td>
<td>-12</td>
<td>$29,342</td>
<td>$28,575</td>
</tr>
<tr>
<td>Institutional and Other</td>
<td>7,910</td>
<td>8,032</td>
<td>+9</td>
<td>7,225</td>
<td>7,225</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$21,680</td>
<td>$20,082</td>
<td>-5</td>
<td>$37,584</td>
<td>$35,800</td>
</tr>
<tr>
<td><strong>Nonbuilding Construction</strong></td>
<td>$10,311</td>
<td>$10,975</td>
<td>+6</td>
<td>$69,845</td>
<td>$67,475</td>
</tr>
</tbody>
</table>

---

Prepared by the Economics Department
Construction Information Group
George A. Christie
vice president and chief economist

Copyright 1990 McGraw-Hill, Inc. with all rights reserved.
TWO THOUSAND VARIETIES OF THE FINEST NATURAL AND MAN-MADE STONE PRODUCTS, 
AND UNPARALLELED SAMPLING AND SPECIFICATION SUPPORT. 

COMPLETE STONE PROJECT MANAGEMENT AND STONE PROCUREMENT PROGRAMS 
FOR LARGE COMMERCIAL PROJECTS.

New York  
470 Smith Street  
Farmingdale, NY 11735  
(516) 752-0318  
Fax (516) 752-0411  
1-800-62-STONE  
W.U. Telex. 880145 INNOVATIVE

California  
8436 West Third Street  
Los Angeles, California 90048  
(213) 653-5533  
Fax (213) 653-6972  
1-800-62-STONE  
W.U. Telex. 880145 INNOVATIVE

European Headquarters  
Verona, Italy  
Circle 30 on inquiry card

See Sweets 04400/INM  
BUY LINE 2257
Before you switch to CAD, consider an overview of Hamilton's new free-standing CADCorner.

More work surface. CADCorner's surfaces are larger and stronger to accommodate 19" CAD monitors, input devices, disc drives, and "D" sized drawings. More storage. CADCorner has add-on shelves and drawer modules for paper storage, software, manuals, and CAD accessories. More flexibility. CADCorner starts with a new free-standing corner unit to which you can add modular components including reference tables and printer stands. Lower price. Workstation configurations and options from $659 to $2000.

The Mayline Company, P.O. Box 1342, Sheboygan, WI 53082-1342. Phone 414-457-5537.

Circle 31 on inquiry card

IRFEN STEEL PALISADE
HIGH SECURITY FENCING

BEAUTIFUL PROTECTION

The Irfen Steel Palisade Fence System is a proven configuration of premium cold-rolled profile steel pales, welded assemblies, and concealed support posts with tamper resistant fixing posts. The Irfen Steel Palisade High Security Fence provides a rigid barrier of strong visual integrity offering the most attractive deterrence while providing the ultimate in protection where privacy, property or personal safety are at risk.

- Minimal inter-pale spacing allows high visibility without compromising security.
- Hot-dip galvanizing with additional color-matched polymer coating.
- Choice of 5 standard finishes, more than 200 custom colors available.
- Gates available, swinging, sliding, manual or automatic.

Call today for more information on creative design solutions for your perimeter security and access problems.

IRFEN INDUSTRIES, INC.
P.O. Box 11141, Chicago, Illinois 60611-0141
1-800-752-1249
Nationwide Network of Distributors for Installations.
MAKING IT IN A CHANGING ECONOMY

What do you do when you find business-as-usual more difficult? Expand your horizons, say four experts.

Expand geographically, in new building types, and in new services you offer," says Charles Thomsen. His firm, 3D/I had one branch office in 1982 when home base, Houston, was at the bottom of the local slump. Now it has 19 — many of them in the Middle East and Far East, and in Europe. Indeed, expanding services beyond U.S. boundaries is turning out to be one of the most-explored management techniques [Practice News page 17].

Kohn Pedersen Fox is doing work in some 10 foreign countries — including New Zealand. "But you have to be there," cautions Eugene Kohn. For him, this means up to a week every month abroad and a new branch office in London, staffed by two full partners, where costs are almost prohibitively high. "Especially the Europeans want you within easy reach."

The Stubbins Associates has been doing work for 10 years in the Pacific Basin — Japan, Taiwan, Singapore — and principal Easley Hamner observes that "design in the 'traditional-modern' idiom seems to be the key factor in landing commissions."

He finds research laboratories a current "hot market," with seven in the works.

LePatner: "To be viable, one must plan and react quickly to change."

KPF is expanding the types of buildings it designs and is currently working on university buildings, hotels, retail buildings, a ferry terminal, an embassy (Cyprus), and even a house.

All three firms are focusing on strengthening or expanding services. Thomsen points to environmental services, including asbestos abatement, as a recently developed capability and Kohn to building renovation and feasibility work with brokers.

But, cautions attorney Barry LePatner, you need an analysis of the market before you decide to take any of these routes. Factors to consider: current-client roster, what you expect the market to do in the future, and whether the current climate has really changed enough to warrant the investment. Still, "in business, as with all else in life, to be viable, one must plan and react quickly to change," he says.

Kohn: "You can't expect that what's getting built most now will continue to be in the future. Predict what will happen."

Knowing the best untapped possibilities

"Find a niche," says Thomsen, "areas where the locals are weak." He sees any type of technical facilities, hospitals, and prisons as a good bet almost anywhere.

"Research, hospitality, and correctional work are niches we already see as a success for us," says Hamner. Suburban planning is one field he finds successful in specific locations — for Stubbins, New Jersey.

Kohn points to the aging population and medical facilities. "The [office-building] developers' best friend has been community resistance to growth, because it's usually strongest before a downturn." That is why he is targeting renovation, including office buildings. "It gets less resistance."

"The firms that review the periodicals on health care, high-tech, and research will find numerous opportunities for new business," says LePatner.

Positioning to tap new possibilities

"In good times, you consolidate your operations for greater efficiency," observes Thomsen. "But when the going gets rough, you nurture the people in your office with the strongest entrepreneurial spirits and send them out of town to beat out the locals." How is this done? "By offering something they don't have." In Hong Kong, 3D/I sold half interest in a subsidiary and its expertise to a local firm. "Each situation is different." Still, Thomsen keeps people with a Texas network. "You have to remain established on your home base for when things come back."

An initial problem for KPF in moving into new building types was getting around a high profile as high-rise, office-building architects. "Most architects are capable of a broader range of buildings than they're given credit for," says Kohn. The willingness in Europe to overlook stereotypes is one of the reasons the firm focuses so much attention there. A current project in Europe is a "very-advanced" industrial building. Especially for work in the U.S., Kohn is looking hard at what it takes to break into such specialized fields as medical facilities. He has yet to decide on association or hiring the expertise in-house. He is confident of getting such work without first making the decision.

One route to new building types is to team up with a contractor, recommends Hamner. Hyman-Stubbins, Inc. was formed to pursue one design/build project, the Suffolk County Jail [pages 148-151]. The partnership has produced a second such facility and is looking for more. Whether for partnerships or clients: "You must be adept enough to convince a prospect, even without relevant experience, your handling of unusual assignments has been successful." What about associations with other architects? "We have found them to be uniformly helpful in expanding our network of leads."

 Says LePatner: "Defining your firm's strengths and rebuilding them into a busi-

ARCHITECTURAL RECORD SEPTEMER 1980 • 47
ness-like marketing approach is more critical than ever.” Among other means: combining your marketing with your clients’ [RECORD, August 1990, page 37].

Approaching clients in new areas
“You do it directly,” says Thomsen. “Join local business and civic organizations. Get to know the people.” Of course, he acknowledges, you may need persistence.

For getting new building types, Kohn advises: “Convince clients that good design is transportable. Having a reputation for being easy to work with doesn’t hurt.”

“Principals who are highly marketing oriented should be out of the office nearly full time,” says LePatner. Especially in hard times, he reminds, “your competitors” are also doubling and redoubling their marketing efforts. Your extra efforts mean the opportunities to expand your [permanent] client base are at a height.” It is all that much more important to familiarize yourself with prospects. “When a client’s annual report indicates an increasing percentage of projects overseas, be prepared to identify services your firm can offer to take advantage—e.g., an overseas office or a principal in your firm who speaks the language.” In the current situation: “Firms that geometrically increase their marketing efforts when business is slow will reap the benefits as the economy turns around in late 1991.”

Taking on marginally profitable projects
This is a technique used by many firms in slow times to maintain staffs and volume. Does it pay?

“Profitability has never been number one,” says Kohn. “The right client is.” To get and keep the right clients, KPF will pass up other clients who offer higher initial profits. “Especially with a new building type, you will not make much if you do the extra work to get it right.” KPF has sometimes not made any money (or lost it) to establish credentials on unfamiliar terr

Rain. “Under many circumstances, even good fees don’t mean profitability.”

Thomsen’s firm will take marginally profitable commissions. “But, you have to cut out your favorite extras—new techniques, new ways of doing things,” he says. “It takes the fun out.” In Houston, at the bottom of the recession, he recalls, some firms took jobs at 1.7 multiples—meaning, of course, they lost money.

On the other hand, Hamner’s attitude is firm: “We don’t do loss-leader work,” he declares. “One loss will lead to a second one. Why would a client give a higher fee for a second commission if you did an acceptable job on the first at a low fee?”

LePatner agrees: “Taking projects under such circumstances merely to keep a staff busy will serve to carry losses forward long after firm profits have resumed in good years.” But, like Kohn, he does see the point if the result is a truly long-term client with financial stability. He recommends a particularly careful analysis of production costs and the client to see if the commission justifies the risks involved.

Reducing costs in tight times
None of those interviewed saw a way to keep fees up when the competition is keen. The alternative: “Some Houston firms did away with all fringe benefits for staffers—even paid holidays,” recalls Thomsen. But he was not able to cut costs piecemeal. He put together a plan affecting all overheads and presented it to the whole firm.

“Everyone knew they were being treated equally and not being singled out for pain and abuse.”

Speaking of Stubbins’ last trimming in the latter ‘70s, Hamner recalls: “Discretionary payments of profit sharing and bonuses were the first to go.” Payroll was reduced by giving all staff unpaid alternate Fridays off.

LePatner: “In some instances, utilizing temporary staff, instead of hiring full-time employees, will dramatically reduce costs of a project. All areas of a firm’s practice that are not profitable or as profitable as others should be dropped summarily.”

Cutting staff
Many architects are reluctant to do this for both humanitarian and practical reasons; it may not be that easy to find experienced people when all firms are busy. Again, Kohn: “We try not to let people go. Remember, KPF was born in hard times, has thrived through downturns, and we don’t see volume down now.” The implication: Good management prevents layoffs. Similarly, 3D/I tries to avoid them.

But Hamner disagrees. Despite the other cost-reduction measures Stubbins had taken, there were also three waves of layoffs in the ‘70s. “Cost reduction is exclusively a function of staffing. A well-run business will pay attention to overhead costs on an ongoing basis and have limited [other] flexibilities.”

LePatner recommends forgetting firm culture, friendships, and saving face. “Restructure for survival in a tight economy. Well-managed firms in every area of business regularly adopt these techniques.”

Here, Kohn and LePatner clearly disagree on what well-managed means.

Stirring up work in a down market
“Advertising always works if you can convince them you have something to sell,” says Thomsen. Use public-relations consul

Kohn: Staying in closer touch with clients and being hands-on.

ants for only what they know how to do. They all have specialities—whether placing articles in financial journals or design journals, or organizing events for the press or clients. Obviously, in down times, selectivity becomes critical.

KPF never advertises and Kohn tends not to work with public-relations consultants. “In a down market, you may be wasting time. Just stay in closer touch with clients.” He doesn’t let down this hands-on approach in good markets—not to get specific projects, but to make sure there are contacts to call when he needs them. Tight times build a stronger firm, he says. “Other people here market and this pulling together brings them together.”

Hamner: “Client development and public relations are two key defenses in a down market. Spend what you can carefully.” He does not step them up in good times. “We have no desire to double our size.”

“Increase marketing, even while cutting staff and expenses,” advises LePatner. “By being highly visible, you project much more positively and help morale.” He advises not letting marketing down in good times. “All during the ‘80s, we advised clients not to live off their backlog. That policy has proven well-founded now.”

Thomsen again: “Don’t try to repeat past successes by using the marketing techniques you know. In down times, that’s like wolves returning to a burnt-out forest.”

CHARLES K. HOYT
UNIQUE PRIME COAT
HIDES DRYWALL JOINTS BEST . . .
FOR FINISH COAT BEAUTY

SHEETROCK First Coat has a unique latex formula designed to provide a superior prime coat in drywall decorating. To keep joints and fasteners from showing through decorated surfaces, both porosity and texture differences between the gypsum panel and finished joint compound must be eliminated. Most primers and sealers will equalize either texture or porosity, but not both.

SHEETROCK First Coat does equalize both, minimizing joint banding and photographing and assuring a uniform, beautiful finish when you decorate. For the best finish, use the best. SHEETROCK First Coat. Write to us for information: 101 S. Wacker Drive, Chicago, IL 60606-4385, Dept. AR990

United States Gypsum Company

© 1990, United States Gypsum Company
USG is a registered trademark of USG Corporation and its subsidiaries.

Circle 33 on inquiry card
Let your imagination soar...

PITTSBURGH CORNING
PC GLASS BLOCK® PRODUCTS

No other manufacturer in the world gives you the confidence to design, specify and install glass block like Pittsburgh Corning. For over 50 years our American-made PC GlassBlock® products and services have helped to let your imagination soar™!

Unmatched, crystal clear block of highest quality—due to low-iron sand—include the clearest VUE® block… exclusive, superior-bonding vinyl edge coating, in optional colors… consistent product quality assured by individual inspection of every block… the only manufacturer’s 5-year limited warranty… leadership in new-product innovation, including corner, solar reflective, paver and EndBlock… as well as mortar-free installation systems… a manufacturing plant dedicated to glass block and a world-wide distributor network.

A single-source for all accessories… extensive product and design information, including the new Electronic CADalog™… samples and on-site support by Pittsburgh Corning Representatives and Distributors… technical assistance and drawing review by our Technical Services Department, toll-free phone assistance, and our Atlanta Design Center.

For more information, call the PC GlassBlock® Products Hotline:
800-992-5769
Monday-Friday, 8:00 a.m. to 4:30 p.m. Eastern Time. Or write, Pittsburgh Corning Corporation, 800 Presque Isle Drive, Department AGB-80, Pittsburgh, PA 15239. Visit our Design Center in the Atlanta Decorative Arts Center. In Canada, call: 416-222-8084. In Europe, call our United Kingdom office: 44-734-500655.

Key Toyota, Cranberry, PA
Architect: Arthur Lubez and Associates
VUE® Pattern

© 1990 Pittsburgh Corning Corporation

Circle 34 on inquiry card

Plaza Center, Woonsocket, RI
Architect: Luigi Bianco, ASID, IBD
Solar Reflective Glass Block and HEDRON® I Corner Block in VUE® Pattern

First Union Clock Tower, Charlotte, NC
Architect: JPJ Architects
ARGUS® Pattern with Fibrous Glass Inserts
HEDRON® I Corner Block, VUE® Pattern

SEE OUR CATALOG IN SWEET'S GENERAL BUILDING & RENOVATION FILE (08910).
Let your imagination soar…

PITTSBURGH CORNING
PC GLASS BLOCK®
PRODUCTS

HEDRON® I Corner Block & EndBlock Finishing Units. You’ll discover virtually unlimited design options when working with these PC GlassBlock® products. EndBlock allows your interior dividers to be finished with PC GlassBlock® units. And with HEDRON® I Corner Block, partitions or panels can make 90° turns to create continuous, aesthetically pleasing, all-glass designs. Both products are available in the VUE® and DECORA® patterns.

HEDRON® I Corner Block and EndBlock Finishing Units are just the latest reasons why, according to independent surveys, PC GlassBlock® products are the choice of nine out of ten architects and interior designers.

Signtech U.S.A., San Antonio, TX
Architect: Middleman + de la Garza + Neugebauer, AIA Architects
DECORA® Pattern. HEDRON® I Corner Block and EndBlock Finishing Units

Electronic CADalog™
Our new Electronic CADalog™ contains hundreds of detail drawings and specifications to help you in designing and specifying. The CADalog™ is available with 5″ and 3½” diskettes and will interface with most existing PC CAD packages. Ask your Pittsburgh Corning Representative or call our Hotline to arrange for a demonstration.

For further information about these unique PC GlassBlock® products and our Electronic CADalog™ call the PC GlassBlock® Products Hotline:
800-992-5769
Monday-Friday, 8:00 a.m. to 4:30 p.m. Eastern Time.
Or write, Pittsburgh Corning Corporation, Marketing Department AGB-90, 800 Presque Isle Drive, Pittsburgh, PA 15239. Visit the PC GlassBlock® Design Center in the Atlanta Decorative Arts Center. In Canada, call (416) 222-8684. In Europe call our United Kingdom office: 44-734-500655.

Circle 35 on inquiry card
NONSTANDARD DE REQUIREMENTS AT DESERT

Bow String Steel Joints
Desertine Elementary School
El Paso, Texas
Bow string steel joists were the order of the day for the designers of Desentaire Elementary School. They wanted a multi-purpose room that was not only functional but architecturally interesting and attractive as well.

We filled the order for those joists. We're the largest supplier of steel joists in the country and we provide more than a dozen non-standard designs, the most in the industry.

That's a lot. But then we've been making non-standard joists for a long time. And the manufacturing expertise we've developed over the years, plus our large inventory of steel, enables us to make them quickly and economically.

And the earlier we get involved in the design stages the better for the project. Because our experienced engineers can assist the building's designers, and bring the end product in at less cost and more quickly than could be done with traditional methods.

So when you're designing your next project, think of Vulcraft non-standard joists. They give you the opportunity to expand your design possibilities while retaining the advantages of steel joist construction. And those advantages are many.

Vulcraft joists are strong, yet lightweight and easy to erect. And they can be delivered to your site when you need them. In short, they meet all the requirements for a truly outstanding product.

VULCRAFT
A Division of Nucor Corporation
A FEW REASONS WHY A 350 TUFFLINE ENTRANCE LIVES UP TO ITS NAME.

A 3/16" minimum wall thickness in door and frame

High performance welded door corner joinery

Security interlocks at door jambs

Heavy duty standard hardware designed for high abuse areas

Heavy duty frame to complete the entrance package

Rugged 2" deep stile sections

Thru bolt and direct hardware attachment where applicable

Joe S.

James W.

Katy O.

Rocco D'

Betsy G.

Sam S.

Ken T.

Julie L.

AND A FEW REASONS WHY IT HAS TO.

350 Tuffline. Educational tool for the 80's. And beyond. For new and replacement doors at schools, college campuses, and in other high traffic and abuse-prone installations. Tuffline entrances are all their name says they are. Tested in the educational market, Tuffline is offered as single-acting entrances in both singles and pairs to 8' heights. With durable butts, pivots, closers and panic to resist vulnerability and increase security when school's out. And design options such as Panneline® to customize without compromise.

Tuffline. At the head of the class.

For technical specifications contact: Kawneer Company, Inc. Department C, Technology Park-Atlanta, 555 Guthridge Court, Norcross, GA 30092

Circle 37 on inquiry card
FINLAND AFTER AALTO

With roots in vernacular sources and Bauhaus Modernism, Finnish architecture reconciles opposing tendencies.

By Gerald Moorhead

Since its cultural awakening in the mid-19th century, Finland has continually sought a single artistic expression for its developing nationalism. By the turn of the century, architects such as Eliel Saarinen and Lars Sonck had blended native folk-art motifs with foreign influences from the English Arts and Crafts movement, the Viennese Jugendstil, and the Richardsonian Romanesque to form Finland’s first unified architectural movement—the National Romantic Style.

After a brief period of Neoclassicism in the 1920s, Modernism came to dominate Finnish culture. As in few other countries, Modernism established itself here as the symbol both of progress and the practical esthetics of the nation’s rural heritage. Bringing these seemingly opposed ideals together into a uniquely Finnish Modernism was the genius of Alvar Aalto. It was Aalto who first combined the white geometry of Le Corbusier and Gropius with wooden elements from the rural vernacular and made it work.

Modernism in Finland, however, is neither as homogenous nor as dogmatic as this brief history might suggest. Two major trends—rationalism and expressionism—exist side by side, frequently overlapping, and form the background for today’s various factions. While the rationalists seek a universal language through technology and process, the expressionists emphasize individual form and overt symbolism.

Three examples of Finnish rationalism: Rationalist buildings emphasize structure, function, and systems of assembly, revealing the influence of Russian Constructivism and British High-Tech. A good example is the new Landmark Tower, a 16-story constructivist spike in Helsinki’s northeast

Reima Pietila’s Multipurpose Center in Hervanta (top left) exemplifies Finnish expressionism, while the Piekasamaki Cultural Center (top right), Peraseinajoki Town Hall (above left), and Landmark Tower (above) represent the rationalist style.
Since 1910, Julius Blum & Co. has provided ornamental metal components of high quality to the architectural trades. Today, Julius Blum & Co. is the industry's most complete source for architectural metals. Our latest publication, Catalog 15, describes our full line of architectural metal components:

- JB Glass Rail — Metal railing components for use with 1/2 and 3/4 tempered glass.
- Connectorail — Non-welded pipe railing system in aluminum, bronze and stainless steel.
- Colorail — Extruded plastic handrail in 12 stock colors and 10 stock shapes.
- Carlstadt Railing Systems — Versatile post and rail systems in aluminum, bronze, stainless steel, and acrylic wood.

Traditional Railings — Handrail, trellage, fittings, and decorative ornaments in aluminum, bronze, steel, and stainless steel.
- Elevator Cab Components — Elevator sills, handrail and brackets suitable for vertical mounting in elevator cabs.
- Handrail Brackets — Wall, post and vertical mounting brackets for all handrail types.
- Expansion Joints, Thresholds and Mouldings.
- Tubing, Bars & Shapes in Bronze, Aluminum, Steel and Stainless Steel.

Catalog 15 also includes a complete Engineering Data section to assist in the proper structural design of various handrail systems.

Contact Julius Blum & Co. for your copy of Catalog 15.
suburb of Itakeskus. Designed by Erkki Kairamo, Heikki Makinen, Timo Vormala, and Aulikki Jylha, it sits in a dense civic complex that recalls Gunnar Asplund's Stockholm Exhibition of 1930. The tower's varying facades pinwheeling around a square plan allude to Frank Lloyd Wright's Price Tower in Oklahoma, but its crystalline transparency ties it to Finland's northern climate where sunlight is so highly prized. The architects reinforce the jewel-like quality of the building by skillfully illuminating it at night, and they contrast a vertical stair tower with the horizontal thrust of an attached shopping center.

By contrast, the Peräseinajoki Town Hall, designed by Antti Katajamaki and completed in 1987, is pure high-tech. Given that the main industry in this town of 4,200 is a steel plant, the citizens take pride in the image of this steel building. Exposed structure and ductwork, a metal cladding system, and expressed joinery unify the variously shaped elements organized along a T-shaped spine. Such mechanical clarity and functional separation recur in Katajamaki's work, which includes the Valio Dairy Co-op's Computer Center in Helsinki (1985) and its Maikula Production Plant in Oulu (1982), two projects marked by industrial logic and high-tech styling.

The Pieksamaki Cultural Center (1989) by architect Kristian Gullichsen represents another facet of the rationalist side of Finnish Modernism. This long building, set beside a park extending to a lake, is an urban design that features walls forming spaces—some formal and contained, others meandering and open. The center is a symbol for the character of the town itself, a place whose "townscape is horizontal and loosely built...developed around a railway junction, lacking any topographical accents," according to Gullichsen.

Loosely planned as an indoor street with a library at one end and a concert hall at the other, the Pieksamaki Cultural Center is encroached by the closed forms of an exhibition gallery and meeting rooms, and expanded by open spaces for a café and reading room overlooking the park. Gullichsen softens the smooth planes and undulating walls of the complex with touches of stone and wood and an all-pervasive natural light. The subtle blend of Corbusian white surfaces with natural materials and a sure sense of space suggests that Gullichsen has learned from Aalto. As it turns out, Gullichsen literally grew up on Aalto: he is the son of Maire and Harry Gullichsen, for whom Aalto designed the Villa Mairea in the late 1930s.

**Derived from nature**

At the other end of Finland's design spectrum is the expressionist school, which stresses individual form and overt symbolism. While classic European expressionism in art draws from abstract geometry and metaphysics, its Finnish counterpart recognizes that uniqueness of place may produce images derived from nature.

For several decades the leader of Finnish expressionism has been Reima Pietila. The Multipurpose Center (1989) in Hervanta New Town outside of Tampere is Pietila's third building here and is a veritable medieval bazaar of open and covered alleys teeming with life. It recalls images of castles, factories, the local train station, and the surrounding forests in its use of crenelated walls, red industrial brick, and unusual window shapes. Rounded corners, vertical slit windows, and a meandering pedestrian way evoke medieval towns, but the startling, hovering curved brick cornice is beyond all time or place. In the adjacent Congregational Center, which Pietila designed in 1979, flared windows reminiscent of fir trees and leaf-green colors reveal Pietila's fascination with nature.

Another architect working this vein is Georg Grotenfelt. Inspired by the rural vernacular and traditional life in the forest, Grotenfelt designed the Ararat Holiday Cabin near Juva in 1985. A hand-crafted compound sited on a narrow peninsula jutting into a lake, the project connects its various elements (sauna, cabin, and outbuilding) with a covered boardwalk that also functions as an outdoor gathering place. Vertical board siding is used throughout—left natural on the inside and stained pale blue-gray on the outside. Simple shed roofs, occasional spayed walls, and angular porch-framing imply the time-forgotten presence of old barns settling into the earth.

As these five projects show, the latest generation of Finnish architects thrives on the tension between the industrial and the traditional, the modern and the vernacular, reflecting the ongoing transformation of the pre-World-War-II Finnish agrarian culture into the more complex urban economy of today.

This article was based on a trip to Finland last year to attend the International Conference on Architecture, Urban Planning, and Design sponsored by the Finnish Association of Architects and the AIA Committee on Design.

"Boy! That was awesome! Wanna try one with setbacks?"

**Reviewed by Roger K. Lewis**

Washington, D.C.'s, magnificent Union Station, beautifully preserved and brought roaringly back to life after years of neglect and deterioration, was the setting for an exhibition of corporate and commercial projects entitled "New Chicago Architecture." How appropriate to display buildings from America's great midwestern architectural laboratory, the city of Adler, Sullivan, Root, Wright, and Mies van der Rohe, the host city of the 1893 Columbian Exposition that spawned the turn-of-the-century Beaux Arts revival, in Daniel Burnham's vaulted, neo-Roman 1908 transportation terminal.

Disappointingly, the idea for such an exhibition is better than its realization. "New Chicago Architecture" consists of several dozen projects, both built and proposed. Most are office-building towers shown in photographs, renderings, and models, and designed by mostly well-known architects—Skidmore, Owings & Merrill, Philip Johnson and John Burgee, Murphy/Jahn, Kohn Pedersen Fox, Cesar Pelli, Hammond Beebe Babka, Perkins & Will, Kenzo Tange, Ricardo Bofill. Except for the United Airlines terminal at O'Hare International Airport, all the projects are in or near downtown, including the new public library, the Rookery, and SOM's AT&T Corporate Center (left).

The installation takes the form of a glade of stubby, rectangular, freestanding kiosks arrayed in a grid pattern in Union Station's West Hall. Photos and renderings of building facades are mounted on the faces of the kiosks along with a small label identifying the project, owner, and architect. A couple of video displays are included.

Unfortunately, the exhibition's background milieu and lighting are less than ideal. A strongly patterned floor underfoot and a visually busy set of storefronts on either side of the hall distract considerably from the exhibition, which itself is fragmented and lacking in continuity.

Also lacking is depth of content. There are no city plans, no site plans, no building plans, no illustrations or descriptions of city history and city context. The exhibition clearly highlights the esthetic elaboration of the tower form, its composition and materials, but offers no explanation of why these buildings look the way they do, how they relate to one another, or even what they are made of. Withholding information about the buildings, about their sites, about adjacent buildings and streetscapes, and about the city of Chicago, the exhibition becomes little more than a kind of giant archi-

---

**More of Ours**

Ours is two new additions to Versatec's family of high performance CADmate™ electrostatic plotters. Turbo CADmate and Turbo CADmate SBus. Turbo CADmate, for 386-based PCs in standalone or networked environments, is up to ten times faster than the plotter on the right. And Turbo CADmate SBus, for Sun SPARCstation™ and 1+ users, is up to 15 times faster. And both give you 300 ppi laser-quality reproduction. You'll also get HPGL/2 compatibility. And the ability to plot with gray-scale shading, something a pen plotter cannot do.

The author attributes to architect and former Columbia University dean James Polshek the view that interior design cannot be considered a true profession because it lacks a body of theory. The aim of this book is to refute this view, and it is indeed a valiant attempt.

While architecture, in the words of Raimund Abraham, is “a monument to the eternal, commemorating the absence and presence of man,” interior design, acknowledges Abercrombie, is “something less grandiose…a monument not to the eternal but to the transient, a celebration of a very particular time, place and situation, commemorating the presence not of man but of specific men and women.”

Nonetheless, the author—with the aid of non-interiors props such as architecture, philosophy, and social studies, and through his own attitudes developed over a long career as designer, author, and editor—does forge such a philosophy. He does it by breaking the field into chunks—such as the transition from outside to inside, the plan, the room, planes of the room, changes in floor levels, ornament, furniture, color and light, sound, smell, art, details, and plants. Students and fledgling designers will find much to guide them in evolving a theoretical backdrop to making design decisions. The serious layperson also will find this book helpful in appreciating an interior. The author’s insights into what makes an interior work or not work—and why—are superb, and the photographs (all black-and-white) are well-chosen and set in the right places.

One would wish certain subjects had also been covered. Surely physical comfort, via a well-designed and functioning mechanical system, are part of one’s response to an interior. So too are such conveniences as the electric system and communications. And what about scale, a key part of anyone’s perception of an interior? More time spent on nonresidential interiors also would have helped create a fuller understanding of the field.

In the end, one is left with the feeling that coming up with a philosophy of interior design separate from architecture cannot be done, for the simple reason that interior design cannot really be separated from architecture. Abercrombie has gone about as far as one can go. The result is a highly readable work that raises the current level of intellectual discourse about interior design a solid notch.

S. A. K.
How A Sheep Saved A Fox

Fortunately for The Fox, yesterday’s wool textiles are available today.

When Atlanta Landmarks, Inc. restored this exotic movie palace to the splendor of its December 29, 1929 grand opening, compromise was out of the question. Purists insisted on historical truth. That’s why the experts specified authentically reproduced wool upholstery fabrics, and Axminster carpets to replicate the richly-decorated period interior.

Now this Fox has been rescued from extinction to enjoy new life as a multipurpose performing arts center. And the robust, renewable wool textiles used to recreate the past will retain their beauty as they age slowly and gracefully in a memorable performance of their own.

For your next restoration or preservation project, turn back the clock—faithfully—with wool. For a list of resources with special expertise in producing historic wool textiles, contact The Wool Bureau, Inc.

The Wool Bureau, Inc., Interior Textiles Division: 240 Peachtree Street, N.W., Merchandise Mart Space 6F-11, Atlanta, GA 30303-1301
The Wool Bureau of Canada Limited, Interior Textiles Division: 33 Yonge Street, Suite 820, Toronto, Ontario, M5E 1G4, Canada

Circle 40 on inquiry card
The editors of ARCHITECTURAL RECORD announce the 36th annual RECORD HOUSES awards program. This program is open to any registered architect; work previously published in other national design magazines is disqualified. There are no entry forms or fees, although submissions must include plan(s), photographs, and a brief project description—bound firmly in an 8 1/2- by 11-inch folder—and be postmarked no later than October 31, 1990. Winning entries will be featured in the 1991 RECORD HOUSES. Other submissions will either be returned or scheduled for a future issue. If you would like an entry returned, please include a self-addressed envelope with appropriate postage.

Submissions should be mailed to:
Paul M. Sachner
ARCHITECTURAL RECORD
1221 Avenue of the Americas
New York, New York 10020
Custom Flooring.

Along with our specialty, the Custom Classics, Kentucky Wood Floors offers a wide range of pre-finished and unfinished hardwood flooring to fit within all budget constraints.

The hardwood floor displayed here consists of American Walnut, Ash, Brazilian Cherry, Padauk, Quartered Oak and Wenge in a Custom Design with brass feature strip.

See your local distributor for a full color brochure, or call or write.

Kentucky WoodFloors
P.O. Box 31276
Louisville, KY 40232
(502) 451-6021

THE SOLUTION TO ROOF TOP ANTENNA CLUTTER

OUR MICROWAVE TRANSPARENT WINDOWS OFFER THE ULTIMATE IN COMMUNICATIONS EQUIPMENT SCREENING

RAYDEL® Electromagnetic Windows will either blend with the existing building facade or become an architectural feature while hiding unsightly antenna installations. Size, shape, and color can be combined to create a unique effect. Sectional dimensions to over 100' are possible. Microwave/Radio Frequency (RF) Transparent properties allow antenna signals to pass through the Teflon® coated fiberglass fabric with minimal interference.

CHEMFAB
CHEMFAB New York Inc.
2015 Walden Avenue
Buffalo, New York 14225
Telephone: (716) 684-0200
Telefax: (716) 684-0222

Circle 42 on inquiry card

OUR MOVEABLE STORAGE SYSTEMS STORE MORE IN LESS SPACE.

Closet Carousel®
- Rotates at push of a button
- Plugs into 110V outlet
- Fits spaces from 4'6" x 6' to 4'6" x 15'; 10 sizes
- Reversible motor for Carousel now available.

STORMATE®
- Layers on extra storage
- Slides aside for rear access
- Fits any length closet; depth is 15" or 18"

And combine with traditional storage components to create modern Home Storage Centers. Call or write for design booklets. Today.

WHITE HOME PRODUCTS INC.
2401 LAKE PARK DRIVE ATLANTA, GEORGIA 30080 PHONE: (404) 431-0900 FAX: (404) 432-3778

Circle 43 on inquiry card

Circle 44 on inquiry card
"We could have carved our reputation in stone. Instead we chose Avonite." 

There are areas in every design project that must make a major statement. Those focal points create a "perception of elegance and value." Choosing the right material is the challenge faced on every job.

AVONITE is a solid surface material, unique in the flexibility of its applications and is only limited by your creative imagination. Fabricators are amazed that "it looks like stone but cuts like wood," and that they're able to interpret the most intricate designs with regular woodworking tools!

AVONITE, being a manmade stone composite, has been chemically engineered to resist attack by acids and stains and is truly a miracle of polymer technology.

Counters, walls, floors, furniture, signage, and accessories become spectacular in AVONITE. Lasting beauty and durability is backed by a 10 YEAR WARRANTY. There is no question that because of this exciting material creative designers and architects throughout the world are developing reputations etched in AVONITE!

Call, toll free, for your nearest AVONITE Distributor... 1-800-4-AVONITE.

Circle 45 on inquiry card
VECTA'S WILKHAHN FS+ GRAND CLASS

Very prestigious.

Very comfortable.

Very Vecta.


Circle 46 on inquiry card
ST. TROPEZ

An Innovative New Design Featuring:
Contemporary styling
Exquisite detailing
Unique beadrail profile
Concealed mounting system

For information,
call 1-800-Levolor.

LEVOLOR

Circle 47 on inquiry card
The Grand Tour Collection. World class contract fabrics engineered for durability.
Four Class A rated designs. Twenty-one colorways.

Brunsuschwig & Fils
75 Virginia Road, North White Plains, New York 10603 Through architects and interior designers.

Circle 48 on inquiry card
Record Interiors 1990

Record Interiors was conceived in 1970 as an expanded feature within a regular issue of the magazine. Over the years, as interiors came to occupy a growing percentage of architects' work, Record Interiors grew into an issue of its own. This year, we return to our original format, which allows readers the chance to examine interior design within the broader context of architecture.

As in the past, this year's featured projects include a variety of interior types—a hotel, a private residence, corporate offices, a performance hall/exhibition center, a product showroom—executed in an increasingly global architectural arena.

In Los Angeles, for example, Craig Hodgetts and Ming Fung describe their renovation of offices for the Hemdale Film Corporation (pages 104-109) as "an arrangement of objects within an envelope," an assessment that might apply to all the interiors shown in this issue. Los Angeles critic Aaron Betsky calls Hodgetts and Fung's particular technique "scenography"—the building of "working sets for working lives." Though the overlap of old and new building parts seems casual, there's nothing random, for example, about the way the architects interwove air-conditioning ducts with existing steel trusses.

In Amsterdam, Pieter Zaanen also faced the task of reconciling old and new. In his case the "old" was a landmark commodity-exchange building by the early 20th-century architect H. P. Berlage (pages 80-87). Zaanen's all-glass chamber-music performance hall is both an artistic and a structural tour de force—a startling contrast to the existing masonry building that ingeniously solves the complex acoustical requirements of his client, the Netherlands Philharmonic Orchestra. Zaanen's bold approach sounds a cautionary note for the profession: visual fireworks are only as successful as the program that inspired them. Zaanen's work, like all accomplished interiors, is a three-dimensional puzzle where the client is the all-important piece that lets the designer bring the image into focus.

Karen D. Stein

Hemdale Film Corporation
Hodgetts and Fung
Design Associates
Plain and Fancy

The Zimmer Gunsul Frasca Partnership's skillful use of ordinary materials makes the headquarters of a Portland, Oregon, advertising agency sophisticated but not slick.

© RICHARD BARNES PHOTO

The seventh-floor reception desk is made of ribbed steel and glass.

Borders, Perrin & Norrander, Inc.
Portland, Oregon
Zimmer Gunsul Frasca Partnership, Architects

Downtown Portland has an impressive stock of late 19th-century buildings that have found favor as offices for designers, advertising agencies, and other creative enterprises. A few architects have elected to cloak the interiors of these appealingly rugged structures with slickly generic office suites. The Zimmer Gunsul Frasca Partnership, however, decided to take the opposite tack in their recent renovation of the top three stories of the historic Director Building into the headquarters of Borders, Perrin & Norrander, a leading Portland advertising agency. Influenced by the robust masonry-and-wood architecture of the host building, located in the Yamhill Historic District, ZGF has produced an elegant set of office interiors marked by a straightforward use of prosaic materials.

The architects' design is sophisticated but not at all effete. "We decided that the building was strong enough to take an aggressive use of materials," says project designer Sharron Duggan. The underlying theme begins decisively in the seventh-floor entrance area, where a gently curving receptionist's desk has been fabricated of ribbed stainless steel, plastic laminate, and glass. The canted wall behind the desk shows an unusual combination of split-face concrete block—dry-stacked to avoid mortar joints—and slate bands. Floors are the original (refinished) fir, and timber columns were sandblasted to remove years of accumulated layers of paint.

ZGF also received leads from the 56-person agency itself, which believes in collaboration and a free interchange of ideas. It is an informal place: on warm days it seems as if half the staff is in shorts, and irreverent graphics appear on
Bronze medallions set into a translucent wall of sandblasted gray and dichroic glass enliven a three-story-high atrium. The stairway is built of mill-finished steel with fir treads.
The most distinctive feature of ZGF's work is a sandblasted-glass wall rising three floors through the atrium. Section below reveals construction detail, which combines 1/2-in.-thick glass plate, L-shaped steel members, and 9-in. bronze medallions.

Above: agency-produced art adorns the seventh-floor reception area, located beneath the spiraling metal stair. Below: the eighth-floor reception desk is made of perforated steel and galvanized sheet metal.

Opposite: timber columns line a seventh-floor corridor. Offices have sliding doors with barn hardware.

every exposed surface. The company's casual attitude suggested spatial openness, expressed most dramatically in a three-story atrium containing an angular black, mill-finished metal stairway with fir treads and neoprene rails and nosing.

The stairway was lowered through the roof in six sections. On the seventh floor and rising to the eighth, it is attached to the original heavy-timber structure. From the eighth to the ninth floors, the stair is attached to the glulam structure of the two penthouses that were appended to the seven-story structure. In both cases the connection is by large metal plates bolted to the wood. Left exposed, they make burly, almost sculptural, accent pieces.

Behind the seventh-floor reception desk, the main conference room is set at roughly the same angle as the stairway. Tables are made of copper tubing and bird's-eye maple, with steel legs on casters so that they can be easily moved. Overhead is a brace of stage lights salvaged from a former Portland theater. The baseboard is black-painted steel, and projection and sound equipment is housed in an enormous ribbed, galvanized-metal pipe made into a cabinet. A segment of the original brick wall has been left exposed, adding to the interplay of materials. A second, smaller conference room can be used separately or joined to the large one.
Although the Director Building originally rose just seven stories, the architects extended the structure with a pair of progressively smaller penthouses (plans below) set back from the building line. Thick gypsum-board partitions create semiprivate offices in the eighth-floor production area (below left). The agency’s upper penthouse features a conference room enclosed by walls made of perforated steel, glass, and exposed metal studs (top opposite), and a light-filled waiting room adjacent to the executive offices (bottom opposite).

Perimeter offices required a balance between the openness that is the agency’s style and the need for privacy in dealing with clients. The solution was sliding barn doors on a metal track; the hardware came out of a barn catalog.

Industrial lighting fixtures are used throughout the 17,500-square-foot space. Fixtures in the corridors, turned upside down for indirect lighting, are fitted with fluorescent octron lamps that meet the city’s stringent energy code. Next to the stairway on the seventh floor, docklights play on a wall display of the agency’s artwork, held in steel turnbuckles and heavy-gauge wire.

Given ZGF’s decision to make the most of the original structure, it is hardly surprising to find mechanical systems exposed. Ceilings are an intricate composition of light fixtures, copper pipes, and gleaming galvanized ducts. According to the architects, when the fabricator was told that the ducts would be exposed, he promised to take special care with them. He delivered on his promise.

The seventh-floor waiting area outside the main conference room features a black Italian-made sofa and two Saarinen “womb” chairs upholstered in a striped wave pattern. The room’s carpet was custom designed, and a constructivist table was built by a member of the agency staff. A pair of antique
neon-trimmed wall clocks are from the collection of the agency's creative director.

The eighth and ninth floors are located in two penthouses added before the agency leased its space. Because the building is on the National Register, the penthouses had to be set back in order to preserve a period appearance from the street. This created generous roof terraces that are well used by agency personnel.

The eighth-floor reception counter is made of perforated galvanized-steel panels fastened with oversized bolts. "We weren't shy about showing how we put things together," observes Duggan. The conference-room wall behind the counter is a combination of plywood, steel, and concrete block. A custom acrylic display system holds certificates of awards won by the agency.

The agency library overlooks a roof terrace, and the production department has eight-foot-high partitions built of gypsum board to avoid what the designers considered the "temporary" look of most office landscape systems. ZGF placed partitions away from the wall, allowing a second semiprivate means of circulation and communication between spaces. Where workstations are without windows, openings are cut in side partitions to share the light.

The ninth floor, reached only by the stairway, is a light-filled aerie. At the top of the stair is a small, cagelike conference room enclosed by glass-covered perforated-metal sheets. The executive office opposite has large areas of glass opening onto the roof terrace. Along with a second library and a set of small offices, there is room for this growing agency to expand.

**DONALD J. CANTY**

**BORDERS, PERRIN & NORRANDER, INC.**

**PORTLAND, OREGON**

**CLIENT:** Borders, Perrin & Norrander, Inc.

**ARCHITECT:** Zimmer Gunsul Frasca Partnership (ZGF Interiors)—Brooks Gunsul, partner-in-charge; James N. Van Duyne, director of interior design and project manager; Sharron Duggan, project designer; David R. Brown, job captain; Craig S. Norman, Kitty Myers, project team; Molly Haatia, administration

**ENGINEERS:** James G. Pierson (structural); Long Engineering (mechanical)

**CONSULTANTS:** Ramsby, Dupuy & Seats (lighting); Tom Coffey (custom furniture)

**GENERAL CONTRACTOR:** Michael Purcell Construction Management
Walls of groutless split-face block and slate in the seventh-floor reception area contrast with the metal-and-glass palette used elsewhere. The conference-room door is clad in a glass fiber grid.
Throwing a Curve

Though Arthur Cotton Moore says his collection of furniture is inspired by the elaborate shapes of Baroque architecture, the metal ingredients are the stuff of mass-production.

To many, "Industrial Baroque" is a contradiction in terms, but not to Arthur Cotton Moore. In fact, the architect likes the incongruous sound of his newly coined style—"Industrial Baroque" points out what is missing in the architecture of today: an aesthetic that is based on curved, mass-producible shapes," he explains.

Moore's unlikely union of two distinct approaches was on view for the general public last spring in a one-man show at the Barbara Fendrick Gallery in New York City. Included in the exhibition were Moore's water-color, acrylic, and ink paintings of such Baroque building parts as pediments, columns, capitals, and cornices, which he "industrialized" with exposed bolts, rivets, and fastener plates (right and opposite). Also on display was furniture that the architect initially designed for his own home—a collection of side tables, dining chairs, floor lamps, fireplace mantles, and flower-pot holders now being mass-produced under license with New York City-based Dennis Miller Associates (photos above and opposite).

Like his paintings, Moore's furniture has the elaborate curves often associated with 17th-century Baroque architecture, but in this case they are made from cut and welded steel elements. For example, the S-shaped base of an 18-inch-wide, 21-inch-high glass-topped side table (photo bottom right opposite) is fabricated of 8-inch steel pipe that is split into two 4-inch-wide rings and then welded and molded into shape. Before the base is painted, it is primed and sanded several times to achieve a seamless satin finish.

Industrial Baroque on an urban scale

Moore's self-styled "exploration in curvilinear form" is, to some, simply curlicues added onto otherwise ordinary metal furniture. Yet the architect's domestic-scale work has larger-scale implications. Referring to such completed urban schemes as Washington Harbour, a mixed-use waterfront complex of apartments, offices, shops, and restaurants [Record, January 1987, pages 84-93], Moore explains, "I have been using tubular shapes in my buildings for some time now to give the compositions a sensation of flowing space."

Moore may find the response to his preoccupation with the Baroque more favorable outside of his home town of Washington, D.C., a city known for watchful architectural advisory boards and preservation-minded community groups that prefer deferential background buildings to more ambitious artistic statements.

Yet it is in this heavily scrutinized community that Moore has built his successful practice, largely on infill, renovation, and adaptive-use projects. His firm is currently at work on the $80-million interior restoration of the John Adams and Thomas Jefferson buildings of the Library of Congress—a complex undertaking which reaffirms Moore's belief that a Baroque flair for detail is essential not only in enlivening old monuments, but also in creating new ones.

Karen D. Stein

For further information, contact:
Barbara Fendrick Gallery, 568 Broadway, New York, N. Y. 10012.
Dennis Miller Associates, 19 West 21st Street, New York, N. Y. 10010.
Arthur Cotton Moore has rendered his vision of Industrial Baroque in ink, watercolor, and colored pencil—"Drum and Sheet Metal Ribbon Capital" (opposite center) and "Arched Metal Pediment" (below)—and in aluminum and glass. Different models of lamps (opposite left and far right) and side tables (near right and below) are part of his collection.
Pieter Zaanen converted the former goods-exchange hall into exhibition space for the Foundation Beurs Van Berlage. Velvet banners were installed to improve acoustics.
Cultural Exchange

The concert halls, exhibition space, and café created by Amsterdam architect Pieter Zaanen inside H. P. Berlage’s 1903 Exchange Building are as innovative as the original building.

The south facade of Berlage’s Exchange faces Beursplein Square.

Beurs Van Berlage
Amsterdam
Pieter Zaanen, Architect

The completion of H. P. Berlage’s Exchange Building in the historic heart of Amsterdam in 1903 marked not only the turn of the century, but also the arrival of a new epoch in European architecture. Berlage resolutely turned his back on then popular historical styles and anticipated the direction architecture would take in the 1920s and ‘30s. Today, with a new century at hand, 58-year-old architect Pieter Zaanen has deftly and respectfully adapted Berlage’s monument for contemporary use.

Amsterdam-based Zaanen—who studied with a varied group of Modern masters that includes Frank Lloyd Wright, Le Corbusier, and Gerrit Rietveld—specializes in adaptive use. In addition to remodeling local theaters and cafés, he was recently commissioned to renovate the city’s oldest artists’ society, Art et Amicitiae, which, by coincidence, was last refurbished by Berlage. Zaanen and his staff of 12 are also responsible for a master plan to convert a 19th-century jail into a complex of housing, shops, offices, and restaurants.

The renovation of the Exchange was surely one of Zaanen’s more daunting assignments. The building now has three principal tenants: the Netherlands Philharmonic Orchestra, the Foundation Beurs Van Berlage, and the Grand Café Berlage. Zaanen’s original commission was from the Philharmonic, which required rehearsal and performance space. The orchestra’s plan to move into the Exchange was timely: the building had just been rejected as the home of the Architecture Institute, and the city’s powers-that-be were relieved to find a cultural use for it.

Although the ventilation and heating system and the glass roofs were in need of modernization, the building was structurally sound. Some of Zaanen’s alterations were prompted by new functional requirements: he reopened a closed-off entrance on one side of the building for the orchestra and around it made room for the Grand Café Berlage (the basement was converted into a kitchen), which is adorned with existing tile tableaux by Jan Toorop—rather stark allegories of past, present, and future. Zaanen wanted to move one of Toorop’s works to the back hall—in accordance with Berlage’s original design—to make a connection between the Café and the former goods exchange, but landmark groups objected. The goods exchange, located behind the Café, is now used by the Foundation Beurs Van Berlage for design exhibitions. To improve the hall’s acoustics, Zaanen hung a chevron of banners from roof trusses—3,600 square feet of blue, green, and yellow velvet.

The conversion of the former shipping exchange room into the 600-seat Wang Concert Hall, which opened in May 1988, was largely a question of introducing enough acoustic absorption to reduce the reverberation time.

The second performance space, AGA Hall, was a more complex undertaking. It is located in the adjacent grain exchange, and its proximity to Wang Hall resulted in acoustic leakage—a problem further exacerbated by the noise of outside traffic—
Wang Hall, shown from the stage (large photo) and from the entrance (inset), occupies the former shipping exchange and is the first of two spaces converted by Zaanen and his team into a concert hall for the Netherlands Philharmonic Orchestra.

1. Wang Hall
2. AGA Hall
3. Exhibition Hall
4. Grand Café
Berlage

and insulation would have obscured the brickwork and polychromed tile friezes. The approach Zaanen chose was an acoustic envelope: a box within a box.

Zaanen first looked into the use of 27-foot-high ribbed glass panels, but this proved too costly. The solution he eventually devised with structural engineer Mick Eekhout proved more economical: a 6,000-cubic-foot box of 5.5-foot-square tempered glass panels that rests on a concrete base. (The design required foundation reinforcement in the form of some 20 new concrete piles alongside the original wood piles.)

Even though the panels are just 0.32 inch thick, they provide sufficient noise reduction. The panel at the top bears the dead weight of those suspended from it. On three of the four walls the glass panels are tinted gray and are arranged flush on the outside; inside they are connected by X-shaped “Quattro Nodes” at the corners and stabilized and stiffened by cross
The all-glass AGA Hall, which is used for chamber-music concerts, is in the former grain exchange. Tempered gray-glass walls permit views of Berlage's yellow-brick structure and Jan Toorop's tile friezes depicting agricultural themes. Zaanen's metal triangles and fabric "kites" improve acoustics.
bars and tensile rods. Bolt holes were cut with a water laser jet by Swiss glass manufacturer Securit.

Although the Ministry of Economic Affairs provided a subsidy for technological innovation, Eekhout wanted to go one step further. "We were working on a system of loadbearing glass panels for the roof," he says, "which we have since realized elsewhere, but at that stage it was too costly and time-consuming. Instead, the roof area is a space frame supported by six columns." Lighting is hung above the roof, along with a sliding bridge for window-washers.

Zaanen originally designed the rehearsal hall as a rectangle, but later gave one wall a bulge he calls a "cello belly" that mutes flutter echoes. This curved wall, the structure's only clear-glass surface, also has a different support system: 13 columns the architect dubs "organ pipes." Perforated metal triangles hang along the orthogonal walls; the white "kites" hovering above the stairwell retract sound from the hard front, while the curved glass back wall diffuses it.

Since glass walls did not provide enough support for doors, Zaanen anchored two steel columns to the concrete base to serve as freestanding doorposts. For door handles he selected the bright yellow plastic grips with suction cups typically used for transporting glass sheets—a playful reminder, he says, not to take all the hall's structural virtuosity too seriously.

Though it had been intended only for chamber-music rehearsals, the glass box has proven so successful since it opened last April that it is now used for performances. A surreal sensation of visual weightlessness is heightened by the fact that musicians enter the hall from subterranean dressing rooms. Once inside the box, the sleek walls seem to dissolve, and the structure disappears like a soap bubble. Careful to keep all new elements literally separate from the original structure, Zaanen has achieved the near-impossible—an architectural intervention that both defers to, and stands apart from, Berlage's finde-siecle masterpiece.

TRACY METZ

Beurs Van Berlage
Amsterdam
OWNER: City of Amsterdam
ARCHITECT: Office of Pieter Zaanen—Pieter Zaanen, principal-in-charge; Kees Spanjers, project architect
ENGINEERS: Octatube Space Structures, Inc.—Mick Eekhout, principal-in-charge
CONSULTANTS: Peutz (acoustics)—Rob Metkemeyer, principal-in-charge
GENERAL CONTRACTORS: Hillen & Roosen (frame, finishing, AGA Hall); Octatube Space Structures, Inc. (glass, AGA Hall)
In the Grand Café Berlage, Zaanen inserted a bar between existing Berlage arches. Triangles are a leitmotif of Zaanen’s design.
Company Manners

Classical deportment and understated ease tune a financial firm’s corporate offices to its low-keyed suburban surroundings.

Dean Witter Financial Services Group
Riverwoods Corporate Place
Riverwoods, Illinois
Lohan Associates, Architects

The first building of an office park set in a low-density residential area on Chicago’s northern outskirts, the new Dean Witter corporate offices rise above the typical suburban office building despite the low profile dictated by local zoning.

To reduce its intrusion on the surrounding community, the 600,000-square-foot building was kept to three stories (stepped up to four at the rear slope), and its immense floor areas scaled down by dividing them among the four wings of a cruciform. This created a natural hub for the building’s common areas, chief among them a four-story rotunda. Although the atrium reinforces the image of stability and substance embodied in dignified facades of glass and granite, it also exemplifies the architects’ search, on behalf of the client, for public and executive spaces that meet—and signal—conformance with a “sensible” budget, avoiding ostentation.

As a bridge between indoors and out, the rotunda echoes the exterior by means of a colonnade of faceted columns and patterned spandrels across the balconies. Both are precast concrete clad in a granite chosen for the marked contrast between the gray-green of its flamed surfaces and the intense Nile green it reveals when polished, a palette augmented by walls of Tinos marble and a spoke-patterned floor of granite and limestone.

In keeping with its additional roles as public entrance and internal connector, however, the atrium also displays a lighter touch in the deep russet-red of the balcony’s metal balustrades and in the sleek oval of the reception desk, which boasts corrugated stripes modeled, confesses interior architect Michael Heider, on the grille of his father’s old Cord automobile. Blue and blue-green upholstered seating groups scattered “like confetti” across the russet rug may be moved to make way for receptions and other large gatherings.

Employees approaching from parking lots bypass the central rotunda, arriving at side entrances linked to it by flanking skylit galleries. Furnished with seating areas and, on the ground floor, such conve-

Disengaged exterior columns and flamed and honed granite cladding herald the rotunda interior.

The rotunda’s size is scaled down by means of complementary color and form.

© NICK MERRICK, HUDSON/ELESSING PHOTOS
The servery linking the atrium and dining room (plan and photo below) is a muted passage where simple forms in rich russet and deep blue are relieved by the brightness of accent lighting and signage. In the semicircular dining room (right), which is naturally lit by broad windows overlooking a terrace and lake, neutral and wood tones are added to the palette. The amphitheater’s sweep is accentuated by the curve of its banquette and coffered ceiling.

At either side of the atrium, skylit galleries with open stairways (left) provide vertical and horizontal passage among office floors.
nences as banking machines and shops, these extensions of the atrium serve as internal streets with gently pitched open stairways whose railings duplicate those of the rotunda's balconies. Gallery walls mimic in paint the patterning of facades visible through large end windows.

The architects' ability to wrest rich results from slender means is apparent too in the employee dining facility that occupies the broad angle at the rear of the building. Entered from the rotunda by way of a connecting servery, the daylit expanse of the dining room echoes its curve in a tiered amphitheater focused on a glass wall that overlooks an outdoor dining terrace and landscaped man-made lake. In addition to breaking the 700-seat space into more intimate seating areas, the bowed and stepped form also encourages its use as an auditorium for public functions and company training sessions. The reinforcing are traced by the fat paired columns is illusory, however; the true columns parallel the outside wall; the doubles suggesting radial lines are fakes.

The modified palette introduced in the food-service area—blues and neutrals with accents of wood—comes to the fore in the second-floor executive area. From the mini-rotunda of a reception lobby, a central enfilade follows a row of outsize columns that leads past flanking conference and dining rooms to the long secretarial hall guarding executive offices.

Again, the elegance is achieved with modest means. Neutral carpeting and two-toned fabric-covered walls set off the African mahogany used sparingly but tellingly for such fittings as chair rails, baseboards, and file banks. In the meticulously detailed horseshoe-shaped secretarial workstations and ceiling-high office doors, inlays and overlays of a darker-toned burl-grained mahogany stand in for rare woods and costly cabinetry.

MARGARET GASKIE
Dean Witter Financial Services Group
Riverwoods Corporate Place
Riverwoods, Illinois
Owner: Dean Witter Financial Services Group
Developer: Homart Development Company
Architect: Lohan Associates—Dirk Lohan, principal-in-charge; Jack Bowman, design principal; George Halik, project manager; Greg Williams, project designer, architecture; Michael Heider, project designer, interiors; Karen Lindblad, design coordinator; Thomas Bair, on-site representative
Engineers: Chris P. Stefanos (structural); Jaros, Baum & Bolles (mechanical/electrical); Bollinger, Lach & Associates (civil)
Consultants: By Design (landscape); McCabe & Co. (food service); Schirmer Engineering Corp. (life safety); Walter Anderson (hardware)
General Contractor: Morse-Diesel, Inc.

Flanking dining and conference rooms (above) introduce executive offices.
In the executive suite’s long reception hall (bottom opposite), islands of seating are interspersed with secretarial workstations (details this page). Like miniature offices, the horseshoe-shaped stations are equipped with word processors and files which augment file banks set into the walls (background in photo right). All fittings are of African mahogany.
Behind an aluminum and ceramic-tile storefront (top opposite), American Standard faucets sit atop copper piping attached to metal walls. The faucets run all day, filling the showroom with the sound of splashing water.
A maze of cubes and the sound of running water set the tone for Tigerman McCurry’s bathroom-fixture showroom in New York City.

American Standard Showroom
Long Island City, New York
Tigerman McCurry Architects

No project so clearly exemplifies Tigerman McCurry’s longstanding effort to marry logic with whimsy than the Chicago firm’s new showroom for American Standard at the International Design Center New York. Like many manufacturers, American Standard had previously exhibited its line of bathroom fixtures in elaborate model rooms, located on the ground floor of the company’s midtown Manhattan headquarters. By moving its showroom across the East River to IDCNY, American Standard sought not to abandon totally its time-honored bathroom-suite displays, but to embellish tradition with something that would attract the attention of New York-area architects and interior designers.

Tigerman McCurry responded by dividing up American Standard’s 6,000-square-foot space into a three-dimensional structural-steel checkerboard comprising 24 10-foot cubes—alternately finished in black and white—that fit neatly into IDCNY’s existing 20-foot-on-center concrete column bays. The white cubes showcase the manufacturer’s fixture lines the old-fashioned way, in settings that mimic real bathrooms; the black cubes, by contrast, spotlight the same products with a special Tigerman McCurry twist—fixtures are
Two showrooms have been set aside for rotating exhibitions of invited designers' work. In one (above left), Stanley Tigerman hung a bathroom suite from the ceiling, skewed wildly off the axis of a similar floor-mounted group. In the second (above right), Margaret McCurry created a fountain out of 11 sinks and 15 taps that drip softly under a canopy of forest-green bath towels.

mounted on the wall or, in a few cases, suspended from the ceiling. The goal, says Stanley Tigerman, is "a maze that will amaze by subsuming the architecture of the whole to product."

The exhibit portion of the showroom is set above raised access flooring laid over a 10-inch-deep pool. Aside from the obvious implied link between water and bathroom fittings, the pool forms the base of a perimeter fountain composed of company-made faucets installed atop exposed copper pipes. Filtered recirculating water runs continuously from the taps into the pool below, noisily animating the space.

Inside the cubes, the architects specified a cleverly varied palette of materials, ranging from honed white marble and black granite walls to perforated metal floors. (They also used more traditional glazed ceramic tile, but only sparingly.) One cube, for example, is sheathed in anodized aluminum tiles supported by cantilevered stanchions (top opposite), while another has plywood walls laminated in clear aluminum sheets (bottom opposite). All walls, whether metal, tile, or stone, are finished with neoprene washers and acorn caps that form a consistent diamond-shaped pattern throughout the showroom. Lighting is a combination of low-voltage pool lights that cast an eerie glow through black-glass and perforated metal floor tiles in the black cubes, and pendant or track-mounted halogen fixtures that provide more conventional display illumination in the white cubes.

Paul M. Sachiner

American Standard Showroom
Long Island City, New York
Client: American Standard, Inc.
Architect: Tigerman McCurry Architects—Stanley Tigerman and Margaret McCurry, partners-in-charge of design; Karen Lillard, project architect; David Knudson, Chris Gryder, Mark Lehmann, project team
Engineer: Kyong Andy Kim
Consultant: Paragon-Paddock (pools)
General Contractor: Visual Communications, Inc.
Nouvel Hotel

Behind the rusted metal awnings of Jean Nouvel’s Hôtel Saint James, located in the picturesque French town of Bouliac, are guest suites minimally appointed in shades of white.

Jean Nouvel is one of France’s leading architects. His Institut du Monde Arabe in Paris [Record, March 1990, pages 76-83] and the Némausus low-income housing in Nîmes [Record, June 1988, pages 128-137] have won him praise and world renown. Recent projects include the proposed Tour Sans Fin (endless tower) for the La Défense district of Paris, a redesigned opera house for Lyons, and the future French pavilion at the Venice Biennale, which was approved last May. In the same month, Nouvel’s design for a cultural center in Lucerne beat out 117 other international applicants for the commission. Benjamin ivory, a Paris-based correspondent for Newsweek, spoke with Nouvel about his newly completed Saint James Hotel and Restaurant, near Bordeaux.

Benjamin ivory: In Patrice Goulet’s book about your work, you are quoted as saying that you have been “traumatized by competitions.” How did you get the commission to design chef Jean-Marie Amat’s Saint James Hotel and Restaurant? Was it another trauma?

Jean Nouvel: Not at all, it was a direct commission. Amat started out by holding a competition among local architects in Bordeaux. As you know, Amat is considered one of the greatest chefs in France. He had a restaurant in the center of Bordeaux that was world famous. But then he discovered the site at Bouliac, which dominates the city, with a beautiful view of the surrounding landscape. I guess he decided that he had enough of Bordeaux, or rather that it would be even more beautiful to be at Bouliac. But there was only a single large building there. When he asked some local architects to [renovate the building and] design a new restaurant and hotel, the results did not please him at all. Each of the local architects placed the project in the middle of the site and didn’t show enough care for the terrain. So Amat declared the competition null and void (as you can imagine, the local architects were not at all happy about that) and instead asked a small number of nationally based architects for ideas. I was the second one he asked, and I was very interested in the project.

Bl: I understand that you like to talk over projects with your team in restaurants.

JN: My main hobby is gastronomy, and I have always been horrified by the décor in even great restaurants—all of the chi-chi and folksy ornament. For me, the way most great restaurants look spoils a part of the pleasure of the cuisine. This point of view fit in well with Amat, who also has an interest in contemporary art. For the Saint James project, we did a lot of brainstorming in restaurants—sessions that lasted for hours. It is well-known that a few glasses of wine can loosen the tongue and stir wells of creativity.

Bl: What was the building like before the renovation began?

JN: Amat had a big old house that presided over the valley of the Garonne River. But the old building had a kitchen that did not suit his purposes, and a restaurant space that was no good either. He wanted to add hotel rooms for guests, which he didn’t have space for, as well as a completely new kitchen and cellar.

Mind you, Amat is interested in the local traditions of Bordeaux, but he didn’t want to make additions in a kind of archaic local or rustic style. In his cooking, he is very inventive and contemporary, incorporating new elements from North African cuisine. He wanted the newly designed building to be equally adventurous and contemporary.

Before, he simply had a country house. When I first visited it, I was struck by the charm of the place. The terrain descends gently and then suddenly plunges as it approaches the river. There are trees just at the line marking the deep plunge, so there is a first horizon in the view and then another one further on. I wanted to preserve this virgin character of the landscape. So we broke up what was the big house into four separate houses, extending it from what was already there. It’s all based according to a strict geometric system.

Bl: What is the physical situation of the town? What sort of people visit the hotel and restaurant?

JN: Bouliac is a little village with a belltower, much like the one on the Presidential seal of François Mitterrand. Bouliac is an agricultural place, and I feel strong ties to it because I was born nearby, in the Dordogne region. The area is noted for its tobacco hangars, where the leaves of tobacco are hung up to dry, and I drew on this tradition for part of my design. The hotel became a sort of extrapolation of the local tobacco hangars.

As for the guests, they are sometimes still a problem. The hotel isn’t as full as it could be. That’s because Amat insisted on not compromising to fulfill what might be the expectations of some guests. The rooms, for example, were designed to be very Spartan and bare. But sometimes guests arrive who haven’t been warned about what to expect, and they say, “Oh, I see you haven’t had time to install the carpets yet.” There are even a
Nouvel designed three-foot-high beds of bleached ash to exploit views of the rolling hillside. Incorporated in the headboard cabinetry are electronic controls that operate adjustable metal window shades and halogen light fixtures. The material palette of the interior includes wax-treated plaster walls and polished concrete floors.
The floor plan of each of the hotel buildings has a different configuration to accommodate owner Jean-Marie Amat’s requirement for guest suites in a range of prices. For example, in Building B (plan top right), beds are located in an alcove at the end of a foreshortened corridor. In Building E (plan top left), the bathroom occupies the core. Building D (plans middle) offers two variations of the more standard rectangular room. In Building C (plans bottom), the bed is treated as a sculptural object placed in the center of the space. In addition to the beds, Nouvel designed tables and chairs.

few guests who get mad and say, “I don’t want to sleep in a prison, or morgue, or hospital.” They find the minimal design offensive. They would rather be cozy. You see, we French were invaded by the English centuries ago, and at least one result has remained with us: the obsession with coziness. Of course, some guests are open-minded and they are deliciously surprised. Amat feels that a hotel should not be a home-away-from-home. For him, a hotel is part of the voyage. A guest should feel slightly displaced, in a universe where he might want to stay for a day or two, but not necessarily where he would want to pass his whole life.

Throughout the project, Amat was courageous. We made some errors, and tried to do everything too quickly, in only six months. We opened the hotel before it was completely finished. The local people of Bordeaux are very tradition-minded. They are not enthusiastic about the hotel. But by contrast, it is full whenever there is an art show or music festival in Bordeaux. And people visit from other areas. Bordeaux’s Modern Art Museum is famous, and attracts many visitors who can appreciate Amat’s hotel. But the usual travel-agency clientele, business people, or vacationers are not always sent there, because they might not like it. I warned him about it, saying, “Remember, you have a traditional clientele.” He replied, “Never mind, let’s go ahead. Just do as you like.” Yes, he was courageous.

BI: Did you plan any more structural changes, apart from making four buildings where there was only one?

JN: We still want to add more rooms under the roof, and a heated swimming pool 35 meters long but only 3 1/2 meters wide, enough for two lanes of swimmers.

BI: How about the rusted metal awnings?

JN: They have an ambiguous quality, picking up on the color of many roofs in the village. The real walls of the hotel are behind the metal awnings, which are worked electronically, raised and lowered to let in sun or to create shadows. Inside the rooms, everything is white, which encourages the play of light and

Continued on page 207
In some rooms, the bathtub is separated from the bedroom only by a glass partition to promote "conversation," according to the architect.
Change In Scene

For a chaotically creative film company in Los Angeles, Craig Hodgetts and Ming Fung assembled a Constructivist open-office landscape out of workaday components.

Craig Hodgetts and Ming Fung aren't interested in making heroic architecture. They don't want to waste money on a grandiose facade, entrance, staircase, or applied ornament. They are interested in scenography—how to create working sets for working lives. In designing the new offices of the fast-growing Hemdale Film Corporation on Beverly Boulevard in West Hollywood, Hodgetts and Fung developed a flexible palette of technology-derived elements and, in the process, produced an elegant machine for working, all at the modest cost of $57 a square foot.

Though a fascination with adapted mechanical gadgets has marked the work of the Santa Monica-based firm Hodgetts & Fung Design Associates since its founding in 1981, in this case the design approach was suggested by the client. "They wanted something that looked like the set of the movie Brazil," recalls Fung. But the architects felt that the science-fiction atmosphere had to be humanized to accommodate "a company of creative types hiding away in nooks and crannies." What's more, the independent movie producer faced a real-life dilemma: how to handle the vast volume of paperwork necessary to supervise its various film projects.

Hodgetts and Fung found the solution to these problems in their design of a workstation of off-the-shelf components, which they expanded on with "architectural elements that could be extended all of the way through the building," according to Hodgetts. Beginning with ample shelving units, desktops, and computer-support returns, the architects devised their own no-nonsense structure: computer-wire raceways, which double as modesty panels, metal extrusions whose rounded aluminum shapes mimic custom-made...
A two-story atrium brings light into center offices (above and opposite, right), while creating a dramatic visual focus for executive offices on the top floor.
air-conditioning ducts suspended overhead, and colored plywood panels (drawings page 108).

Once the design of the workstations was determined, Hodgetts and Fung had to arrange them within an existing four-story, 100-foot-deep building with elevators and staircases located along the perimeter. The architects gave a derelict facade a much-needed facelift (small photo page 104) and in order to bring light into the dark core, they carved a rectangular void into the second through fourth floors that pops out of the roof as “a lantern to light the whole building.” Frosted glass and aluminum partitions around this light well (page 105) echo the materials of the workstations and form translucent screens around the central open space.

Hodgetts describes the result as “layers of shrouding—a luminous envelope placed over a structure that can be straightforward and crude, since it is screened by an elegant enclosure.” Because this designed incision reveals the metal and wood of the existing structure, the overall effect is to exhibit the structure of the 1961 building, down to the spotwelds and exposed joists, while bringing this architectural “display” into the present with the addition of more up-to-date technology. In addition to the kit-of-parts workstations and the layers of translucence, Hodgetts and Fung added elements to underscore certain spaces: a curved soffit that follows the stepped configuration of private offices on the third floor (page 108), and red and yellow objectlike rooms on the second and third floor for copy machines, file cabinets, and additional office equipment have walls and ceilings painted in saturated tones.

Hodgetts and Fung bridged time and space by revealing the old structure and inserting new elements in overlapping patterns. Plywood panels mimic original wood flooring (below), and Hodgetts and Fung’s aluminum ducts weave through existing raw steel beams (above).
Private offices are located around the perimeter of the building. Aluminum-framed partitions of clear and frosted glass give privacy while permitting sunlight to filter to open-office workstations in the core.
Detailing throughout the office enforces the architects' notion of components assembled inside an envelope. Interior walls are notched back from exterior walls, and horizontal and vertical planes overlap, allowing lines from one wall to continue in the next. Taking cues from the movie industry, Hodggets and Fung composed a sequence of enclosed rooms and overlapping spaces, whose sum total is more than just a stage set.

Aaron Betsky

Hemdale Film Corporation
West Hollywood, California
OWNER: Hemdale Film Corporation
ARCHITECT: Hodggets & Fung Design Associates—Craig Hodggets and Ming Fung, partners-in-charge; John Trautman, project architect; Rachel Vert and Bill Molthen, project team
ENGINEERS: Robert Lawson (structural); The Sullivan Partnership, Inc. (mechanical); Nikolakopus & Associates (electrical)
CONSULTANT: S.O.T.A. Design (furnishings)
GENERAL CONTRACTOR: Pacific Southwest Development, Inc.

Workstations combine custom-designed elements and off-the-shelf components.
Angled yellow-and-white soffits help diffuse natural light that filters into perimeter offices. Plywood and painted surfaces of open offices echo the colors of existing brick, wood, and steel.
Penthouse Suite

Steven Forman has renovated a triplex apartment in midtown Manhattan into an urban house for a couple with a growing family. His solution: a calm backdrop for busy lives.

Manhattan Triplex Apartment
New York City
Steven Forman, Architect

In the early 1980s, the overheated housing market in New York City fostered the development of a residential building type dubbed the “sliver”—a tower shoehorned into a town-house site. Although permitted by city zoning regulations in effect since 1961, many of the resulting tall, skinny structures were considered unwelcome intrusions by their more venerable low-rise neighbors—they obscured desirable views and cast long shadows—though from their occupants’ perspective, they provided all the amenities of an apartment building and the charm of a low-density block.

It is in just such a building in midtown Manhattan—one of the last slivers erected before changes in zoning regulations put an end to their construction—that 35-year-old architect Steven Forman was commissioned to renovate a trilevel penthouse vacant since its completion in 1982. Looking beyond the awkward existing layout and standard finishes provided by the building’s developer, the apartment’s new owners—a jewelry manufacturer and his wife, a jewelry designer—recognized that with the appropriate renovations, the 2,900-square-foot space could approach their ideal of an urban house.

Forman’s clients were equally concerned about the kind of high-style entertaining one often associates with a Manhattan penthouse and the more mundane daily requirements of a growing family. In order to deal with this seemingly conflicting agenda, Forman devised what he calls a “theme of simultaneity.”

The physical form of Forman’s chosen theme called for a “both/and” approach—sleek and ordered public rooms with surfaces durable enough to withstand constant abuse by young children. It also demanded a carefully worked out vertical organization of the space, since horizontal space was restricted by the 25- by 100-foot floor plan of the building, with nearly one quarter of the footprint given over to two elevator shafts and a service stairwell (see axonometric drawings page 114).

Organizing the space, Forman made the topmost floor a “public” level of living room, dining room, and kitchen (opposite and top page 115), the middle floor a “private” level of bedrooms and bathrooms (bottom page 115), and the lower floor a “semi-private” level consisting of a family room/media center and two terraces totaling 750 square feet (page 117). Forman kept the apartment’s main entrance on the middle level, and added a new layer of security: an oversize front door, whose perforated stainless-steel panels allow you to see and speak with arriving visitors (inset left). To further screen the elevator from the foyer, Forman formed an entrance vestibule of curved glass block, with room for coat closets.

Inside, Forman made the apartment’s panoramic views of New York City the focus of his design. As if to underscore the vertical nature of the skyline, the architect designed a vertical beacon of his own—a 6-foot 9-inch-high column of sandblasted Pyrex rods, bundled together by metal rings, and forming a softly luminescent accent mark at the living room’s perimeter (opposite and page 112-113).

Contrast of solid and transparent
Built-in ebonized ash cabinetry lines living-room walls, hiding stereo equipment and a fully equipped wet bar, and acts as a solid foil to the transparent surfaces. According to Forman, the cabinetry is an inversion of Georges Braque’s use of black as a background color in his paintings. Claims Foreman, an avid student of Mod-
The entry foyer of the three-level apartment is on the second floor, behind the living room.
ern art: "Black is typically perceived as a visually negative background or framework in a composition, much like the early paintings of Braque. In this case, however, the cabinets are the positive foreground elements of the composition."

A red-leather club chair and red piping on the sofa's muted gray cushions are the only vibrant colors in the room; Forman selected a muted palette as a backdrop for the owners' growing art collection. Here, as throughout the apartment, Forman mostly maintained existing 9-foot ceiling heights, dropping down to 7-foot 6-inch soffits in some areas to accommodate spotlights, and to 6-foot 9-inch soffits that conceal hvac equipment. To differentiate the layers, Forman color-coded ceilings in three subtle shades of what he calls "bridge" gray.

Forman's scheme of overlapping spaces interrupted by sculptural partitions recalls other Modernist floor plans, especially those of the architect's previous employer, Gwathmey Siegel and Associates. For example, the architect recast an existing powder room into a capsule-shaped object that occupies a central position in the foyer/picture gallery (axonometrics page 114). A compact kitchen is separated from the dining room by a serving window that can be closed for formal gatherings. Inside the kitchen,

Forman transformed 72 square feet of terrace space into an eating alcove.

To connect the entry level to the den above and bedrooms below, Forman replaced existing wood banisters with custom-made brushed stainless-steel tubes whose curved corners echo the arc of the stairwell (photo page 114). On both landings, frosted-glass panels serve as lightbox diffusers and create a vertical stripe that spans the three floors.

Privacy below
With limited views of the outside, the 1,110-square-foot "private" level seems much smaller

The perimeter of the living room (photos opposite and left) is marked by Forman's custom light column of sandblasted Pyrex rods held together by stainless-steel rings. Built-in cabinetry of ebonized ash lines walls in solid contrast to the transparency of generous south- and west-facing windows.
Custom-made brushed stainless-steel handrails wind around the stairwell that connects the triplex's three floors (above). A curved powder room (photo below and axonometric middle) stands as a free-floating object within the entrance foyer. Forman inset a small mirror at the end of the dining-room table to give an illusion of infinite space (opposite top).

A curved glass-block partition screens the dining room from the 72-square-foot breakfast alcove, which occupies a former terrace. An oversized door separates the master bedroom suite (opposite bottom) from the rest of the lower level. Built-in cabinetry hides the bed from the bathroom on one side and from views outside on the other (axonometric bottom).
than the main level, but is in fact the same size. The master-bedroom suite occupies most of the floor and is separated from a narrow hallway and two smaller bedrooms by an oversized steel door befitting more ceremonial use. Inside, a built-in curved oblong vanity separates the sleeping area from a large bathroom, and massive closets screen views of the outside.

**Drama above**
The 600-square-foot top level contains a family room/media center and a semiclosed study with a bar. With ceilings rising to 18 feet, this 24th-floor aerie is the most dramatic space in the apartment. Large terraces flank the family room, which is outfitted with an imposing array of audio-visual equipment, all painstakingly placed within ash cabinetry.

Predictably, Forman's clients demanded a jeweler's precision, not only in the blending of many diverse elements into a seamless whole, but also in the project's construction. "They were relentless about details," says Forman, whose liking for architectural precision found a pair of kindred spirits. **Karen D. Stein**

**Manhattan Triplex Apartment**
New York City

**Architect:** Steven Forman Architect—Steven Forman, principal-in-charge

**Engineers:** Cawsie Jijina Consulting Engineers (structural); C. T. Vogel, P. E. (electrical/mechanical)

**Consultants:** Sandra Forman Architect (interior design); Carl Hillman Associates, Inc.—Donald Leithauser (lighting); Audio Interiors, Inc. (audio-visual)

**General Contractor:** Herbert Construction Company—James Stumpf; Evan Ertrachter, Philip Strina
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.

©1990 EFCO Corporation

Circle 49 on inquiry card
If this is your idea of a place in the country...

These are some of our ideas on how to get inside.

Whether you're designing for a chateau or a cottage, Omnia has a lockset that provides the perfect complement.

For exterior or interior applications, our collection of designs includes over sixty finely crafted solid brass locksets in a range of finishes. And, some feature chrome, marble, clear acrylic, gunmetal, bronze or porcelain accents. Whether you select a traditional or contemporary style, Omnia locksets provide a level of detail that will enhance any setting.

Omnia locksets may be specified as mortise or deadbolt installations on standard entries, or as narrow backset mortise locksets for French and patio doors. For interior requirements, a full range of functions is available.

Whatever your idea of the perfect place may be, let our unique blend of security and exceptional design grace all your entryways. Omnia hardware is available through leading distributors coast to coast.

For the name of your nearest dealer, please contact...Omnia Industries, Inc., Five Cliffside Drive, Box 530, Cedar Grove, NJ 07009, (201) 239-7272.

OMNIA
INDUSTRIES, INC.
The Leader in Elegant Design

Circle 50 on inquiry card
Redwood

Natural beauty, durability and stability make it the natural choice for creative designs that endure. Send for Redwood Architectural Guide.

CALIFORNIA REDWOOD ASSOCIATION

405 Enfrente Drive, Suite 200 • Novato, CA 94949 • (415) 382-0662

ARCATA REDWOOD COMPANY • MILLER REDWOOD COMPANY • THE PACIFIC LUMBER COMPANY • REDWOOD EMPIRE, INC.
LOOKING UP

Ceilings don’t need to be the Cinderellas of building design.

Having recently had occasion to review several hundred submittals to various award programs, and with a sharp eye for building detail as I travel about the country, I feel I must share an impression (which, by the way, I have in common with other observers).

I refer to ceilings. With all the design thinking that goes into a building’s siting, massing, texture and color; all the effort to achieve fresh interior space sequences and appropriate ceiling, wall and floor treatments; the ceiling itself all too often reads like an afterthought—a place into which you have to cram a potpourri of ambient and task lighting fixtures, air supply and exhaust registers, burglar and smoke alarms, sprinklers, public address system outlets, partition holding channels, acoustic absorption, and more.

A major reason that many submittals failed to make this RECORD INTERIORS issue is ceilings so poorly designed that they brought down the quality of the entire project.

It’s not as though the products aren’t here to do the job. Even a cursory look at the product literature reveals a broad range of tools to help carry on. Rather, it’s a matter of doing better when thinking through the program requirements, and coming up with a fresh solution that integrates all those ingredients into a coherent, attractive whole.

Consider, for example, the sea of possibilities in 3-D ceiling configurations. What about vaults of different shapes and diameters, the coffered effect of ribbed concrete, the suspended lighting grid, the exposed wood beam or truss, greater use of natural light, more ingenious configurations using off-the-shelf acoustic ceiling units, switching some subsystems currently in the ceiling to a raised floor, suspended reflective polished metal slat systems, even a contemporary version of the good old stamped tin ceiling—all of these and more are grist to a more sparkling approach to ceiling design.

There’s also room for more creative connections between ceiling and walls, using cornices, notch details or other devices, reinforced by lighting.

The technical tools are there. The rest is design.

Stephen A. Kliment
Even at Princeton, where the dialogue between old buildings and new is more civil than on many campuses, Kliment & Halsband's 14-year-old computer science building shows unusual regard for its surroundings, going so far as to address neighbors not yet built. Its posture answers both to a pivotal site and to the outlook of the computer science department, which though organizationally a part of the engineering college perceives itself as a discipline that bridges to the "pure" sciences and the humanities as well. So while the new building is located directly opposite the engineering complex at the far eastern fringe of the campus, it also asserts its bonds with the larger institution.

In plan, massing, and materials, the computer center is composed around three portals expressed as towers. The most predictable is a slender shaft at the northeast corner, open to the main entrance of the engineering school and a secondary street to the north. The primary entrance, however, is on the south (opposite), where the entire end of the building shapes a broad bay looking up and down McCosh Walk, the loosely delineated but heavily travelled footpath that is the major east-west route through the campus. From the bay a glazed colonnade curves around to the third portal, which defines the corner of an as-yet-phantom courtyard framed by the sites of three future buildings that will replace an existing parking lot.

The implied hierarchy reflects a four-story plan that places generous common spaces for scholarly colloquy in the encompassing curve of the building-wide bay, and deploys the adjoining colonnade at ground level to serve as the combined lobby for a formal lecture hall and a tiered demonstration classroom wired for workstations. The remainder of the ground floor and part of the basement contain additional classrooms and workstations, while the upper floors house offices for faculty, research staff, and graduate students along with seminar rooms and laboratories. The main computer room and administrative offices are on the second floor, as is a tea room that is the scene of daily afternoon gatherings.
In opening a dialogue among distinct campus neighborhoods and styles, Kliment & Halsband’s computer science building for Princeton University speaks to the future as well as present and past.
The computer science building’s external form and materials reflect not only its internal organization but its regard for near neighbors. The composition is based on three entrance towers distinguished by limestone base portals and window casements as well as limestone headers in their Flemish-bond brick cladding. Of the three the most prominent is the limestone-faced building-high bay on the south (top right), where a porch opens.

The building’s inner organization, like its three-way orientation, is also marked by varying surface treatment and fenestration. Each entrance tower, for example, raises from its limestone base a tapestry-like cladding of red Flemish-bond brick lightened by limestone headers and window casings. The south front’s more candid link to the broader campus is further defined by a full-height limestone frontispiece over the main portal, where a porch and broad steps provide a hospitable gathering place for students traversing McCosh Walk. Flowing seamlessly from the porch, the colonnade’s curve of broad windows overlooking the quadrangle-to-be is surmounted by a modulated pattern of brick and limestone that smooths the transition to solid brick at the north end and west front. These are broken by the shallow reveals of gray-painted aluminum windows in which upper “panes” of opaque metal substitute for glass, indicating the lowered ceilings that accompany the shift from the communal spaces of the south bay and secondary entrance towers to more workaday offices and labs.
to a major pedestrian path through the campus. The glazed limestone colonnade and corner entrance on the east (below and bottom interior detail) will edge a future quadrangle, while the third tower ends a west facade keyed to the unadorned face of the adjacent engineering complex. The three-high stack of major computer laboratories that dominates the building’s northeast segment (left in section and photo below) is marked by a mechanical penthouse.
Within the computer center's four stories, the first and basement floors house spaces used by undergraduates: standard classrooms and workrooms (below left) as well as more specialized spaces such as the large lecture theater (top right opposite), a small tiered amphitheater for demonstrations, and the sweeping glazed colonnade that is lobby to both. A grand vaulted and paneled staircase (left opposite).

Although the principal computer rooms and special classrooms are served by raised access flooring, the wiring needed for offices and work areas travels through cable trays that run along nine-foot-high ledges in the corridors and feed into interstitial walls (see axonometric at right and third-floor plan top right), where it can be tapped at will.
leads to the upper three floors, which contain the principal computer rooms, offices for graduate students, research staff, and faculty, and, on the second floor, administrative offices overlooking a roof terrace above the colonnade. The south bay is reserved for such communal spaces as the tea room and adjoining anteroom (bottom left opposite and bottom right, respectively), seminar rooms, and a small library.

By extending but respecting the vocabulary of the campus environment, the computer science building's several faces also help to establish a congenial model for the evolution of the future quadrangle. This role is particularly marked in the interiors, where the department's unabashedly 21st-century apparatus mingle comfortably with the well-worn, well-mannered traditions of the Ivy League. From the weathered white-oak entrance doors to old-fashioned red-oak classroom chairs, handsomely detailed wood warms otherwise neutral backgrounds, approaching the caliber of fine cabinetry in such gentleman's club fittings as wainscoting and paneling. Craft of another order controls the building's formidable electrical circuitry with a flexible cable network that feeds power to offices and labs as needed. Throughout, the balance between highly technical and quasi-social spaces is reinforced by inner windows that visually unite the two, while outward views bring in the wider world of the campus as a whole.

**Computer Science Building, Princeton University**
**Owner:** Princeton University
**Architect:** R. M. Kliment & Frances Halsband Architects—R. M. Kliment, Frances Halsband, Alejandro Diez, Michael Nieminen, Karin Robinson, Martin Brandwein, Mark Caligiuri, project team
**Engineers:** Robert Silman Associates (structural); Ambrosino, DePinto & Schmeider (mechanical/electrical)
**Consultants:** H. M. Brandston & Partners (lighting); Robert A. Hansen & Associates (acoustics)
**Landscape Architect:** Peter G. Rolland & Associates
**General Contractor:** Turner Construction Co.

**Margaret Gaskie**
Regional Transit

Rob Quigley's Escondido Transit Center embraces its Southern California setting with outdoor "rooms" organized around monumental tilt-slab structures. By Dirk Sutro
Escondido’s current architectural direction was set in 1988 with the opening of a new City Hall, designed by the San Diego firm Pacific Associates Planners Architects in a distinctive vernacular style [RECORD, January 1989, pages 104-107]. In commissioning a new regional transit center a few blocks away, local officials hoped to strengthen the sense of place established by City Hall’s courtyards, arched openings, delicate grillwork, and Deco-style stucco patterning.

In the past, San Diego architect Rob Quigley’s quirky, personal design language has tagged him as a regional cousin of such strong-minded Los Angelenos as Frank Gehry, Eric Owen Moss, and Morphosis. So the Escondido Transit Center, with its direct references to another building, marks something of a departure. “I wanted to buy into a scheme of organizing the architectural chaos of Escondido,” Quigley explains. Green fiberglass grilles with zigzag patterns and vertical fluting on towers mimic elements on City Hall. He borrowed such images sparingly, though, and he calls the transit center a masculine partner to the more ornate and feminine City Hall.

Situated about 20 miles north of San Diego, Escondido (population 104,000) is hot and arid. The transit center takes full advantage of the weather with a series of outdoor rooms organized around an open-air atrium, three clock towers, and four low buildings, all constructed of tilt-up concrete panels.

Although Quigley had used tilt-up concrete in the past for industrial warehouses, the transit center marked the first time he tried it on a civic project—or on structures taller than one story. The largest of the 70 panels rise 36 feet and weigh 40 tons. They were formed and poured on site, lifted into place by crane, and welded together with metal tabs embedded during the pours. Thick reinforcing bars tie the panels to deep concrete footings.

The center directs the movement of hundreds of cars and buses each day. Buses travel a peanut-shaped loop road, arriving and departing from 15 curbside stops. The center’s main colonnade runs parallel to Valley Parkway and makes a strong civic gesture along this busy street. Two pedestrian axes extend deep into the parking lots, their towers serving as guideposts for arriving travelers. Shaded by trees, trellises, and steel-and-plastic awnings suspended from steel cables, passenger areas are spread generously across the 11-acre site.

Chromatic tile adds splashes of color to concrete benches beneath the towers and atrium. Copper downspouts, gradually turning green, accent the bare concrete walls of small structures housing transit offices, restrooms, a locker room for bus drivers, a ticket and information office, and a fast-food outlet.

The transit center is one of several recent Quigley projects emphasizing practical solutions rendered in a newly restrained style. As projects like Escondido reflect a more ordered yet playful regional vision, Quigley seems to be thinking more and more like another San Diego architect, Irving Gill, whose spare stucco and concrete buildings merged so gracefully with the local landscape earlier in this century. “The older I get,” Quigley confesses, “the more impressed I am with Gill’s ability to do things simply.”

Escondido Transit Center
Escondido, California

Owner: County of San Diego
Architect: Rob Wellington Quigley, AIA—Melvin Dalton McGee, Guillermo Tomaszewski, project architects
Engineers: Flores & Ng (structural); EC Engineering (mechanical); Pountney & Associates (civil); Mattson-Beaudin (electrical)
Consultants: Marian Marum (landscape architect); David Robinson (signage); Kathleen McCormick (colorist)

General Contractor: Douglas E. Barnhart, Inc.

Dirk Sutro is a San Diego-based freelance writer.

The transit center’s roofless five-sided atrium (drawing above and top photo opposite) serves as the hub for spokelike pedestrian axes. Even the ticket office (left) is open to the elements. Steel beams extend from four concrete footings to support a beamed shelter. Floor tiles are made from tire rubber—a highly durable material and a not-so-subtle symbol of transportation. Low buildings (left and right in bottom photo opposite) were assembled from 12-by-12-foot concrete panels, poured on site and tilted into place.
At Home in San Jose

Although downtown San Jose all but died during the post-war development of Silicon Valley, an architect-directed redevelopment program, fueled by an ingenious mode of financing, has brought new life to California's third largest city.

Marketers of cities in our increasingly privatized urban economy equate new with good, and their lavish promotional brochures burst with tales of reborn downtowns and revenue-generating public facilities. In the case of San Jose, their talk is not hyperbole. Virtually every major building pictured on these pages was built since 1980, including a brace of public facilities designed by well-known architects. The aerial panorama opposite reveals two of the most imposing of the city's new structures: MGA Partners' San Jose Convention Center (foreground), which opened last year [RECORD, March 1990, pages 100-103], and Ricardo Legoretta's children's discovery museum (lavender-colored building, lower left in photo), which was completed earlier this year. The arcade adjoining Legoretta's building is a light-rail transit station that will connect the museum to a proposed technology museum, also designed by the Mexican architect.

The small photo on this page shows the core of downtown San Jose, located just north of the convention center. Significant buildings include, clockwise from lower left, the San Jose Art Museum, a Romanesque Revival former post office with a sleek addition by Skidmore, Owings & Merrill; a plaza and tower by SOM that is the first phase of Silicon Valley Financial Center, an eight-block redevelopment project; and Hellmuth, Obata & Kassabaum's gable-roofed Fairmont Hotel. Fronting the Fairmont is Plaza Park, one of many open spaces woven through the new downtown.

To be sure, there are many gaps in the aerial views, and downtown San Jose has yet to attain commanding density or height. But the point is that a "before" view taken three decades ago could easily have been mistaken for a scene of wartime devastation. The city's turnaround has been swift and purposeful, even if its planners' vision is still only half realized. Renewal has been guided by a political leadership and redevelopment agency with a keen strategic sense and genuine concern for design, all fueled by innovative financing.

From market town to high-tech bedroom
San Jose, situated at the southern end of San Francisco Bay, is the state's oldest city. Until the 1950s, it was the capital of a rich farming region, the Santa Clara Valley. It was a settled, slow-paced place with a benign climate and a sure sense of identity. And its downtown was the undisputed shopping and financial center of the valley.

Then came the whirlwind that transformed the region into Silicon Valley. Mile after mile of orchards was replaced by the bland facilities of the aerospace industry and other high-tech companies. The process changed San Jose forever. Though its population doubled in the 1950s and again in the 1960s, growth was all at the perimeter of the 100-square-mile city and beyond. Shopping followed the outward ooze of development, and downtown was left behind, drained and decaying. "Downtown San Jose had no place in the new order of things," recalls a redevelopment-agency history. "No longer a focus for the area's economic activity, it had become instead a fiscal liability, demanding resources to hold back deterioration but returning little tax revenue to meet the needs of an expanding community."

The San Jose Redevelopment Agency was created in 1956 and at first behaved in ways typical of the period. Its initial effort, begun in 1961, cleared a 13-block area downtown for a mixed-use project called Park Center Plaza. If the name has the ring of early urban renewal, so does the architecture. The project (behind the convention center in the aerial view opposite) is a bleak, inward-turning island of concrete. It did create some new open spaces, however, and became the site of a performing-arts center designed by Taliesin Associates (also a period piece but of a more interesting sort).

Although the agency had other plans in addition to Park Center Plaza, its resources were limited and thinly scattered. The breakthrough came in the mid-1970s, when the city decided to take part in the action that was producing Silicon Valley. It turned 4,667 acres into the Rincon de Los Esteros industrial redevelopment project, which soon began attracting firms such as Hewlett-Packard, Ford, Atari, and McDonnell Douglas. A later 2,045-acre project, Edenvale, became the home of IBM's Western production center. The agency invested just over $100 million in these areas (the private sector well over $2 billion) and began receiving a steady flow of tax-increment funds from the increase in property valuation.

A new director and an innovative fiscal engine
In 1979 the agency hired as executive director Frank Taylor, an architect from Cincinnati who had headed that city's redevelopment effort. The following year the agency and the city persuaded the state legislature to take the final fiscal step in making possible downtown San Jose's rebirth. Tax-increment financing normally can only go for redeveloping the area in which the funds are generated. The legislature allowed San Jose to merge all of its redevelopment areas, including downtown, for purposes of funding, giving Taylor the wherewithal to leverage private investment in a city without the glamour or natural market of San Francisco or Los Angeles. This leverage was particularly important in the early years

Meanwhile, the agency was investing $276 million in public improvements. It was the primary funding source for the convention center and is underwriting a new downtown arena that it hopes will bring major-league sports to San Jose. The agency also took the unusual step of helping to fund a freeway. Downtown had several freeway exit ramps but none leading directly into the core. So the agency helped build the Highway 87 spur to downtown. Its funds also went into a 14-block transit mall serving bus and light-rail systems (including a downtown loop employing vintage trolleys collected from around the world).

What's more, the agency has made major contributions to the new museums. And 20 percent of its tax-increment funds have been set aside for low- and moderate-income housing. Here, too, the Taylor approach has been to use public funds to leverage private investment, resulting in over 2,000 new units of housing downtown and 300 shelter beds for the homeless.
Mexican architect Ricardo Legoretta's vividly hued children's discovery museum (below) is situated just southwest of the downtown core, across Almaden Boulevard from San Jose's new convention center. Inside the museum, high spaces and a simulated city street with working stoplights entertain youthful visitors.

In economic terms the results have been impressive: 90,000 new jobs in the industrial areas and some 15,000 downtown ones have been created, turning the central business district from a tax-eater into a generator of $20 million in tax revenues each year. In urban-design terms the result has been a well-knit core with an unusually high level of public amenity.

San Jose's unwritten rules of urban design

Over most of the past decade, Taylor's right hand has been Tom Aidala, an architect with wide experience in urban design in the public and private sectors. Aidala, the agency's chief architect for the past eight years, speaks of the "window of opportunity" created by the natural death of the old downtown and San Jose's bringing Silicon Valley inside the city limits. Moreover, he praises Taylor as a pragmatist not merely interested in planning for planning's sake. In 1982, the agency did adopt the so-called "1995 plan," many of whose provisions have been put into effect, but there is no overall urban-design scheme, just plans for individual sectors of downtown, such as SOM's for Silicon Valley Financial Center.

Taylor believes in "day to day quality control," again relying on the use of leverage—in design terms the leverage given the agency by its subsidy of private development. He uses it to influence selection of architects and building materials.

Aidala says that while there are no written design guidelines, there are certain "laws" that the agency imposed on downtown development. Among them: "build to the property line, use clear glass at street level, no mansard roofs or really dark glass." Aidala presides over a design staff of 13 who exercise a first level of design review over downtown projects, with appeal to the city council, which is also the agency's board. So far the council has always followed staff recommendations.

But the agency relies less on formal design review than tight programming and ongoing collaboration in the design process. It was the agency, for example, that convinced MGA Partners to make the convention center's long gallery a public "street,"
and it likewise recommended the four entrances that link the Fairmont to its surrounding open spaces. Agency staff skillfully designs downtown’s street furniture and other small-scale items, while Aidala himself has designed a park that will be one of four “gateways” into downtown bearing major works of art.

“In 100 years, it is the parks that will be remembered,” Aidala claims. The largest is Guadalupe River Park, which will wind for three miles along the edge of downtown and represents the first major public use of the river in the city’s history. Landscape architect is Hargreaves Associates, with affectionate input on the treatment of the river banks and bridges from Aidala, whose staff has produced a frieze of the river’s flora and fauna for a set of bridge rails.

There is clear emphasis in the agency on connections. Says Taylor, “We have a great deal of concern with the spaces between buildings, the movement of people from place to place.” Aidala says that the transit mall, with its wide pedestrian ways and artful street furniture, “is what ties downtown together,” joining old and new.

This concern is evident in the plan for Silicon Valley Financial Center. It will feature, says SOM, “a sequence of courtyard spaces identified by landmark architectural elements and linked by a continuous pedestrian arcade, and by ground-level uses that activate streets.” Already in place is part of the Paseo Mall, one of many midblock passages in downtown San Jose that soften the effect of its huge “Spanish” blocks. SOM has designed the first tower, along with the museum addition; other firms, however, will do the center’s next two buildings.

Redevelopment-agency director Frank Taylor: “We have a great deal of concern with the spaces between buildings, the movement of people from place to place.”

“That’s how cities are built,” says Aidala, “by many hands.”

One of the center’s projected towers will be entirely residential, the other partly so. Getting more people to live downtown is clearly Taylor’s next priority, partly because of his belief in “daytime-nighttime urban design” that keeps downtown alive after dark and on weekends. It also has to do with the need to increase downtown’s retail vitality. Competition from peripheral centers remains intense, and The Jerde Partnership’s pavilion of shops and restaurants behind the Fairmont has been slow to lease (though sitework is underway on a second phase). More shoppers-in-residence nearby would clearly help.

Taylor is counting on the new cluster of cultural facilities and hotels around the convention center to encourage visitors to spend time in San Jose rather than just pass through. He is especially keen on the projected technology center. While the children’s discovery center may influence parents to stay, a 175,000-square-foot technology center, which he describes as a “Smithsonian of the West,” would be a more powerful draw. The city has committed $30 million to the project, and a committee including Silicon Valley executives is raising private funds.

In the end, Taylor’s principal aim for San Jose is that it once again become a “hometown,” a place for children who grow up with an awareness of the urban core. He is encouraged by the number of people “proud to say they live here” and would like to see San Jose a larger-scale version of the regional center it used to be. He does not want it to emulate San Francisco. “We should be ourselves, not envy other cities. This can be a truly beautiful city if we believe it can.”

Donald J. Canty
Sargent simplifies security.
The rugged, handsome 10 Line lever-handle lockset is now available with the Sargent removable core cylinder system. Simply insert the control key, remove the entire core cylinder and re-key it, store it or exchange it. There's no time-consuming disassembly. No need to remove the lock from the door. And the cores transfer to any Sargent removable-core exit device, padlock, bored lock, or mortise lock, even knob styles.

This is the lever-handle lockset for offices, dormitories, hospitals, schools—wherever personnel changes mean periodic rekeying. You get maximum flexibility with minimum effort.

The 10 Line is part of the complete Sargent line of locks, exit devices and door closers. Each has what no one else can offer. The heart of a Sargent.
BIG FACE™

GET IT BEFORE THE LAW GETS YOU

The law can get you for all you're worth. If you install, specify or are otherwise responsible for running more than the equivalent of three #12 conductors through the power segment of a Poke-Thru, you're probably in violation. Unless, you're using BIG FACE from Raceway. That's something you don't want to learn in a liability suit.

So how did this situation occur?

Back in the hula-hoop days, when test procedures were created for Poke-Thru's, Underwriters' Laboratories examined fittings with one or two receptacles (hence the assumption that three #12's would be adequate). Then came open offices and smart offices with Poke-Thru's supporting demountable partitions, electrified modular furniture and the sophisticated work station. The once conventional single receptacle and phone connection was left behind with the hula-hoop. A false sense of security was introduced by the generous raceway capacities provided by manufacturers.

Yet, tests conducted to industry standards* demonstrate that the number of power conductors utilized in common field practice often generates and traps excessive heat in confined Poke-Thru space. Under these conditions, the fitting will not meet U.L. Standards.

BIG FACE from Raceway Components, Inc. is currently a Poke-Thru that is U.L. Listed and Classified for seven #12 in the Power Compartment.

Its' double gang design permits 'mixing and matching' a myriad of high and low tension combinations.

The alternative to learning more about this subject the hard way is to send for our free brochure on BIG FACE. Write Raceway Components, Inc., 206 19th Avenue, Paterson, New Jersey 07504 (201) 279-1116.

*Current usage tests according to "E-119", available on request.

U.L. Listed and Classified  Pat. Pending  I.B.E.W.
JAZZ, small, compact table lamp (12"x5" when closed and 12"x25" when extended) features a telescopic, two-dimensional arm and a hidden cord, making the item easy to handle and transport.

Jazz is equipped with a luminous electronic full range dimmer (easy to see in the dark) and a memory device that lets the user obtain the same degree of light intensity when turned off and then back on again.
Prison Explosion

Amidst an unprecedented boom in the construction of correctional facilities, architects are working on designs that look and feel less like prisons.

The numbers are staggering. After spending more than $2 billion a year building prisons and jails for three years in a row, federal, state, and local governments are set to shell out another $3 billion in 1990. Flush with an extra $1 billion from President Bush's crime initiative, the federal government alone has earmarked $1.4 billion for new facilities this year, nearly triple what it appropriated in 1989. The figures translate into 120 new institutions with 76,000 more beds. According to the National Council on Crime and Delinquency, the number of inmates nationwide will more than double to two million by 1995.

Ironically, while governments are getting tougher on crime, the institutions built to hold criminals are getting softer. Bleeding hearts, however, are not the reason. Pragmatism is. The less harsh, less restrictive prisons being built today dramatically reduce assaults against both guards and other inmates. The credit for this improvement goes to a model of inmate management known as "direct supervision," first used by the federal authorities in the Chicago House of Detention designed by Harry Weese in 1975.

In direct-supervision facilities, cells are arranged around dayrooms where corrections officers are in constant contact with inmates. By grouping inmates into such "pods" (usually comprising about 50 cells in two levels) and giving officers the ability to see all prisoners at all times, these prisons put officers in control. In the past, guards patrolled corridors and periodically checked cells where inmates often held the upper hand. "Prisoners behave differently in direct-supervision facilities," says Ken Kerle, managing editor of American Jails magazine. Better behavior means less need for nearly indestructible (but very expensive) fixtures such as stainless-steel toilets and anchored furniture. As a result, dayrooms look and act more like lounges than fortresses.

Direct supervision is the hallmark of what experts refer to as "third-generation" prisons. Although they require better-trained guards, these facilities reduce staffing requirements by maintaining clear sightlines into cells and dayrooms. And by bringing services such as dining, visiting, and sometimes even recreation into dayrooms or adjacent spaces, they minimize movement of prisoners from one area to another. The bottom line is that these prisons are more efficient, more humane, and less expensive to operate.

While the Federal Bureau of Prisons has fully endorsed the direct-supervision model, many state and local authorities have accepted only certain aspects of it. So-called "second-generation" or "remote-surveillance" prisons adopt the popular configuration of cells around dayrooms, but keep guards in control booths outside the housing units. "First-generation" or "intermittent-surveillance" prisons employ linear designs in which cells are lined up along corridors without benefit of any smaller, organizing element. Limited contact between officers and inmates has led many experts to condemn this model as dangerous.

Architects designing new prisons are now working on ways to bring more sunlight into dayrooms ringed by cells and are increasingly using laminated polycarbonate glazing (instead of bars) to create better environments for correctional officers to supervise inmates.

Just as they are humanizing the interior environment of prisons and jails, moreover, architects are also designing exteriors that harmonize better with their neighbors. Attention to massing, materials, and fenestration at the Suffolk County Jail in Boston (page 148), for example, helped The Stubbins Associates create a building that adds to its downtown location rather than tearing it apart.

Not long ago, few prisons held more than 500 inmates; today several house close to 2,000. In the future, prison and jails will continue to get bigger, forcing ever greater efficiency in plans.

Clifford A. Pearson
FRONTIER JUSTICE REDEFINED

Federal Correctional Institution
Sheridan, Oregon
The Zimmer Gunsul Frasca Partnership, Architects

If ever a prison could be considered a good neighbor, this is it. And if ever a prison could be considered a bearable environment in which to spend 5 to 15 years of one’s life, this is the place.

Located 50 miles south of Portland in one of Oregon’s beautiful (but economically depressed) agricultural valleys, the $46-million prison was seen as a major contributor to expanding local employment. But a 190-acre complex housing upwards of 1,000 federal prisoners is a lot for a rural community to absorb. As a result, the architects and the Federal Bureau of Prisons, who worked together closely on the design, searched for ways to soften the facility’s impact. For example, 90 acres of the site was reserved for lease-back farming, and landscaped buffer zones were created using local vegetation.

Split into two distinct parts—a medium-security main institution and a low-security “satellite camp,” the prison is a collection of one- and two-story structures arranged in a campus setting. The buildings’ profiles were deliberately kept low and fragmented. From a distance only eight tall light standards mark the project as an institution (and these could serve a college as well as a prison). Indeed, the comparison between the two building types keeps recurring as the buildings come closer into view. Principal design architect Robert Frasca also had agricultural buildings in mind while working on this project. The form and massing of the structures, the roof lines, the colors, and the materials all reflect (without literally repeating) those of the valley’s farms.

At an early stage of the design process Frasca considered cladding the buildings in wood shingles to emphasize the connection with their rural neighbors, but decided this would be too heavy for such a large complex. Instead he chose white-painted wood for the walls and split-face concrete block for the base of the buildings.

Frasca was also influenced by some of the West’s old military installations. The plan of the prison’s main institution, with administration and common-use facilities ringing a central quadrangle, resembles that of a military base organized around a parade ground.

The buildings along the quad are joined

As in the main institution, the dining hall at the satellite camp (left) is linked to other common-use buildings by a covered walkway. At the main institution, the quadrangle (opposite, bottom) runs 450 feet long and is anchored by an impressive gymnasium at one end and housing at the other.
The prison's medium-security main institution (top left, plan) comprises 365,000 square feet of one- and two-story buildings, while the low-security satellite camp (top right, plan) includes 109,000 square feet. Housing blocks at the main institution (section and plans, left) are organized in triangular pods with two levels of cells ringing multipurpose rooms. Housing at the satellite camp is in the form of dormitories (above). Sunlight streams from clerestory windows into the prison's chapel (opposite, top) and the satellite camp's dining hall (opposite, below and axonometric).
by arcades punctuated by gables and three more prominent landmarks: a large, sun-filled cafeteria, a small sculptural chapel, and a brawny gymnasium that is the prison's most imposing building. The gym is a single large volume framed by wide flange trusses with colorful tie rods, exposed ductwork, and clusters of double-hung windows supplemented by clerestories. Rising behind the quadrangle complex are the metal sheds of the prison factory, looking much like sophisticated grain-storage bins. The housing, a short walk from the quad, is in two-story buildings that are twin-triangles in plan. Cells are set around central multipurpose rooms where the prison employs direct supervision.

On the Bureau's one-to-six scale of minimum to maximum security, the main institution ranks a three, necessitating a double security fence with knife-sharp barbed tape encircling the facility and a well-patrolled perimeter road beyond that.

In the satellite camp (rated a one on the Bureau's security scale), inmates roam freely, and housing is in dormitories with low partitions. More intimate in scale than the main institution, the camp includes a semicircular dining hall and a chapel-like multipurpose building.

D. J. C.

Federal Correctional Institution
Sheridan, Oregon
OWNER: Federal Bureau of Prisons
ARCHITECT: The Zimmer Gunsul Frasca Partnership—Brooks Gunsul, principal-in-charge; Jack Cornwall, project architect; Robert Frasca, principal designer; Evett Ruffcorn, senior designer; Ernest Grigsby, Ken Mouchka, Renee Kajimoto, Dennis Destefano, Robert Furusho, William Maxwell, Ronald Gronowski, Jane Clark, Kathryn Krygier, Mark LaFerge, James Smith, Robert Zimmerman, Steve Adams, Richard Brown, Linda Muerte, Gary Douglas, design team
ENGINEERS: KFF Consulting Engineers (structural); PAE Consulting Engineers (mechanical and electrical); David Evans & Associates (civil)
LANDSCAPE ARCHITECT: Jones & Jones
GENERAL CONTRACTOR: Hoffman Construction Co.
COURTS HELP SHAPE JAIL DESIGN

Sonoma County Detention Facility
Santa Rosa, California
The Ehrenkrantz Group, San Francisco, Architects

Designed explicitly to respond to court decisions defining inmates' rights (down to the level of noise the hvac system is permitted to make), the Sonoma County Detention Facility is a prime example of the so-called “constitutional jail.”

A 404-bed pretrial facility, the building is organized into housing pods for direct supervision of inmates. As in other direct-supervision jails, officers are stationed directly in the pods and are trained to act as much as counselors as guards. A major factor in making this arrangement work is a classification system that separates dangerous from well-behaved inmates.

The new facility is linked to an existing justice center and provides extra courtrooms. Built of heavily textured load-bearing concrete block, the jail has the look of an old Western fort. While small recessed windows mark the building as a jail, the architect varied the fenestration (clustering some windows behind painted grids) to add interest to the exterior.

OWNER: Sonoma County, California
ARCHITECT: The Ehrenkrantz Group, San Francisco—Ezra Ehrenkrantz, principal-in-charge; Christ Kamages, director of design; Curtis Pulitzer, director of criminal justice; Mark Sharp, Fakoor Popal, Robin Burr, Gary Marshall, Mark Creedon, Jane Marshall, Jesus Corpus, Ted Schuster, Virginia Yang, Laura Maiello, Tara Lamont, Rob Gayle, project team
ENGINEERS: Zucco Associates (structural); Breit & Race (civil); Marion Cerbatos Tomasi (mechanical/electrical)
LANDSCAPE ARCHITECT: POD
GENERAL CONTRACTOR: Dillingham

© JANE LEE PHOTOS
The entry courtyard to the $30.6-million jail (opposite) faces the existing justice center. The architects succeeded in bringing plenty of sunlight into a dayroom (top) where inmates eat and spend most of their time. The main lobby (above) is a two-story space.
ROOMS WITH A VIEW OF THE CHARLES

Suffolk County Jail
Boston, Massachusetts
The Stubbins Associates, Architects

Jails are rarely welcome additions to the urban landscape. Their very function—to isolate dangerous people from the rest of society—works against any easy blending into their surroundings. The Suffolk County Jail has proved an exception.

The product of a design/build competition won by a team comprising The Stubbins Associates, Voinovich Monacelli, and the George Hyman Construction Company, the jail graces its site on the Charles River in Boston with a civic presence that is formal but never overwhelming. A three-story portico clad in granite opens the building to the water, while brick-faced wings housing inmate cells gracefully step down from a central hipped roof. A riverfront esplanade and park eventually will add to the project’s outgoing nature.

The building’s plan is both simple and effective. Shared functions—including visiting rooms, counseling services, health facilities, a library, and a top-floor gym—are located in the building’s central section, while prisoners are housed in the two wings. Though the jail follows the direct-supervision model in terms of organizing inmate cells into two-level “pods” around common dayrooms and placing officers in direct contact with prisoners, it supplements this system of management with control booths located between pods.

Bringing light into dayrooms
To minimize the number of officers needed to supervise inmates, the architects set two pods off each control booth. And by inserting space-framed outdoor areas between pods, the architects brought recreational activities closer to the inmates. Such a device not only reduces the need to move prisoners from one part of the facility to another (always a security risk), but also helps solve the problem of bringing light into dayrooms that are ringed by cells. To maximize sunlight to each level, the recreation spaces step back as they climb up the side of the building, diminishing in size from 2,000 to 1,600 and finally to 1,200 square feet.

Because the small cell windows required in prisons and jails can give a facility the look of a fortress, The Stubbins Associates designed a precast unit that pairs two windows together and gives the impression of one large opening. Each window is angled
Constructed in just 30 months for $52.4 million ($150 per gross square foot), the steel-frame, concrete-slab jail on the Charles River accommodates 453 inmates in single-bunk cells. Outdoor recreation areas enclosed within space frames are located between paired housing “pods” (left and far left).
45 degrees from its mate to prevent visual contact between cells.

Although all areas beyond the lobby are secured, the level of security increases as the floors go up. The architecture reinforces this hierarchy, explains W. Easley Hamner, the Stubbins partner in charge of the project. Well-behaved inmates are rewarded with greater access to areas with movable furniture and softer materials, while more dangerous prisoners are restricted to harder spaces on upper floors.

To maintain tight security, each of the building's four sets of elevators is dedicated to a particular type of user: visitors, inmates, employees, or service personnel. Lateral movement is also regulated by restricting corridors on every other floor to either inmates and staff or visitors. C. A. P.

Each 70-square-foot inmate cell (above) has its own toilet and sink.

Suffolk County Jail
Boston, Massachusetts
Owner: Commonwealth of Massachusetts
Architect: The Stubbins Associates—W. Easley Hamner, principal-in-charge; Theodore Nolte, project designer; Roy Pedersen, project director; Russell Ames, project architect; Emmett F. Glynn, field coordinator; Desmond McAsley, David Paoletta, Steve Sivak, Doreen A. J. Thomas, Dan Thomas, Tetsuo Takayanagi, Richard Murphy, Michael Gilligan, Charles Hayter, Jeanne Zilligen, project team
Associate Architect: Voinovich Monacelli
Engineers: McNamara/Salvia (structural); Syska & Hennessy (mechanical/electrical)
Consultants: Cerami & Associates (acoustical)
General Contractor: The George Hyman Construction Company
Between 36 and 40 cells ring each 1,200-square-foot dayroom (above). While an officer is stationed at a desk in the dayroom (left in photo above), he is supplemented by an officer in a control booth (below) who oversees two sets of housing units.
KIDS BEHIND BARS

Gardner/Betts Juvenile Justice Center
Austin, Texas
Cox/Croslin and Associates

Faced with the special needs of children accused of crimes, Austin architects Cox/Croslin designed a justice center that downplays the institutional while encouraging relations between families and government authorities. "We wanted to bring families into the process as much as possible," explains Chuck Croslin, partner-in-charge of the $8.2-million project.

To this end the architects organized public areas, such as courtrooms and social services, around a two-story, light-filled mall. "Everyone is familiar with malls, so we felt this form would be less intimidating," says Croslin. A glass curtainwall serves as a welcoming facade for the public portion of the building and is topped with a pyramidal metal roof to give it a civic presence. Inside the mall, a large monitor brings sunlight into the lobby, while clerestory windows do the same for the arched corridor leading to the secured detention and residential sections.

Although spacious and well-lighted, the secured areas are clearly stamped with the imprint of authority. As in most new adult prisons, housing is organized by pods with small living rooms ringed by seven or eight cells. The pods, in turn, encircle a large dayroom observable from a central control booth. A separate activities building with classrooms, cafeteria, and gym stands behind the residential block and helps define a secured courtyard.

C. A. P.

OWNER: Travis County, Texas
ARCHITECT: Cox/Croslin and Associates—Chuck Croslin, principal-in-charge; Larry Miller, project manager
ENGINEERS: Jose I. Guerra (structural); HMG and Associates (mechanical); KLW Engineering (civil)
GENERAL CONTRACTOR: Spaw-Glass Construction Services

The 82,000-square-foot detention center encompasses three buildings: a main structure (plans above and photos opposite), an activities building (left in photo below), and a shelter for runaways and abused children (not shown). The facility currently can house up to 45 children in single-bunk rooms and has been built for future expansion. The shells of two pods on the second floor of the housing block can be easily built out when needed. Public spaces, including a toplit corridor (opposite, lower left) and two-story lobby (opposite right), were designed as light-filled malls.
When the destruction caused by the Camp Hill riots added to the PA, Dept. of Corrections' already critical problem of housing shortage, ROTONDO provided the answer with 128 finished precast modular cells erected on site in **four days**.

From design, to permits, to site work, to construction, this facility co-ventured with Dick Enterprises, Inc. was occupied on the **140th day**.

Our team combined the speed of modular construction with the security, appearance and permanency of conventional construction.

**WHEN PERFORMANCE COUNTS, CALL: (800) 523-2273**

*The Rotondo Companies*

Manufacturers of Quality Pre-Cast Concrete Products

Circle 55 on inquiry card
SOMETHING TELLS US YOU'VE BEEN WAITING FOR A WALL SYSTEM LIKE AXIOM.

It's here. Finally.
A complete exterior metal wall system. With performance characteristics like no other. Available nationwide. Engineered, fabricated and installed by Robertson.

In short, the new AXIOM I Wall System is everything you've hoped for.
And as much as we'd like to compare it with other wall systems, we can't. Because no such comparison exists.

For starters, pressure equalized joinery means the AXIOM system can withstand even the worst weather conditions. It features all metal honeycombed Formacore® panels that offer excellent fire resistance in a system that's only 2" thick.

And unlike other wall systems, AXIOM panels can be easily removed. Which keeps replacement or repair costs to a minimum.

The AXIOM I Wall System. Quite simply, the best composite metal wall system money can buy. For a complete brochure and specs, call or write: H.H. Robertson Company, 400 Holiday Drive, Pittsburgh, PA 15220; AXIOM Wall System (412) 928-7500.

Circle 56 on inquiry card

ARCHITECTURAL RECORD SEPTEMBER 1990 • 155
Mark Tatis draws the line on value.

"As Vice President of Store Planning and Design at Burdines, I know how environment affects the way people shop. Our carpet has to stay looking fresh and new. So I specify PermaColor warranted carpets. Balancing creative innovation with performance is my greatest challenge. A challenge that PermaColor makes easier. I get great Florida pastels that clean beautifully in every department, from accessories to ready-to-wear, without showing wear and tear. I've been in retail for more than 14 years and I know a revolution when I see one. Everybody wants more value—and with PermaColor warranted carpets, that's the bottom line."
ACCESS FLOORS: A WAY TO HANDLE THE CABLING MESS

Computers and telecommunications media are proliferating, but cable size is shrinking. Wire management is the issue.

A vacant skyscraper is a dispiriting sight. In most cases it’s a matter of too much supply, too little demand. But there is talk in telecommunications circles of a high-rise office building in New York City that remained empty for two years after construction, not because the market went slack, but because the building lacked the infrastructure to accommodate an up-to-date communications system.

In many offices cabling capacity has become a significant issue. The communications revolution of the last decade has crowded the workstation with sophisticated machines, and obliged the office building to house prodigious lengths of cable. As an unwelcome result, businesses often find their distribution systems insufficient. RECORD spoke with several facilities managers of large corporations, each of whom told similar stories of cellular floors “chock-full” of cable, of “saturated” underfloor ducts. How is the architect to cope with these leapfrogging changes? The obvious answer is an access floor, a pedestal-supported secondary floor system with easily removed panels.

Though access floors were once used almost exclusively in computer rooms, architects, engineers, telecommunications planners, and facilities managers are increasingly finding the system to be the most flexible and roomiest way to handle the proliferating cable needs of open-plan general-office areas. (See page 159 for discussion of the other most popular cable-management options.) Theodore York, of the Software Productivity Consortium in Virginia, is just one of several facilities managers who told us how pleased he is with the system. “With access floor, I have 60,000 cubic feet of electrical closet beneath the floor.”

Access flooring’s flexibility is as important as its capacity. This is not surprising, since an office’s occupancy can change as fast as its technology. According to the International Facilities Managers Association, the annual “churn rate”—the frequency with which employees and equipment are rearranged—is typically 30 percent and in some industries, notably insurance and financial services, much higher. Even relatively stable offices frequently add or upgrade computer equipment—with resulting changes in cable.

“The flexibility of access floor is without parallel,” says Anthony Nuciforo, a telecommunications consultant in New York City, and most building managers we spoke with agreed. To Jim Smith, Director of Interior Design at the United States Automobile Association in San Antonio, raised floors are essential to the workings of their headquarters. “We’ve been using access floors since the mid-1970s and probably have more than a million square feet of them. Our churn rate is about 60 percent, so for us no other system would be worthwhile—access floors do a lot to facilitate change.”

Despite its advantages, there are obstacles to the widespread acceptance of access flooring. The chief of these is budget. It is never easy to compare costs definitively, as there are so many variables beyond the actual outlay for the product. For access floors, these factors include size of the installation, height and configuration of the floor, and the system selected. (Most manufacturers offer several systems, varying in panel construction, connection detailing, and price.) It is generally accepted that access flooring, ranging in installed price from $4.50 to $5.50 per sq ft, is the most expensive distribution system to install. Not surprisingly, developer clients usually balk at paying for what is essentially a second floor. Another important cost consideration is that raised floors may increase the cost of a new building by requiring greater floor-to-floor distance. Even a 6-in. raised floor, if used throughout (6-in. to 8-in. is typical for offices, but 12-in. to 14-in. is not...
uncommon), adds significant costs if it leads to an increase in the height of a multistory building.

Construction costs alone, however, can be misleading. Again, the issue is "churn." For many users, the flexibility afforded by access flooring—the relative ease and economy of changing office layouts, of removing old and installing new cable—justifies the system's upfront expense. "Access floor pays for itself almost as soon as it's installed," says Scott Hill, an architect with Shearson Lehman Hutton in New York. "Even as we move in, we're making changes in plan."

Executive material?
There are esthetic objections to raised floors. The sheet-steel panels typically used in computer rooms were found to be unsuitable for offices. Employees complained that panels sounded hollow and felt wobbly. Manufacturers have addressed these problems by designing denser panels and stronger panel-to-pedestal connection details. Most offices today use metal flooring filled with cementitious material or panels made entirely of concrete, to which replaceable carpet tiles are adhered. "The panels have gotten a lot better," says Mark Regulinski, an architect at Skidmore, Owings & Merrill in New York City, "but you still know you're walking on a raised floor." USA's Jim Smith offers this appraisal: "In general, an access floor with carpet tile won't match a heavy-pile broadloom on a concrete base. The more rigid systems with high-quality tile come close, but it's not yet executive-suite material."

Until a few years ago, the industry lacked testing standards. With each company designing its own product tests, it was hard for designers to compare the manufacturers' claims. This situation improved in 1987, when the Ceiling & Interior Systems Construction Association (CISCA) published a voluntary standard test procedure (see "further information" page 208). While acknowledging this standard's usefulness, Richard Harz, of USG Interiors/Donn Access Floors, points out that "unfortunately it is not yet universally adhered to. The next step is to establish performance-based design criteria and then proceed to adoption by ASTM."
Access floors have become popular for trading rooms, such as the office below, designed by HOK for a Texas firm, in which each workstation may have a computer, several monitors for the display of network- or telephone-fed data, and one or more telephones. With rapidly advancing hardware and software, change is frequent. Systems with this complexity require well-organized wire-management databases. One financial firm had such intense cabling needs that it has filled a 2-ft deep access floor with cable. Access flooring is less secure than systems embedded in the floor deck, but the choice of cables can defeat tapping efforts and interference.

In environments with fewer electronic and networked devices, raised floor is suitable where systems furniture is widely used.

**OTHER PLACES TO PUT CABLES**

**Pros and cons of the most popular wire-management options.**

**Poke-through**
In this system, developed in the mid-1970s, cable is placed in the ceiling plenum and fed to the floor above through fire-rated inserts. Used in most speculative construction. **Advantages:** least expensive to install; **Disadvantages:** the most expensive to alter; potential conflicts with structure, ductwork, and lighting; code limitations on slab penetrations; less secure.

**Cellular floor**
Cables for voice, data, and power are placed in separate cells formed for this purpose in the structural metal deck. Developed in the 1930s, it was until recently the distribution method used in most high-quality steel-framed buildings. **Advantages:** Still considered a good system for static office environments. More secure than access floor or poke-through. **Disadvantages:** Cell spacing may not match office layouts; long cable runs may be needed.

**Underfloor duct**
Metal troughs for cable are embedded in the structural slab during construction. Developed about 75 years ago for use in concrete buildings. **Advantages:** Still considered a good system for small, static environments. Because ducts readily run in two directions, outlet modules may be smaller and cable lengths may be shorter than for cellular deck. **Disadvantages:** A dense system may require a thicker slab; requires careful coordination with slab reinforcement.

**Flat cable**
Cable that is 1/16-in. thick and several inches wide is applied directly to the floor under carpet. Developed by NASA and marketed commercially in the 1980s. **Advantages:** Requires no raceway. In some retrofit applications, the only solution. **Disadvantages:** Until recently considered promising for office use, flat cable is now regarded as too fragile for all but the most limited applications.
WHEN THERE’S NO PLACE TO GO BUT UP

How architects and engineers are working together to build over, around, and through existing buildings.

The collaboration between architects and engineers—particularly structural engineers—is less glamorous than it once was. There’s been some handwringing over this, reflecting a hankering for the good old days when technological virtuosity was idealized—the fabric roofs of Frei Otto, the intricate concrete structures of Pier Luigi Nervi—and the engineer lionized. Nowadays, though, the two disciplines often have to work closer together than ever. Even in the 1970s, time of the celebrated collaborations between various SOM design partners and Fazlur Khan, the quest had moved toward a subtle efficiency in the use of materials rather than an acrobatic expression of technology.

Collaboration today is likely to be for different reasons altogether. It’s not just that fire codes mitigate against the exposure of structural steel, or that we are looking at solutions for ever larger or even taller buildings (although there is renewed interest in surpassing the Sears’ Tower). We call on the engineer to help us do more with less, wrestling with grittier, tougher issues. In this first of a two-part examination of recent engineering trends, the three case studies shown are projects that bridge or cantilever over—or gingerly penetrate—existing structures on tight urban sites. In October, we’ll examine the design of a new crop of tall, extremely slender buildings.

Squeeze play
One could argue that the confluence of specific zoning rules and an (until recently) overheated real-estate market are the only reasons a developer would even consider erecting a hotel on a site where only one-third of the land area could be built upon (page 163), or an office building where 20 percent of the floor area must hang over a four-story landmark theater (page 162).

Such schemes may seem crazy. But the expensive and nerve-wracking problem of packing more square footage into a difficult site is being faced by many institutions—particularly large urban medical centers—for which the replacement value of existing construction is too high, and the proximity to other facilities or institutions too important to consider less costly structures on distant but more readily buildable land. (Acute-care patients, for example, cannot easily be transported across town for needed diagnostic or therapeutic services.)

Keeping the client up and running
For projects where land is limited, design problems can be compounded by logistics: there is rarely an off-street construction staging area, and critical functions (from fire-department access to vibration-sensitive operating rooms) must often be maintained throughout construction. Ingenuity is needed to understand the issues, design for them, sequence construction properly, and communicate effectively with the client (this page and opposite). Though construction scheduling is typically the province of the contractor, architects and engineers are often locked into the timing of complex procedures, because construction techniques and the demands of temporarily displaced functions may otherwise dominate the design process, to the long-term detriment of the project.

JAMES S. RUSSELL

For the Presbyterian-University Tower, the architects built models showing the construction sequence. Because cranes and building material will share the street with emergency and nonemergency vehicles the client could visualize the required relocations and traffic rerouting. Photos show installation of protection system over roof (1, 2), construction of transfer trusses (3, 4), and erection of tower (5).
## Presbyterian-University Hospital Pittsburgh

After three hospitals merged, Burt Hill Kosar Rittelmann was brought in to design a phased, $250-million, five-building redevelopment. Equally thorny but different issues arose on each project.

- The first phase, a recently completed eight-story Biomedical Science Tower, was erected over an existing eight-story parking garage. Though the garage had been designed to accept an anticipated 10-story addition, loads had to be transferred through a 22-ft high, 115-ton truss (bottom right) because the Tower’s research laboratories required spans of 36 feet. Some existing columns were reinforced to pick up eccentric loads from a cantilevered bay.
- A Magnetic Resonance Imaging Center, soon to go into construction, will rise over an electrical vault. Three-in-thick steel plates surround the Center, protecting it from magnetic interference.
- The Diagnostic and Treatment Center, scheduled for occupancy in 1991, will be erected on a site encumbered only by an existing loading dock.
- The hospital’s main wing, the final phase, will be renovated, with removed functions initially occupying the Diagnostic and Treatment Center.
- The hardest phase will be the construction of the Presbyterian-University Tower, a 21-story acute-care center rising over an existing four-story hospital wing (middle right). A pattern of column, stairs, and elevator shafts was designed to minimize disturbance of the existing structure. Each disruption of activities was carefully accounted for (matrix above). Foundations of each penetration were hand excavated, and sealed enclosures—called doghouses—were built and placed under negative air pressure so existing functions can continue. Above the existing wing, three floors will be hung from a three-story-deep transfer truss that supports a different column grid suited to the plan of the 15 uppermost stories.

### TABLE: Column Numbers and Matrix—RUH Tower

<table>
<thead>
<tr>
<th>FLOORS</th>
<th>COLUMN NUMBERS</th>
<th>INTERFERENCE</th>
<th>MATRIX—RUH TOWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td>C1 C2 C3 C4 C5 C6 C7 C16 C18 C19 C2a C3a C4a C5a C6a C7a C16a</td>
<td>Column towers beyond the front wing</td>
<td>Column tower penetration</td>
</tr>
<tr>
<td>3rd</td>
<td>R4 W. Exam Corridor Patient Rooms 1476 &amp; 1478</td>
<td>Roof penetration</td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>R3 O.R. Ortho G.R. #1 Corridor Scoliosis Prep</td>
<td>Roof penetration</td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>R3 Radiology Chapel Main Corridor Central Stairs</td>
<td>Roof penetration</td>
<td></td>
</tr>
<tr>
<td>LOBBY</td>
<td>R1 Sidewalk outside Radiation Safety Corridor</td>
<td>Roof penetration</td>
<td></td>
</tr>
<tr>
<td>GROUND</td>
<td>R1 Existing parking and driveway affected Motor Equipment Plant Service Foundation wall</td>
<td>Roof penetration</td>
<td></td>
</tr>
</tbody>
</table>

### KEY

- **PREVIOUS FUNCTION MAINTAINED**
- **TEMPORARY MOVE REQUIRED**
- **PERMANENT RELOCATION REQUIRED**

© 1990 BURT HILL KOSAR RITTELMANN ASSOCIATES

**SECTION:**

The Presbyterian-University Hospital Tower (middle) rises 21 stories. Installation of transfer trusses at the Biomedical Sciences Tower (above).
1675 Broadway
New York City

For those unfamiliar with New York’s real-estate market, the economic justification for this 750,000-sq-ft office tower and the Embassy Suites hotel (opposite) must be baffling. In the mid-1980s, New York City planners created incentives to shift development west from the overbuilt center of midtown Manhattan. While desirable sites in a “preservation” district were downzoned, the low-scaled blocks along Broadway and Seventh and Eighth avenues were upzoned, including this site a few blocks north of Times Square. (The upzoning strategy was so successful the incentives were repealed. See RECORD, June 1989, pages 81-85).

The site, however, was not large enough to allow the square footage and floor size desired by owner/builder Rudin Management. Having purchased air rights over the adjacent Broadway Theater, a 1924 landmark, Rudin brought in the team of Fox & Fowle Architects and the Office of James Ruderman, structural engineers. Their solution: a 35-story building with six north-south trusses that project as much as 45 feet over the existing theater. Four of the trusses extend through the elevator core to the south side of the building which counters the weight of the cantilevered side (section right). Though truss struts penetrate parts of two floors, the scheme does not require columns between core and exterior on upper floors.

Not surprisingly, lower-floor columns and the truss members are very large. The biggest trusses weigh 200 tons, some members 2,000 lb per ft. Rectangular columns supporting the truss adjacent to the theater are 32-in. by 26-in. and are nearly solid steel, built-up from 5-in. plates welded together. Neither falsework nor loads were permitted on the roof of the theater (performances of Les Misérables have continued throughout construction), so pieces were lifted from a crane on 52nd street (185 ft from the furthest end of the cantilever) and handed to two tower cranes on the building frame. This sequence meant that relatively small pieces of the truss were raised at a time. Each was placed and temporarily braced until it was securely fastened to its inboard neighbor.

The building is nearing completion (bottom left), but scaffolding still covers the theater; the developer’s agreement included restoration of the facade. The architects have refined the massing with setbacks in plan to reduce the apparent bulk of the building as viewed from the street. Thus, the most difficult and expensive aspect of the project—its cantilevered truss—is, by intention, invisible.

© Fred George
© Gil Amiaga Architectural Photography

The weight of the building’s south side counters gravity forces bearing on the truss cantilevered over the Broadway Theater (top). Pieces of the truss were lifted into place over the auditorium from the framework of the new structure (left).
Embassy Suites
New York City

Problem: how do you put a 384,000-sq-ft, 460-room hotel on a 21,700-sq-ft site encumbered by a landmark theater occupying 13,500 sq ft? Then, to achieve owner-requested zoning bonuses and meet mandated requirements, relocate an existing subway entrance to within the building line, place as much retail space as possible along the street, and apply several thousand sq ft of electric signs. (Only 1,200 sq ft was left for a ground floor-lobby-plan.) This tall order was met with aplomb in Fox & Fowle's Embassy Suites Times Square.

Luckily, there is a narrow alley behind the theater, so Carlos M. Dobrin, partner with structural engineer DeSimone Chaplin & Dobrin, was able to avoid placing columns within the volume of the Palace Theater (1913), instead supporting two 130-ft-long, 57-ft-deep composite-steel-and-concrete trusses on four “super columns” — two to the east and two to the west of the auditorium. Smaller trusses — 17 of them — transfer loads from the bridge trusses to the cast-in-place flat-slab concrete framing of a tower containing guest suites. Public spaces (including a third-floor skylobby) are squeezed into the area in front of the auditorium and between the bridge trusses, which are three ft thick.

To assemble each truss without disturbing the theater, a “stiff-leg” derrick was set up in the street and, using temporary braces and tension rods, members were placed from the street side eastward, each truss temporarily a cantilever, until bolted to the columns behind the stage house.

Steel bridge trusses (later encased in concrete) span the landmark interior of the Palace Theater (above) and support 36 floors containing 460 two-room suites. A new theater lobby has been incorporated into the ground floor (right) replacing one that was removed. The hotel is to begin receiving guests this month.
Before Ellison there was no balanced door. So the act of opening a door was a one-sided contest which invariably left people on the losing end. But rethinking the weighty principles of how a door swings changed the balance of power and put physical forces where they belong — in the hands of the user.

The solution to the problem was so widely accepted it’s now taken for granted. And yet we all know the difference when opening a heavy swing door and a heavy balanced door. All things being equal, it takes half the energy to open a balanced door in a 20 mph wind. The principle at work becomes evident when the door begins to open and the hinge stile swings inward. The effect of exterior wind or interior suction is greatly diminished by this movement, rendering the door amazingly easy to open.

The balanced door is a convenience for most of us. It can represent something much more valuable to the physically challenged.

There are other benefits, of course. Ellison balanced doors save space. They move in an elliptical arc. Because travel is confined, lobby space can be saved and sidewalk obstruction is reduced.

There’s more. Ellison balanced doors are particularly well suited where building design requires a large or heavy door. Consider the advantage of reduced wear and tear on hardware in addition to the obvious operational benefits.

Ellison Balanced Doors. Long respected for their custom craftsmanship in bronze and stainless steel, are now available in economical aluminum designs. Call or write us for more information on the doors that put power in the hands of the people.
ENVELOPE 2000™ REDISEGNS THE ONE DOLLAR BILL.

Weyerhaeuser's Envelope 2000™ is changing the face of modern architecture. With pre-engineering. High-gloss colors. Custom-made components. A thick, slick aluminum skin. Increased structural support. And one other important benefit. A pricetag roughly half the size of other high-end envelope materials. Which makes Envelope 2000 doubly impressive.

ENVELOPE 2000™
Engineered Architectural Wall System

Weyerhaeuser
Architectural Panels Division

Circle 59 on inquiry card

To receive a full color brochure on Weyerhaeuser's new Envelope 2000, call 1-800-426-0870, extension 5082 (Continental U.S. outside Washington State) or 206-924-5082.

Weyerhaeuser
PRODUCT INFORMATION
BULLETIN FOR
ARCHITECTS AND DESIGNERS

THE STONE REVOLUTION
This phrase embodies the recent dramatic increase in the use of natural stone in the USA. A significant part of this “Stone Revolution” is the remarkable new technology developed by the Italian company Tecnomaiera of Turin, Italy wherein a block of natural quarried stone—marble, granite or limestone—is sliced into thin 1/4” (7mm) full block-size sheets reinforced with epoxy and glass fiber or steel mesh. This technology spawns a number of new and revolutionary products some of which are described below.

GL Marble 1/4” 2’ x 2’ 2’ x 4’
Thin, lightweight (3.7 psf) and strong, these large standard size tiles of 1/4” GL Marble with their fiberglass-epoxy reinforcement offer significant advantages over the traditional heavier slab marble in economy and ease of installation over both new or existing surfaces. Ideal for renovation, they can be installed with thin-set adhesive over any sound level surface, floor or wall. A wide range of colors is carried in stock.

ISO Marble Wall Panel System 1/2” 2’ x 8’ 4’ x 8’
The full-size sheet of 1/4” stone becomes the facing veneer of a thin laminated composite panel with a cementitious core and backing sheet of bondarized steel. Available in many different varieties of stone, these 1/2” thick panels come in sizes 2’ x 8’ and 4’ x 8’ and weigh only 6.7 psf. They can be hung on walls like conventional paneling. They are also available with an aluminum honeycomb backing with an ultralight panel weight of only 3.2 psf.

RS1 Granite or Marble 5/16” 4’ x 8’ 5’ x 10’
The latest dramatic development in Tecnomaiera’s continuing marriage of high technology with nature’s oldest building material is the RS1 Panel, a patented vacuum formed lamination of 1/4” natural stone, granite or marble with a thin steel mesh reinforcement and epoxy resin. The total panel thickness is 5/16”, the weight is 4.5 psf, and the sizes are the full block dimensions—in the case of granite as large as 5’ x 10’. The RS1 Panels will be used for exterior cladding and interior wall and floor coverings in large dimensions with both mechanical and adhesive attachment methods.

PAT Systems—Prefabricated Marble Bathrooms
A solution for modular luxury marble bathrooms primarily for hotels both new and renovated. Utilizing its accumulated technology Tecnomaiera will engineer and fabricate the complete bathroom enclosure, package it in a single crate and deliver to the jobsite where it is usually installed in one or two days. This turnkey approach offers significant cost advantages in both construction time and materials.

ABOUT MARBLE TECHNICS
Marble Technics, a division of Tecnomaiera, is a full-service stone company equipped to answer any needs of the design community regarding natural stone in any shape or form. In addition to the advanced technology thin stone systems, Marble Technics is a supplier of traditional cut-to-size projects throughout the USA and carries a large inventory of tiles and slabs. Marble Technics is the exclusive USA representative of Guinet-Derriaz a major French stone company specializing in the unique French limestones. A complete sample program of marble, granite, and limestone is available to aid the designer and specifier.

MARBLE TECHNICS LTD
A DIVISION OF TECNOMAIERA-FORNARA GROUP ITALY

Circle 60 on inquiry card
AERODYNAMIC CURVES

Florida start-up firm makes chairs the way they used to in the Golden Age of Lounge.

Chairs from a new Florida firm would be right at home on the set of The Fountainhead or Flying Down to Rio, and are meant to recall an authentic American style, Streamline Moderne. Jim Young, founder of Design America (he is also president of Spinneybeck Leather, a well-established source of contract leather upholsteries now owned by Knoll International), grew up during the Great Depression entranced by the glamour of Hollywood’s vision of High Style, and became an enthusiastic collector of Moderne—toasters, pocket lighters, chairs, and airplane models—objects whose smooth shape and horizontal parallel lines accentuate a form adapted to speed.

Spearheaded by the self-taught industrial designers Norman Bel Geddes, Raymond Loewy, and Walter Dorwin Teague, Moderne became a copywriter’s dream in the ’30s, and was found in the design of everything from pencil sharpeners to locomotives for the Pennsylvania Railroad. In furniture, Young feels that the Moderne style was best represented by Paul T. Frankl, whose designs were much admired by no less a critic than Frank Lloyd Wright.

Determined that these forms not be confused with Art Deco—there are no zigzags, angles, or Frenchified inlays on these chairs—Young sees the franchise of his new firm as the rescue of this exuberant American style from its undeserved limbo. Even though Frankl himself was an immigrant from Austria, Young considers the streamlined style to be uniquely American, and as appropriate to the economics of the ’90s as it was to the back-to-work challenges of the Depression. His all-American design team includes Cranbrook alumnus Martin Linder, San Francisco-based Kenneth Gilliam and Daniel Friedlander, and Luis Henriquez, who trained at Louisiana State University’s Graduate School of Environmental Design.

The initial nine-chair collection includes a lounge (2) and sofa (7) designed by Frankl in the ’30s, subtly re-engineered for contemporary production requirements. Brand-new are Martin Linder’s Mayfair (1), Rollback Coupe (3), and Broadway Limited (6), and New York, New York, by Luis Henriquez (4). Gilliam and Friedlander collaborated on the Zephyr Love Affaire sofa (5). Built for the contract market, the seating ranges in price from $1,800 to $2,950, plus the cost of upholstery. Design America, Coral Gables, Fla. Circle 300

Products continued on page 171
DOWCRAFT MOVABLE WALLS.
A cost effective system which relocates easily will keep operating dollars in the right place. Your bank.

Some floor to ceiling wall systems are not engineered for easy relocation. In fact building owners can suffer as much as 40% loss of gypsum type demountable panels during the first reconfiguration of their facilities. Dowcraft movable walls are "unitized" steel walls that live up to their intended purpose. They save you money because relocation doesn't require outside contractors, and panel damage rarely exceeds 10%, move after move. By specifying a Dowcraft system you can hold the line on budget by matching the type of wall to any functional and aesthetic requirement, whether it's a group of executive offices, a school interior, or a clean room environment. There are six application engineered systems in all, including a fire rated wall and a system which integrates with Haworth partition and wall furniture... plus effective alternatives to "Ready Wall" and "Design Option" walls. When you're ready to move to a floor to ceiling system that's truly easy and economical to move, Dowcraft distributors and engineers will help you make the choice that makes sense for you. For complete catalog and design information, just call, write or FAX.

DOWCRAFT corporation

65 S. Dow Street, Falconer, New York 716 665-6210 • FAX: 716 665-2743

Circle 61 on inquiry card
UNDER THE RUG

Bolder patterns, brighter colors, and more elaborate textures add new flair to three carpet lines designed for accessible floors.

Carpeting for the electrified office has come a long way from the “any color as long as it’s a solid” stage. Beyond comparing pitch, stitch, and pile heights, carpet for active floors must meet a unique in-use standard: it has to be capable of being lifted and replaced often without cupping or distorting. Now graphics printing and multiple-level tufting technologies give designers many new, bold choices for covering raised-floor or trench power-distribution systems.

Integrated colors, textures, and patterns
Interface offers Ideas in Pattern/Creative Options, an ambitious systematic approach that has 200 selections created from a standard range of patterns, base constructions, and colors. The odds are that a specifier’s choice of each design component will be truly unique. (1) This large-scale pattern is one of the boldest in the new range; a selection kit contains 3- by 9-in. samples of each of 40 patterns. Carpeting in the Standard Federal Bank, Troy, Mich., Lord & Earl, architects (2), illustrates one way patterns disguise the grid: they overwhelm it.

Accessible backing system
Prince St. developed Access Back (3) to combine the economies of broadloom construction with the flexibility of carpet tile. The high-strength backing allows the carpet face to be cut into flaps or removable pieces anywhere under-carpet access is needed, using only a carpet-cutting knife.

Cut sections will lie flat and smooth when folded back onto the floor, with no delamination, curling corners, or unraveled edges. SculptureWeave (4), a new multiple-level dimensional texture offered with Access Back construction, comes in styles from tweeds to dramatic, large-scale patterns. Prince St. Technologies, Atlanta.

Circle 302
Bright colors, deep texture
Milliken has enhanced its already extensive patterning capability with Illuminations (5, top), a new printing technique that allows a boldly colored pattern (Bright Rhythm is shown) to be placed over even the darkest background without losing the vivid contrast of the color. A new high-twist, tufted texture, Rainbow Twist (bottom) is the first frieze construction to be offered in Milliken’s modular carpet line. Milliken and Co., LaGrange, Ga. Circle 305

Products continued on page 177
NEW YORK MARKET

Autumn in New York for architects, designers and facilities managers: speak internationally, and carry a sharp pencil.

A competitive spirit is producing a top-notch lineup of design stars for programs scheduled to be held in New York October 10 through 13. Registration packets are now available for Designer's Saturday; contact Alexia Lalli, International Design Center New York, 29-10 Thomson Ave., Long Island City, N.Y. 11101, (718/937-7474). For activities connected with Design New York, the residential-interior furnishing market, contact Leslie Martin, (212/751-5110), or Mark McIntire (212/679-9500). Showrooms all over the city will be open; some of the new products to be exhibited are previewed here. J. F. B.

Left: fire-rated Orion ceiling panels from USG Interiors, Inc. Circle 307
Middle: Stanley Jay Friedman's Jonathan Chair, molded of springy fiberglass resin. Brueton Industries, Inc. Circle 308
Right: new upholstery and panel fabrics from GF Office Furniture. Circle 309
Below: Douglas Ball's foldable Ballet training-style table. Vecta. Circle 310

Made by Vorwerk in Germany, carpet line includes designs by Richard Meier (top) and Arata Isozaki. Prestige Mills, Inc., Div. Stark Carpet. Circle 304

Right: The Sugar Chair, designed by Alan Buchsbaum, Dennis Miller Associates. Circle 305
Top: Triuna Collection furniture for the smaller office, designed by Manfred Petri. Geiger International. Circle 306

Below: Arts and Crafts-inspired Brookside furniture. Alex Stuart Design, Inc. Circle 311
With 25 colors, 6 thicknesses, 6 sizes and 21 trim pieces, Colormassa tiles have all the variety needed to win your preference. Colormassa is a fine porcelain stoneware that’s ideal for public areas, industrial floorings, urban decoration applications and high-resistance outdoor paving. Colormassa cleans easily because it’s vitrified, remains inalterable with time due to its mass-colouring, and gives you the certainty of a technical quality certified by Floor Gres, the first Italian tile-making company utilizing three technologies: extrusion, pressing and casting. So, ask for Colormassa by Floor Gres. You will find high quality in large variety.
MODULAR CELLS A LA CARTE

Now that prison construction time is often counted in months instead of years, precast-concrete cell modules may be the answer.

Top: utilities are among items that are installed as units are cast.

Our times are such that the need for prison space is far outstripping the supply. Several jurisdictions are under court order to reduce overcrowding; in some cases, newly convicted criminals cannot be incarcerated until another prisoner is released. Thus, all too often, speed is of the essence in bringing new prison facilities on line. The Rotondo Company, of Telford, Pennsylvania, has responded by offering a variety of factory-built, modular prison cells.

Each cell separately cast
The basic unit, which can be stacked as high as eight stories, is a single cell comprising precast-concrete walls, floor, and roof. In plan, each unit is rectangular with one corner deeply chamfered to leave room outside for a mechanical chase (plan left). Upper-level units may be cast with a projected deck, which, when linked with adjacent units, becomes the access mezzanine (section left). Other cell configurations are offered to meet local standards and the manufacturer has the capability to fabricate to custom requirements. The company will also build cells to separately house mechanical equipment.

Fully equipped in the factory
Depending on staffing and supervisory requirements, the units may be aggregated in a variety of patterns to form courtyard-like day rooms, the roof and floors of which are built on site. Specifiers may choose to have the hvac, lighting, electrical fixtures, and plumbing supplied by Rotondo or by others, and may order built-in bunks, flooring, windows, and desks. Prefabricated stairs and rails for dayroom-facing cells can also be supplied (middle and above).

Onsite time savings
According to the manufacturer, many new prison facilities require occupancy within a year of contract award, a schedule that can be readily met through the use of off-site-fabricated units. While the cells are being cast in a factory, the site can be prepared, utilities laid, and foundations poured. Once this infrastructure is completed, as many as 20 cells a day may be installed. In one case, a 128-unit addition was constructed in under five months.

Rotondo/Penn-Cast, Telford, Pa.
Circle 312
Forty years of refining and redefining, pride of craftsmanship, dedication to quality, and the latest technology have made Sub-Zero the unsurpassed leader in built-in refrigeration for homes of distinction. Winner of the "Design Excellence Award," the 500 Series offers exciting eurostyled white and glass interiors, 24" depth, capacities to 30 cu. ft., several combination model choices with widths ranging from 30" to 72".

The exterior beauty and the reliability of a high performance system, backed by our exclusive 12-Year Protection Plan.

Offer your customers and clients the Sub-Zero difference. For more information contact your Sub-Zero distributor or Sub-Zero directly.

SUB-ZERO FREEZER CO. INC.
P.O. Box 4120, Madison, WI 53711, 608/271-2233
Square, rectangular or round tables with wood or aluminum bases and back-painted glass tops. The Variations table can be specified in a variety of sizes, in two heights and in a practically limitless combination of colors and finishes, including four wood stains, eleven shades of Nextel® and eleven metallic automotive finishes. Variations—over five hundred colorful choices.

International Contract Furnishings Inc.
K-13

CALL TODAY for complete details on how K-13 can benefit your project.
1-800-444-1252

International Cellulose K-13 Spray-On Insulation is providing effective thermal insulation, lighting control, acoustic enhancement, and the ventilation and de-humidification you desire. K-13 is a versatile insulation system that can be used in virtually any application. It is an environmentally friendly, non-toxic, and non-sensitizing material. K-13 is a highly efficient, cost-effective insulation solution that can be used in both commercial and residential applications. It is available in a variety of colors and textures to meet the needs of any project.
TAKE THESE TWO GIANT REFERENCES FOR ONLY $14.95
when you join the Architects' Book Club®
You simply agree to buy 2 more books — all at handsome discounts — within the next 12 months.

An Extraordinary Offer!
A $100.00 Value

Here, at enormous savings, are two books that have been specially selected for their usefulness and value — yours at dramatic savings as our way of welcoming you to the Architects' Book Club.

ARCHITECT’S HANDBOOK OF FORMULAS, TABLES, & MATHEMATICAL CALCULATIONS
By David Ballast
Hundreds of calculations, standards and shortcuts to help you...
■ Determine building planning space requirements
■ Calculate building systems requirements including structural systems, HVAC, plumbing, fire protection, electrical, lighting and more
■ Develop designs that meet appropriate energy standards
■ Select the best building material
Almost 500 pages filled with formulas and tables make this one of the most useful references you’ll ever own.
(Publisher’s Price: $59.95)

THE ARCHITECT’S STUDIO COMPANION
Technical Guidelines for Preliminary Design
By Edward Allen and Joseph Iano
■ A unique compilation of quick-reference charts, tables and drawings that can speed you through initial design stages
■ Reduces complex engineering and building code information into simple formal and spatial approximations
■ Helps you define which building code applies to your project
■ Covers the structural system itself as well as mechanical and electrical services and egress
With hundreds of charts, tables and diagrams, you’re sure to use this invaluable reference again and again.
(Publisher’s Price: $39.95)

4 more reasons to join today!
1. Best and newest books from ALL publishers! Books are selected from a wide range of publishers by expert editors and consultants to give you continuing access to the best and latest books in your field.
2. Big savings! Build your library and save money, too! Savings range from 20% to 40% off publishers’ list prices.
3. Bonus books! You will automatically begin to participate in our Bonus Book Plan, that allows you savings up to 70% off the publishers’ prices of many professional and general interest books!
4. Convenience! 14-16 times a year (about once every 3-4 weeks) you receive the Club Bulletin FREE. It fully describes the Main Selection and alternate selections. A dated Reply Card is included. If you want the Main Selection, you simply do nothing — it will be shipped automatically. If you want an alternate selection — or no book at all — you simply indicate it on the Reply Card and return it by the date specified. You will have at least 10 days to decide. If, because of late delivery of the Bulletin you receive a Main Selection you do not want, you may return it for credit at the Club’s expense.

As a Club member you agree only to the purchase of two additional books during your first year of membership. Membership may be discontinued by either you or the Club at any time after you have purchased the two additional books.

To join and get your books, call toll free 1-800-2-MCGRAW. For customer service call 609-426-7600. Or fill out the attached card and mail today! If the card is missing, write to:
Architects’ Book Club®
P.O. Box 582, Hightstown, New Jersey 08520-9959

AGAA-035
Until now, architectural design on the computer was just a CAD and mouse game!

Discover the power of a dedicated CAD workstation on the Macintosh II. Call now for an Evaluation Kit or more info.

Graphisoft
400 Oyster Point Blvd., Suite 517A
S. San Francisco, CA 94080
1-800-344-3468
(415) 266-8720
Circle 71 on inquiry card

Architectural design courtesy of Elizabeth Vespremi Planning & Architecture. ArchiCAD is a registered trademark of Graphisoft, Macintosh is a registered trademark of Apple Computer, Inc.
FAST GRAPHICS FOR AUTOCAD

Display list processing software can handle very large files by mimicking more-costly graphics accelerator boards.

It’s too good to be true: Inexpensive software that mimics graphics accelerator boards costing $1,000 to $6,000—and that, unlike the boards, are compatible with non-CAD software.

But true it is. The biggest problem you are likely to find with these so-called “display list processor” packages is that they are so cheap dealers have little incentive to stock them and to learn them well. Thus, you will have to do your homework. In a sense, this article is your study guide. The four packages we reviewed this month cover the range of features available. They range from bare-bones (Auto80027) to duplicating features available up to now only on accelerator board (AutoPlus and GT Express). All can handle large files. With AutoCAD/386 and emerging versions that work with “protected mode” memory, there’s no software limit to maximum file size.

The most easily measured of all variables is speed of redrags and zooms. All did about the same when operated in the same way on our review equipment. And all did very well indeed. Speedups were five- to tenfold over standard VGA displays. Redrags and zooms were about half the speed we’ve come to expect from specialized graphics accelerator boards. But we reviewed these software packages on a slow, 16 MHz IBM PS/2 Model 80. On a 25 MHz computer, the software speeds will be comparable to those of all but the most expensive new accelerator boards for redrags and zooms.

Note that some accelerator boards also do regens. Display list processing software cannot speed regens, although it does reduce the number of situations regens are required. If your situation requires many regens, an accelerator board would probably be best for you.

Now for your study guide:

How they work
All true CAD programs keep track of entities in your drawing, as if they were physical objects. That is, a line placed between two points in the drawing will have a finite length described by the coordinates of its endpoints. So will an arc or other shape. Your drawing is, in reality, a “list of these objects to display.” When your drawing is first loaded from your fixed disk or network, your CAD program goes through this “display list” and “generates” corresponding images made up of pixels—dots that your screen shows. In general, the CAD software has room for generating more than one version of the image, so you can resize or pan, within limits, and the CAD software will “redraw” the pixels on-screen.

If you change the size or position of the drawing on-screen more drastically, the display list must be regenerated. This dreaded “regen” takes a long time for complicated drawings on most computers. As screen resolutions have improved, the CAD software must keep track of more pixels. Thus, users who were able to avoid regens in the past, must now endure them.

Display list processing software speeds redrags by keeping more “versions” of the drawing in memory. This is not quite the same as using graphics accelerator boards. With the boards, redrags (and usually regens as well) are calculated much, much faster than the computer itself would have been able to handle them. Newer computers, equipped with fast 80386 and 80486 processing chips, lots of memory, and display list processing software, can handle redrags about as fast as can the accelerator boards.

How is AutoCAD tied to the display list processor? Through a “driver” that intercepts the signal to the screen. One such driver is AutoCAD’s ADI. When a drawing is first loaded from disk or the network to be in a drawing session, the display list processor tells AutoCAD that the screen is 32,000 pixels across, which is as large as AutoCAD can handle.

The default AutoCAD ADI “interception point” or interrupt vector is designated 7A hex. This is the default for all the display list software we re-
viewed, too. But if you have another piece of software that already uses 7A, you'll have to change it, or change AutoCAD and the display list. Most versions of the popular Novell network software use 7A as a default.

Why only AutoCAD?
Some other popular CAD software comes with display list processing. VersaCAD/386 is the best example. Judging from talk at the A/E/C Systems show in June, most vendors with CAD software using the Phar Lap DOS extender for memory management will be supplying display list software as well. These built-in processors tend not to be as feature-laden as the packages available as AutoCAD add-ons.

Vendors of add-on packages say they will have their hands full satisfying demand for more sophisticated AutoCAD versions in the months ahead. Thus, no one is willing to announce versions for other CAD software at this point.

Memory matters
There are four ways to use memory in an IBM-compatible computer using MS-DOS or PC-DOS. The various kinds of memory can cause difficulties setting up display list software. Memory is cheap these days—$100 to $150 per MB—so install plenty for your display list to work efficiently.

• Normal DOS memory. This is the "first 640K" of memory. AutoCAD, network software, and ADI drivers compete for this scarce space. Plain-DOS AutoCAD 10 relies upon it, so display list drivers are a tight fit. The Phar Lap version of AutoCAD 10 (AutoCAD/386) uses only about 20K of this memory itself, however, leaving plenty of room for network software and for display list drivers.

• Expanded memory. Also called EMS or LIM (for Lotus/Intel/Microsoft) memory. This memory is allocated in 16K "pages." Display list processors work fastest if they can store the list in expanded memory. Normally, such memory is carved out of the rest of the memory in your computer with an "expanded memory driver" that is invoked in your CONVGSYS file. AutoCAD plain-DOS versions (AutoCAD 9 and 10, for instance) seek out expanded memory and fill it when available. This does not leave any for the display list unless the ACADLIMEM command is invoked in your AU TOEXEC.BAT file. Display list software that runs in expanded memory needs to take a small amount of normal DOS memory as well—29.5 to 43K in the systems we looked at.

• Just being released now are packages that run specifically with AutoCAD/386 in "protected mode." Protected-mode display list processors do not use any normal DOS memory, and they have no software limitation on how big a display list can be. But they do require that an AutoCAD utility, DSPADI, be invoked along with what AutoCAD calls a "P386" driver. There's a P386 driver packaged with each protected-mode display list processor.

• Extended memory. This memory is available in computers using the 80286, 80386, and 80486 processors. It is most commonly used with AutoCAD/386. For the display list to run best, some extended memory is turned into expanded memory. AutoCAD/386 does not need ACADLIMEM to stay away from expanded memory, so installation of display list processors that work with AutoCAD/386 is easy.

• Virtual disks. The VDISK option is built into all versions of DOS starting with 3.3. Most display list processors allow the use of VDISK instead of expanded memory for storing the list. VDISKs can be created in either expanded or extended

**Four Display List Processing Packages**

**Autoboot**

Key features: Versions for AutoCAD 9 as well as AutoCAD 10, ADI 3.1 and higher. For EGA, standard VGA (640 by 480 pixel, 16 colors) and "super" (800 by 600) VGA. Autoboot II allows 1024 by 768 pixel VGA. Bird's-eye window size and position can be modified at installation. So can font size for menus. Display lists as large as 4 MB for original Autoboot, no limits on later versions. Fills can be enabled or disabled. AutoCAD 10-only version due soon will allow multiple viewports. Fills can be enabled or disabled without forcing re-gen. Version promised with tablet/icon overlay capability.

Needs 38K of normal DOS memory (60K for fixed or RAM-disk operation). Protected-mode drivers for 80386-equipped computers allow all of Autoboot I and II to be placed above normal DOS memory. Protected mode version with bird's eye for AutoCAD/386 due Sept. 1. Install program for Version I only recognizes drive A. Install does not set DSPADI environment variable. A more sophisticated installation program due in September.

**Display List Driver VGA**

Key features: For AutoSketch, AutoShade, AutoCAD 10 or AutoCAD/386, ADI 4.0 or above. Resolutions up to 1024 by 768. Uses any memory you set aside for it, plus any memory not in use by AutoCAD itself (or by other programs). Display list overflows to extended memory and to fixed disk. Can display 16 or 256 (dithered) colors. Can support separate display list for each of four viewports. Removed entities can be deleted from display list, or overwritten. Version for TIGA boards offloads pans and zooms onto the TI 94010 or 94020 processor. Single or dual screens.

Version 2.0 DLD-VGA has new setup utility, context-sensitive help, better color figuration utility simulates AutoCAD screen, instead of numbers. Can modify physical colors as well as drawing colors. Supports 256 colors without continued on page 190

---

<188 ARCHITECTURAL RECORD SEPTEMBER 1990>
Your designs deserve the strength and beauty of Crossville Ceramics porcelain tile—the only large-unit porcelain tile made in the United States. Phone today for a free catalog. 615/484-2110.
SOFTWARE REVIEWS

memory. VDISK storage runs more slowly, but is often already set up on your computer. Most display list software will also allow the use of your fixed disk to store lists. But that, unfortunately, slows things down considerably.

Compatibility with video cards
EGA cards are standardized. So are VGA cards with resolutions up to 640 by 480 pixels. But VGA cards at higher resolutions (800 by 600, 1024 by 768) have some subtle differences. All display list software packages can be adjusted to work with many cards, but not all. Before buying, call the supplier for the latest list, to make sure your card is on it.

The IBM 8514/A video standard uses 1024 by 768 resolution as well, but 8514/A is not compatible with VGA at the same resolution. If you are using an 8514/A-compatible graphics card, you need a display list processor that matches it. As of this writing, only Panacea offers one.

How much memory?
There is not a one-to-one relationship between drawing file size and display list size. A drawing with only straight lines and little or no text generates a display list about half the size of the file.

Text and area vastly increase the size of the display list. This is because the display list calculates everything at maximum resolution, so each curve is made up of more chords than would be necessary at lower resolutions. One 350K file we looked at, of a building with curved walls, on a sloping site with lots of contours, and with lots of on-screen text, generated a display list of over 800K. That's over twice the file size.

You can minimize display list size by reducing the resolution of the display list the same way you would reduce the resolution of an on-screen view—with the AutoCAD VIEWRES command.

Changing your drawing
Display lists handle deleted or changed entities two ways. One is to remove the old entity from the list. That works best with smaller drawings, perhaps up to 200 or 300K display list size (even larger if you have a very fast system, say 25 MHz or faster). The other way is to overwrite deleted or changed entities with the background color. This adds to display list size, but saves the need to recalculate the entire display list. It may be faster for you if you have very large files.

Some packages allow "automatic" cleanup after a user-specified number of changes. To be informed that a regen will occur, use the AutoCAD REGENAUTO OFF command.

Lots of changes coming
The features of four vendors' packages are in the accompanying box.

As reviewed in RECORD August 1990, page 106, Metheus and GT Graphics were the clear winners for plain VGA; their installation programs were easy to use, documentation (especially for Metheus) was excellent, and on-screen controls exceptional.

Panacea's offerings work with the most graphics cards, especially non-VGA cards. And they are attractively priced. By the time you read this, the installation program will have been improved.

Foresight, the first firm to make display list processing software widely available, is not standing still, either; with AutoBooster II (protected-mode, bird's eye, and so forth) due this fall.

And Foresight is designed to work with AutoCAD 9.

All these packages are good. And truly, they are getting even better. STEVEN S. ROSS
Circle 313

---

dithering, if your system can. Display list clean-up command DODCLEAN available at AutoCAD command line.

Needs 43K of regular DOS memory. Easy installation and setup utility.

GT Express 1.00
Artist Graphics, 675 Patton Rd., St. Paul Minn. 55113. 800-6ARTIST or (612) 631-7800. $385, $255 for additional units.

Key features: For EGA and VGA systems, Auto-Shadow, AutoCAD 10 or AutoCAD/386, ADI 4.0, single screens only. Uses on-screen menu that does not preempt top-of-screen AutoCAD menus. Bird's eye view. VDISK or expanded memory. Automatic cleanup of deleted entities. Resolutions to super VGA (800 by 600). Maximum display list is 8 MB, unlimited size in protected mode. No overflow to disk from RAM (although you can specify that the entire display list be kept on a fixed disk).

Bird's eye can be repositioned and resized with drawing on-screen. Pans are directed from bird's eye. Update due in September for 1024 by 768 and will include new GT Flexicon interface for AutoCAD.

Memory: Uses 29.5K of normal DOS memory with AutoCAD ADI 4.0 driver, none with AutoCAD/386 in protected mode version promised soon.

Metheus AutoPlus
Metheus Corp., OCC Science Park, 1600 NW Compton Dr., Beaverton Ore. 97006. (503) 690-1550 or 800-METHEUS. $399 (no charge with Metheus UGA graphics adaptor).

Key features: Works with any AutoCAD ADI 4.0 (and higher) application, such as AutoCAD 10 and AutoCAD/386, AutoSketch and AutoShade, at resolutions up to 1024 by 768. Deleted entities are marked so they will not be drawn on the screen. Can maintain a number of separate palette files (good for working with drawings from many sources). AutoPAN pans the image automatically as the cursor reaches the edge of the screen. Display fonts can be changed, depending on resolution. Bird's eye view can be moved to any corner, but not resized. Fill pixel command magnifies 16 by 16 pixel area under cursor. Menu exists apart from AutoCAD pulldown menus. Allows 33 zoom levels at 1024 by 768 resolution. By far and away the most complete installation guide. Supports multiple viewports. Maximum display list size: Roughly 15 MB.

Memory requirements: Appears to be under 50K. Protected mode version, due in September, will require no normal DOS memory.
Devilish as it seems, up to half the floor space in storage areas is wasted on aisles.

With TAB Mobile Systems, only the aisle you need appears and disappears—with less effort than opening a file drawer.

Getting rid of those extra aisles offers design possibilities for a more efficient storage system.

A TAB representative can show how our Mobile Systems fit in any office environment. You'll see how TAB offers more ways to make space more productive, and what you can save clients in dollars and cents.

**TAB has it all:**
- Special storage solutions from artifacts to X-rays.
- Systems for paper files, magnetic media, microforms and optical disks.
- Colors, finishes, textures and fabrics.
- Manual, mechanical or electrical choices.
- Complete environments and filing accessories.
- Training, installation, and maintenance.

Look at it this way. When it comes to conserving valuable floor space, those aisles are guilty as sin!

There are 115 TAB offices throughout North America. For the one nearest you call:
- **1-800-672-3109 Ext. 4612**
- In CA, 1-800-742-0099 Ext. 4612
- FAX 1-415-852-2687.

See us in Sweet's GBR 10670
In designing the new United Airlines Terminal at O'Hare, Helmut Jahn has made an architectural statement that is memorable for its appearance and exciting in its distinction as one of the most outstanding airport terminals in the world.

So as not to repeat the typical spiritless and dismal environment so common to such facilities, Jahn uses conceptual clarity in the choice and combination of materials.

Happily, TCS (terne-coated stainless) is used to cover the folded roof sections of the Ticketing Pavilion. Already having weathered to an attractive, warm gray, TCS quietly contributes to the overall beauty of the terminal's total visual eloquence.

TCS is a unique roofing material. Its finest testimonial is the roster of distinguished architects such as Helmut Jahn who continue to specify it for major projects.

Requiring no maintenance, TCS promises a life span which can be measured in generations rather than years.

We feel that it deserves your consideration whenever metal roofing or weathersealing is specified.

Architects: Murphy/Jahn, Chicago, Illinois
Project: United Airlines Terminal 1 Complex O'Hare International Airport Chicago, Illinois Roofer: Eako-Young, Chicago, IL

TCS is available in Europe and in the Pacific Rim. For more information, see our catalog in Sweets

FOLLANSBEE
FOLLANSBEE STEEL • FOLLANSBEE, WV 26037
FAX 304-527-1269 • Call us toll-free 800-624-6906
Circle 74 on inquiry card
For more information, circle item numbers on Reader Service Cards

Hospitality furnishings / A four-volume set of new product catalogs illustrates hotel and restaurant furnishings, conference-center, function-room, and banquet seating and tables, and banquettes and other designs for fast-food installations. Shelby Williams Industries, Morristown, Tenn. Circle 400

Mackintosh furniture / A lavishly illustrated catalog shows a range of furniture designed by Charles R. Mackintosh now offered as part of Cassina’s Master’s Collection. Text describes each item, giving dimensions and production details. Atelier International, Long Island City, N. Y. Circle 401

Systems furniture / A new brochure, subtitled “a catalog of office habitats,” includes in-use photos of panel systems, files, and work surfaces, with design details including upholstery fabrics, recessed pull treatments, and worktops shown close-up. Shaw-Walker, Muskegon, Mich. Circle 402

Vinyl floorcovering patterns / Toli International, formerly Toli-Matico, offers a color brochure on a wide line of resilient floorcoverings for commercial and residential use. Realistic patterns include deeply textured granite, sandstone, and terrazzo designs. Toli International, Commack, N. Y. Circle 403

German whimsy / A color folder shows the Hopper Family, playful chairs produced in Germany by the MDZ Design Studio. Each made with curved-metal back legs and rigidly vertical wood front legs, the chairs have nicknames like Woody and Hippity. Kinetics, Toronto. Circle 404

Ceiling suspension systems / A brochure supplies specifications and installation details on two new fire-rated ceiling suspension systems. Metal Gridlock board protectors give the appearance of a 2-by-2-ft ceiling to more economical 2-by-4-ft panels. National Rolling Mills, Frazer, Pa. Circle 405

Wood-detailed furniture / A full-color catalog introduces the Carmel line of wood-framed one-, two-, and three-place contract seating. The design comes in two upholstery styles and a choice of over 200 leathers and textiles. Gunlocke, Wayland, N. Y. Circle 406 continued on page 197

THE PERFECT COMPLEMENT: RADI water coolers.
BY OASIS, OF COURSE.

Contemporary, functional, beautiful. And Radii water coolers by Oasis add the final touch. They serve the handicapped and anyone else with 8 GPH of chilled drinking water. Components in these water coolers/fountains are lead free as defined by the Safe Drinking Water Act Amendments of 1986, and the Lead Contamination Control Act of 1988. See the full line of Radii coolers and fountains in Sweet’s or Hutton Files. Or call your Oasis distributor, listed in the Yellow Pages. Ebco Manufacturing Co., 265 N. Hamilton Rd., Columbus, Ohio 43213-0150.

WATER COOLERS BUILT WITHOUT SHORTCUTS.

Circle 76 on inquiry card
Chairs of Note.

Chairs from Adden Furniture perform. Wherever they appear... our seating earns rave reviews.

The Adden Furniture Seating Collection features exceptional comfort and support backed by solid oak construction.

When your audience demands seating value, count on Adden Furniture for the best seats in the house.

ADDEN
FURNITURE

26 Jackson Street, Lowell, MA 01852 (508) 454-7848

Circle 77 on inquiry card
For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified.

Pages 70-77
Bordens, Perrin & Norrander, Inc.
Zimmer Gunsul Frasca Partnership, Architects

Pages 88-93
Dean Witter Financial Services Group
Lohan Associates, Architects

Pages 94-97
American Standard, Inc., Showroom
Tigerman McCurry Architects

Pages 104-109
Hendle Film Corporation
Hodgetts & Fung Design Associates

Pages 110-117
Manhattan Triplex
Steven Forman Architect

Pages 111-118
Chair: Atelier International


Pages 122-129
Princeton Computer Science Building
R.M. Kliment & Frances Halsband Architects

Pages 126-131
Escondido Transit Center
Rob Wellington Quigley, Architect

Pages 142-145
Federal Correctional Institution/Sheridan
Zimmer Gunsul Frasca Partnership, Architects

Pages 146-147
Sonoma County Adult Detention Facility
The Ehrenkrantz Group, Architects

Sources continued on page 197
The Lightweight, Flexible, Unbreakable Mirror.

A-LOOK ceiling tiles are the panels of choice for your interior applications.

Consider the following advantages:

- Fire rated.
- Maintenance free.
- Easy installation with grid system and/or adhesive tape.
- Available in a variety of colors, patterns and sizes (2'x2', 2'x4', 4'x4' and more).
- Unbreakable.
- Light in weight.

A-LOOK EX is the perfect panel for all your ceiling applications. Great for high humidity areas such as pools, saunas, bathrooms and outdoors. These panels also offer compatibility in various sizes, colors and patterns.
Durable fabric / A folder holds data sheets describing upholsteries and wall-coverings woven with Cordura nylon, showing the fabrics used in schools, hotels, offices, and other high-traffic applications. Photos illustrate textures, and test results are given. DuPont Co., Wilmington, Del. Circle 407

Kid-size chair / The ball-footed Bola chair, an IBD Gold Award winner, has been downsized for three-to six-year olds, with a 21-in.-high table to match. A binder page shows the line in several color combinations. Fixtures Furniture, Kansas City, Mo. Circle 408

Motorized shades / Fold-up and roll-up shading systems are made for manual or motorized operation. Fabric options include light-diffusing fiberglass mesh screens and light-proof blackout material. A brochure details vertical and curved installations. Automatic Devices Co., Allentown, Pa. Circle 409

Modular work-walls / The Spec-Wall Collection has expanded into a new category of modular work-wall configurations. A range of possible assemblies as well as sample office layouts are illustrated, and a 16-page selection guide is included. Dar/Ran Furniture Industries, High Point, N.C. Circle 410

Office furniture / A three-volume catalog features integrated contract furniture by Panel Concepts and PCI/Tandem, and explains the company’s single-source capability to the designer and facility manager. All products are listed by function. Panel Concepts, L.P./PCI Tandem, Santa Ana, Ca. Circle 411

Preserving the past / Authentic architectural details are illustrated, including door, window, and wall treatments; cornice moldings; and stair brackets. The literature introduces Fabucast and fire-rated Classacast, two new lightweight, durable materials. Focal Point, Atlanta. Circle 412

According to Rick, it's a jungle out there.

Especially for a veneer buyer. It's a jungle of undefined customer expectations. It's wading through a forest of subtle performance features of a variety of wood species. It's searching out the source and choosing just the right log for the job. It's knowing just how to bring out the innate beauty of each wood species.

"It requires a lot of exploration," says Rick Philips, Director of Purchasing at Eggers. "I have to determine exactly what the customer has in mind as to product appearance. I call it 60 questions. Of course you have to know what questions to ask. In the 14 years I've been at Eggers, I've been lucky enough to have some of the old craftsmen pass on a lot of their knowledge to me.

"The next step is to see if the customer's expectations can be accomplished within the limitations of a particular species. Our people know how workable a particular species is and how to bring out the best appearance. I guess you could say that consultation is a big part of our job."

"After that, it's a matter of knowing where to find the most desirable fit or log. It may involve as many as 15 to 20 suppliers. We have a good relationship with our suppliers. It pays off when we're looking for just the right log.

"We're usually pretty successful in giving the customer just what he wants."

Eggers has a booklet of tips on working with and specifying veneer. Call (414) 793-1331 or write for it.

Eggers Industries
1819 East River St., P.O. Box 88, Two Rivers, WI 54241-0088

Circle 80 on inquiry card
Another beautiful building in the Sunshine State utilizing the Series 3600 Curtain Wall

**Performance:** Designed to meet the most demanding performance specifications for today's construction market. The 3600 Curtain Wall offers comprehensive certified test reports for air, water, structural, and seismic testing. Baffled weeps and standard molded corner gaskets are just a few of the many design features the 3600 Curtain Wall system has to offer.

**Labor Savings:** Completely factory fabricated stick system designed for inside erection and glazing with 1" or ¼" standard infills.

**Profiles:** Allows for both 2½" or 3" face profiles vertically or horizontally with a nominal 6" depth.

**Thermally Improved:** Exposed interior aluminum is thermally isolated from the exterior metal using ¾" injection molded nylon clips. System has a certified CRF (Condensation Resistance Factor) of 67 in accordance with AAMA 1502.7 and 1503.1.

Available anodized in standard clear bronze or black. Also available in a rainbow of colors using high performance paint finishes.

See us in Sweets 08400 UMV.

“**Our Constitution is Service**

---

For complete information call 1 (800) 627-6440, Fax 1 (800) 289-6440, or write

**United States Aluminum Corporation**

**Manufacturing Facilities**

- 3663 Bandini Blvd. Vernon, California 90052 Telephone (213) 268-4230
- 200 Singleton Drive Waxahachie, Texas 75165 Telephone (214) 937-9651
- 6989 West 73rd Street Chicago, Illinois 60638 Telephone (708) 458-9070
- 720 Calf River Road Rock Hill, South Carolina 29730 Telephone (803) 386-8326
- 750 Cardinal Dr., P.O. Box 333 Bridgeport, New Jersey 08014-0333 Telephone (609) 467-5700

Subsidiaries of International Aluminum Corporation ©1990 International Aluminum Corporation

Circle 81 on inquiry card
Classical motifs play contemporary rhythms against smooth, white faux-stone. Detailed with sand-cast brass, bronze or aluminum trim in high relief, or integrally molded faux-stone dentil, these sconces contour interiors with incandescent or fluorescent indirect and semi-indirect illumination. UL Listed. Designed by Kevin von Kluck.
It's rough finding product information when you're drowning in catalogs and floundering in "junk mail." And the information you do come up with may well be incomplete or out of date.

Sweet's organizes and triple indexes hundreds of catalogs filled with detailed product information. SweetSearch®, a computerized index of manufacturers' catalogs, makes product searches easier than ever.

BuyLine® finds local representatives for you.

THAT'S WHY OVER NINE OUT OF 10 ARCHITECTS NOW REACH FOR SWEET'S.

For more information on how Sweet's can help you: Call 1-800-421-9330 or circle and return the reader service card today.
IF EASTERN EUROPE WANTS TO GET PRODUCTIVE AGAIN, WE'LL SHOW THEM A SYSTEM THAT WORKS.

For the past 200 years, the Constitution and the Bill of Rights have been the blueprint for the most productive system of government on earth. To copy it, you'll need another system that delivers just as reliably: The Lanier Copier System. It's guaranteed to be up and running 98% of the time. And you'll get a loaner for the time it's not. And you'll get a 24-hour-toll-free Hot Line for any questions. So for more productivity, call 1-800-852-2679. And get up and running without a lot of red tape.
PERFORMANCE TAKES A GIANT STEP. Remarkable Orion Ceiling

Panels surpass glass fiber in every way. Unbeatable sag and water resistance... high NRC's and STC's...

fire-rated... pure white color, no yellow cast. For more information, call 1-800-950-3859.

USG Interiors, Inc. 101 S. Wacker Dr., Chicago, IL 60606-4385.
ACCESS FLOORS...

Continued from page 158

sprinklers. Others worry that fans and diffusers will interfere with cabling.

Both designers and users emphasize that access flooring works best when considered as an aspect of a cable-management strategy. Without thoughtful management, raised floors may actually complicate telecommunications. It is tempting to just toss cable under the floor and hope that the generous space will make up for lack of order. But this can lead to a telecommunications nightmare: floors clogged with active and abandoned cable, one indistinguishable from another, and faulty devices that can't be found. As Walter Cooper says, "In terms of cable, it's not out of sight, out of mind."

Cable management

To maintain cabling discipline, consultants often advise clients to run wire under their access floor in cable trays. Experienced companies, such as USAI, have developed their own wire-management programs. Merrill Lynch tracks cabling through a proprietary computer database.

Whether or not access flooring becomes an essential component of the American office depends largely upon the telecommunications technology that put it there in the first place. Communications designers do not agree on how much cabling capacity will be required by the office of the future. Cables are becoming smaller and more standardized—fiber-optic is replacing copper, and multimedia cable, such as twisted pairs, is replacing wiring "native" to each device. The need for raised floors may thereby be reduced. Other experts contend that any reduction in cable variety or size will be offset by an increase in their quantity, and point out that the turning radius required by fiber-optic, for example, and its fragility may influence the decision to choose raised flooring.

What do architects need to know about telecommunications cabling and distribution? "Not much," according to Paul Kreager, a communications planner and teacher at Washington State University in Pullman. "Architects ought to ignore today's specific technology and focus on designing a good, adaptable telecommunications infrastructure. That means adequate entry facilities, vertical risers, closets, and horizontal pathways." Kreager is one of the authors of a new international standard—the "Commercial Building Standard for Telecommunications Pathways and Spaces"—recently adopted in Canada and due for U.S. adoption soon. It was developed by the Telecommunications Industry Association to help both architects and users.

Whether access floors fit into a given building's wire-management scenario is still a decision to be made on a case-by-case basis. Clients will increasingly call upon the architect to develop an architecture that supports their wiring strategy—or help them to devise one.

NANCY LEVINSON

Further information


BICSI Telecommunications Distribution Methods Manual, by The Building Industry Consulting Service International (BICSI), which is based at the University of Southern Florida, in Tampa, and is available from GTE TestMark Laboratories, Publications Department, 3050 Harrodsburg Road, Lexington, Ky. 40503 (813/974-2695).

Recommended Test Procedures for Access Floors is intended to help contractors and specifiers. CISCA, 104 Wilmot Road, Suite 201, Deerfield, Ill. 60015 (708/940-8800).
CREATE NEW HORIZONS WITH EMBOSSED METALS

Before every great idea there's a void waiting to be filled. And textured metal panels by RIGID-TEX® can fill that void. Lightweight, yet strong and mar resistant, they can add timeless beauty to any interior or exterior. For everything from walls and column covers to elevators and escalators, in stainless steel, brass, bronze and more. We have dozens of standard patterns, and will produce any custom design you can imagine. Challenge us today!

RIGIDIZED® METALS CORPORATION
658 Ohio Street, Buffalo, New York 14203-3185
800 836-2580, Fax 716 849-0401

Circle 87 on inquiry card

PRESERVATION
PLAN ON IT

Planning on restoring a house, saving a landmark, reviving your neighborhood? No matter what your plans, gain a wealth of experience and help preserve our historic and architectural heritage. Join the National Trust for Historic Preservation and support preservation efforts in your community. Make preservation a blueprint for the future.

Write:
National Trust for Historic Preservation
Department PA
1785 Massachusetts Ave., N.W.
Washington, D.C. 20036
The meaning of beauty

- The beauty of GRANITIFIANDE® makes you forget its most important quality: superior technology. The result of endless research, matchless creativity and sophisticated technology, GRANITIFIANDE® in polished or matte finish allows for infinite creations of stunning beauty. GRANITIFIANDE® is porcelain stoneware through and through. Stronger than granite, it is a perfect blend of function and aesthetics. GRANITIFIANDE®, architectural projects that leave a mark forever!

- In CANADA:
  OLYMPIA FLOOR & WALL TILE Co.
  Head office: 1000 Lawrence Ave. West
  Toronto, Ontario
  Canada M6B 4A8
  tel. 416.785.6666
  fax 416.789.5745

- In U.S.A.:
  TRANS CERAMICA LTD
  P.O. box 795
  Elk Grove Village
  IL 60007, U.S.A.
  tel. 312.350.1555
  tnx 517085 TCLCER
  fax 312.350.9180

- In MEXICO:
  VITROMEX S.A.
  Apdo, postal 385
  25230 Saltillo, Coah.
  Mexico
  tel. 841.53144/53242
  tnx 391190 VITSMEX
  fax 841.53122

- DALLAS, Texas
  OAKLAWN FARMOUNT Bldg.
  Architects:
  SULLIVAN KEY MERRIL
  Arch. & Planners Inc., Dallas

Circle 88 on inquiry card
It's about time.

Specifying a roofing system used to take days. But now it takes just minutes.

Tam-CADD® from Tamko generates CSI-formatted specifications, drawings, construction details, even multiple roofs with electronic speed and total accuracy.

All you need to operate Tam-CADD is an IBM PC or compatible computer with MS-DOS as the operating system, a minimum 640K RAM, a 30 megabyte hard drive, AutoCAD Release 10 or higher and word processing software capable of importing ASCII files.

If you're an architect, Tam-CADD will help you create a better specification in less time and with fewer associated costs. If you're a contractor, Tam-CADD can give your bids more credibility.

Call 1-800-641-4691 today for a copy of our free brochure. Tam-CADD. Isn't it about time?

Tam-CADD is a product of TAMKO Asphalt Products, Inc. © 1990 TAMKO Asphalt Products, Inc. System developed by Architectural Synthes, Inc., Nashville, TN.

Circle 89 on inquiry card
Continued from page 103

shade. When I thought about the exterior, I knew I wanted a kind of industrial effect, and I thought of rust right away. My initial idea was a mixture of rust and brass as a way of being nice to the clientele, because brass can give a sense of self-esteem, while the presence of rust seems like a criticism of the guest. But Amat told me to go ahead and just have rust. The rust on the awnings is not controlled in any way. The awnings will last 15 years and then we will have to change them. It’s like in Japan where they change the panels of paper houses. When the awning rusts completely, it will be very lovely, sort of lacelike. Right now the awnings are a beautiful orange-rust shade, but they will be even better when they evaporate into the air.

BI: How are the awnings fixed to the facade?

JN: The elements are placed in a kind of cruciform. They are worked by electronic levers from the inside.

BI: Are any light-filtered louvers mounted on the inside?

JN: Usually in hotels curtains are massed by the sides of the windows. At first we didn’t want to have blinds or curtains, but we found that people expected them, because they like to sleep in absolute darkness. Also, the curtains help insulate heat, and some of the beds are fairly close to the windows. The curtains are canvas and white, like all the other textiles in the room.

BI: What materials were used for the interior?

JN: Cement, light colored wood... the ultimate goal was to have everything in white, a biblical kind of simplicity, a monastic effect. But we plan to change that very soon when we will add something artistic in each room, as a kind of marking of the place. The already existing white backgrounds will serve as a visual support to the added new works.

BI: And the furniture?

JN: I designed it myself especially for the hotel. Perhaps the most noteworthy item is the high bed in each room (page 100-101), which, like old country beds, is a meter off the ground. It shocks some guests that they have to lift up their backsides to get into bed. Another innovation is the furniture for the restaurant [bottom, page 98], where the design is based around the table. I imagined a room where the only décor was the tables with table covers, linen, everything in white. The chairs and other furniture are made in steel with foam cushions, covered in white fabric. The fabric covers on the chairs are changed regularly, just like the covers on the bed. One of the chairs designed for the hotel may be mass-marketed soon in America. The furniture is not meant to be farmlike. The only part of the design that is farmlike is the character of the building; the rest is

not very rustic.

BI: Is there any painted decoration in the restaurant?

JN: No, but I’d like to add some neon letters, just something to add a sense of vibration, but unfortunately that would cost a lot. The director of the Center for Contemporary Art in Bordeaux, Jean-Louis Froment, said that he would take care of that for us. I have in mind not something that’s already been done—a phrase like Coca-Cola—but rather something minimal, more conceptual. For me, the word minimal is not at all pejorative. Minimal art is one of the most difficult arts that exist. Mies van der Rohe was one of the best minimal architects, and we see from his work that it wasn’t as easy as some people may think. I am seeking to create a place that marks its own existence, and also a place that asks questions. A place that will select its own clients, those who choose to frequent it.

BI: Why are some of the hotel rooms irregularly shaped?

JN: Each room was designed to optimize the view. I treated it as a sort of game. Some of the rooms, like those above the restaurant, are very narrow. Some are 15 meters long, and you don’t even see the bed, which is hidden in an alcove. The beds are always in a strategic position, high off the ground, so that the guests can appreciate the view while lying down. Another bed is right against a window that is 10 meters long. I wanted to exploit the view in the different floor plans, and also to have a variety of room shapes, so that

Continued on page 222
Steelite. Our support is as attractive as your design.

Steelite service will reinforce the esthetics—and endurance—of your next project

Total building enclosures—metal roofing and siding, standing seam roof systems, louvers and ventilators—look better and last longer because Steelite works with designers and owners from the beginning of the building concept and throughout design and construction.

Before your design is even on paper, Steelite provides technical design and engineering assistance, computerized specifications, load calculations, and coatings recommendations. Prior to production, we ensure quality in the metal substrate and on the coil coating line. Throughout the production cycle, in-house and independent testing verify the quality you specify, from coating film integrity to panel tolerances.

This same quality control continues through packaging and shipping. And with Steelite’s nationwide network of qualified dealers/erectors, plus our own technical assistance, construction quality matches the components we manufacture.

Metal building panels may all look alike. Buildings don’t have to. Steelite service and attention to detail can reinforce your building esthetically, physically, and durably. Put Steelite quality into the design of your next new or renovation project: commercial, architectural, institutional, or industrial. See us in Sweet’s or call for detailed information.

The Limited Headquarters, Columbus, Ohio
Architect: Acock-Schlegel
Contractor: Setterlin Construction

STEELITE, INC.

1010 Ohio River Boulevard, Pittsburgh, PA 15202-2836, TOLL-FREE: 800-824-1741

Circle 91 on inquiry card
Here are some building products’ catalogs, brochures and technical literature available in the architectural market today. To receive your copy of any of them, just fill out and return one of the special Reader Service Cards bound into this Product Literature Showcase.

Stop Wall Damage
A 24-page catalog describing newly reformulated Acrovyn® is available from The C/S Group of Companies. Acrovyn wall protection is offered in 68 standard colors, 22 of which are coordinated to Formica® brand laminate. The Acrovyn corner, wall and door protection system carries a U.L.® Classified, Class I Fire Rating. The C/S Group: 800-233-8493. FAX: 717-546-5169.

The C/S Group
Circle 500 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Floor and Stair Coverings Brochure
Contains helpful illustrations and specifications on fire safety and other rubber floor and stair tread systems featuring many different marbleized or plain raised and surface designs in all decorator colors. Included are rubber landing and riser materials, vinyl treads and risers, felt cord and traffic tiles along with recommended adhesives. Musson Rubber Co., P.O. Box 7038, Akron, OH 44306.

Musson Rubber Co.
Circle 501 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Chadsworth Incorporated
Authentic Replication Columns follow the specs derived from the fifteenth century Renaissance master architect, Vignola. Architectural Stock Tuscan, Contemporary and Art Deco columns in pine, redwood and other wood species. Diameters 6'-36'. Heats to 40. CHADSWORTH - Expect the Best! Catalogs or information Box 53268, Dept. 9, Atlanta, GA 30365. Ph. 404-876-5410. Fax 404-876-4492.

Circle 502 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Chadsworth Incorporated

Fantech F-Series Inline Centrifugal Fans
The Fantech Inline Centrifugal F-Series fan is the answer to many residential, industrial, and light commercial air movement problems. It’s state of the art design puts it in a league by itself. It’s designed to move air efficiently, handle static pressures, and operate very quietly. This combination far superior to all other "tube" type fans. The applications are limitless and Fantech backs it all up with a 3 year warranty.

Fantech, Inc.
Circle 503 on the PRODUCT LITERATURE SHOWCASE inquiry card.

CLEAR-Pb® Lead-Plastic X-Ray Room Shielding
CLEAR-Pb® modular barriers and windows solve shielding problems in hospital x-ray, CT and special procedures rooms. CLEAR-Pb® is a lead-impregnated transparent plastic that is shatter-resistant. Available in 200 stock sizes up to 6 x 8 ft. and in lead equivalences from 0.3 to 2.0 mm. FREE Planning Guide showing x-ray room installations available on request.

Nuclear Associates
Circle 504 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Weatherstrip & Thresholds
Since 1952, Pemko has been manufacturing thresholds, weatherstripping and gasketing products for commercial and residential door openings. This 6-page catalog covers our extensive line of solid brass products including floor closer thresholds, automatic door bottoms, interlock thresholds, astragals and rigid-door gasketing. Pemko, Ventura, CA and Memphis, TN.

Pemko
Circle 505 on the PRODUCT LITERATURE SHOWCASE inquiry card.
New! Grani/Rapid
Grani/Rapid is a two-component fast-setting latex dry-set mortar for the installation of natural, agglomerated marbles and granite, and impervious porcelain tiles. Grani/Rapid is specially designed for setting all these tiles over all kinds of substrates, indoors and outdoors, on walls, floors and ceilings. Grani/Rapid is available in a convenient 15 kg kit. For more information, please call 1-800-42-MAPEI.

Mapco
Circle 506 on the PRODUCT LITERATURE SHOWCASE inquiry card.

A Practical Solution to Roof Paver Stone Applications
New bulletin shows a better way to transform a roof into a patio, terrace, balcony, walkway, plaza podium, promenade, or just plain roof deck, using the Pave-El Pedestal System. Designed to elevate, level, and space paverstones for drainage in any weather, Pave-El reliably protects roof, paver stone, membrane and insulation. Ellicott Station Box 119, Buffalo, NY 14225. 416-252-2090.

Envirospec, Inc.
Circle 507 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Elegant Entrances
The C/S Group has an 8-page brochure describing their improved Pedimat® entrance mats. Pedimat has all aluminum hinged tread rolls with plush 100% nylon carpet treads in 25 designer hues. And now your carpet Pedimat can easily be personalized with your logo or trade-mark. The C/S Group: 800-233-8493. FAX: 717-546-5169.

The C/S Group
Circle 508 on the PRODUCT LITERATURE SHOWCASE inquiry card.

General Shale Brick
The General Shale Catalog features 92 face brick produced by this leading brick manufacturer. Also included are special shapes, patio brick, fireplace brick and flue liners, brick sculpture, landscaping products and concrete masonry units. To order your free copy, write: General Shale Products Corporation, P.O. Box 5547 CRS, Johnson City, TN 37602.

General Shale
Circle 509 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Indy Lighting Offers New White Son Fixture Line
Let White Son bring your colors and textures to life at 50% the operating cost of PAR lamps. We have an accent light to meet all your merchandising and display needs, plus track and downlights all utilizing either the 35, 50, or 100 watt lamps by Phillips. Call 800-542-2064.

Indy Lighting, Inc.
Circle 510 on the PRODUCT LITERATURE SHOWCASE inquiry card.

The World of Kitchens
Programme Summary
ALNO, Europe’s largest manufacturer of cabinetry, is known for quality of workmanship and attention to detail. ALNO has a wide range of cabinet styles for the kitchen, bath, bedroom, family room and office, available through a national network of dealers. ALNO KITCHEN CABINETS INC., 196 Quigley Boulevard, New Castle, DE 19720, 800-233-5218.

Alno Kitchen Cabinets Inc.
Circle 511 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Solve Roof Drain Problems With RetroDrain
RetroDrain® allows you to replace a broken existing roof drain entirely from the roof top. No access required to the building’s interior and installation is completed in minutes. Interior ceilings are not damaged and work inside the building is not disrupted. An easy cost-effective method of replacing roof drains.

Uflow Roof Drain Systems
Circle 512 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Choose the Ironing Center That’s Right For You
With IRON-A-WAY® ironing centers, quality, versatility and modern convenience are built in. That’s why IRON-A-WAY® is chosen more often than any other ironing center. Each one is safe, practical and functional - the perfect addition to your home and to your lifestyle.

Circle 513 on the PRODUCT LITERATURE SHOWCASE inquiry card.
Closet Maid® Systems Offer Storage Solutions
6-page brochure features product specs, 17 four-color photos and 7-line drawings of storage systems for closets, laundry, pantry, linen, cabinetry, garage and light commercial storage areas. Nationally distributed through authorized installers. Closet Maid® line cost-effectively maximizes accessible storage capacity without increasing square footage devoted to traditional storage areas. 25 year ltd. warranty.

Clairson International
Circle 514 on the PRODUCT LITERATURE SHOWCASE inquiry card.

New: Algoma Hardwoods Raised Panel Door
Algoma brings new style to a traditional look as it introduces the Raised Panel Door (SLC-5RP). Grain all runs vertically, resulting in cleaner lines and a more pleasing appearance than the ordinary stile and rail construction. It begins with a hardwood lumber core. High quality architectural grade faces and crossbonds are hot-pressed to the core to provide both strength and beauty.

Algoma Hardwoods, Inc.
Circle 515 on the PRODUCT LITERATURE SHOWCASE inquiry card.

HYZOD® SolarShield Polycarbonate Glazing
Sheffield Plastics HYZOD® SolarShield glazing has all the impact strength of standard polycarbonate with the U.V. resistance of acrylic backed by a five year warranty against excessive yellowing, loss of light transmission and breakage. Typical applications include skylights, covered walkways, canopies and other areas subjected to extreme sunlight exposure.

Sheffield Plastics, Inc.
Circle 516 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Decorative Grilles
Unusual visual effects emerge when our grilles are designed for area effects. Versatility is the theme. R & G offers architects and interior designers many ways to express the changing forms of metal with the integrity of R & G's architectural grilles. Custom or standard finishes are available plus any grille can be created in matching color to blend with your decor. 202 Norman Ave., Brooklyn, NY 11222. 800-521-4895 fax 718-549-2611.

Register & Grille Mfg., Co.
Circle 517 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Security Revolving Doors and Portal Systems
Horton's automatic revolving doors and portal systems combine security with reliability, efficient performance, reducing the need and cost of security personnel. Described in this full color brochure are Control Flow™ Revolving Doors—Card Access for two-way traffic security, Directional Control for one-way traffic security, and Security Portal Systems for low volume traffic areas.

Horton Automatics
Circle 518 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Picture Hanging The State of the Art
New and complete, a fully illustrated 4-color catalog of Hanger Rods, Picture Moldings, with Hooks, Clips and Holders for framed, matted or unmatted paintings, prints, posters, drawings, foamed core presentation boards and more. New—Clips, Rods and Bars for hanging quilts, weavings and tapestries. Write for catalog and samples. 250 South Lake Ave., Duluth, MN 55802.

Walker Systems, Inc.
Circle 519 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Enhance the Beauty of Your Designs with High Quality CROSS VINYLattice
No worries about unsightly panels because there's no splitting, cracking or rotting. CROSS VINYLattice comes in ten fade resistant colors that never need painting. Diagonal and rectangular patterns are available in three weights and various sizes. Catalog in 1990 Sweet's section 10240/ CRO or call 404-451-4631, 3174 Marjan Dr., Atlanta, GA 30340.

Cross Industries Inc.
Circle 520 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Window Management:
The MechoShade System—the original—is operated manually, electrically, and by computer and used as a building-standard window-shading system by the foremost developers, designers, and architects. High, wide, inaccessible windows are easily fitted. Reduction of summer heat and winter heat-loss with energy savings. Literature available. Dozens of new shades and fabrics and glass selection chart.

MechoShade Systems, Inc.
Circle 521 on the PRODUCT LITERATURE SHOWCASE inquiry card.
Radiological Illuminators
Over 150 Styles & Sizes
Wolf X-Ray Corp. is the largest manufacturer of illuminators used in hospitals for x-ray film viewing...specifically designed for the unique needs of the radiologist. Free 100 page catalog has extensive information on illuminator features, installation, measurements, etc. and Wolf has trained sales people, including draftsmen, to assist health care architects in planning reading rooms. 800-356-9729.

Wolf X-Ray Corporation
Circle 522 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Artup Lighting
Introduces Rainbow
The Rainbow wall scone is made of two dielectric spectral glasses which are positioned within the vertical beam of a halogen bulb located in the base of the fixture generating a 4-color prism effect. Made in the U.S.A. UL Listed, Patent Pending.

Artup Lighting
Circle 523 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Authentic Vixen Hill
Cedar Shutters
Full color brochure features traditional working shutters for interior and exterior applications. Cut-away photographs show authentic teak pegged mortise-and-tenon joints, separate interlocking trim and extra-thick louvers for extended product life. Shutters are constructed with clear western red cedar to a final thickness of 1 1/8 & 5/16. See Swee's section 98668/VIX or call 1-800-423-2765.

Vixen Hill Manufacturing
Circle 524 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Architectural Signage
For The Outdoors
MODULEX Exterior 600 offers a sturdy and contemporary system of signs based on aluminum extrusions. Sizes range from small wall-mounted signs, up to 8' x 8' free-standing units. The cabinets are available with the unique interchangeable text by MODULEX. Finishes: Anodized and baked enamel in 80 standard colors. 1-800-632-4321.

MODULEX Inc. — a company of the LEGO Group

Modulex Inc.
Circle 525 on the PRODUCT LITERATURE SHOWCASE inquiry card.

The beauty of Shakertown Cedar Siding
The beauty and the benefits of Shakertown western red cedar sidings are shown in their new catalog. The 8-page, color brochure features many photos of actual product applications. Close-up product photos show the many options available such as face, exposure, shingle spacing, and butt line. Available free—1200 Kerron St., Box 400, Winlock, WA 98596, 206-785-3501. Outside WA 800-426-8970.

Shakertown Corporation
Circle 526 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Fully Warranted Membrane Assembly
PRMA-PLUS II™ is a fully warranted protected roof membrane assembly consisting of a Bakelite 2-ply reinforced roofing membrane and protection sheet; high strength/high moisture resistant foamular extruded polystyrene insulation; and pedestals and pavers from Hanover Architectural Products. Single-source warranty covers material and workmanship of the membrane, insulation and pavers.

Bakelite/Hanover/UCI
Circle 527 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Flexco Company
Resilient Flooring
Flexco produces outstanding rubber & solid vinyl flooring products for a wide variety of commercial uses. Sold through an Intl. network of over 125 distributors, Flexco products combine beauty & functionality. Their unique color palettes & styling offer high design potential for environments with even the heaviest traffic. This catalog features all 18 Flexco products. Catalogs or Info, 1-800-933-3151, Fax 404-454-9335.

Flexco
Circle 528 on the PRODUCT LITERATURE SHOWCASE inquiry card.

A Unique Look in Filing Cabinets
The Impressions Series from Office Specialty allows an unlimited number of geometric patterns to be created by "knocking-out" material from a metal file front. This exposes a painted metal liner positioned slightly behind the front. The result is a dramatic, three dimensional effect, that can be created in virtually any color combination.

Office Specialty
Circle 529 on the PRODUCT LITERATURE SHOWCASE inquiry card.
Designer Ceilings
Upgrade your open area whether it be a shopping mall or large office with "PRISMATIC 4-plus", a newly introduced ceiling panel. Panel fits into a standard 4' x 4' lay-in grid. Base material is acoustic fiberglass. Made in U.S.A. Phone: 419-893-1225; Fax: 419-893-1421.

Fiber-Lite Corporation
Circle 530 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Allied Fibers Lifecycle Maintenance Guide
This guide is Allied Fibers' official maintenance manual for commercial carpets made of High-Performance Anso IV-R, Anso IV-HP, Anso IV-and Anso-brand nylon. It features spot and stain removal procedures for over 70 of the most common commercial stain problems, as well as other important information for extending the life and appearance retention of commercial carpeting.

Allied Fibers
Circle 531 on the PRODUCT LITERATURE SHOWCASE inquiry card.

CertainTeed Corporation
Circle 532 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Thermal & Acoustical Insulation Catalog
CertainTeed Corporation is offering a new catalog describing its complete line of fiber glass insulation products for residential and light commercial applications. Contains important data on availability by size and R-Value, latest energy standards and code information.

It Only Looks Expensive:
Innovative SnapLoc, the medium-tension fabric-mounting system for walls, offers aesthetic beauty, rigid code compliance, and custom features. Luxurious fabric-covered walls can be economically created on site. Holding fabrics taut and square, SnapLoc offers sophisticated architectural details: butt-joints, sound-absorbing infill, mitered corners. New from StretchWall, SnapLoc only looks expensive.

StretchWall Products
Circle 533 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Duraflake FR
DURAFLAKE FR is a smooth, grain-free, Class I fire-rated particleboard panel 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, furniture and fixtures applications where fire codes and public safety are critical. Contact Willomette Industries, Inc., P.O. Box 428, Albany, OR 97321 or call (503) 928-5866.

Duraflake
Circle 534 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Handles Handrails Brochure
HEWI, Inc. has published a new brochure which offers design suggestions, full color illustrations and descriptive information about custom handles which are available using the HEWI railling system. Custom designs are achieved through combinations of components which are made in two diameters and 13 colors. Handles are easily installed with fasteners suited to various requirements.

Access Flooring
Innorette Systems, Inc., a member of The C/S Group of Companies, has recently developed a new 8-page brochure outlining its revolutionary access floor panel—a floor. Manufactured from reinforced concrete, A-Floor was exclusively developed for use in offices and performs exceptionally well under concentrated rolling loads. Innorette Systems, Inc.: 800-225-2153, FAX: 201-272-1870.

Innorette Systems, Inc.
Circle 536 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Innovations in Noise Control:
Fabric-covered panels for walls and ceilings with a wide range of noise-control characteristics can be created into a 100% array of compositions, thicknesses, and finish details. The economical frameless, upholstered panel system includes fiberglass, mineral board, plywood, super padded, geometric grids, and FabTiles for ceilings enjoying acoustical, tackable, wall-coverable, and reflective/absorbent properties. N.R.C. ratings from .25 to 1.10. American Fabric Panel Co.
Circle 537 on the PRODUCT LITERATURE SHOWCASE inquiry card.
**Signs, Plaques and Emblems**

Identify the premises with our superior line of indoor and outdoor signs, directories, plaques, memorials, and plaques. Our unique Graphic Blast® process allows us to carve copy and artwork into virtually any material, wood, marble, tile, metal, tough thermoset plastics. Best® Manufacturing Sign Systems, 1202 N. Park Avenue, Monrovia, CA 91015-3170, 303-249-2378.

Best Manufacturing
Circle 538 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**Garavento Stair-Lift**

Garavento Stair-Lift provides graceful, effective solutions to building access problems. This inclined wheelchair lift is installed along straight or turning stairways up to three stories. Savings floor space and requires no building modifications. Stair-Lift is cost-effective, code-compliant, customized for retrofit or new structures, proven safe and reliable in 2,500 installations.

Garavento
Circle 539 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**Grand Entrances For Disabled People**

Garavento Stair-Lift provides graceful, effective solutions to building access problems. This inclined wheelchair lift is installed along straight or turning stairways up to three stories. Savings floor space and requires no building modifications. Stair-Lift is cost-effective, code-compliant, customized for retrofit or new structures, proven safe and reliable in 2,500 installations.

Garavento
Circle 539 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**Drywall and Plaster Trim**

Extruded aluminum trims for the ultimate drywall and plaster details. Over 230 shapes in stock – or custom designed for unique applications. Our 35-page catalog is full of ideas and also outlines our ceiling grid, baffle, curtain pocket and columning products. Fax Toll Free: 1-800-877-8746.

Gordon, Inc.
Circle 540 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**Audio/Visual Displayers and Modular Storage Systems**

Gressco offers one of the nation’s largest selections of stock and custom built multimedia displayers. Our modular storage system - Modula S - gives you unlimited flexibility in designing unique and attractive storage environments. Catalogs or information P.O. Box 7444, Madison, WI 53707. Phone Toll Free 1-800-345-3480, Fax 608-244-7212.

Gressco Ltd.
Circle 541 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**Natural Stone Fireplaces**

Bring the romance of a fire and the breathtaking character of stone into your customers homes with unique fireplaces. An internal contralow design from Finland, combined with nature’s finest material for retaining heat, soapstone - provides a highly efficient, emissions-free fireplace. Call our new US office at 1-800-THE-FIRE (800-843-3473) to receive a free color brochure on Tullikivi/Fireplaces, Bakeovens, Cookstoves, Countertops, and the Dealer nearest you.

Tullikivi Group
Circle 542 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**Sophisticated Styling... Reliable Performance**

Hubbell Style Line Series 21 switches, dimmers, receptacles, communications outlets and wall plates is the complete line of wiring devices offering sophisticated styling, state-of-the-art engineering and reliable performance... all under the name of the company synonymous with quality for more than a century.

Hubbell Inc., Wiring Div.
Circle 543 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**Office Productivity Software For Engineers / Architects**

The Wind-2® Financial Management system includes four integrated modules: Business Management with Accounts Receivable, Payroll, Accounts Payable, and General Ledger, Custom Reporting Query and Financial Indicator Reports and reporting options. TotalTrak™ is project tracking and financial management software for firms of eight or fewer employees, priced at $695. Also A/E Marketing Manager™. Call 1-800-777-WIND for information.

Wind-2 Software, Inc.
Circle 544 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

**W.W. Henry Self-Leveling Underlayment System**

Repair damaged or uneven floors quickly and easily with Henry 3400SL Self-Leveling Underlayment. This pourable, cement based compound dries in a matter of hours to provide a smooth, flat surface ideal for the installation of virtually all types of floor coverings. 3400SL is just one of Henry’s innovative tile setting and floor preparation products.

The W. W. Henry Company
Circle 545 on the PRODUCT LITERATURE SHOWCASE Inquiry card.
Parallam® Beams & Posts

MacMillan Bloedel Limited
Circle 566 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Skytech Commercial Skylights
New 12-page color brochure provides detailed architectural drawings, design specs, details and photographs of custom skylight solutions for a variety of new and renovative commercial application problems. Skytech Systems offers state-of-the-art computer design engineering, top quality products, and exceptional technical service support nationwide. Skytech Systems, Box 763, Bloomsburg, PA 17815, (717) 752-1111.

Skytech Systems
Circle 547 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Hubbell Quality to Meet All Your Dimmer Needs...
Available in two grades - Architectural and Specification - in two styles - Slide Control and Rotary - make Hubbell dimmers the smart choice. All are UL listed with contemporary styling to enhance any incandescent or fan speed motor control application. All models feature RFI filtering to reduce interference from electrical equipment.

Hubbell Inc., Wiring Div.
Circle 548 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Tackless Wallcovering System:
The original concealed tackless system for installing fabric as an architectural finish. For more than 25 years, StretchWall™ systems have molded, shaped, curved, delineated, and given texture to walls and ceilings through the suppleness of fabric. Matrix Panels™, TAC™ Panels, SoftTouch™, Classic StretchWall™, and SnapLoc™ all part of an extensive program perfect for any wallcovering project.

StretchWall Products, Inc.
Circle 549 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Data Sheet Describes Cut & Stack Plotter
The Océ G1845-AC is designed for maximum operability and independence. Plotting begins with hands-off roll-feed media input, and after completing plots of pen speeds as high as 55 inches per second (ips) and pen acceleration as high as 50 g’s, the machine cuts the finished plot from the roll, stacks it for easy retrieval, and begins the next plot.

Océ Graphics USA Inc.
Circle 550 on the PRODUCT LITERATURE SHOWCASE inquiry card.

ISOLATEK. The answer to your passive fireproofing questions.
Not all passive fireproofing or thermal-acoustical need is the same. That’s why ISOLATEK is the only company that offers you a wide choice of sprayed and cementitious products. From commercial buildings to industrial complexes, retrofit to new construction, ISOLATEK has the right solution, worldwide.

Isoltek International
Circle 551 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Open & Private Offices A Single Source
Transwall combines these two basic wall requirements for today’s high tech office with its Sounddivider® open plan system and the full height Corporate series. The two systems offer complete interchangeability of wall mount components, as well as compatibility in design and appearance. Modular furniture blends with panel mounted work surfaces. Electrical and electronic support is system integrated.

Transwall Corporation
Circle 552 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Custom Made Oak Rolling Ladders
Putnam Rolling Ladder Co. has been manufacturing rolling ladders since 1933. Great for homes, home libraries, offices, stores and lofts. Each ladder is custom made in oak, ash, maple, cherry, Honduras mahogany or birch, other woods and finishes available. Track and hardware come in four finishes including black, brass plated and chrome plated.

Putnam Rolling Ladder Co.
Circle 553 on the PRODUCT LITERATURE SHOWCASE inquiry card.
Introducing Our New Precious Metal Collection
In homes where details make a difference, Central Brass makes perfect sense. Now in an exciting new collection of "Precious Metals" for the kitchen, bath and bar, you'll find precisely what you're looking for. The "Precious Metal Collection" features ceramic disk valves for unparalleled resistance to corrosion and wear. Central Brass, 2950 E. 55th St., Cleveland, OH 44127. 216-883-0220.

Central Brass Mfg. Co.
Circle 562 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

Micro Processor Based Lighting Control System
LiteTouch 2000 is an innovative, microprocessor based control system capable of switching and dimming incandescent, fluorescent, neon, cold cathode, and low-voltage loads as well as switching outlet and motor loads. Menu driven programming allows even the most "computer shy" client to easily program and reprogram his control system.

LiteTouch, Inc.
Circle 553 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

Cheney Classique™ Elegant and Affordable
Ideal convenience for homes, condos, and low rise office buildings. Takes no more space than a normal closet. Vertical travel up to 40 ft. Platform up to 12 sq. ft. Custom designed cab with optional openings and sizes. Oak paneling with Natural Oak, Pennsylvania Cherry or antique Walnut finish.

The Cheney Company
Circle 554 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

We Are Now The Choice...
For "Feature" Ceiling Systems
A lifetime of accumulated experience in engineering metal, luminous and wood materials has made Ceilings Plus the desired choice. Also "Featured" are wood and metal wall panels with column enclosures fabricated on a project basis. Let Ceilings Plus assist you with planning on your next project.

Ceilings Plus
Circle 555 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

The REPORT
How to Build Effective Rep Networks
Newsbriefs and reports, building products, law, marketing, management, selling tips, news of companies and people, employment listings, new lines available, and sales leads on major construction projects... everything the successful representative needs to know...from McGraw-Hill. $67/year (12 issues). Call 212-512-3442.

The Report
Circle 566 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

Slip Resistant Ro•Tile is Naturally Beautiful
Ro•Tile is a cement-bodied tile that combines beauty and durability in a low maintenance floorcovering. This 12-page full color catalog contains design ideas and technical data, together with available colors, sizes and shapes. Ro•Tile is ideal for both residential and commercial projects, new construction or remodeling.

Ro•Tile, Inc.
Circle 567 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

Create a Masterpiece Everyday with KPT Tile
KPT's 1991 Sweet's catalog presents four unique series of ceramic tile. From the new Davinci Series, a marble look tile, to the versatile Traditions and Heritage Series, you will see tile selections in the colors and sizes you want. And, KPT ceramic tile is known for its exceptional quality, so you know it is eminently suitable for commercial and residential applications. Send for product information.

KPT USA Mastering the art of tile
Circle 568 on the PRODUCT LITERATURE SHOWCASE Inquiry card.

Tractionfloor
Slip-Resistant Vinyl
When safety underfoot is desired, Tractionfloor delivers. 16 UV-safe colors, smooth or studded. Chemical/heat resistant (up to 572°F). Dimensionally stable. Easy to maintain. Heat welds and flash covers for watertight installation. For Forbo's collection of Linoleum and Vinyl floor coverings call (800) 233-0475 or fax (804) 346-2015.

Forbo Floor Coverings
Circle 569 on the PRODUCT LITERATURE SHOWCASE Inquiry card.
RESURFACE & RESTORE ACOUTICAL CEILINGS

with Coustic-Coat
from Coustic-Glo

Coustic-Coat® is a cosmetic, acoustical, non-bridging, resurfacing material—not a paint. It’s available in any color and has been certified as an effective flame and smoke retardant coating.*

Call 1-800-333-8523 For the Office Nearest You.
WE MAKE YOUR CEILINGS LIKE NEW AGAIN.
*Flame & Smoke test data available upon request.

Circle 92 on inquiry card

---

this publication is available in microform

Please send me additional information.
University Microfilms International
300 North Zeeb Road
Dept. P.R.
Ann Arbor, MI 48106
18 Bedford Row
Dept. P.R.
London, WC1R 4EJ
U.S.A.
England

Name ____________________________
Institution _______________________
Street ___________________________
City _____________________________
State __________ Zip ____________

---

Modern Father.
Traditional Values.
Great American Investor

Accountant Rene Oliver works out of his home so he can be there while his daughter Windy is young. And he buys her U.S. Savings Bond when she grows up. "As an accountant I know that Bonds are the best to save for Windy’s college," he says. Today's Bonds pay competitive rates, and now can be completely tax free when used for higher education. To find out more about the Great American Investment, call 1-800-US-BONDS.
Scalamandre

BASICS 1
A coordinated collection of wool and wool-blend fabrics that work brilliantly in every contract setting.

Circle 93 on inquiry card
Just $39.50, it holds everything but board meetings!

Honestly, our Original Lands' End Attache has a capacity for paper work even workaholics can't exhaust.

Made of sturdy, yet flexible cotton canvas, this is the thinking manager's attache—wth interior pockets that hold all the makings of a working plane trip, or a night at your desk at home. Consider, an interior space that's 17% by 13% by 3%-and you can see yourself stuffing it with more than it was ever meant to hold. It can take it, and it will. GUARANTEED. PERIOD.*

So, take a moment right now to fill in the coupon. Or, order by phone. The toll-free number is 1-800-356-4444, and an order in today is on its way to you tomorrow. While you're at it, have us send you our latest catalog. You'll find it crammed with Lands' End values in clothing, shoes, accessories, and other soft luggage—because neither man nor woman can manage to live on work alone! You deserve to look good doing it, too!

**Please send free catalog.**

Lands' End
Dept. RE-63
Dodgeville, WI 53595

Name
Address
City
State Zip

*Please send information about your new international service.

Write or call toll-free: 1-800-356-4444

Circle 94 on inquiry card

NOUVEL HOTEL...
Continued from page 207

...guests who returned could experience different aspects of the hotel.

One of the four buildings, for instance, is quite small, with only one room per floor. The guest has windows on all four sides of the rooms around the bed. In the bed a meter high, the guest is seemingly at the prow of a ship. The rooms vary in size from 25 square meters to 70 square meters. This was partly due to Amat's suggestion, as he wanted a wide variety of rooms, some more modestly priced than others. Other rooms are enormous, and the bed is a kind of big stage, with white linen. These are the rooms that some unkind people called "hospital-like."

BI: I notice that the bathrooms aren't closed off from the rest of the room.

JN: In one of the room types, the bathtub is parallel to the bed, which is good for conversation. The bathroom plays its part within the room. Of course, the toilets are separated and closed, not a part of the bathroom as they are in American hotels. I cannot tolerate that. But the tub being close to the bed is good for communication. I designed open bathrooms for the sake of pleasure.

BI: Did any architect's work in particular inspire your design for the hotel and restaurant?

JN: We can be inspired by work, even if our design does not particularly resemble it. I have eclectic tastes, but my absolute favorite is Pierre Chareau, the French architect who designed a glass house in Paris in the 1930s. He was the greatest French architect, in my opinion. He did a house for the painter Robert Motherwell that was recently demolished. We tried to get the French Cultural Minister Jack Lang to buy the Chareau house and transport it to France in order to save it. After all, Americans buy other countries' houses and do the same thing. But our plan was not accepted. For me, Chareau's Glass House is much more important than Le Corbusier's Villa Savoie. Chareau was first and foremost an interior designer. He designed everything from armchairs to bookshelves. His was the exemplary modern style of the 1930s.

Hôtel Saint James
Boulogne, France

OWNER: Jean Marie Amat
ARCHITECT: Jean Nouvel, Emmanuel Cottani et Associés—Jean Nouvel, partner-in-charge; Emmanuel Combarel, project architect; Yves Brunier and Eric Pouget, project team

Presenting the "Elevette" from Inclinator Company.

Once used exclusively for improved accessibility (and still tax deductible if recommended by a doctor), residential elevators have become a desirable luxury/convenience option in many upscale homes. And Inclinator Company is leading the way with the Elevette.

The Elevette is custom-built to your specifications, and comes in a variety of sizes and weight capacities. Inclinator Company even offers several interior design options to match every decor.

Send for free information of the best way to meet the needs of your upscale clients. The Elevette.

INCLINATOR COMPANY OF AMERICA
Dept. 66, P.O. Box 1557
Hamberg, PA 17115-1557
(717) 234-8066

Circle 95 on inquiry card
"Excellent program for all parties who expect to successfully participate in the construction process in the 1990's and beyond."

Kerry Williams, Attorney/Professional Engineer, Miles & Stockbridge, Baltimore, MD

"Informative and practical leaders in the construction industry and legal profession share current strategies and future trends."

Jeffrey Montibeller, Vice President, Watson Engineering Inc., Palm Harbor, FL

THE FIFTH ANNUAL CONSTRUCTION LITIGATION SUPERCONFERENCE

December 6-7, 1990
Fairmont Hotel
San Francisco, CA

Attend the leading conference for construction and design professionals that continues to maintain its momentum, its excitement, and its following.

▲ Featuring 26 sessions presented by the foremost construction/design experts in the country such as "Suing and Defending the Architect, Engineer and Construction Manager" and "What to Change in those New Fangled AIA Forms."

▲ Special events including two working luncheons, a breakfast and cocktail reception.

▲ Participants will receive, "Pricing and Proving Construction Claims", compliments of Coopers & Lybrand as well as a conference workbook compiled from material submitted by the distinguished faculty.

To receive a detailed brochure:

☎ 203-838-3710
Attn: Gina Amatruda
CMC
200 Connecticut Avenue
Norwalk, CT 06856-4990
(203) 852-0500

THE FIFTH ANNUAL CONSTRUCTION LITIGATION SUPERCONFERENCE

December 6-7, 1990
Fairmont Hotel
San Francisco, CA

Name
Title
Company
Address
City____________________State________Zip________

Phone (______________)_________________________ Code: CLD-1

Construction Litigation is an Andrews Conference, sponsors of the nation's leading litigation conferences. Managed by Conference Management Corporation, a leader in the field of professional conference management.

Circle #75 on Inquiry Card.
An open invitation
to visit
the greatest
Gypsum plant
in the
World.

All our preferred Domtar Gypsum customers are invited to visit our new gypsum manufacturing plant in Newington, New Hampshire. It’s a true world-class facility that features advanced technology and superior plant efficiency capable of producing more than 360 million square feet of gypsum board a year.

When you enter our incredible Newington facility you immediately sense a difference.

The environment, the people, the attitude all reflect a truly quality organization. And you’ll be made to feel that you are a part of the total process of assuring that your product mix is being produced with superior quality, cost effectiveness and responsive service. You’ll realize, firsthand, why end users rate our products as superior within the price range. You’ll also gain important knowledge from our application training sessions...and you’ll leave our facility knowing that your order will be delivered on time.

Our remarkable Newington facility was designed and built to lead Domtar Gypsum and you, our customers, into the 90s with a competitive edge. It’s just one more way we’re building a difference to satisfy our customers’ needs.

If you’re not already a Domtar Gypsum customer, consider this your invitation to find out more about us. Just call 1-800-DOMTAR 4.

We’re building a difference.

Domtar

Circle 95 on inquiry card
COLOR YOUR WORLD TERRAZZO

Wausau Terrazzo floor tiles and Precast Specialties meet every need for color and design flexibility. Our custom capabilities provide a canvas for your next work of art.

Call for details.
(800) 388-8728

ANGLUX™ MR

Adjustable accent light optimizes the popular MR-16 lamp. Our specially engineered reflector eliminates glare. Recessed depth is only 6 3/4". Easy one finger aiming adjustment. Unique locking mechanism guarantees original aim through years of relamping. We also offer a precisely designed MR-16 downlight with matching 4" aperture. Two new Standards from Edison Price. Call or write for further information and the name of your local representative.

EDISON PRICE LIGHTING
ARCHITECTURAL LIGHTING AT ITS BEST

Edison Price Inc., 409 East 60 St., NY, NY 10022 Tel: 212-838-5212 Fax: 212-888-7981

Circle 98 on inquiry card

GRATINGS!
ALL STYLES - ALL METALS
24 HOUR SHIPMENT

FOR "THE HOLE STORY" ON
PERFORATED METAL • EXPANDED METAL
WIRE CLOTH • BAR GRATING

FREE CATALOG

National Toll Free: 800-237-3820

McNICHOLS CO.
FAX: 813-289-7884 Telex: 52706

Circle 99 on inquiry card
The most up-to-date, comprehensive reference for lighting design professionals and specialists

LIGHTING DESIGN HANDBOOK

By Lee Watson

458 pages • 11"x8 1/2"
352 ILLUSTRATIONS • $69.95
0-07-068481-2

Special features include:
• Unusual lighting applications such as discos, puppet theaters, theme parks, fairs, and more
• Uses of lighting in education and industry
• Helpful appendices containing a buyer's guide, sample shop orders, and sources of information and material not available elsewhere.

This "first-ever" Handbook covers virtually every aspect of lighting technology, design, and the professional practice of lighting design. Following a basic refresher on the physics of light and light sources, this authoritative guide provides practical treatment of hundreds of lighting applications in architecture, interior design, theater, TV, public arenas, industry, and even landscape design. The book's 352 illustrations— including 92 in lavish full-color—offer a unique perspective on today's top quality lighting design practice in all segments of the industry.

Written by a world-renowned lighting designer and educator, here's a repository of new ideas, techniques, and inspiration for all practitioners and students of lighting design. And it's the only guide that focuses on that intangible element—the art and process of designing lighting—while providing technical details on equipment, color use, scenic projection, lasers holograms, fiber optics, and computers. What's more, the book provides facts you won't find anywhere else on the business of lighting—union rules, professional organizations, taxes, employment prospects, training, and education. You owe it to yourself to examine this indispensable lifetime reference.

Available through your professional bookseller or
Call Toll-Free 1-800-2-MCGRAW
Fax orders: 1-212-337-4092
Or order directly from:
McGraw-Hill, Inc.
Science & Technology Group
11 West 19th Street, New York, NY 10011

In Canada, contact:
McGraw-Hill Ryerson Ltd.
330 Progress Avenue
Scarborough, Ontario M1P 2Z3
Telephone Orders: (416) 321-7610
Prices subject to change without notice.
You can order reprints of articles that have appeared in Architectural Record within the last two years, whether in color (if the article was published in color) or black-and-white (if published in black-and-white), in whatever quantities (minimum 100) you need, for use in your own mailings and presentations.

For more information, price quotes and help with layout and format of your reprints, write or call:

Janice Austin
ARCHITECTURAL RECORD
Princeton Road
Hightstown, NJ 08520
(609) 426-5494
ENGINEER/ARCHITECT

The Port Authority of NY & NJ builds and operates many of the most dynamic facilities for transportation, world trade and economic development in the b.i.-state region. We are currently seeking an engineer or architect who will be responsible for the supervision of a staff of engineers and architects, and for the coordination of their reviews for code conformance for all Port Authority Tenant construction.

The ideal candidate shall be a PE or RA, and will have a minimum of 10 years of diversified experience in the design of building projects and a bachelor's degree in structural engineering is preferred, and a solid working knowledge of Building Codes and their Reference Standards is desirable. Good interpersonal and communications skills are essential.

The Port Authority offers a highly competitive salary, a comprehensive benefits package that includes life, health and dental insurance and the opportunity for career growth. To apply, please send resume and salary history to:

The Port Authority of NY & NJ
Human Resources Dept. 44N
Box AM-3
One World Trade Center
New York, NY 10048
An Equal Opportunity Employer M/F/H

Architecture: City Architect. City of Oakland announces recruitment for licensed architect to direct plan and design of capital improvement projects, renovation of public facilities and construction of new structures. Repair of earthquake-damaged buildings. Six years experience and a master's degree in architecture are required, with three years as supervisor. Municipal county experience necessary. Salary $4,119-$6,025 monthly.

City pays 7% retirement, excellent benefits. For applications contact Jean Hofvendahl, Engineering and Design Department, One City Hall Plaza, Oakland, CA 94612.

Architects — $25,000-$95,000. The Shadon/Cautora Group Executive Architectural Recruiters. Key positions nationwide at all levels with Regional & National firms. Experience in research/development, health care, commercial, criminal justice, educational, institutional, industrial and sports complexes. Confidential. No fee. Include salary requirements. The Shadon/Cautora Group, 6960 W. 38th Avenue, Denver, CO 80212. (303) 480-3436.

Commissioner of Architecture/City of Cleveland: seeking an architect to direct design and construction, coordinate projects and contracts and to manage long range planning. Familiarity with public architecture and ability to provide examples of team leadership in architecture and administration required. Bachelor's degree, ten years progressively responsible architectural experience, professional registration as an architect and ability to earn State of Ohio registration within 3 months of hire required. Salary is $41,212-$57,796. Send resume and salary history to: Mary Anne Lyman, Personnel Analyst, Cleveland City Hall, Room 121, 601 Lakeside Avenue, Cleveland, Ohio 44114. Equal Opportunity Employer. City of Cleveland residency required within 6 months of hire.

Assistant City Architect, City of Oakland announces recruitment for new position. Candidate takes lead in directing seismic repair of public facilities, or directing production or consultant work. Requires seven years post-graduate architectural work, including three years of supervision, and a license. Municipal county experience desired. Salary $3,628-$5,588 monthly. City pays 7% retirement, excellent benefits. For applications contact Jean Hofvendahl, Engineering and Design Department, One City Mall Plaza, Oakland, CA 94612.

Architectural Designer: Bachelor's Degree in Architecture, minimum five years experience, salaried at $25,000 per annum for normal 40+ hours per week, 8:00 AM to 5:30 PM — Mon. to Fri. Designs interior & Exterior spaces of Comm and Inst development projects primarily located in Middle East. Provides Prof services related to design & constr of the structures reg by project proposals. Util knowledge of middle Eastern, Arabic & Islamic motifs & styles hold together with architectural contr prin to dev & present designs meeting both aesthetic & pract/utility reqs. Plans layout of proj and integrates eng, surveying & arch elements into a unified design. Consults with clients analyzing and assessing their spatial needs, des & style pref & fin limitations. Preps pre-sketches, constr scale models, & upd draft renderings & persp drawings. Preps tech drawings for bldg & site contractors enter elect, mech, and struct eng elements into the unified des. Res available material alts and presents ops and recs maintaining theme & motif of proj. Res & devs cost estimating recommending alterations and alternatives to meet budget lim. Util computer aided design software and b/ware in des activity. Must have at least 8 years ex in the strictest of confidentiality. Constr or architect necessary. Resume please to: Lindergh Plaza Center, St. Louis, Missouri 63132; (314) 993-6500.

Designer to prepare designs, layouts, color rendering and schematics of proposed structures and analyze cost estimates for commercial and institutional building projects. Requires three-dimensional conceptual model building techniques and computer-aided analysis. Make presentations to clients. Requires Bachelor in Architecture and demonstrated ability to perform stated duties by portfolio. Salary: $21,000 per year. Send resume to: Mrs. Evelyn Roney, Alabama State Employment Service, 1060-A East South Boulevard, P.O. Box 2005, Montgomery, Alabama 36120-0025, or apply in person at any Alabama State Employment Service office. Job Order Number AL0835695. E.E.O.

Architect/Studio Owner. Marshall Erdman and Associates, the designers and manufacturers of Techline, are adding new Techline Studios to those already established. Studio owners use Techline, a sophisticated systems of furniture and cabinetry, in the design of residential, medical and other institutional interiors. At least one Studio partner must be in the design profession. Successful applicants have management skills, enjoy client contact and a hands-on operation. We are an established architectural and building firm. Our goal is to develop mutually beneficial relationships with creative and ambitious individuals. Contact Marshall Erdman, Chairman, Marshall Erdman and Associates, 5117 University Avenue, Madison, WI 53705. (608) 288-0211.
FACULTY POSITIONS VACANT

Chair, Department of Architecture College of Design Iowa State University. The Department of Architecture, College of Design, Iowa State University, invites nominations and applications for the position of Chair. The department has established and vital undergraduate and graduate degree programs, with highly selective admissions, operating in all interdisciplinary design arts context. The Chair will have the opportunity to provide vision and leadership in linking the department to new strategic directions of the college and the university. Candidates should have a professional degree in Architecture, a graduate degree, and an established and on-going pursuit of architectural practice or research. In addition, candidates should demonstrate a commitment to integrating disciplinary and professional concerns. Salary will be highly competitive commensurate with qualifications and experience. The appointment is open January 2, 1991, although a later starting date is negotiable. Applications are due September 30, 1990 but will be accepted until the position is filled. Submit a letter of application, resume, and the names, addresses and telephone numbers of five references to: Professor Herbert Gottfried, Chair, Architecture Chair Search Committee, Office of the Dean, 134 College of Design, Iowa State University, Ames, IA 50011.

POSITIONS WANTED

Project Design Architect seeking opportunity to demonstrate experience in a well-established architectural design oriented firms. Currently designs & directs commercial, corporate and institutional projects from start to finish. Excellent technical, presentation and client relations skills. University of Michigan graduate — B.S. and Master's degrees in Architecture. Registration and member of AIA. Please reply to PW-6388, Architectural Record.

Published Architect-Sole Proprietor of medium size firm seeks position of responsibility or partnership. Reply to PW-6388, Architectural Record.

FACULTY OPENINGS IN ARCHITECTURE

Advertise for faculty openings in Architectural Record's Faculty Positions Vacant Section.

Call (212) 512-2422
FAX (212) 512-6800
for rates and information.

Through October 30

Through December 3
“Give Us Your Best: An Exhibition of Washington Architects' Work,” showing built and unbuilt designs chosen by Washington architects from their own work; at the National Building Museum, Washington, D.C.

September 10-11

September 14-November 3

September 25-December 30
“18th Century Scenic and Architectural Design: Drawings by the Galli Bibiena Family,” showing works from the Museu Nacional de Arte Antiga and the Academia de Belas Artes in Lisbon; at the Cooper-Hewitt Museum, New York City.

October 1-3
“Town Planners and Distribution: The Essential Partnership,” the URBANCOM Congress, sponsored by the International Association for Town Planning and Distribution; in Brussels. For information: URBANCOM, Rue Marianne 34, 8-1180 Brussels, Belgium (02-345-99-23).

October 8-19
“R. M. Kliment & Frances Hansband Architects, Five Campus Buildings 1981-1989,” an exhibition organized by the Roger Williams College Architecture Division; at Washington University, St. Louis.

October 18-20
Lighting World trade show, with seminars and exhibits of lighting effects, cosponsored by the Los Angeles chapters of the American Institute of Architects and the American Society of Interior Designers; at the Los Angeles Convention Center. For information: William Kent Schoenfisch, Rifton, N.Y. 12471 (914) 668-8390.

October 31-November 4
“Rivers and Cities,” the annual New Orleans Architecture Symposium, sponsored by the Tulane University School of Architecture, the Preservation Resource Center, and the Center for Palladian Studies in America; at the Tulane Architecture School, New Orleans. For information: Preservation Resource Center, 604 Julia St., New Orleans, La. 70130 (504) 581-7082.
The Marketplace

THE VERY BEST

Woven Wire Partition
- Quality Product • Fast Delivery •
WireCrafters, Inc.
1-800-626-1816
6208 Strawberry Lane, Louisville, KY 40214

Circle 101 on inquiry card

CUSTOM DESIGNED ENCLOSURES
for Perimeter Heating and Cooling

New catalog of elegant custom enclosures shown in the prestigious buildings for which they were designed. For ideas to enhance imaginative interiors and FREE Catalog, write or call:

Vulcan
515 John Fitch Boulevard
South Windsor, CT 06074
(203) 289-6843 • FAX (203) 528-8870

Circle 102 on inquiry card

CAC SERVICES SUPPLIES

CAD SERVICES
- OPEN PLOTTING
- ASER PLOTTING
- DATA CONVERSIONS
- SURFACE SCANNING
- CAD TRAINING/CONSULTING

HARDWARE
- MONITORS
- COMPUTERS
- ELECTROSTATIC PLOTTERS
- ELECTROGRAPHIC SUPPLIES

1-800-237-7289

Circle 103 on inquiry card

Limited Numbered Edition

ARCHITECTURAL RECORD's first issue (1891) is reprinted to celebrate our upcoming centennial. 150 pages. 64 illustrations. Every architect should have this collector's issue. Only $8.95 ppd. For information call: 212-512-3443.

Architectural Record, Circulation Dept.
1221 Avenue of the Americas
New York, NY 10020

Circle 104 on inquiry card

HYSUNITE™
Energy-efficient white roofing membrane of Hypalon® with polyester scrim reinforcement. Mechanically attached with hot-air welded seams. Resists UV, wind, weather, air pollution, fire and structural movement. New or retrofit. Warranted up to 15 years.

Call Roofing Systems 1-800-992-ROOF (OH: 1-800-231-5867).

Circle 105 on inquiry card

Looking For More Ideas? Back issues of Architectural Record While They Last! Add to your idea file by ordering previous issues from 1986 back to 1972! The price per issue is only $4.50 (includes postage and handling). Not all issues are available and the supply of others is limited. For a free list of back issues with the major subject covered, write to:

Architectural Record
1221 Avenue of the Americas
New York, NY 10020
Attn: Back Issues Department

Circle 106 on inquiry card

Catalog of Site Furniture

Design coordinated families of cast iron, steel, welded wire and all-temper benches, seats, litter containers, ash receptacles and planters are illustrated in the 64 page TimberForm Site Complement Catalog. Metal components are powder coated with a choice of over 150 designer colors. Alaska yellow cedar or Marine Teak slats are available for most models. Many products are available for QUICK SHIPMENT. For FREE specifier catalog call toll-free 1-800/547-1940, ask for extension 555.

Columbia Cascade Company
1975 S.W. Fifth Avenue
Portland, Oregon 97201-5293
503/223-1157 • FAX 503/223-4530

Circle 107 on inquiry card

Optimum Security Lighting For Detention Environments
Designed to ensure optimum durability and reliability, Life Sentry™ luminaires from Kenall offer a complete package of product features, options and accessories to meet all levels of security in a detention environment. This 28-page product guide contains applications, photometric data, product benefits, specifications and ordering information. Kenall, 1020 Lakeside Drive, Gurnee, IL 60031. Phone 1-800-634-5013. Fax 708-360-1781.

Circle 108 on inquiry card

The PAVE-EL Pedestal System
A practical solution to roof paver applications
Write or call for specification brochure
ENVIROSPEC INCORPORATED
Elliot Station Box 19, Buffalo, New York 14205
(415) 252-2090

Circle 109 on inquiry card
**The Clear Choice for Standard or Monumental Skylites**

Pre-engineered, Pre-drilled, Pre-cut and Tested to meet ASTM Standards. The View-Thru System is the choice for installers because of its easy-to-install built-in features, such as factory-pulled gaskets, resulting in on-time schedules.

907 West Lake Ave. Schaumburg, IL 60193. (708) 351-1322
Toll Free: 1-800-527-3377 FAX: 708-351-9684

Circle 109 on inquiry card

**Custom Tower Clocks**

May be manufactured in a variety of styles complete with fully automatic "catch up" after a power failure. "Always on Time" clock systems are micro-processor controlled. Dials may be back lighted and finished in a variety of materials. Call 1-800-544-8820 to discuss your design needs. Van Bergen Bellfoundries, Box 12928, Charleston, SC 29412.

Circle 110 on inquiry card

**Porcelain On Aluminum Panels...**

The durable solution for current wall building projects and window retrofit projects. Outstanding design flexibility with unlimited color choices at affordable cost. Available in 1/4" thickness or insulated up to an R-Value of 27.79. Backed by 25-year warranty. Call for catalog and free sample 1-800-228-2391.

Circle 111 on inquiry card

**Mantel & Moulding Catalog**

If you use or specify mantels, mouldings, chair rails, door trim, deep sculpt carvings, balustrades or linenfolds, this guide should be in your files. Call or visit our showroom to pick up your catalog. $10.00.

Circle 112 on inquiry card

**Architectural Panels**

The quality look of natural stone or the beauty of ceramic, slate, combined with the strength and longevity of a patented man-made process. 4' x 8' or 10' panels can be cut to size or used in full dimension to adapt to unique building conditions.

- Through color
- High strength
- Impact resistant
- Minimal porosity
- Maintenance free
- Interior/Exterior
- New or retrofit

See us in Sweats 07420/PEI General Building.

Circle 113 on inquiry card

**Bradford Spas**

Commercial & Residential


Circle 114 on inquiry card

**Quick Ship**

Custom Hollow Metal Doors & Frames are shipped 10 working days from distributor's order. Our quality guarantees customer satisfaction! Write or Call For Catalog.

Visit us at booth 125 in Philadelphia Oct. 14-16 at the Door & Hardware Show

Circle 115 on inquiry card

**Architectural Record Review**

A collection of the best healthcare facilities from the pages of Architectural Record, re-reviewed and updated...tracking reports on regional healthcare construction trends...complete listings of national, state and local government agencies and of associations involved in healthcare facilities...technology, design and placement of hospital lighting and much more. Just $3.50 (includes postage and handling). Send to: Architectural Record Review, 41st Fl., 1221 Avenue of the Americas, New York, NY 10020.

Circle 116 on inquiry card
Advertising index

Bold face—page number
Italics—Reader Service number

A
Adden Furniture, 194; 77
(508) 454-7848
American Glass Association, 24; 20
Amoco Fabric & Fibers Co., 196; 57
Eggert Industries, 197; 80 [G]
Ellison Bronze Co., 164; 58 [G]
Tolman/ Expancel International, 43
(716) 665-0522
Essexport Corporation, [G]
F
Floor Grac Ceramiche, 174; 63 [G]
Florida Tile Div., Sikaos
Corporation, I; 122 [G]
Florida Laminates, 192; 73 [G]
Forms + Surfaces, Cov. IV, 123
Furniture Consultants, Inc., 166-E, 166; 11
(212) 337-4300
G
Georgia-Pacific Corp., 30-31, 32 [G]
(716) 684-4000
Chesterman, Inc., 16W; 15
(500) 325-5877
Chevy Co., 178; 68 [G]
(716) 732-2222
Con Edison, 16E-16Eg; 10
(800) 543-4464
Construction Litigation, Conference
Management Corp., 22; 75
(202) 526-3710
Costic-Glo International, Inc., 22; 92
(500) 533-5023
Crossville Ceramics, 188; 72 [G-D]
(615) 454-2110
D
Dontum Gypsum, 22; 90 [G]
(800) DOMTAR-4
Dowcraft Corp., 170; 61 [G]
(716) 665-6210
E
Ego Manufacturing Co., 193; 76
(716) 665-6210
Eddison Price Inc., 225; 98
(212) 838-5212
Econo Corp., 115; 49 [G]
(800) 221-4109

For detailed data, prefiled catalogs of the manufacturers listed below are available in your 1990
Sweet’s Catalog File as follows.

(G) General Building & Renovation
(E) Engineering & Retrofit
(I) Industrial Construction & Renovation
(L) Homebuilding & Remodeling
(D) Contract Interiors

Schnieder Elevator Corp., 33-34; 26
(800) 321-8194
Southern California Edison, 16Wb; 15
(800) 552-5062
SPI/Polyurethane Foam Contractors
Div., 207; 90
(800) 632-6154
Steele, Inc., 3-3; 2
(800) 333-9809
Steelite, Inc., 208; 81 [G-I]
(800) 824-1371
Sub-Zero Freezer Co., 176; 64 [G-L]
(800) 721-2223
Sweet’s Div.-McGraw-Hill Information
Systems, 200; 83
(888) 848-9002

T
TAB Products Co., 191; 72 [G]
(800) 672-5196
Tamlo Asphalt Products, 206; 89 [G-I]
(800) 641-4691
Tischler and Sohn, 172; 62 [G]
(205) 622-8490
Trane Ceramic Ltd., 205; 88 [G]
(312) 350-1555
Triarch Industries, 233; 110 [G-D]
(800) 581-6111

U
United States Aluminum Corp., 198;
87 [G]
(800) 627-5440
United States Gypsum Co., 36; 27,
49; 32 [G-E-D]
(800) 347-1345
USG Interiors, Inc., 202; 85
[G-E-I-D]

V
Vecta, 66; 46
(212) 641-2960
Vent-Axia, Inc., 168; 16 [E]
Versates, a Xerox Company, 50-51;
39 [G]
(500) 538-6477

W
Wausau Tile, 225; 97 [G-E-I]
(800) 762-2753
Weyerhaeuser, Architectural Panels
Div., 165 to 167; 59 [G]
(800) 425-3570
White Home Products, Inc., 44
(404) 431-0060
Wood Bureau, The, 40
(212) 989-9202
Worthington Group, Ltd., 178; 67
(404) 872-1968

Y
YKK, Architectural Products
Div., 16Ex; 8 [G]
(404) 344-2981
## Sales offices

### Main Office

McGraw-Hill, Inc.
1221 Avenue of the Americas
New York, New York 10020

Publisher
Ronoe C. Smith III (212) 512-2844

Administrative Assistant
Anne Mullen (212) 512-4686

Director of Business and Production
Joseph R. Wauk (212) 512-2783
Fax: (212) 512-4596

Assistant Publisher/Director of Marketing
Elizabeth Hayman (212) 512-2814

Classified Advertising
(212) 512-2422

### District Offices

#### Atlanta
4170 Ashford-Dunwoody Road
Atlanta, Georgia 30319

Gregory Boeserma (404) 843-2781
Fax: (404) 252-4036

Boson
575 Boylston St.
Boston, Massachusetts 02116

Louis F. Kutcher (203) 326-3051
Fax: (203) 326-4555

Chicago
2 Prudential Plaza
180 N. Stetson Ave.
Chicago, Illinois 60601

Anthony Arnsone, (312) 616-3339
Thomas P. Kavoras, Jr., (312) 616-3338
Fax: (312) 616-3333

Cleveland
225 High Ridge Road, Suite 170
Stamford, Connecticut 06905

Frank Rose (203) 326-3052
Fax: (203) 326-4555

Denver
John J. Hernan (303) 851-9704
Fax: (303) 855-9786

San Francisco/Seattle
2 Prudential Plaza
180 N. Stetson Ave.
Chicago, Illinois 60601

Thomas P. Kavoras, Jr., (312) 616-3338
Fax: (312) 616-3333

Los Angeles
Media Sales Associates
22322 Peralta Drive, Suite 218
Laguna Hills, Calif. 92653

William W. Hogue (213) 659-4448
Richard Aynor
Fax: (714) 859-3279

New York
1221 Avenue of the Americas
New York, New York 10020

Laura Vierness (212) 512-3603
Fax: (212) 512-4555

Philadelphia
225 High Ridge Road, Suite 170
Stamford, Connecticut 06905

Frank Rose (203) 326-3052
Fax: (203) 326-4555

Pittsburgh
225 High Ridge Road, Suite 170
Stamford, Connecticut 06905

Frank Rose (203) 326-3052
Fax: (203) 326-4555

San Francisco/Seattle
9017 Peacock Hill
Gig Harbor, WA 98335

William W. Hogue (415) 315-0552
(906) 858-7576
Fax: (906) 858-7576

Stamford
225 High Ridge Road, Suite 170
Stamford, Connecticut 06905

Louis F. Kutcher (203) 326-3051
Fax: (203) 326-4555

### The Marketplace

Lou Renee
Lissete Martinez
Fax: (212) 512-4556

Fax: (212) 512-4556

## Overseas Offices

#### Frankfurt/Main
Liebigstrasse 19
Frankfurt/Main, Germany

Sheffield
146 West St.
Sheffield S14ES, England

Milan
Via Baracchini No. 1
Milan, Italy

Paris
128, Faubourg St-Honoré
75008 Paris, France

#### Tokyo
2-3, 3-chrome
Kasumigaseki, Chiyoda-ku
Tokyo, Japan

South America
Empresa Internacional de Comunicacoes Ltda.
Rua da Consolacao, 222
Conjunto 103
01392 Sao Paulo, S.P. Brasil

## OFFICE WALLS

Go. To work, to sleep, to eat, to think. Here. With Duroplex® walls, you pick the colors, the patterns, the textures. Call Our Design Support at 1 800 537-6111.

And get to work.

TRIARCH
Houston, TX 1 800 537-6111

Circle 120 on inquiry card
Terrazzo designs made with Lehigh White Portland Cement bring classic elegance, inside and out, to any building project. With its unique composition and durability, white portland cement terrazzo allows the architect unlimited freedom to develop original and versatile wall and floor designs that are beautiful, functional and economical. The blending of modern design, ancient artistry and Lehigh White Portland Cement produce a terrazzo that is truly a material of timeless function and beauty.

Leading architects continue to specify Lehigh White Portland Cement to insure the consistent and lasting beauty of their terrazzo designs.

Lehigh White Cement is a true portland cement. The raw materials are carefully selected using only the whitest limestone and clay, and manufactured under precise, rigidly controlled conditions to assure uniformly pure white color, consistent performance and reliable strength.

We invite you to discover more about Lehigh White Cements. For additional information or to request literature, call 1-800-523-5488 and speak to one of our representatives, or write to Lehigh Portland Cement Company, P.O. Box 1882, Allentown, PA 18105.
ARTURA™ MAKES EVERY WALL A WORK OF ART…AGAIN.

Once again, the wall is a work of art. The new “Artura Lumina Collection” is a ceramic wall tile creation that is at once ageless, original and individually expressive.

This vivid collection of larger sized tiles features stylized natural forms and patterns rendered over a lustrous, milk-white tile surface. With its coordinated patterns, colors and the distinctive look of hand-painted designs, “Artura Lumina” can complement a variety of interiors with a beauty that’s durable and a style that’s personal.

See the “Artura Lumina Collection” yourself for a renewed appreciation of the timeless beauty of original wall art. Visit a Florida Tile distributor’s showroom. And, once again, you’ll begin to see walls as works of art. For more information, call 1-800-FLA-TILE.

Makes Every Wall a Work of Art™


Circle 122 on inquiry card
For over 25 years, Forms + Surfaces has been enhancing the built environment with products of enduring quality and beauty.

Doors
Hardware
Ceilings
Walls
Elevators
Site Furniture.

The applications are endless. The quality and design are legend.
Forms + Surfaces
Box 5215
Santa Barbara
CA 93150
(805) 969-7721
FAX (805) 565-1578