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Circle No. 310 on Reader Service Card
81 Authentic Modernity
Mario Botta's competition-winning scheme for the André Malraux Cultural Center is the centerpiece of a proposed residential and cultural district in Chambery-le-Bas, France. Donatella Smetana

91 Life Behind the Logos
As corporations have become major employers of architects and designers, corporate architecture has become a respected career path, with considerable decision-making power. Thomas Fisher

92 The Corporate Developer
The Prudential Insurance Company of America has become one of the largest developers in the country, producing buildings noted for their attention to detail and life safety systems. Thomas Fisher

100 Big Blue Designs
Long an advocate of quality design for the many buildings it erects, IBM continues its tradition by commissioning and working closely with architects attuned to that quest. Thomas Fisher, Jim Murphy

104 Mickey the Talent Scout
Disney Development Company, the real estate branch of The Walt Disney Company, is actively recruiting big-name architects for building projects on the peripheries of its thriving theme parks. Pilar Viladas

A R C H I T E C T U R A L  D E S I G N
Editor in charge: Pilar Viladas

108 A Reader Inquiry: Inside the Hotel Guest Room
Notions of what makes a successful hotel guest room depend on who's doing the designing—and who's using the room. Vernon Mays

114 Up Against the Wall
Architects must consider the various factors affecting the exterior of buildings when designing and detailing curtain walls. Thomas Vonier

DEPARTMENTS
9 Editorial
Traveling in Time
11 Views
15 P/A Reader Poll
Competitions and Awards
27 News Report
37 Perspectives
Barcelona Olympics
45 Calendar
53 P/A Awards Program
63 P/A Practice
Verifying Zoning Maps; After the Crash; Single Subcontract
118 Technologies-Related Products
125 Books
Building a National Image; The Spirit of H.H. Richardson
131 New Products and Literature
143 P/A in July
145 Job Mart
147 Selected Details
148 Advertisers' Index
149 Reader Service Card

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Examining past architecture can sharpen our discernment, especially if we see beyond our usual professional preoccupations.

THE job of an architecture journalist involves much travel to see the latest buildings. Looking at historical buildings is usually done in spare moments—an hour in Chicago between appointments, a quick tour of Austin or Des Moines between the objective of the trip and the airport—once in a while some real vacation days in places chosen at least in part for their architectural rewards.

One of the pleasures of serving on the AIA Committee on Design over the past several years has been the opportunity to look at buildings and areas I do not otherwise have to see—and to do it with a congenial, interested group of architects. We have seen famous landmarks together, but some of the off-beat places stick in my mind—some of the early Modern houses in Portland, some of the Classical banking halls of San Francisco. This spring, the committee met in Annapolis, Maryland, a town remarkably full of 18th-Century buildings, only a couple of which appear in standard histories of American architecture. Even though the location was a major inducement for attending, we still devoted most of our hours to committee business, so the time spent seeing the town had the quality of stolen moments.

The tours in Annapolis made a strong impression on me primarily because the buildings we examined covered such a narrow span of time and types that we could focus on fine architectural distinctions, rather than broad impressions. Another favorable circumstance is that we relied here on local volunteer guides—very skillful ones—to interpret the buildings for us, rather than people with the more familiar perspectives of architects or architectural historians. These guides were quite effective in portraying the gradually increasing grasp of Classicism shown by Colonial designer/craftsmen in everything from fenestration patterns to chair backs. At the same time, they could illuminate the role of the town’s mansions as social-season settings for families whose real homes were on outlying plantations, for instance, and they could portray the spirit of botanical exploration behind the 18th-Century gardens. They could also share with us the present-day preservation strategies of a historic town that is also the seat of an expanding state government, with the metropolitan expansion of both Washington and Baltimore rolling into its outskirts.

It is very helpful to the critical faculties, I was reminded again, to immerse yourself, if only for a few hours, in the aspirations and related design accomplishments of another time. In this case, it was also humbling. The ambitious urban plan of this town, its buildings, and their furnishings were accomplished despite a relatively primitive technology and a position at the very edge of Western culture. In many naive—sometimes awkward—ways, the design we saw shows its provincial origin; why, then, does it compare favorably with much of the best work we produce today, with our advanced technology and our access to every design thought and accomplishment on earth?

Two tentative answers: In the 18th Century, design and architecture constituted a far larger portion of total intellectual investment than they do today, and in that society there was a fairly clear consensus—at least among those who commanded the resources—as to what the ideal built environment should be. Today we can take some satisfaction in the attention the popular media are giving to design and in community efforts to regulate design (by no means an unmixed blessing), but we still cannot pretend that architecture commands any more than a small and remote corner of the national consciousness—or that interested citizens won’t be befuddled by the conflicting messages they receive from our design community.

At any rate I would urge you, based on this brief encounter with Annapolis, to seek out some similar experience to provide a healthful shift of perspective. Over these next few months, when vacations are in order, you may quite understandably want to examine the latest museum or waterfront bazaar, or the timeless beauty of some cathedrals or Mediterranean villages; whether or not you can make these more ambitious pilgrimages, by all means visit a nearby historic neighborhood, house, farmstead, mill, or pueblo—if possible in the company of a nonarchitect guide. You risk at worst being numbed by trivia, but if you are fortunate, you may get a perception of design as part of a larger cultural picture—a picture that warrants thoughtful comparison with the world you work in.

John Marin Orton
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Wagner Exhibition Credits

The exhibition of Otto Wagner drawings (P/A, April 1988, p. 28) which is traveling in America through the fall of 1988 was organized by the Drawing Center, 35 Wooster Street, New York, New York 10013. The Drawing Center is a nonprofit space for the exhibition and study of drawings. The catalog by Otto Graf, which contains 110 black and white photos and 38 color plates, is available from the Drawing Center for $24 including postage. The exhibition has been made possible by generous grants from the National Endowment for the Arts, the New York State Council on the Arts, and British Airways. The exhibition can be seen at the University Art Museum, University of Minnesota, Minneapolis, now through August 26. (See Calendar, p. 45.)

Winter Behind Walls

The environmental improvisation within the walls of Dannemora Prison was illustrated in the August 1987 P/A (pp. 86–87) in summer photos by Joshua Freiwald. In March 1988, the New York Times published this photo of the same yard in winter, showing how residents take advantage of the northern New York State climate.

Office Design Credit

The offices of Leason Pomeroy Associates in Los Angeles (April P/A, p. 96) were designed by Stanley Felderman, when he was president of Leason Pomeroy-Felderman Associates.

Chair Museum Credit

Vitra's chair museum (May P/A, p. 79) was designed by Frank O. Gehry & Associates in association with Gunter Pfeifer Architect, Lorrach, West Germany.

Urban Design in 3-D

As an Architect and Urban Designer I was very pleased with your March issue and its focus on Urban Design. I am troubled, though, by one aspect of Thomas Fisher's "New Urban Design" review of current work: each project was illustrated exclusively by a plan drawing. You chose not to include any sections, elevations, or 3-dimensional studies of these projects. As Senior Designer of the Gateway East Project in East St. Louis, my design concept, while originating in plan diagrams, quickly became an exercise in 3-dimensional design. I am sure the same is true of my professional colleagues whose work you also chose to illustrate. Perhaps the greatest distinction between Urban Designers and Urban Planners is that most Urban Designers are Architects and, as such, design in plan, section, elevation and perspective. The heart of any true Urban Design scheme should be the creation of quality urban spaces: hard plazas, landscaped parks, tree-lined boulevards, pedestrian arcades and courtyards, service streets and mews. As illustrated in your article on Rector Place, Battery Park City, Design Guidelines can be an effective way of implementing the creation of these spaces. And while I would argue that a strong Urban Design concept can be very lenient in its guidelines, nevertheless the full design of these spaces can only be achieved in three-dimensional modeling. It is therefore a discredit to the profession to limit the illustration of the work to plan views.

Robert L. Schmidt, AIA
Skidmore, Owings & Merrill
London

CADD Resolution

The microcomputer-based "rendering" example (P/A Technics, April, p. 127) by SOM Chicago of Sullivan/Wright's Charnley House balcony is so graphically inept, without apparent purpose, and altogether inadequate to the beautiful original, it should have been captioned as an example of the misguided and primitive results that still abound in the world of CADD.

I'm looking forward to [the] AIA Convention Professional Program Seminar entitled: "Computer-Aided Design: Myth or Dream Unfulfilled?"
Claude E. Armstrong, AIA
Jan Hird Pokorny Architects & Planners
New York, New York

[All of the dimensional data for the Charnley House balcony is in SOM's computers and a higher resolution image of it, showing the intricate carving, could have been made. Because it was shown in the article as part of a much larger image, it was not reproduced at a high resolution.—Editors]
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Readers recognize the benefits of competitions and awards programs while registering concerns about cost and fairness.

Just over 700 readers—most of them owners and principals—responded to the P/A Reader Poll on Competitions and Awards Programs. Their answers reflect firm experience as potential or seasoned competitors.

Who responded (Figure 1)
Small firms with less than 10 employees dominate the sample at 58 percent of the total. Over 66 percent of the sample are owners and principals, although project managers and staff architects are also well represented at 15 and 12 percent respectively.

Morrison & Morrison find that the greatest variations in response, however, are registered not in terms of the ownership size of a firm but its age. The sample is split fairly evenly among the four age brackets for firms, defined in this report as startup (5 years or less in business), young (6 to 15), mature (16 to 30), and established (over 30 years).

DESIGN COMPETITIONS Participation (Figures 2–4)
Although half of the respondents believe that the number of design competitions has increased over the past five years, only 14 percent report that their willingness to enter competitions has increased. Over one-third report a decrease in their desire to participate. Established firms are the most disenchanted, with 44.9 percent registering a decrease in interest, while young firms, as might be expected, show the greatest interest.

The cost of competing (Figure 6)
The Morrins report that the cost of entering design competitions emerges in this survey as the chief concern for all architects. A strong 83 percent of the respondents believe that competitions are too costly for competitors, although 53 percent believe they are justifiable to some degree as marketing expenses. Established firms are the most likely to regard that cost as prohibitive, and architects whose interest in competing is on the wane cite cost as a major concern.

Although startup and young firms are the most eager to participate in design competitions, nearly all readers (95 percent) hold that small, new firms are the least equipped to support the cost. Thirty-nine percent of the sample find that entering design competitions is economically feasible for only large and established firms, while another 30 percent believe that entering is not feasible for any firm, regardless of size or age.

Other drawbacks (Figure 5)
Chief among the other concerns expressed by respondents is the lack of client consultation in design competitions. Nearly three-quarters of the respondents also believe that design competitions are a good means for developing a firm's skills, a view shared in particular by new and mature firms. And 71 percent believe that entering design competitions helps staff morale, even if their firm does not win. Staff architects are more likely to hold this point of view than are owners and principals (80 percent versus 67 percent).

The benefits (Figure 5)
Although they may find the costs of competing prohibitive (see below), many architects (63 percent) believe that design competitions generally raise the quality of architecture. That view is most strongly held by staff architects and by new firms.

Over 70 percent of the readers believe that design competitions provide a good mechanism for helping young firms get started. Surprisingly, however, the Morrins find that this view is most commonly held by respondents from the large and established firms (82 and 86 percent respectively as against 71 and 74 percent for small or startup firms).

Three-quarters of the respondents also believe that design competitions are a good means for developing a firm's skills, a view shared in particular by new and mature firms. And 71 percent believe that entering design competitions helps staff morale, even if their firm does not win. Staff architects are more likely to hold this point of view than are owners and principals (80 percent versus 67 percent).

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view is strongest among project managers and those respondents registering a low interest in competitions. (As might be anticipated, those with little interest in competing are the most likely to find fault with the competition process and results.) Nearly three-quarters of the respondents believe to some extent that design competitions are a means by which clients exploit architects, and that in architect/developer competitions, design counts for little. Neither view, however, is strongly held; only 26 percent agreed completely with the exploitation statement, and only 19 percent agreed completely with the criticism of architect/developer competitions.

Nearly one-third of the readers, however, believe strongly that the quality of presentation counts too much in decisions. And a disturbing 70 percent disagreed with the statement that the best designs usually win. That view, again, was strongest for those who register low interest in competing. Startup firms show slightly more optimism than the norm.

What makes a good competition? (Figure 7)
The assurance of a real commission to the winner and the promise of fairness, as indicated in the competition rules, are cited as the most important from a list of six variables by 73 and 67 percent of the readers respectively.

Fifty-four percent cite the importance of a complete and clear program, while 40 percent regard the promise of publicity as a significant incentive. The stature of the jurors and the prize money were listed as critical factors by only 32 percent of the sampled architects. However, prize money is significantly more important to staff architects (45 percent) than to any other category of respondents.

Historic competitions (Figure 8)
Although readers were not particularly quick to praise the publicity value of competitions, a test of general knowledge reveals that architects do remember competitions fairly well, especially recent ones. Seventy-seven percent correctly identified the Boston City Hall as a commission awarded on the basis of competition, while 74 percent recognized the Tribune Tower and 66 percent recalled the Gateway Arch as competition commissions. Memories failed for the Lincoln Memorial, the oldest commission by competition in the poll list. However, all but a small percentage of readers caught the "plants." Eighty-seven percent knew the National Gallery commission was not awarded by competition, while 89 percent made the right call on Dulles Airport and 97 percent knew that Frank Lloyd Wright did not compete for the commission to design Johnson's Wax.

Best competition programs (Figure 9)
The Morrisons report that "a majority (70 percent) of P/A readers believe that design competitions are most appropriate to choose architects for major public buildings." At the other end of the scale, specialized health and education commissions were considered the least appropriate subjects for competitions.

Forty-nine percent of the readers felt competitions worked well for publicly sponsored housing, while modest public projects and corporate facilities were considered good candidates for competition by only 40 and 38 percent of readers respectively.

Awards programs (Figure 10)
Twenty-six percent of the firms sampled have participated in the P/A Awards Program, while 35 percent have participated in the AIA Honor Awards Program. Over half of those who have entered the AIA program have won an award, while 25 percent of those who have entered the P/A program have received an award. The two programs attract many of the same competitors: 55 percent of those who enter the AIA programs also enter the P/A competition, while 66 percent of P/A submitters also compete in AIA programs. And 27 percent of the sample have won an award in a local or regional AIA competition. Large and established firms show a better track record in both P/A and AIA programs.

Asked to register their perceptions of awards programs, as distinct from competitions for commissions, 91 percent of the readers agreed that such programs provide a good means for young firms to gain recognition. The Morrisons report that "those firms who enter P/A and AIA award programs are even more likely to concur with this sentiment." Over 70 percent regard awards programs as a valuable way for established firms to maintain their reputations. However, only 57 percent agreed that awards programs are a valuable means of comparing one's talents with the best.

The problems
Just over half of the respondents do not believe that the best design usually wins. Fifty-nine percent believe that jurors are not conscientious and unbiased,
while 75 percent believe that jurors have too little time to evaluate entries. (A sour grapes syndrome does prevail: Those who entered either the P/ A or the AIA Honor Awards program and have not won register a consistently more negative view of juror qualifications than the sample average.) And 68 percent feel that few clients allow work that will win awards.

Conclusion
Design competitions can help hone a firm's skills and boost staff morale, help a young firm get started, and raise the general quality of design. But the cost of competing, the overemphasis on presentation, and the lack of direct contact with clients remain key concerns for architects who consider entering competitions.

Similarly, winning an award can help a young firm gain recognition or an older one maintain its reputation. But concerns about the time jurors spend reviewing entries and the biases they bring are reflected in the pessimistic belief that the best design does not always win.

Not surprisingly, the most negative opinions prevail among those practitioners least interested in competing. Yet even those architects who maintain a high interest in competitions and awards programs register significant criticisms. Their concerns form a useful checklist of factors to be reviewed by any architect considering whether or not to enter a given competition or awards program. Moreover, a majority of respondents—64 percent—indicate a willingness to enter competitions despite perceived drawbacks. These architects recognize that competitions and awards programs are an established—and growing—part of professional practice.

Daraicic D. Boles
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Progressive Architecture 6:88

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Despite all the talk in Congress about how to make U.S. exports more competitive, there has been little discussion about product design and how it might help improve the balance of trade. But that may change if Design America gets its way.

The organization has held forums around the country to generate interest in and gather ideas for a U.S. design council, which would promote good design both at home and abroad. (continued on page 33)

Endangered Holy Family Church.

Churches Threatened in Chicago

For many old and beautiful churches in Chicago, the question is becoming when, not if, they'll be demolished. The fate of two architecturally significant Catholic churches in particular is in grave doubt. And last December, the archdiocese of Chicago announced that 25 historic inner-city churches may be closed and possibly demolished in the near future.

The Landmarks Preservation Council of Illinois (LPCI) and the National Trust for Historic Preservation are trying to pull together money and resources to save endangered local churches. "We realize we can't save them all, so we are forced to (continued on page 32)

Americans in London Docklands

Britain's first skyscraper of American proportions is to form the centerpiece of the 12-million-square-foot Canary Wharf development proposed by Toronto-based developers Olympia & York for London's Docklands district. The 800-foot-high pyramid-topped building, designed by Cesar Pelli of New Haven, will be London's tallest. Other parts of the $7 billion Canary Wharf project, which is (continued on page 28)
Jean Nouvel has been awarded the commission to design a luxury hotel for Perrier in Vichy, France. Ricardo Boffil and Christian de Portzamparc were also considered for the project.

The Massachusetts Museum of Contemporary Art now has the funds to proceed with plans to convert an abandoned factory in North Adams, Mass., into the world’s largest gallery. Governor Michael Dukakis signed a bill allocating $35 million to Mass MoCA, whose program also includes retail, hotel, condominiums, and light industry.

Gwathmey Siegel & Associates, New York, have been selected to design the new Busch-Reisinger Museum at Harvard University. The $6 million building, which will occupy a site adjacent to the Fogg Art Museum, will also house a portion of the Fine Arts Library.

An International Academy of Architecture has been set up in Sofia. Funded in part by the Bulgarian government, the Academy is to be housed in the restored monastery of St. Kirik, also home to the Bulgarian Institute of Architects, outside Plodniv. Dennis Sharp will head the education arm, and Jonathan Glancy will edit the bimonthly magazine, as yet unnamed, with the assistance of guest editor Norman Foster.

HOK’s Sports Facilities Group has been named architect for the Chicago White Sox Stadium, proposed for a site adjacent to the existing Comiskey Park. The open-air stadium will seat 47,000.

Eero Saarinen’s Dulles International Airport Terminal Building has won the 1988 Twenty-Five-Year Award from the American Institute of Architects.

The former Crown Zellerbach Building in San Francisco is to be renovated by Kaplan/McQuary/Diaz. Designed by SOM with Hertzka & Knowles in 1956, the 17-story office building, a classic curtain wall structure, was designated a historic landmark last May.

**A Bridge Too Far?**

Should the city patch it up or tear it down? That is the question confronting the keepers of New York City’s Williamsburg Bridge, who are simultaneously examining repair plans and studying new bridge proposals.

Some 89,000 automobiles, 17,000 trucks, 84,000 subway riders, 4000 bus passengers and 400 pedestrians cross the 85-year-old Williamsburg Bridge each day. Those commuters get a taste of traffic nightmares to come when the bridge was closed in May for emergency inspection and repairs. Faults are legion—from broken wires in the cables to crumbling decks.

While most of the 25 replacement bridge designs proposed by competing international teams play it straight with simple solutions in which the engineering is the architecture, a few took the opportunity to propose more ambitious programs. A design by DRC Consultants and Parsons Brinckerhoff Quade & Douglas with Der Scutt, all of New York, would house a museum and a restaurant in twin towers that would be right at home among the apartment buildings of Third Avenue.

As New Yorkers contemplate these alternatives under crisis conditions, two bridge construction executives have sounded a more general, worldwide alarm. According to The New York Times, Stewart C. Watson and David Stafford contend that cable-stayed bridges, which are less expensive to build than traditional suspension bridges and increasingly favored, are vulnerable to premature, rapid corrosion that can reach dangerous levels in four to ten years. (In the cable-stay design, the roadway is suspended directly from the bridge towers, producing a fan-shaped cable pattern, while in suspension bridge designs, smaller vertical cables are suspended from larger cables, which hang in an arc between the towers.)

Ironically, all but two of the 25 designs for the Williamsburg replacement bridge use the cable-stay system.

While public attention has focused on the more dramatic possibility of failure in the main suspension span, recent inspection reports locate the most significant corrosion in the on-land approach roadways. That fact, coupled with the new questions raised about cable-stay design, could make repairing the existing bridge more palatable. The city’s Department of Transportation is expected to announce its plan of action in July.

Doralice D. Boles

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**Docklands** (continued from page 27) billed as the world’s largest commercial development, are designed by Kohn Pedersen Fox of New York and the London and Chicago offices of Skidmore, Owings & Merrill.

Canary Wharf marks the most comprehensive intervention to date in Europe by American architects. The master plan for the 71-acre site by SOM with I.M. Pei & Partners, New York, and YRM Associates, London, with landscape architects Hanna/ Olin, Philadelphia, incorporates major revisions demanded after the initial plans were unveiled last year. The mixed-use program, with 10 million square feet of office space, 400,000 square feet of retail, two hotels, and parking, remains largely unchanged. The new plan, however, is more symmetrical, with more formal landscaping and improved access to the water that surrounds the site. It is perhaps overly formal by London standards, but makes good use of the dramatic possibilities offered by the long site linking two bends in the Thames River. The buildings are grouped around a long courtyard that is divided in two by the Pelli tower.

Pelli’s design replaces a taller, asymmetrically positioned skyscraper by KPF, who have contributed a pair of 600-foot-high towers. The slender Pelli building tops the current plan. KPF has also designed three mid-rise buildings—a hotel and a pair of office blocks now under way. These join office buildings of similar size by SOM and Pei.

The dominant feature, however, is the Pelli tower. Some 50 feet shorter than the tallest tower of the original plan, it remains 200 feet taller than London’s previous tallest buildings, the 1966 British Telecom Tower and the 1981 National Westminster Tower.

Pelli takes pride in the fact that his tower will act as symbol for this booming area, noting that London’s existing tall buildings lack sufficient “flair and dignity” to be termed skyscrapers. He has not missed the great symbolic value of his design in signifying the shift of London’s center of gravity away from the City and the West End. Yet he has designed a skyscraper for London without appearing to consider what a European skyscraper (a contradiction in terms?) should look like. And his romanticized skyscraper implicitly denigrates London’s other, mostly Modernist, tall buildings, some of which inspire a certain fondness among locals.
Gund by Faneuil Hall

Faneuil Hall, Merchants Row, State Street: This is Boston's Holy Land. You can practically hear the chatter of merchants, the call of orators, the shouts of patriots—and the clamor of preservationists. And the sifting of "acres of drawings," says architect Graham Gund of Graham Gund Architects, Cambridge.

Gund's new building on State Street may be the city's most painstaking exercise in contextualism. The 12,000-square-foot One Faneuil Hall Square reflects the combined labors of city preservationists, the Boston Redevelopment Authority, and the architects.

The "long bloody process," as one former BRA staffer puts it, began in 1979 after the 19th-Century Sanborn building by Alexander Parris, which had occupied the site adjacent to historic Faneuil Hall, burned down. Round and round the design went. Countless forms and façades came forth—as many as 120 in a room in one day, the BRA staffer remembers.

The point of this arduous exercise was to ensure that the new building fit into Faneuil Hall Square, with its small-scale mix of periods—from master architect Charles Bulfinch's Federal style enlargement of Faneuil Hall from 1805, to Parris's robust Greek Revival Quincy Markets a generation later, to the office towers of today.

Gund's role model, he says, was the Sanborn Building itself, which deferred to Faneuil Hall. Unfortunately, One Faneuil Hall Square does not defer sufficiently to this noble father figure. From too many vistas, the offspring, a seven-story masonry cube ordered into six symmetrical bays on each side, overwhelms its historic parent. The reasons for this unintended result seem both predictable and symptomatic of so many buildings that are self-consciously historical, but fail to emulate the past's small scale and more detailed craftsmanship.

As in so many Post-Modern replays of historic outlines, the underdetailed parts—the austere sweep of the roof, the blank-eyed windows, and especially the glass greenhouse, which manages to stripe the sky as a black void above Faneuil Hall's cornice—draw away from the role model in a kind of paradox.

To be sure, the need to mediate between a historic area and the slick Modernist towers nearby would have daunted Boston's master architect Bulfinch himself. To Gund's credit, too, he has avoided the cliche of Boston brick, with a pink granite façade that bows to State Street.

The BRA likes to use this building as testimony to their capacity to compromise between old and new, to encourage a structure that merges into the cityscape. To this viewer, however, it is false homage to the God of Context. One Faneuil Hall Square remains evidence to stripe the sky as a black void above Faneuil Hall's cornice—draw away from the role model in a kind of paradox.

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Jane Holtz Kay

Berlin Academy of Science design by Robert A.M. Stern.

Academy (continued from page 27)

The site was undoubtedly chosen for its proximity to the Cultural Forum, where prime examples of postwar architecture by Scharoun, Mies, and Stirling are located. But the Embassy's origins did not go unnoticed by the competition organizers, who requested that any new architectural elements be of Modern design. These Modern additions would contrast with the Neo-Classical embassy and thereby demonstrate that the "... period of the Third Reich] had been intellectually conquered." (A group of period rooms are, however, to be restored.)

The winning scheme by Aulet's team accomplishes the paradox of barely altering the embassy's footprint, while adding a monumental presence to West Berlin's skyline. A slender galleria slices through the embassy's east wing, culminating in a ten-story apartment tower whose west façade will offer superb views of the Tiergarten.

Even more dramatic was Hans Kollhoff's proposal. Uncomfortable...
Academy (continued from page 29) able with the concept of housing a new humanistic science center in a building built by the Nazis for an Axis power, Kolhoff and codesigner Theodora Betow proposed a 17-story tower located at the rear of the embassy courtyard. The two structures—embassy and tower—are opposites, balancing glass against masonry, transparency or lucidity against opacity. Modernism against Neo-Classicism, past against present.

In a departure from their recent American projects, which are more classicizing, the office of Robert A.M. Stern proposed a collection of irregular glass pavilions, vaguely reminiscent of Expressionist architecture and intended, said the architects, to "represent the idea of science as a process of renewal.

In the end, however, all three schemes failed, despite aggressive interventions, to rid the building of its past. The Senate itself is reconsidering the decision to house the Academy there. A proposal to give the embassy landmark status was recently rejected. A second idea—to renovate the existing embassy but erect a separate building for the Academy—is now being investigated. Either way, Academy representatives say Audien will serve as architect, and a final decision is expected this month.

Mary Pepchinski
The author, an American architect, is teaching at the Technical University in West Berlin.

Broadway Theaters Earn Designation

After a protracted and complicated battle between preservationists, actors, theater owners, real estate interests, and local politicians, New York City's governing Board of Estimate voted in March to affirm the landmark status of 28 Broadway theaters, bringing the total of designated theaters to 31. The Board also adopted special guidelines that allow owners to make production-related changes to the theaters on their own, as long as any noted decor or architectural feature altered during a production is restored afterward.

The three major theater owners and producers in the area—the Shubert Organization, the Nederland Theater Organization, and Jujamcyn Theaters—had argued strongly against designation, especially of theaters in their chains. They claimed that the financial constraints of restoring any altered portion of a playhouse, including sometimes minute or detailed interior ornamentation, would impede the profitable operation of most playhouses. But the special guidelines, which were worked out between the New York City Landmarks Commission, the owners, and the nonprofit organization Save the Theaters, attempt to address the economic realities of show production by permitting changes required by extravaganzas such as "Cats," or "Phantom of the Opera," to be made swiftly, without the normal landmark review procedures and without bureaucratic delay, as long as those changes can be reversed.

Owners also complained that designation would rob them of the potentially lucrative air rights over the theaters—this despite the New York City Planning Commission's proposed Theater Retention Bonus. That bonus would allow developers in the theater district to gain extra floor space with payments to the theater owners; in return, theater owners would pledge not to destroy the theaters and maintain them as legitimate production houses.

The Board's action comes six years after the demolition of the Helen Hayes, Bijou, and Morosco theaters for a hotel triggered angry protests from various groups, including the Municipal Arts Society, Actors' Equity, and Save the Theaters. Since then the Landmarks Commission has reviewed 45 theaters—at least 33 still used as legitimate playhouses—in a 13-square-block area around Times Square. (Very few theaters remain on Broadway itself.) Together these theaters represent a concentrated and unique ensemble of showhouses that have helped define and nurture the idea of "Broadway" as the pinnacle of showbusiness success and glamour.

Although the Commission's reports cite the designated theaters' general "historic and symbolic importance to the development, heritage and cultural characteristics of New York City, New York State and the nation," emphasis on the theaters' architectural or aesthetic significance varies greatly from building to building. Indeed, some architectural historians have noted that many of the Broadway theaters, when considered individually or compared to other architecturally important playhouses in America or in Europe, are aesthetically undistinguished.

Nonetheless, a handful of the Broadway showhouses do stand out as unusual, innovative, or strong examples of early 20th-Century theater design. Among the notables are the elegantly proportioned Neo-Georgian Music Box Theater designed in 1921 by the prolific theater architect C. Howard Crane, and Carrère and Hastings' Globe Theater, built in 1910 and renamed the Lunt-Fontanne in 1958.

Neither the Commission nor the Board has acted on eight other theaters that are now either unused or have been converted to movie houses. These remaining theaters, all of which are on 42nd Street, will likely be upgraded as part of the 42nd Street Development Corporation's plans to build office space and "clean up" the thoroughfare—plans which so far have been delayed by legal action and the search for adequate financial backing. Peter L. Donhausen

The author is an architectural historian and an educator at the Metropolitan Museum of Art.

Philip H. Hubbard, Sr., 1900–1988

Philip Hollister Hubbard, former President and Chairman of the Board of Reinhold Publishing, died in April.

As president of Reinhold, which publishes P/A, Hubbard presided over the shift in editorial direction that accompanied the name change from Pencil Points to Progressive Architecture following World War II. That change was described in the magazine itself as a shift from a "general journal for the drafting room" to a broader publication dedicated to "the vigorous promotion of what we believe to be good architecture and to the active encouragement of all . . . who work honestly at improving the human environment.

Hubbard joined the Pencil Points Press, Reinhold's predecessor, in 1923 as a sales representative. He served as publisher of Pencil Points and then P/A from 1931 through 1946. He was also instrumental in establishing the P/A Awards program and played a major role in the formation of the company's book division. He retired from the position of Chairman of the Board of Chapman-Reinhold in 1968.

His son Philip H. Hubbard, Jr., has also served as publisher of P/A and is now President of the Reinhold division of Penton Publishing and Vice President of Penton Publishing. His eldest grandson, Philip H. Hubbard III, is an architect with Ferris Architects, Southport, Conn.
The Trattoria Chair
Design: Vico Magistretti, 1987

Here is an 18th century chair which Magistretti has taken from a piazza in Venice and sturdily re-created for our time.
Endangered St. Mary of the Angels in Chicago.

Chicago (continued from page 27) pick the most architecturally important," said Carol Wyant, executive director of the LPCI. Holy Family, the second oldest Catholic church in Chicago, is one of those important churches. Built in 1871, it served a succession of immigrant waves—Irish, Italian, Mexican, black. But its neighborhood has declined in recent years as one-time parishioners moved up in the world and out to the suburbs. The mostly lower income parishioners can't meet rising maintenance costs, and restoration is estimated at $3.5 million. The LPCI and the National Trust are working feverishly to help save the church. Recently, a church council rejected a committee recommendation to demolish the church; the matter now goes to a higher authority in the Jesuit order.

The outlook is only slightly brighter for St. Mary's of the Angels. The archdiocese, which had announced its intention to close and possibly demolish the deteriorating structure, recently granted the congregation a two-year reprieve. Parishioners are eager to save the building, but daunted by the estimated $1.4 million in necessary repairs to the roof, dome, and walls.

The imposing church, located just west of the Kennedy Expressway on Chicago's West Side, was designed by Worthmann & Steinback and built in 1911. It is considered one of the finest examples of the Roman Renaissance style in the United States, with terra cotta and tile dome modeled after St. Peter's Basilica in Rome.

Neither church is designated a landmark, nor are they likely to be, thanks to a March 1987 amendment to the city's landmarks ordinance prohibiting designation of a religious edifice without the consent of the congregation. That legislation doubles the difficulty of attaining landmark status not only for inner-city churches, but for well-kept churches of affluent congregations.

The Fourth Presbyterian Church on tony North Michigan Avenue is one example. Like St. Bartholomew's Episcopal Church in New York, Fourth Presbyterian sits amid skyscrapers in one of the city's hottest real estate markets. Cashing in on the potential real estate value of their property is something the congregation doesn't want to preclude.

One of the few success stories in church preservation in the city's inner-city area is Unity Temple in Oak Park, a 1906 Frank Lloyd Wright building. The congregation granted interior and exterior easements to the LPCI, giving the preservation group control of the architecturally significant elements of the building. But the preservationists have had no such luck in Chicago. Meanwhile, the LPCI and National Trust are consulting with lawyers to see if a successful court challenge could be made to the city's ordinance.

Lisa Goff
The author is associate editor of Crain's Chicago Business.

Low-Income Infill Housing

A recent exhibition in New York carried the message that low-income, subsidized housing can be an architecture of carefully modulated forms, spaces, and materials that dignifies its occupants and enriches surrounding communities. "Reweaving the Urban Fabric: International Approaches to In-Fill Housing" included 69 American and European entries.

As part of a three-pronged effort by its sponsors—the New York State Council on the Arts and the New York Landmarks Conservancy—to make housing a public issue, the exhibition joins the sponsors' 1984 Harlem In-Fill Housing Competition and a more extensive housing survey to be published this fall.

In contrast to the sleek, corporate gallery of the Paine Webber Building where the show was housed, the exhibit depicted an architecture occupied and altered by ordinary people. Their presence in the architectural photographs deepened the show's underlying stance that design, at its best, is a humanistic pursuit that integrates physical form with culture in service to society.

Of the American work, projects in New York, California, and Charleston are among the most effective in "reweaving" old with new. A premiated entry in the Harlem competition by Steve Campbell and Mark Nielson of Payette Associates, Boston, comes closest to the European synthesis of local housing traditions with progressive site planning principles evident in projects by Antoine Grumbach in Paris, Herman Hertzberger in Germany and the Netherlands, and Aldo Rossi in Italy. It is Hertzberger, however, who consistently provides the exhibition's richest rewards. In his low-rise projects in Berlin, Kassel, and Amsterdam, units reach to the light with balconies and terraces that give rhythm and scale to façades. There is no ornament here, but there is a tactility to these elevations that is equal to the outstanding brick row house work of English architects Jeremy Dixon and Alan Colquhoun, also exhibited, who make stylistic references to the London row house. We may look at these photographs and others in the show and return to the American city and suburb of Wicker Park condominiums asking: What is luxury?

Roy Strickland
The author is a practicing architect and assistant professor in the Graduate School of Architecture, Planning and Preservation at Columbia University, where he teaches the housing studio.

HRH vs. Architects at St. Paul's

"Architects have inflicted greater damage on London than the Luftwaffe managed during World War II," claimed Prince Charles in a recent speech. This sort of assertion doesn't go down well with architects; yet when the Prince not only garners headlines in an otherwise indifferent press, but has the ear of the current RIBA president, Rod Hackney, they take notice.

Moreover, the Prince went on to commend features found in an unsolicited proposal for a sensitive site in the City of London currently subject to a limited competition among seven of the world's most highly regarded firms (highly regarded, that is, among architects). The proposal that was to the Prince's taste had been commissioned from a lesser known firm, John Simpson & Partners, by a London evening newspaper. The features praised by the Prince were the pseudo-traditional ones that pass for "history" in popular sentiment.

The site in question is Paternoster Square, on the north side of St. Paul's Cathedral. While (continued on next page)
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*The AATCC Gray Scale Rating is a nationally recognized system using a standardized comparison system to determine the extent of color differences.

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   (f) staining or fading occurring after removal of the carpet and its reinstallation.

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small compared to the vast redevelopments of Docklands (see story, page 27) and Kings Cross, this square has been London urbanism's most important testing ground for decades. This precinct of freestanding slabs and loosely contained plazas, laid out by Sir William Holford in the 1960s, was regarded at the time by critics such as Nikolaus Pevsner as the definitive solution to a sensitive area. Today the slabs are obsolete for current business needs, while the plazas are unloved by office worker and tourist alike.

The triangular site will be redeveloped by the Paternoster Consortium as an office and shopping complex. The Consortium commissioned a competition for "an overall scheme . . . rather than a final design solution." Of the invited firms—Arup Associates; Skidmore, Owings & Merrill; Isozaki & Associates; Richard Rogers Partnership; Foster Associates; MacCormac, Jamieson, Pritchard & Wright; and James Stirling & Michael Wilford Associates—Arup was chosen to take the project forward.

The jury—which included critics Colin Amery and Charles Jencks—made the unusual request that the Arup office work with Richard Rogers in order to incorporate a feature from his proposal that opens up a view of the north transept of St. Paul's from below to those alighting from underground trains.

Of the Arup project, little can be said at present, as it has not been published, although a glimpse on a TV program revealed that it was the only scheme to recall Christopher Wren's idea of an oval plaza, reminiscent of Bernini's design for St. Peters Square, set before the west portals.

Foster's alternating bands of public arcades and glazed private courts was the most abstract and insolent—the most Modernist—of the proposals. The most willful, however, was surely Isozaki's Farrago of forms—trapezoid, quadrant, triangle, square/circle/tower, oblong, crescent, and octagon—ranged along the churchyard edge, as if to manifest the conflicts in what the architects call "an unsolvable puzzle, even within the customary practice of urban design." Brian Hatton

The author teaches at The Architectural Association and writes about contemporary art and architecture.

Council (continued from page 27)

The meetings were jointly sponsored by the National Endowment for the Arts and the Architecture and Planning Research Laboratory at the University of Michigan.

It is no coincidence, say council backers, that trading partners, such as England, Denmark, Italy, and Japan, known for well-designed, high-quality products, also have active design councils. Still, establishing one here will not be easy, as the forums made clear. Manufacturers were wary of governmental involvement in design, and even some designers questioned whether, in the words of Neils Diffrient, "we can give a clear definition of what good design is."

Most participants, however, seemed to agree that a U.S. design council should be regionally based and privately funded, should make use of existing business and design networks and media, and should conduct research into what constitutes good design and what its economic value really is.

A question raised by the forums was why the U.S. has so many poorly designed products when it is home to many of the world's leading designers. Put another way, why have U.S. designers often found foreign companies more receptive to new design ideas than companies here? Getting corporations to recognize the country's own design community as a valuable and precious resource is itself a worthy task for a design council.

Its NEA funding expended, Design America is now seeking new funds and further participation from the business and design communities. Interested parties should contact Colin Clipson at the College of Architecture and Urban Planning, The University of Michigan, Ann Arbor, Michigan 48109-2069. Thomas Fisher

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An international line-up of architects is designing for the 1992 Olympics in Barcelona.

A Designer Olympics

The 1992 Olympic Games in Barcelona will be the most architecturally oriented since the Tokyo Games in 1964, according to Jorge Carbonell, director of the Olympic Village project. Master plan designers Martorell Bohigas Mackay and the Barcelona City Council are currently selecting architects from around the world to design segments of the Village. On the other side of town, plans for the principal sports halls on Montjuic Hill have been completed by their many architects, according to a master plan by Correa & Mila, Barcelona, and foundation work is currently under way.

The most innovative structure for the Games is Isozaki’s covered sports hall, designed to seat 17,000 spectators. Steel supports are currently being put in place for a 140 x 110 meter space-frame roof structure, which will be assembled on the ground and then jacked hydraulically 45 meters up into position. The three-stage “pump-up” operation avoids the need for scaffolding and could take as little as a...
day. Shuichi Fujie, director of architecture for Arata Isozaki & Associates Spain, says this is the first time the technique has been used on such a large structure outside Japan.

The main stadium on Montjuic Hill is a restoration of one built for the 1936 Games, which were never actually held in Barcelona but moved to Berlin at the outbreak of the Spanish Civil War. Principal architects Vittorio Gregotti and Federico Correa are preserving the original perimeter of the old structure, rather than expanding it as initially conceived. The additional spectator seating requirement—raising the capacity from 36,000 to 70,000 with provisional seating for 10,000 more during the Games—is instead being met by simultaneously shrinking and digging out the arena to lower the track level 11 meters.

Changes in Olympic running event distances over the past half-century conveniently accommodate this contraction with a track length of 400 meters, down from 500 meters in 1936. A new second tier of seating will meet the increased demand.

At the opposite end of the central Olympic plaza atop Montjuic will lie a new building by Ricardo Bofill that serves the delightfully ironic double role of wrestling hall and press center. For his return performance in Barcelona, the architect is showing his well-known brand of romantic Neo-Classicism, and has not reverted, as might have been expected, to the Catalan regional Modernism of his early work in the area.

The wrestling hall draws on the Classical gymnasium of Olympian Greece as well as the existing Neo-Classical structures on Montjuic that were built for the 1929 International Fair. (The most notable of these, the grandiose former Palau Nacional, now houses the Museum of Catalan Art, and its interior is being redesigned by Gae Aulenti in time for the 1992 festivities.) Project architect Peter Hodgkinson describes the hall's squat Neo-Classical order as a typically Catalan interpretation of the Beaux-Arts style. Construction is to use traditional Catalan roofing tile and a concrete that approximates the warm yellow sandstone of existing Montjuic buildings.

Across town, Martorell Bohigas Mackay is drawing up more detailed plans for the Olympic Village (P/A, March 1987, pp. 45–46). Considerable modifications have been made to

(continued on page 40)
Create a naturally-lighted glass enclosure for thirty-nine full-size aircraft, and still comply with one of the country's toughest energy codes. That's the challenge Ibsen Nelsen and Associates faced in designing the Museum of Flight at Boeing Field, Seattle, Washington.

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(continued from page 38)

the original master plan, although the supergrid, based on groups of three of Barcelona's historic city blocks, remains. This will be a small Village, with only 2000 dwellings, and its density will be lower than that of Woo & Williams's village for the imminent Seoul Games, or the average for Barcelona.

The three superblocks that make up most of the development will be under control of different architectural teams, who will design not only housing but ceremonial features, such as the arches that tie the blocks together over the 19th-Century street plan.

David Mackay stresses that the eclecticism here will be more restrained than that of Berlin's IBA housing program (P/A, Nov. 1987, pp. 41–46). Some commonality will be ensured by a recommendation that firms use similar, locally available materials. But, says Mackay, "We would like to be as eclectic as the city [of Barcelona]. What we don't want it to be is like the IBA which was deliberately eclectic—in other words, a false situation. We'd like it to be more like Amsterdam in the 1920s."

A welcome addition to the urban scheme should result from the recent decision to bring the Olympic yachting events from La Palma on the island of Mallorca back to Barcelona. These events are rarely held in the same location as other sports. The change presents an exciting opportunity to open up the Olympic Village to its Mediterranean shore, giving Barcelonans more access to the sea that is paradoxically so separate from this beautiful old port city.

Hugh Aldersey-Williams

The author is a free-lance journalist based in London and New York. His book New American Design will be published by Rizzoli this fall.
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Exhibitions

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Frank Lloyd Wright and the Johnson Wax Buildings: Creating a Corporate Cathedral. High Museum of Art, Atlanta, also July 16-September 4, Walker Art Center, Minneapolis. (See P/A, April 1986, p. 27.)

Through June 23
Discovery Through Diversity, a furniture design exhibition. Art and Architecture Design Gallery, Baltimore, Md.

Through June 25

Through June 26

Through June 30

Through June 30
Three Designs: The Norman House, Stockbridge, Mass. (See P/A, April, p. 25.)

Through July 4

Through July 10

Through July 10
The Long Island Country House, 1870-1930. The Parish Art Museum, Southampton, N.Y.

Through July 15
Arquitectonica. Galerie d'architecture Arc en Rêve, Bordeaux, France.

Through July 17

Through July 31

Through August 14

Through August 26
Otto Wagner: Drawings. University Art Museum, University of Minnesota, Minneapolis, Minn. (See P/A, April, p. 28.)

Through August 31

Through August 31

Through September 4

Through July 31

Through July 17-20

Through July 31
The Structure of an Architectural Project. Smithsonian Institution, Washington, D.C.

Competition

June 30
Submission deadline, Quaternario 88, for technology in architecture. Contact Planning Research Center, Faculty of Architecture, University of Sydney, 2006, Sydney, N.S.W., Australia.

August 1
West Coast Gateway International Design Competition. Contact West Coast Gateway, 11300 W. Olympic Blvd., Suite 730, Los Angeles, Calif. 90064.

August 1
Nominations deadline, Good Offices: The Seventh Arango International Design Exhibition. Contact Arango Design Foundation, % Carol Damian, 1115 N. Greenway Dr., Coral Gables, Fla. 33134.

Conferences

June 24-26

July 17-20
CTDA/AATMCA International Ceramic Tile Exposition, Moscone Center, San Francisco. Contact Ceramic Tile Distributors Association, 15 Salt Creek Lane, Suite 422, Hinsdale, Ill. 60521 (312) 655-3270.

August 1-5

August 3-6

August 4-6

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Progressive Architecture announces its 36th annual P/A Awards program. The purpose of this competition is to recognize and encourage outstanding work in Architecture and related environmental design fields before it is executed. Submissions are invited in the three general categories of architectural design, urban design and planning, and applied architectural research. Designations of first award, award, and citation may be made by the invited jury, based on overall excellence and advances in the art.

**JURY FOR THE 36TH P/A AWARDS**

**Architectural Design:** Anthony Ames, Anthony Ames Architect, Atlanta; Terry Farrell, Terry Farrell Partnership, London; Adrian Smith, Partner, Skidmore, Owings & Merrill, Chicago; Bernard Tschumi, Bernard Tschumi Architects, New York, Dean, Columbia University Graduate School of Architecture, Planning and Preservation, New York.

**Urban Design and Planning:** Alexander Cooper, Alexander Cooper + Partners, New York; Don Logan, ELS/Elbasani & Logan Architects, Berkeley, Calif.

**Research:** Donald Prouder, Assistant Professor, University of Pennsylvania Department of Architecture, Philadelphia; Polly Welch, Welch & Epp Associates, Arlington, Mass.

**Judging** will take place during October 1988. Winners will be notified, confidentially, before October 31. Public announcement of winners will be made at a ceremony in New York on January 20, 1989, and winning entries will be featured in the January 1989 P/A. Clients, as well as professionals responsible, will be recognized. P/A will arrange for coverage of winning entries in national and local media.

*Turn page for rules and entry forms.*

**DEADLINE FOR SUBMISSIONS: SEPTEMBER 6, 1988**
Entry form: 36th P/A Awards Program

Please fill out all parts and submit, intact, with each entry (see paragraph 14 of instructions). Copies of this form may be used.

Entrant:
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Entrant phone number:
Project:
Location:
Client:
Client phone number:
Category:

I certify that the submitted work was done by the parties credited and meets all Eligibility Requirements (1–7). All parties responsible for the work submitted accept the terms of the Publication Agreement (8–9). I understand that any entry that fails to meet Submission Requirements (10–18) may be disqualified. Signer must be authorized to represent those credited.

Signature
Name (typed or printed):

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Your submission has been received and assigned number:

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Submission requirements
10 Entries must consist of legibly reproduced graphic material and text adequate to explain proposal, firmly bound in binders no larger than 17" in either dimension (9" x 11" preferred). No fold-out sheets; avoid fragile spiral or ring bindings.
11 No models, slides, films, or videotapes will be accepted. Original drawings are not required, and P/A will accept no liability for them.
12 Each submission must include a one-page synopsis, in English, on the first page inside the binder, identifying the project and location, clarifying eligibility (see Item 4, 5 or 6), and summarizing principal features that merit recognition in this program.
13 To maintain anonymity, no names of entrants or collaborating parties may appear on any part of submission, except on entry forms. Credits may be concealed by any simple means. Do not conceal identity and location of projects.
14 Each submission must be accompanied by a signed entry form, to be found on this page. Reproductions of this form are acceptable. All four sections of the form must be filled out, legibly. Insert entire form, intact into unsealed envelope attached inside back cover of submission.
15 For purposes of jury procedure only, please identify each entry as one of the following: Education, Houses (single-family), Housing (multiple-unit), Commercial, Industrial, Governmental, Cultural, Recreational, Religious, Health, Planning and/or Urban Design, Applied Research. Mixed-use entries should be classified by the larger function. If unable to classify, enter Miscellaneous.
16 Entry fee of $75 must accompany each submission, inserted into unsealed envelope containing entry form (see 14 above). Make check or money order (no cash, please) payable to Progressive Architecture.
17 P/A intends to return entries intact, but can assume no liability for loss or damage.
18 Deadline for sending entries is September 6, 1988. Any prompt method of delivery is acceptable. Entries must show postmark or other evidence of being en route by midnight, September 6. Hand-delivered entries must be received at street address shown here, 6th floor reception desk, by 5 p.m., September 6.

Address entries to:
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Eligibility
1 Architects and other environmental design professionals practicing in the U.S. or Canada may enter one or more submissions. Proposals may be for any location, but work must have been directed and substantially executed in U.S. and/or Canadian offices.
2 All entries must have been commissioned, for compensation, by clients with the authority and the intention to carry out the proposal submitted. Schemes developed for design competitions must meet the same qualifications; the submitted design must be the one the client intends to execute. (For special provision in Research category only, see Item 6.)
3 Prior publication does not affect eligibility.
4 Architectural design entries may include only buildings and complexes, new or remodeled, that are scheduled to be in any phase of construction in 1989. Indicate schedule on synopsis page (Item 12).
5 Urban design and planning entries must have been accepted by the client for implementation in 1989 or research studies undertaken by entrant with intention to publish or market results. Explain basis of eligibility on synopsis page (Item 12).
6 Research entries may include only studies undertaken by entrant with results accepted by the client for implementation in 1989. Explain implementation plans on synopsis page (Item 12).
7 The jury's decision to premitate any submission will be contingent on verification by P/A that it meets all eligibility requirements. For this purpose, clients of all entries selected for recognition will be contacted by P/A. P/A reserves final decision on eligibility and accepts no liability in that regard. Please be certain entry meets above rules before submitting.

Publication agreement
8 If the submission should win, the entrant agrees to make available further graphic material as needed by P/A.
9 In the case of architectural design entries, P/A must be granted the first opportunity among architectural magazines for feature publication of any winning project upon completion.

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THE ANSWERS COME EASY WITH ANTRON®

Circle No. 327
Economics (continued from page 63) into thin air.

Every bull and bear market is somewhat different, but the schematic chart (p. 63) is one that every architect should study carefully. It displays stock prices over time, but ultimately derives its pattern from the psychology of investor fear and greed. The arrows point to where the New York Stock Exchange and Japan’s Nikkei Stock Index are in the middle of 1988. We are in a post-crash recovery in stock prices which (historically) brings the most automatic price movement in the financial markets, and which does not offer hope for the U.S. economy.

The widespread belief that we are not actually in a bear market will only extend the length of phases A, B, and C—perhaps even beyond the duration shown on the chart. But those who are predicting that the bear market is in hibernation, or that we are in the early throes of the next bull market, are ignoring the history of the markets.

The Chart
Look at the chart as a sort of financial market “master-plan.” Phase 1 brings a rise in stock prices and reflects a revival of confidence in business after the previous bear market. A middle ground is then reached during Phase 2 as security prices continue to move up in response to known improvement in corporate earnings. Profits that result from such earnings amount to the only sound foundation upon which a sustained advance in stock prices can be built. Phase 3 sees prices increase on heightened expectations as opposed to real value. The perceptions of informed investors this time began to change in the United States in early 1987, and this led in August to the pinnacle of climax of Phase 3.

Phases 4, 5, and 6 in the bear market have similar but somewhat reverse explanations. During Phase 4, stocks go down for no visible reason as informed investors quietly distribute their stocks to the less informed, who are busy accumulating them. In Phase 5, stocks go down in response to obviously deteriorating business conditions, which is the phase we are now entering. Finally, in Phase 6, people have to raise money at any cost to stave off bankruptcy, and begin to sell assets: homes, stocks, bonds, collectibles, even gold.

Lessons for the Profession
Exactly what will happen next in the world’s financial arena is almost beyond analysis, but there are some general signposts that architects should be aware of.

- A breakdown in the price of gold and/or oil would signal increased odds of a major deflation. Since the assets of many architectural clients are in acreage and buildings, such a deflation might bring on bankruptcies in that group.
- If the Dow Jones Industrial Average (as charted daily in The Wall Street Journal) were to fall decisively below a 1650 reading, it would ensure that we are in a severe bear market. Recognizing this 1650 “signpost” in advance allows a timely reaction if and when it occurs.
- Because interest rates are the single most important influence on the health of the design and construction industries, much higher rates would presage a business downturn. Investing in gold (by way of the actual asset or through a gold fund) may be the best way for an individual or firm to hedge against a slump because gold increases in value in response to both financial crises and substantial increases in interest rates.

Reading the Economy
The rapidly changing complexion of the national and international economy means that the profession needs information about trends in stocks, bonds, gold, interest rates, and the like—all slanted toward the design and construction industries. But the information in some of the media is either untrue or (much worse) misleading. How does one “listen” to the financial markets? Here’s one such way:

The Industry Prices table, presented on page 9 of Wednesday’s Investor’s Daily newspaper should be reviewed on a regular basis (such as the first week of every month). The conclusions reached from the process explained below will depend upon the contents of that table cross-pollinated with knowledge of (continued on page 66)
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Economics (continued from page 64) your region’s economy, the thrust of your firm’s marketing efforts, and so on.

First—Check off those groups (from almost 200 in the table) that start with the words “building,” “construction,” or “real estate,” and then circle the entry for Standard & Poor’s stock index or “S&P 500.”

Second—Note the number of the three architecture-related groups that are positioned higher than—as well as how many are below—the S&P 500 index in the table.

Third—In a different color, tick off the position of the client groups that are particularly relevant to your practice (e.g., Hotels & Motels, Hospitals).

The conclusions to draw from the above procedure based upon that March 30, 1988 issue were:

• The overall list is pointing toward a coming economic slowdown—roughly nine months out (this is how far ahead the headlights of the financial markets can “see”)—but construction will be one of the last areas to turn down.

• Any future economic weakness within the building/construction/real estate-related segments of our economy will be concentrated in both prefab and site-built housing, plus commercial construction.

• Foreign auto manufacturers and cable TV head up the list of potential design/construction clients that are showing the most strength, while nursing homes and all projects involving robotics are currently the most anemic area.

• The weakness within the utility group (which tends to be a bellwether) takes into account one or more of the following: 1) a decreased demand for energy in the United States in 1989, 2) higher interest rates next year, or 3) the coming trend toward independent power production.

The table also showed that, just as retail stocks turned down last summer prior to the decline in the consumer spending binge, technology stocks today are weakening, perhaps in response to a coming downturn in capital spending.

Market comparisons also tell us what’s ahead for international business: Here the strength lies in the Asiatic countries (excluding Singapore) and Canada, while the weakest financial markets are concentrated in Europe.

The foresight provided by such a fine-grained view of where money is flowing within both our economy and the world will become invaluable whenever recession arrives... for it will help the design profession to target an increasingly rare commodity: Clients who have preserved their financial health.

William Voelker, AIA
The author, an Associate Professor at the School of Architecture, University of Illinois in Champaign/Urbana, holds M.Arch and MBA degrees.

Law (continued from page 63)

New York faced this very question in connection with a 31-story office building constructed in an area with a zoning limitation of 19 stories. (Matter of Parkview Associates v. City of New York)

A portion of the owners’ property, located on Park Avenue and 96th Street in New York, is in a special Park Department district that, under a zoning resolution adopted in 1973, limited the height of buildings to 19 stories if the setback was less than 150 feet and 31 stories if more than 150 feet. In 1983, the city modified certain boundary lines of the special district to reduce the required setback for 31-story buildings from 150 feet to 100 feet, but the owners’ property was in an area unaffected by the amendment. However, the zoning map accompanying the 1983 resolution showed the owners’ property within the amended area. The architects, relying upon the map, designed the 31-story building with a 100-foot setback.

Having applied for a building permit in 1985 that was approved by the Building Department as conforming with all zoning requirements, the owners proceeded to construct the building. In 1986, after substantial construction, the Building Department stopped the work. After review, the Commissioner of Buildings partially revoked the building permit on the ground that the permit was invalid when issued and directed the owners to remove the top 12 stories of the building. This decision was appealed to the Board... (continued on page 68)
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Law (continued from page 66) of Standards and Appeals and was sustained. The Board found that the original zoning resolu-

cable provisions of law and that the Commissioner may revoke a permit that has been issued in error. Discrepancies between

Specifications (continued from page 68)

Single subcontract responsibility for certain related portions of the work is one answer. By requiring the contractor to combine several typical subcontracts in a single subcontract, another level of coordination and responsibility is introduced. One subcontractor becomes responsible for the work of several trades. The choice of which trade takes the lead is usually left to the contractor to decide. Implementation in the contract documents is simple, requiring only a clear delineation of the related work in appropriate specification sections and a statement similar to the following in Section 01010

Summary of Work:

“The curtain wall work, as specified in the following sections, shall be awarded as a single subcontract. Separate subcontracts for portions of the curtain wall work will not be permitted.” Perhaps the most common application of single subcontract responsibility is for curtain wall construction, where the goal is successful performance of an assembly that is fabricated and installed by several trades. Diverse components, such as metal framing members, insulated panels, glass, stone, and sealants, must be designed, fabricated, and installed to meet specified performance criteria. Thus, a coordinated testing program for mockups and installed assemblies is specified in a single section and cross-referenced elsewhere. A single subcontractor is given responsibility for meeting the performance standards, and a single warranty for the work should be signed jointly by the contractor and the subcontractor.

A second application is for control of finishes on otherwise unrelated components, such as the metal elements of a building lobby. Revolving doors, pivoted doors and frames, glass framing members, signs, hardware, each is usually fabricated by a separate subcontractor. When finishes are subject to variation in color, sheen, or texture (and when are they not?), the results are sometimes distracting. “Brass” can range from yellow to bronze, directional brushed finishes can be installed in every orientation, and coatings can look like paint from a selector book. In this case, single subcontract responsibility will ensure concurrent submittal of all finish samples, a good possibility to be installed have been accepted for the work. By specifying coordination of the desk design (at least the display panel portion), fabrication, and component installation under a single subcontract, potential problems are averted.

When specifying single subcontract responsibility on a project, it is equally important to reinforce some of the normal quality control requirements, such as requiring the subcontractor to name a person who will be responsible for coordination of the work. At a joint post-award meeting, potential coordination problems should be discussed with the involved subcontractor. The specifications should call for coordination of shop drawings and product data submittals first by the subcontractor, then by the contractor. The contractor, subcontractor, and involved suppliers should sign off on coordinated submittals before they ever reach the architect. Incomplete submittals should be rejected. The subcontractor should submit, through the contractor, a schedule for delivery and installation of the related components.

William Lohmann, AIA, FCSI

The author is Specifications Manager at Murphy/Jahn in Chicago.

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ECLIPSE® reflective glass is a pyrolytically coated reflective glass product of the Libbey-Owens-Ford Co. It is manufactured using a chemical vapor deposition process in which a gas reacts with the semi-molten surface of a ribbon of float glass to form the reflective coating.

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Unlike many competitive products, ECLIPSE reflective glass is post temperable. The durability of the pyrolytic coating is such that ECLIPSE reflective glass can be handled, cut, insulated and tempered or heat-strengthened like ordinary annealed glass. It can be glazed with either surface to the exterior in both monolithic and insulated glass applications and is compatible with most commercially available glazing sealants. This added product flexibility can greatly reduce the need for costly special handling, fabrication and installation procedures.

Superior Performance
ECLIPSE reflective glass offers an exclusive combination of crisp reflectance and good daylight transmission which results in a uniquely low absorption characteristic which eliminates the need for heat treating in most vision applications. In addition, the coating is extremely uniform and effectively blocks the sun’s damaging ultraviolet rays.

Distinctive Appearance
Whether the coated surface is glazed to the interior or exterior, ECLIPSE reflective glass has a unique, striking appearance which provides building designers with an exciting new visual tool.

Excellent Availability
The on-line pyrolytic coating process gives ECLIPSE reflective glass ready availability which can significantly reduce lead times, helping control project costs.

Product Characteristics
Heat Treatable
ECLIPSE reflective glass can be heat-strengthened, tempered or bent. As with any pyrolytic reflective glass, maximum temperature limits must be observed.

Interior or Exterior Glazing
Because of its exceptional coating durability, ECLIPSE reflective glass’ coated side can be used in first or second surface applications in single glazing or on any of the four surfaces of an insulated glass unit. As in any first surface installation, a review should be made of potential problems caused by surrounding materials, such as stains from weathering steel or concrete.

Compatible With Most Sealants
ECLIPSE reflective glass is compatible with most construction silicones and the sealants commonly used in the manufacture of insulated glass units. Specific compatibility questions should be directed to the sealant manufacturer.

Low Heat Absorption Characteristics
ECLIPSE reflective glass offers a unique combination of high solar reflectance, good daylight transmission and resultant low heat absorption. This allows it to be used without heat-treating in most vision applications. Heat treatment is required in instances where strength, safety or thermal stress are of concern.

Significantly Reduces UV Transmission
Over 90% of the sun’s damaging ultraviolet radiation is blocked by the ECLIPSE coating. This substantially limits problems of color fading and the breakdown of plastics. At the same time, ECLIPSE reflective glass will not adversely affect plant growth.

Resists Surface Damage
The ECLIPSE coating is extremely durable. Handling, fabricating, packaging and installation rubs and scratches are minimized.

Distinctive Appearance
With the coating glazed first surface, ECLIPSE reflective glass has a distinct, crisp appearance and a higher reflectivity. In second-, third- or fourth-surface use, the colors are deep and rich, with a subtle reflectivity. Viewed from the interior, ECLIPSE reflective glass transmits light with a definite warm color cast.

A Choice of Colors
ECLIPSE reflective glass is available in four dramatic colors: blue-green, bronze, grey, and with the coating glazed first surface, a distinctive silver—regardless of substrate color.

Extremely Uniform Coating
The ECLIPSE manufacturing process affords exceptional run-to-run consistency. This results in excellent performance and color uniformity—both in new construction and replacement applications.

Cleaning, Maintenance & Heat Treating
Complete, step-by-step guidelines in each of these areas are available from LOF and may be obtained by contacting your local representative.
### Performance Data

#### Direct Transmittance<sup>1</sup> Reflectance<sup>1</sup> U-Values<sup>2</sup> Shading Coefficient<sup>3</sup>

<table>
<thead>
<tr>
<th>Product</th>
<th>Exterior Appearance</th>
<th>Nominal Thickness</th>
<th>Coated Surface</th>
<th>Daylight Solar Ultra-3 Violet</th>
<th>Daylight Exterior Solar Summer Winter</th>
<th>Shading Coefficient&lt;sup&gt;3&lt;/sup&gt; No Shade</th>
<th>U-Values&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ECLIPSE&lt;sup&gt;®&lt;/sup&gt; Blue-Green</strong></td>
<td>Bright Silver</td>
<td>6mm monolithic (1/4&quot;)</td>
<td>1</td>
<td>33</td>
<td>11</td>
<td>.43  .46  .44</td>
<td>.49  .52  .50</td>
</tr>
<tr>
<td></td>
<td>Blue-Green</td>
<td>2</td>
<td>4</td>
<td>30</td>
<td>11</td>
<td>.43  .46  .44</td>
<td>.49  .52  .50</td>
</tr>
<tr>
<td></td>
<td>Bright Silver</td>
<td>24mm insulating (1&quot;)</td>
<td>1</td>
<td>29</td>
<td>22</td>
<td>.43  .46  .44</td>
<td>.49  .52  .50</td>
</tr>
<tr>
<td></td>
<td>Blue-Green</td>
<td>2</td>
<td>2</td>
<td>30</td>
<td>19</td>
<td>.43  .46  .44</td>
<td>.49  .52  .50</td>
</tr>
</tbody>
</table>

1. Nominal values shown. Tolerance ±3.
2. The UV Solar Transmissions are based on the standard intensity versus wavelength for the sun’s radiation when the sun is at 60° zenith angle and measured at normal incidence to the glass surface.
3. Winter U-values are based on an outdoor temperature of -18°C (0°F), an indoor temperature of 21°C (70°F), and a 24 kph (15 mph) wind velocity with no sun. Summer U-values and shading coefficients are based on an outdoor temperature of 32°C (90°F), an indoor temperature of 24°C (75°F), a solar intensity of 789 W/m² (250 Btu/hr.x ft²), and a 12 kph (7.5 mph) wind velocity. "Eng." units are Btu/(hr.x ft².x °F). "SI" units are W/m².K.
4. 24mm (1") insulating glass constructed of 6mm (1/8") glass outboard, 12mm (1/2") airspace, and 6mm (1/4") clear glass inboard.

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**Cover photo:**
A.B. Warren Development Building
Tucson, Arizona
ECLIPSE<sup>®</sup> Bronze #1 Surface

1. Christofer Oaks, Phase II
Sacramento, California
ECLIPSE<sup>®</sup> Blue-Green #2 Surface
Bent Glass Application

2. Rainbow Health Center
Miami, Florida
ECLIPSE<sup>®</sup> Grey #1 Surface

3. San Ramon Recovery Center
San Ramon, California
ECLIPSE<sup>®</sup> Bronze #2 Surface

4. Quadrant Corporate Center
Bothell, Washington
ECLIPSE<sup>®</sup> Grey #2 Surface

5. SeaGate Centre
Toledo, Ohio
ECLIPSE<sup>®</sup> Grey #1 Surface
ECLIPSE<sup>®</sup> Grey #2 Surface

6. Arapaho Office Building
Richmond, Texas
ECLIPSE<sup>®</sup> Grey #2 Surface

---
Mario Botta’s design for a cultural center in the foothills of the French Alps abuts a 19th-Century barracks that is reused but retains its historic identity.

"THE best way to respect the past is to be authentically modern. The rich history of the city is a result of successive stratifications," declares Mario Botta. The 45-year-old architect from the Swiss canton of Ticino believes that technical and functional progress has too often demanded a sacrifice of the memory and history of the city. Yet he also argues against the slavish restoration of monuments that "mummify" the city. And he claims that "historical buildings should die a natural death," unless their space can be shaped to the changing need of the inhabitants. One such living monument, cited by Botta in defense of his thesis, is the Roman Pantheon, which was built as a temple of the gods and subsequently utilized as a church and marketplace.

This spirit of strengthening and rejuvenating urban history carried the day in the 1982 competition to design the André Malraux Cultural Center in Chambéry-le-Bas, France. Following an open call for entries, the city named three finalists: Botta and the French architects Henri Gaudin and Favre & Perrottet. Botta won with a design that incorporates the east wing of the adjacent Gendarmerie.
Overviews of Malraux Cultural Center (above and right) show the relationship of Botta’s new theater to the adjacent Gendarmerie, a 19th-Century structure whose east wing has been restored to house the theater lobby, an art gallery, rehearsal rooms, and offices. Other military buildings surrounding the former barracks were destroyed as part of a comprehensive urban renewal plan. A residential development designed for the site by Henri Ciriani has not gone ahead. As a result, the Botta theater stands in an open but unfinished plaza. The theater itself is composed of two contrasting volumes—a half-cylinder housing orchestra seating and a massive block that contains the stage and flytower (above). Smaller wings housing dressing rooms flank the flytower (right, foreground and top).
A dramatic emergency exit stair (top) shapes the plaza between the theater and the former barracks (above). Theatergoers enter the cultural center through the barracks courtyard and its east wing, passing to the theater through a glazed bridge (facing page, right). The striated stone and concrete façade is cut with a jagged edge to reveal the interior stairs and glazed foyers, which wrap around the ground-floor cinema and theater seating one flight up.
Horizontal and vertical circulation wraps around the cinema and theater seating. A generous ground-floor ambulatory (facing page) and wide stairs that provide access to the theater at the second and third floors (top right) show Botta's command of daylighting. The striped exterior facades are echoed in the public foyer (top left) and within the theater itself (bottom, left and right) in alternating gray and yellow bands of stone and wood.
or former military barracks, which dates from the Napoleonic era.

The Malraux Center was intended by the city to be the centerpiece of a renewed cultural and residential district, located just outside the medieval center of the city. Other military buildings in the area deemed by the city to be of no historic value were demolished to make way for new construction. The only new projects completed to date, however, are Botta’s theater and the complete renovation of the Gendarmerie by French architect Jean Patrick Fortier. A major residential complex, designed by architect Henri Ciriani for a site across the square from Botta’s theater, has not yet gone into construction, and the fate of other ambitious plans for the area remains uncertain.

In Botta’s design, the wide interior courtyard of the Gendarmerie now serves as an open foyer used by the public attending theater performances, while the east wing houses the entrance lobby, an art gallery, a library, and offices. Theatergoers pass from the old to the new building by a stacked, glazed bridge which offers a view of the surrounding urban area.

The 950-seat theater and the cinema below it occupy a striking half-cylinder, while the stage and fly tower, rehearsal and dressing rooms fill an imposing block that towers over the half-cylinder and three-story barracks. Botta’s paired volumes face one another like two compact bodies, distinguished on one side by the theater’s emergency stair, which departs dramatically from the northeast edge of the cylinder, defining a secluded plaza between the barracks and theater. Although Botta had originally positioned the theater perpendicular to the Gendarmerie, it was later shifted to align with the existing grid of the city.

The theater’s dramatic striations of concrete and limestone recall the Romanesque churches that served as Botta’s inspiration. The heavy walls have no conventional windows but instead are pierced by narrow slits that recall medieval fortresses, or eroded with a wide, irregular tear that reveals a concrete and glass façade.

These openings—together with the use of primary volumes each of which serves a distinct function, and the striated or gridded compositions of stone, concrete, and glass—all are characteristics of Botta’s work. The contrast of full and empty spaces, and the sharp differentiation of light and shadow reveal the architect’s assimilated heritage of Classical architecture and Modernism.

Described variously by critics as “an oasis” and “a Japanese wrestler, crouching before springing forward,” Botta’s theater stands out as a strong formal presence in the quiet town of Chambéry, below the French Alps. The classic Gendarmerie, its roof cut by dormers, bears no apparent connection to the new house of culture beside it. Yet this 19th-Century building and the adjacent monument of the 1980s match with a sort of subtle, inexplicable complicity.

New and old coexist harmoniously, despite a natural dialectic tension. As Botta himself points out, “This intervention consolidates the old military barracks. It is the detached object, the building on the edge of the city limits that establishes a dialogue with the compact medieval center. In my view, the consequent contrast emphasizes the fixed assets of two worlds, the old and the new.”

Donatella Smetana

---

Project: André Malraux Cultural Center, Chambéry, France.
Architect: Mario Botta, Lugano, Switzerland (Urs Kulling, Mischa Groh, design team).
Client: City of Chambéry.
Site: adjacent to historic center of Chambéry on location of former military buildings dating from Napoleonic era.
Program: 82,000-sq-ft theater complex that incorporates a restored 19th-Century barracks which houses administrative offices and the lobby.
Structural system: reinforced concrete.
Major materials: reinforced concrete, limestone.
Cost: withheld.
Photos: Pino Musi, Altair Studio, except as noted.
Corporations are not only major clients of architecture, but major employers of architects and designers. Here, design professionals in four corporations discuss their work and the corporate work of their peers in outside firms.

AMERICAN corporations, in this era of acquisitions and mergers, deregulation and trade deficits, are no longer the fortresses they once were. Competition has become fierce, and change a constant companion.

These events have left their stamp on corporate architecture. Fee competition and fast-track schedules have become common for outside firms, while cost control and quick response have become facts of life for in-house design staffs. Meanwhile, new demands have been placed upon the architecture itself. A lot of attention, for example, is now focused on how facilities can enhance or diminish worker productivity or a corporation's image.

Perhaps the most significant change in corporate architecture over the last decade has been the rise of facilities management as an established activity within companies and a respected—and increasingly common—occupation for architects and designers. Just 20 years ago, the AIA was discouraging corporate architect memberships; now, corporate architects are a rapidly growing segment of the organization, with their own AIA committee.

The increasing number of corporate architects and designers has created some new challenges for their peers in private firms. More facilities work, for instance, is being done in-house. While companies claim that it is more efficient and cost-effective to do so, architects argue that the comparisons often are not fair. "They don't factor in overhead," says one architect in private practice, "just salaries." But fair or not, it has forced firms to become more responsive and efficient.

Firms also now face having architects and designers as their clients. Some firms report that that has helped produce better buildings; others say that that has just made their job harder. Those differences may stem, in part, from the way the corporations themselves operate, since some seem to give their facilities managers a lot of leeway, and others just a lot of rules.

What follows are profiles of four corporations: Disney, IBM, Prudential, and Marriott. They vary in the size and operation of their facilities departments, and in the type and image of architecture they commission. What they share is a commitment to architecture as a key resource in a fast-changing, competitive world. Thomas Fisher
SAFE, secure, rock solid—the qualities that Prudential promotes in its insurance seem to pervade its corporate architecture as well. "We look for well-rounded, service-oriented firms," says Bruce Long of Prudential's Realty Group, the development arm of the company. "When we have gone with high-profile firms," he adds, "it has usually been in joint ventures, where the architects were already on board." The same seems to hold true for the architecture Prudential commissions for its own use. "We are not looking for firms that are all show and no go," says James O'Hara of Prudential's Corporate Services and Buildings Department (CSBD). "We look for firms that have solid experience in areas such as space planning.

If Prudential doesn't see itself as a design leader, it is a leader in the sheer volume of architecture and interior design that it commissions. "We are one of the largest real estate developers in the country," notes Long. (A 1987 Building Design & Construction survey listed Prudential as the fifth largest diversified developer in the country, with $850 million of construction in place.) And, with 85,000 employees occupying almost 12 million square feet of office space, The Prudential Insurance Company of America is itself a major corporate client. "We have 2.5 million square feet of office space to complete in just the next 24 months," says Kenneth Wood of the CSBD.

**Corporate Life**

Almost 50 percent of the design work on Prudential's own facilities is done in-house, by a staff of over 50 designers in the company's Newark, New Jersey, headquarters and by two or three designers in each of the company's satellite facilities. Slightly more than half of the Newark staff consists of interior designers, with the remainder being architects and engineers representing most of the engineering disciplines.

The department looks and acts very much like an outside design firm. "We do everything from programming to contract administration," says Wood. Also like many outside firms, the facilities staff is oriented to do a certain size project. "If a project is less than about 30,000 square feet," says O'Hara, "we farm it out to the satellite offices. Below about 10,000 square feet, we won't touch it." "The only thing that we don't have to do is market our services," says Wood. "In a corporation this large, the work is self-generating."

Prudential's Realty Group is much different in size and function. It has 17 architects and engineers in the company's headquarters and four regional offices. They help select outside firms, monitor the company's development projects, and supervise the maintenance of the company's existing real estate portfolio. The staff also inspects properties that Prudential is acquiring, selling, or mortgaging.

Getting and keeping staff does not seem to be a problem for either department. "We don't have much trouble attracting people," says Wood. "Most outside firms don't pay their people as well and they don't have as good a benefit package." Corporations like Prudential also offer a degree of job security that many designers do not have in outside firms. "We try to keep a steady core of staff people and farm out work to outside firms when we get too busy," says O'Hara.
The trade-off seems to be mostly in the area of flexibility and career advancement. "When you work for a corporation, you have to play by the corporate rules," says Richard Norkaitis of CSBD. "Also, Prudential is not in the building business. The architects here provide a technical service and there is only so far that they are going to rise in an insurance company."

The Pace of Work
If there are any trends at Prudential's CSBD, they are the increasing amount of interior design work that is done in-house and the increasing speed with which that work must be done. "In the last several years," says Wood, "the work load has become greater and the schedules, shorter. The competitiveness of the financial services industry is the main reason for the increased pace." Outside firms that work for Prudential find the same rapid pace. "All of the Prudential work that we've done over the last ten years," says Howard Grad of The Grad Partnership, "has been fast-tracked."

Adding to the increased pace of the work has been Prudential's recent move to break its operations down into a number of business units, each of which is responsible for its own bottom line. That has led to some unusual financial arrangements, with some business units charging others for space or equipment. It also has varied the company's facilities requirements. "On one hand, Prudential is our sole client," says O'Hara. "On the other, we have 50 clients because the individual business units have different needs. Some want mainly open offices; others, private offices. Some want a banking house ambience; others not. Whatever they want," he adds, "the business units each have to pay for and justify their tenant fit-up."

The move to business units also is one of the reasons why more of the interior design work is done in-house. "We often have a better understanding of how the business units work," says Wood, "and are able to challenge users in the company more effectively. Outside firms tend to be more polite for fear of offending somebody."

Working with Firms
The trend toward more in-house responsibility has had little effect on Prudential's architectural and development work. "We still farm out most of our A/E work," says O'Hara, "although the amount of that has decreased as we have used more leased space." The CSBD doesn't like to mix responsibilities, with the in-house staff doing the interiors for a building being designed by an outside firm. "But, we typically farm out the architectural and interiors work to different firms," says O'Hara. "We find that it leads to better results."

What Prudential looks for in firms and how it selects them varies with the situation. "Our field people often make a list of firms located near a project," says Long, "although we don't necessarily only go with local firms. It depends upon the size and visibility of a project. Sometimes we'll use a high-profile firm for the design and a local firm for production. If the project requires specialized knowledge about a particular type of building, we'll look for firms with that experience. We also like to go to firms we've used before and have liked."

"When interviewing firms," adds Norkaitis, "we look at the project team—its ability, experience,
The architects used geometric forms to demarcate the entrances of the office building and hotel (above left). The office building is entered through a brick portal set in a glass drum, while the hotel is entered through a cross-gabled porte cochere, which is echoed in the gabled brick facade. The office atrium (above) shows the high-quality materials and expansiveness of space that Prudential uses to attract the "high end market." The site plan (left) indicates how the two buildings define a central plaza, yet are distinguished by having offset entrances. Their first-floor plans (far left) show how the buildings also differ in their spatial organization, with the hotel having a main block with meeting rooms attached to its back side and the office having a slab that expands at its middle to incorporate the atrium.
and chemistry." The trend among some corporations to choose firms solely on the basis of fees is not an issue at Prudential. "We ask firms for their fee," says Long, "but that is rarely a deciding factor. We find that most firms qualified to do a job have competitive fees."

What is becoming a factor in its decisions, though, is a firm's use of computers. "As we build our computer database here," says Wood, "we will be looking to firms to turn over their documents in electronic form. Compatibility with our computer system is becoming important; fortunately compatibility among systems is also becoming easier to achieve."

If Prudential's people see weaknesses among outside firms, it is in the areas of business savvy and documentation. "Firms' contract documents are generally inadequate," says Long. "Detailing is often sketchy and follow-through in the field is poor." Long admits that the fast-tracking of projects may contribute to this. Still, "we trust the architects to complete the documents," he says, "even though we usually work from a guaranteed maximum price based on 75 percent completion of the drawings."

Long also thinks too few architects are sympathetic to development constraints. "We look for architects with a developer's philosophy, architects who can build to the budget and who can design to our financial parameters," says Long. "A key issue in any job is controlling the architects and cutting them off when they go over budget or off schedule."

In many ways, Prudential is a very tough client. "Our charge," says Long, "is to use Prudential's funds wisely, so we are very careful and follow projects closely." But tough clients can also be good clients if, as in Prudential's case, their concern leads to better quality buildings. "Prudential's standards are higher than most developers," says Howard Horii of The Grad Partnership. "In some areas, such as life safety and detailing, they are much higher." Prudential may not be a design leader among corporate clients. But, in terms of the performance of the buildings that it both develops and occupies, the company is a regular Rock of Gibraltar. Thomas Fisher

Prudential uses a variety of architectural firms for both its own buildings and those that it develops. Roseland III in Roseland, New Jersey (above left), was designed by The Stubbins Associates for Prudential's own use. The building will have 350,000 square feet arranged in arms that embrace outdoor courtyards and that abut a multistory atrium. Its cladding will consist of precast concrete with granite trim and two colors of glazing. Enerplex in Princeton, New Jersey (above right; see also P/A, Aug. 1984, pp. 82–89), consists of a pair of buildings designed by Alan Chimacoff and Skidmore, Owings & Merrill for Prudential's Realty Group. The project has an ice pond, daylighted corridors and office perimeters, and various passive solar strategies, and it shows Prudential at its most experimental.
Continuing its expansion at breakneck speed, Marriott maintains a staff of a thousand just to oversee the design and construction work outsiders do for it.

WHEN it comes to creating an international domain of lodging and restaurant facilities, nobody does it bigger than the Marriott Corporation, which last year erected $1.1 billion in new hotel and motel construction alone.

What began as an unassuming root beer stand opened in 1927 by J. Willard Marriott has blossomed into a conglomerate of nearly 200 full-service hotels, more than 180 moderately priced inns, 500-plus Roy Rogers Restaurants, over 200 Big Boy restaurants, and another 100 eateries along America's highways. The company now has more than 200,000 employees, making it one of the ten largest employers in the country and ranking it as the largest private employer in the Washington, D.C., area.

As if that weren't enough to keep any self-respecting company on its toes, Marriott continues its pace of adding roughly $1 billion in new construction to its inventory each year. Charged with overseeing its ever-expanding stable of buildings is the corporation's Architecture and Construction (A&C) Division, which occupies the entire third floor—and then some—of Marriott's sprawling headquarters in Bethesda, Maryland.

A Shared Commitment
No company, of course, grows so enormous without a sense of purpose and direction. Both characteristics surface in the conversation of Marriott's managers and in the self-assured manner with which the company proceeds in its empire-building. Confidence is what underlies Marriott's stringent design standards, which set minimum levels of quality for all Marriott facilities and ensure, within reason, their profitability. "The alternative to level of standardization is increased cost," says Bob Dacey, senior vice-president for design.

Controlling costs, while ensuring quality, is the A&C staff's mission. The multidisciplinary group of design and construction professionals oversees the development of virtually every new Marriott property from preliminary number-crunching through design phases to the moment when the final bathroom tile is cemented in place. Yet the volume of construction activity has become so unwieldy—Marriott, for example, will build some 10,000 new hotel rooms, renovate another 10,000-15,000, and refurbish more than 800 restaurants this year alone—that almost all design and engineering services have been hired out since 1978 to architects, interior designers, and engineers.

Choosy About Consultants
Marriott selects outside firms from a constantly changing file of available candidates. How do firms get in the file? Initial selection comes from recommendations, mostly, though it is not uncommon for firms to nominate themselves. When a new project comes up, ten-or-so firms are drawn from the file and their qualifications reviewed. Firms located near the project receive strong consideration, "though if we can't find a local one with the right expertise, we might hire one from 1000 miles away," says architect Russell L. Jordan, vice-president for business development. Requests for proposals are then sent to four to six firms.

Interestingly, interviews are conducted at the consultants' offices, rather than at Marriott headquarters. Jordan says it's a good way to assess the
A view of the atrium in the Atlanta Marriott Marquis (left) reveals the unfolding progression of balconies in the soaring space, highlighted by a large fabric sculpture. The project began through the initiative of architect developer John Portman, who had largely completed design of the hotel before securing Marriott's commitment to manage it. Some facets of the original design changed at Marriott's urging—notably, the capacity increased from 1500 to 1800 rooms and a planned rooftop restaurant was relocated to the garden level to consolidate kitchen facilities. The completed hotel (this page) features a 50-story tower that begins at the podium base as a truncated oval in plan and gradually takes a rectangular form as it rises.
facilities and working atmosphere in the outside office. Final selection weighs heavily on how well a potential consultant runs its business and how well it has performed other jobs under similar circumstances. "How competent and responsive they are is the most important thing," Dacey says.

That responsiveness translates to a willingness to work within the constraints of Marriott's standards, which are described as everything from "rigid" to "comprehensive," depending on whom you talk to within the company. Outside architects sometimes react negatively to the guidelines, Jordan says. "They make personal decisions that are not based on a lot of research," he adds. "But the architects who work for us are hanging on the door to work for us again."

Expectations Based on Experience
Marriott closely monitors the progress of its projects and measures that progress against its considerable experience. "I think we give designers the widest possible latitude," Jordan says. "We expect a good designer to be innovative in satisfying an owner's requirements." Over the years, Marriott has compiled vast amounts of data on the strength and durability of products and finishes that are specified, for example, in hotel rooms. "We know an awful lot about doors," says Dacey. Consequently, the guest room doors in a new Marriott hotel will not be a spec writer's best guess but, rather, will be doors that have proven themselves to minimize life-cycle costs.

Marriott's design guides serve as building criteria the company has developed over time through market surveys and design, construction, and operating experience. Periodically updated as conditions change, the guides govern the design of items such as building exterior, public circulation ways, meeting rooms, guest rooms, vending areas, linen storage, and employee lockers. Lengthy sections of the guide detail the design of laundry areas, food and beverage production facilities, and building systems.

A Boom of In-House Staff
The unprecedented expansion of Marriott has prompted a parallel growth of its A&C Division, which began in the 1930s with a handful of employees under J.W. Marriott's direct supervision. Now the division employs some 1000 people, including about 180 in architecture (70 of whom are registered). Other disciplines included in the division are engineering, interior design, food and laundry facility design, accounting, construction, and information systems. An active procurement wing researches, buys, and tests the fixtures, furnishings, and equipment that eventually find their way into Marriott-owned buildings. And if products that meet Marriott standards can't be found on the market, Dacey says, then the corporation will arrange to manufacture them. Such was the case with flimsy fiberglass shower stalls that dominated the market. While impressed with the prefabricated stalls' potential to reduce installation costs, Marriott found them of unacceptable quality and so fabricated more durable stalls made to company specs.

For those who choose design careers at Marriott, there is a departure from the pattern of work typical in many offices, where an individual's attention may be focused on one to three projects at a time.
"Here an architect lives out his career on a much broader stage," Jordan says. Marriott's architects describe their role as "influencing design," as opposed to design per se. "We manage a process rather than a product," says Bill Dye, who came to Marriott seven years ago fascinated by the prospect of collaborating with architects worldwide.

"I think what attracts a number of architects, particularly young architects, is that we offer a tradeoff from being on the boards and designing," Dye says. "We offer an opportunity to manage a project, selecting and evaluating and hiring an outside consultant. We offer a good exposure to the business of architecture. We kind of step out of our design shoes and into our management shoes. And I think if we were ever to go back into private practice, we would be better prepared for the business and administrative aspects of architectural practice."

Rare Opportunities
Working at Marriott presents opportunities to have a hand in development while preserving the role of designer, says architect Leland Turner, who found land development a difficult kind of experience to gain while in private practice. While working for the corporation also offers a level of job security often hard to obtain in architectural firms, Jordan says he finds that many young designers move on quickly to other jobs in order to build a broad base of experience. "We run a hotel design school here," he quips. A corporate work ethic pervades the A&C division as well, with the office buzzing most days 7 A.M. to 7 P.M.

Tom Holmes, an A&C veteran of 18 years, watched the division double in size in just a few years. But he says the corporation is getting better as well as bigger. The use of focus groups, for example, provides Marriott with a source of user feedback that improves its services.

Among those areas where he insists Marriott has improved is design. "Perhaps 15 to 20 years ago, you wouldn't have seen these hotels as architecture, but only as buildings," Holmes says. "I have a problem with our buildings being viewed only as sculpture and not judged according to how they function as hotels. No other company is doing hotels that work so well for us and for the needs of our guests."

With such a commitment to the Marriott way of doing things, Holmes says it is inevitable that there will be bad experiences with prima donna architects who pretend to know more about Marriott's guests than the company knows. And there have been clashes. "But I think most good designers appreciate the standards and use them to their advantage," he says.

The best case in point, Jordan says, is Kevin Roche, who recently was selected to design a new, 3-million-square-foot corporate headquarters for Marriott. Though the project is still in conceptual design stages, Roche already has adapted to the Marriott style. "Roche said it beautifully," Jordan recalls. "He said: 'Innovative design should be used to bring the building in on time and within budget.'" To the Marriott way of thinking, those words are music.
IBM, one of the first U.S. companies to embrace Modern architecture, remains at the leading edge of design with its innovative review process and its passion for excellence.

If there is a corporation in this country associated with supporting good design, it is IBM. From the sleek forms of its products to the impressive list of well-known architects that have designed its facilities, IBM has shown that design can be a powerful marketing tool. "We strive to be at the leading edge of our business," says William Kistler, manager of IBM's Architecture and Design Programs, "and like to reflect that in our architecture."

What helps the company stay at that leading edge of architecture is its use of an outside design advisor. In 1956, IBM hired Eliot Noyes to serve as the company's first design advisor for architecture and industrial design. "He convinced the company to adopt a modern design vocabulary," says the company's current advisor, Gerald McCue, Dean of Harvard's Graduate School of Design, "as a way of setting it apart from competitors."

McCue succeeded Noyes after his death in 1977, as IBM's architectural design advisor. "While IBM had a strong tradition of caring about excellence in everything that it did," says McCue, "I felt that new ideas were emerging in architecture that would give us an opportunity to become more adventurous without losing the integrity of the company's tradition." McCue also adds, "The strong interest in design quality under the leadership of Art Hedge, IBM's vice-president, corporate real estate and construction, has permitted us to make important advances."

Both McCue and IBM emphasize the advisory aspects of McCue's role. "He does not approve projects for IBM," says Kistler, "but he helps keep in focus the overall objectives of a project. He makes suggestions and acts as a sounding board, and IBM makes the decision." McCue concurs. "I have an ombudsman role," says McCue, "and speak up when something isn't consistent with IBM's high standards. I give the second opinion."

McCue reviews most aspects of a project's design, from the schematic and design development drawings to interiors, furniture, and colors. Such upfront work is important, he says, to get the design going in the right direction. "It is important to get everyone to agree on objectives," says McCue, "to get a design going in an acceptable direction."

Corporate Life

The contact point for McCue is a design team—half of whom are architects—on IBM's corporate real estate and construction staff. Kistler says, "This group has worldwide responsibilities for architecture and interior design. They are part of a corporate real estate staff that controls all of IBM's real estate activities." Much of the facilities and construction management is handled by the company's various operating units. The corporate staff, says Kistler, does "practically no" architecture or interior design work themselves, and instead commissions outside firms for most new work.

IBM's architects derive professional satisfaction in other ways. "The most gratifying part of the job," says Kistler, "involves interpreting business needs, turning them into concrete programs and objectives, and working with the profession to transform them into a quality building. I enjoy participating in watershed decisions that lead to a good building—budget, program, architect selection. Working in a corporation gives one the opportunity to affect the final outcome at that early stage."

Big Blue Designs
The IBM Distribution Center in Basiano, Italy, by Gino Valle shows the high level of design quality in even the most utilitarian of IBM's facilities. The building, an automated warehouse for IBM products, is large (366,000 square feet) but visually unified by the striped aluminum cladding that forms a continuous surface out of which major openings are cut (left). The two-story, recessed entrance (facing page) separates the truck docks and the office wings, which face courtyards defined by two-story portals on the façade. The office wings back up to a mid-level zone that contains a cafeteria and lounges. The warehouse itself has a front receiving area, a middle distribution zone, and three perpendicular rear wings that contain spare parts storage, general storage, and a 78-foot-high automated storage area. The heating plant (above) is located at the rear of that wing. Gino Valle has just completed an addition to the facility, which was designed to expand in an east and west direction.
Corporate Clients

IBM

Selecting Firms
When assembling a list of firms to interview, IBM's corporate staffs draw from their first-hand knowledge of trends in the profession and the strengths of various firms in the field. "We also consider the location of a firm," says Kistler, "whether it's busy or not, and whether it has done projects of similar size and scope." McCue also suggests firms for the IBM list. "I point out the very best designers to the company," says McCue. "There is a tendency among some people to think that they can manage great work out of ordinary designers, but it can't be done."

The company interviews three or four firms for every job. What IBM mainly looks for in a firm is "insight," says Kistler. "We try to be reasonably specific in defining what we are looking for in a project, but we respect architects who can show us things we hadn't thought of and demonstrate that they have investigated all options and have found the very best solution."

Previous experience with a particular building type also is important, particularly if the project is technical in nature. "We don't want to be teaching a firm how to do a laboratory," says Kistler. "Once selected, a firm is presented with a set of guidelines that, says Sanford Nelson of Cooper Carry & Associates, "are fairly daunting at first." But IBM's people defend the guidelines as the accumulated wisdom from having done a lot of building. The guidelines, says Kistler, "are not terribly confining except in a few areas." And he adds that "there is a caveat at the end that states if a better way of doing something can be shown, IBM welcomes the deviation."

Joint Ventures
The selection and review process is slightly different for IBM's joint-venture projects, in which the company typically participates as both anchor tenant and partner with a major developer. In drawing up a list of firms to interview, for example, "the name architects have a slight advantage," says Kistler, "since name recognition helps in leasing and future marketing. In our own projects, we try not to always gravitate to the already well-established firms, but in the joint ventures, we have to balance our own needs with those of our partners and of the marketplace."

The level of design review also is somewhat abbreviated. "I don't spend as much time on the joint-venture projects or go into as much detail," says McCue, "because both IBM and its partner are working together to guide the architect's design."

A primary reason that IBM enters into joint-venture partnerships as opposed to direct lease situations, says Kistler, "is that it allows us to retain a substantial role in the design decision-making process."

The emphasis on design quality emerges in all discussions with IBM people as well as with architects who have done company facilities. "We try to do what's right for the business," says Kistler, "while at the same time making the right design decision. We don't have one image, one aesthetic that we push on architects. If IBM has a single style, it is simply excellence."  

Tom Fisher, James Murphy

IBM, once a strong proponent of Modern architecture, has become more open in the style of work that it commissions. One example of that is Atlantic Center, in Atlanta (above left), which was a joint venture between IBM and Prentiss Properties. Designed by John Burgee Architects with Philip Johnson in association with Heery Architects & Engineers, the tower's Gothic detail is a far cry from the company's former Modernist image but very much in keeping with IBM's interest in leading-edge design by some of the country's leading architects. 2300 Windy Ridge, a joint venture between IBM and Cousins Properties, also in Atlanta (top), was designed by Cooper Carry & Associates. What distinguishes the design is the semicircular entry court that is lined with shops and that separates the parking garage from the Modern office block. IBM joined this project after schematics were done. Gino Valle designed a Rationalist headquarters for IBM in Europe (above), which is located in the Defense section of Paris. The entry is defined by a low arch and flanked by a shallow curve in the façade that responds to a circular wing off the back that contains common spaces.
IBM's office in Bordeaux, France, was designed by Jean Pierre Buffi. The approach to the building skirts an undulating lawn (above). The entry to the building is through a circular space clad in stone and cut out of the base; a curved cornice and slender columns form a colonnade around that space (below left). The nearly square base contains common facilities and a broad lobby and corridor that makes the transition from the entry court to the elevators at the opposite corner of the building. The L-shaped office block has recessed glazing and horizontal exterior louvers facing south. The north-facing walls have flush glazing (above left).
Mickey the Talent Scout

The real-estate branch of Disney's entertainment empire is recruiting high-design architects to create cost-effective buildings around Disney's booming theme parks.

IN just four years, the Walt Disney Company has changed from a Hollywood has-been to the hottest movie studio in the country—hot enough to land its animated icon, Mickey Mouse, and its CEO and chairman, Michael D. Eisner, on the cover of Time. Motion picture, television, theme park, and merchandising operations have all contributed to the success of Disney's $3 billion entertainment empire; now the mouse that roars wants to make it big in real estate. Disney Development Company, a wholly owned subsidiary of WDC, was formed three years ago with the express purpose of making more profitable the land that Disney owns around its theme parks. That's a lot of land: 28,000 acres (of which only 4500 have been developed) in Orlando, Florida, home of Walt Disney World and Epcot Center; and just under 5000 acres in France, where the $2 billion Euro Disneyland will open in 1992. In the next two years, DDC will have $400 million of construction in the works, for which it is energetically enlisting a star-studded roster of guest architects, much as the parent company assembles the talent for its movies. Michael Graves, Robert A.M. Stern, Arata Isozaki, Frank Gehry, Andres Duany and Elizabeth Plater-Zyberk, Venturi, Rauch & Scott Brown, and Gwathmey Siegel are some of the names in this glittering cast.

The first of these projects to be unveiled, however, is one for which Disney is not the actual client. The $375 million Walt Disney World Dolphin and Swan hotels (P/A, March 1988, pp. 37–38) were designed by Michael Graves Architect, Princeton, New Jersey, with Alan Lapidus Architect, New York, responsible for design development and working drawings. The development/financing team, which, as the client, is actively involved in the design process, leased the land from the Walt Disney Company under Disney's direction, and Disney Development was responsible for the master planning, as well as for bringing the Graves office into the deal and negotiating its fees.

If this sounds complicated, it is. To make a long story short, this project, while atypical of Disney's development efforts, exemplifies its corporate philosophy of "entertainment architecture." The phrase, coined by DDC president Peter S. Rumwell, characterizes Disney's belief that the architecture outside the boundaries of Disney's theme parks should embody the same fantasy and sense of place as that within. The theme parks themselves are designed and built by Walt Disney Imagineering, another WDC subsidiary (with outside architects for technical backup). The 80-person Disney Development group, however, does no in-house design; the dozen or so architects it does employ serve as project managers working with outside designers. The aforementioned list of major architects is Disney's intended key to creating a corporate and commercial development kingdom—of hotels, resorts, shopping centers, and office buildings—with as much magic as that of the theme parks. As Michael Eisner succinctly puts it, "I don't want to drive by a bad building every day."
But how does Disney go about getting good buildings—and good architects? The research process seems to be an informal one, with executives from both DDC and WDC, including Eisner, doing a lot of reading, looking, and asking around. “Who’s doing good work?” is a question they often ask, although chances are that they already know. “I gave them the names of several young architects,” recalls Michael Graves, “and they [Disney] had talked to all of them. They’re amazing.”

Once an architect begins to work with Disney on a project and is given the program, initial meetings stress creativity and brainstorming. According to Wing T. Chao, the architect/planner who is DDC’s vice president in charge of master planning and architecture, Disney encourages designers to “show us everything; nothing is too wild or crazy to look at.” Some of the wildest ideas have reportedly come from Eisner himself, who sees his role as that of “cheerleader and challenger.” For a CEO, Eisner maintains an extraordinary degree of involvement in every step of the design process. He hastens to add that he doesn’t want to be an impediment; rather, he aims to protect the architect by “not allowing the process to take over” from the design concept.

Working with the company, however, is not always a day at Disneyland. DDC may be committed to quality architecture, but it is also committed to budgets and schedules, both of which can run tight. In the movie business, Disney’s skinflint reputation is legendary; architects may find the company equally tough. Michael Eisner believes that quality “is not always related to cost per square foot; imagination is the key.” Easier said than done, perhaps.

Disney spends millions to build the theme park attractions for which it is renowned, but can justify the investment because the attractions generate big returns. Outside the theme parks, however, the economics change. As Peter Rummell explains, “You lose the protection of the gate [admissions],” so DDC’s architects don’t have the luxury of the Imagineers’ budgets. “Our hotel has to compete with the Hyatt down the street,” Rummell adds. This makes DDC extremely hard-nosed when negotiating contracts and fees, but the company admires architects who can stand the heat. “I don’t know whether we’re a lot of fun to work with,” muses Rummell. “But we respect people who have the guts and sophistication to defend their ideas, who don’t change to please the client.”

This no-nonsense attitude also characterizes the client group at Tishman for the Dolphin and Swan hotels. Tishman, which built Epcot Center and the Hilton hotel at Disney World, confers frequently with Graves, Lapidus, and DDC to ensure that its schedule and budget goals are met. Thomas Marchisotto, an architect who is a vice president at Tishman Construction, notes that planning and budget considerations have been a top priority from the outset.

Disney is moving on to other projects, including an office building and hotels by the Stern office, and another Graves design, for its own corporate headquarters in Burbank. But will it be able to produce the magic of Disney in today’s competitive real estate market? Will entertainment architecture be good architecture? Stay tuned. — Pilar Viladas

When they are both open in 1990, the Walt Disney World Dolphin and Swan hotels, designed by Michael Graves, will form the largest convention/resort hotel complex in the Southeast. The 26-story, 1510-room Dolphin (above, foreground, and facing page, Crescent Lake façade) will be operated by The Sheraton Corporation. An octagonal rotunda lobby serves as a circulation hinge between the hotel lobby and that of the 165,000-square-foot, barrel-vaulted convention center (left foreground). The hotel, with its commanding central pyramid, is painted in shades of blue-green and coral, with a pattern of banana leaves, and adorned at each end with a 55-foot-high dolphin. Four nine-story guest-room wings project out into the man-made Crescent Lake; each wing is topped by a verandah with a lighted fountain. Connected to the Dolphin by a pedestrian bridge across the lake, the 12-story, 760-room Swan (background) will be operated by Westin Hotels and Resorts. The building is topped by a pair of 47-foot-tall swans, and its exterior is painted with a pattern of waves. The two hotels will share a “themed” grotto pool, eight tennis courts, and a 150-foot-long beach.
The Dolphin and Swan hotels will be located on a 150-acre site just to the west of Epcot Center’s World Showcase (to which they will be connected by waterways), and to the north of the Disney/MGM Studios, which will open in 1989. The Dolphin is the largest structure on Walt Disney World’s 28,000 acres, and to accommodate so many guest rooms, there was no way to avoid making the building big. It had been a Disney rule that no building outside the theme parks should be visible from inside them; out of necessity, the Dolphin is the first to break that rule, and Michael Graves’s pyramid design (a “mock mountain”) is dramatic enough to turn bigness into theatricality.

Although the Dolphin and Swan will exemplify state-of-the-art convention/resort hotel design, they also contain an impressive amount of fantasy, supplied by Michael Graves and his office, who worked with hotel designers Trisha Wilson & Associates. The Dolphin (facing page, 1, view across causeway from Swan) has a cascading fountain that ends in a clamshell pool supported by four dolphins. The Dolphin Fountain Court is lined with the hotel’s seven restaurants. Its barrel-vaulted foyer (2) leads to the three-story-high, octagonal rotunda lobby, with lattice columns and walls, and a tented fabric ceiling.

The Coconuts Lounge (3), a cocktail lounge-brasserie, features thematic cutouts of palms and large pieces of fruit: the watermelon and cantaloupe are drink rails; the bananas are the bar; and the pineapple is the d.j.’s booth. The Dolphin’s Coral Cafe (4), with its wave-stencil murals and coral-patterned carpet, features large cutouts of “caricature” fish, including dogfish, catfish, tilefish, and of course, mousefish.

The Swan (6). Its lobby (7), a tall space with a tented fabric ceiling, is punctuated by columns of gathered “papyrus reeds” with palm-frond capitals. The guest room corridors (8) are designed to break up the usual endless expanses of wall with a painted beach scene of sand and palm trees; guest room doors are painted to look like cabanas. In the Swan’s grand ballroom (9), shuttered “windows” above a “paneled” base open onto a mural depicting views of a tropical landscape.
The competitive scramble to win a piece of the lodging market results in hotel rooms that are varied to fit particular types of guests.

As the hotel industry begins paying more attention to variations in the profile of overnight guests, so the notion of good guest room design becomes more complex—and more pluralistic. Presented with the old saw, "You are what you eat," today's hotel designers would likely draw on prevailing wisdom in the industry and counter with a maxim of their own: "You are where you sleep."

Close scrutiny of hotel guest demographics, combined with saturation of the convention-based mega-hotel market, has prompted hoteliers to reevaluate their expansion plans and look for ways to lure a diverse group of travelers that includes professional organizations, vacationing families, free-spending singles, and traveling business people. The result is increased fragmentation of the fiercely competitive lodging industry, which runs the gamut from the plush Waldorf-Astoria to McSleep Inn, the latest entry in the super-budget category. Most of the major hotel chains have introduced new lodging types each designed to appeal to a different consumer, identified either by income, lifestyle, or some combination of the two.

The All-Suites Concept
Hence the rapid introduction of the all-suites hotel, which made its first appearance in the early 1980s when Holiday Corporation introduced Embassy Suites. Several factors led to the proliferation of hotel suites; defined generally as rooms that include separate spaces for sleeping and entertaining (or working), often incorporating a kitchen. The tremendous influx of women into business was one incentive. "Women, especially, are sensitive to having the bed staring everybody in the face when
double beds. The fact that guest room floors represent between 65 and 85 percent of the total hotel area guarantees they will be closely analyzed for wasted space or poor layout. The room plans illustrated here are typical in their creation of discrete zones for sleeping, working, bathing, and relaxing. Often because a room is occupied by more than one person, this separation of activity zones helps to reduce conflicts between occupants and allows more than one activity to occur at a time. The conventional double-double room in a hotel with interior corridors places the bathroom and dressing areas near the entry, the beds in the center of the room, and seating and work tables beside the window for better light and views. Variations in room layouts are achieved by combining or separating these zones in new ways. Compartmentalized bathrooms, for example, are created by isolating the bathtub and toilet from the sink and dressing area.
they are sitting down for a business meeting," says Hank Brennan, a partner at Brennan Beer Gorman Architects, of New York. The firm designed the prototype for Sheraton Suites, working first with ideas gleaned from financial analyses and customer surveys, then with results from critiques of full-scale mockups.

Sheraton opted to go with suites composed of side-by-side rooms. The original model followed by Embassy Suites was an in-line suite—resembling a "shotgun house" in concept—that was developed by Walter Rutes, a former design director or vice-president at such hotels as Sheraton, Ramada, Inter-Continental, and Holiday Inns, and author of the 1985 book, Hotel Planning and Design. "It took us a long time to figure it out," Rutes says. "But we finally discovered we could give customers a lot more in two rooms than we could in one."

Rutes, now chairman of 9 Tek Ltd. Development Corporation in Scottsdale, Arizona, has seen his thoughts on suites evolve. After proposing the in-line suite, he developed a side-by-side suite arrangement, which is less efficient than the in-line model (by adding more corridor and more perimeter to the building, for example) but adds more privacy to the suite. Because much of the cost of hotel rooms lies in the HVAC systems and bathrooms, particularly in tilework and plumbing, building a bedroom suite typically costs only 10–15 percent more than conventional rooms. Rates for suites average 20–25 percent more than for conventional rooms, offering an attractive profit potential.

As side-by-side suites fast become the standard, Rutes already is touting ideas for a third variation: the bi-level suite. "It's cost efficient, more impressive spatially, and more economical to build," he says. By offering suites with the living and sleeping areas on separate floors, hotels will be giving consumers accommodations that don't look like hotels, which is one of Rutes's formulas for success. He is introducing bi-level suites on the top level of a hotel now in the works in Orlando, but says he believes an entire hotel done with bi-level suites would be both marketable and extremely efficient.

But developing new niches in the lodging industry, even slight variations on proven themes, is something industry giants approach with care. Exhaustive feasibility and marketing studies are commissioned often before the first thoughts are given to design.

Experimental Mock-Ups

The most common tool used to test new ideas is the full-scale room mock-up. Two mock-ups built for the development of Sheraton Suites were used to sample the opinions of subjects who were asked to rate the rooms on such areas as dimensions, finishes, colors, and psychological comfort. Similar mock-ups, while not tested so rigorously, are used routinely by hotels whenever new interior designs are introduced. "It's a living specification," says interior designer Howard Hirsch of Hirsch/Bedner.
and Associates, of Santa Monica, California. Mockups are built to evaluate the qualities a finished room will have. Visual cues might demand that the dresser height be raised slightly or the mirror made smaller. "Plus if you can change a detail that makes it easy for the tradesman to do his job—if you can cut a half-hour of labor for each room—that begins to add up real quick," says Steven R. Schnoor, director of design for Westin Hotels and Resorts.

Refinements continue even after the hotel is built and in operation. Ever wonder if anyone takes seriously those customer response cards left conspicuously on the nightstand? Believe it, they do. Sometimes comment cards, in fact, are used to assess users' reactions to new amenities. "A lot of these things—say, hair dryers—we will include in the room and see if people comment on them being there," says Richard Emrick, vice-president for new construction of Quality International.

In addition to reviewing guest's reactions, the Marriott Corporation employs a formalized internal feedback system. After a Marriott hotel has been in operation six months, the hotel's executive staff and regional managers meet with the designers and contractors to discuss the building's performance. Further information regarding acceptability, durability, and utility of materials, systems, finishes, and construction means and methods is fed back to the corporation's Architecture and Construction Division, which uses such data to update its hotel design guides. Marriott design, procurement, and construction staff also works directly with manufacturers to improve products or develop new ones to fit Marriott's needs.

Listening to Guests
One issue that creeps up in conversation with hotel design chiefs is "perception of quality," something that user feedback systems help to gauge. User feedback helps hoteliers decide where in the room their money is best spent. "We're trying to create the feeling of an executive hotel without the cost of that," Brennan says. Guest responses have prompted a general upgrading of hotel rooms, particularly in the higher-end hotels that cater to discriminating guests and in resorts, where hotel corporations are investing heavily. In those properties, ceramic tiles are taking the place of vinyl tiles. Bathrooms are getting larger, often featuring longer vanities. And, in deference to the large number of guests who work during some portion of the day in their room, work space is getting a second look, featuring larger tables, better chairs, and lighting that can be adjusted for the task. “People want more,” Hirsch says. “They want to travel in a style to which they would like to be accustomed, even if it’s one to which they are not.”

So when it comes to hotel design, the guest room is king. “The architecture of the lobby may grab their initial interest, but it’s the guest room that keeps them coming back,” says Rutes. Yet, the economics of hotel construction often supersede innovation in the design of individual rooms, says
Hyatt’s John Nicolls, vice-president of technical assistant services. “It turns out that we rely more on the furnishings, where there is more room for flexibility within the same budget,” Nicolls says. Hotels also change interior schemes to introduce a regional flair to otherwise universal construction.

If any trend is shared by all the chains, it is the move to make hotel rooms look more like home. Furnishings, for example, have taken on a decidedly residential look. But, more than the architecture, hotels rely on small comforts to win repeat customers. Non-architectural bonuses such as hair dryers, second televisions, free breakfasts, and cocktail hours become the point of difference most hotels use to lure guests. Largely invisible improvements—for example, the fire-resistant materials in beds, chairs, and draperies that became more widespread in the past few years—are touted by hotels but lack in sex appeal.

“Everyone in the hotel business thinks they have the best rooms, but there really aren’t many differences,” says John Hardy, vice-president of architecture for Interstate Hotels, a Pittsburgh-based hotel development and management company. “A room’s a room, for the most part.”

Assembly-Line Strategies
To a great extent, that’s desirable in an industry that churns out hotel guest rooms the way Detroit rolls cars off the assembly line. Economies of scale are ever-present in an industry that employs techniques of mass production. “We’re looking for nickels,” says Bob Dacey, senior vice-president for design at Marriott Corporation. Alternative plans for guest room floors are studied in the early stages of a hotel’s design. Typically the schemes range from variations on a linear slab (with double-loaded corridors) to tower plans to atriums. Each is analyzed for efficiency, which translates to dollar investment. But, despite the limitations of cost control, Rutes insists that hotel rooms—even within the same building—need not be as repetitive as they are. Many variations can be made on the same floor without financial penalties, he says. It’s only when variations occur vertically that the alignment of plumbing stacks, for instance, is threatened and construction costs soar. In practice, though, rooms are generally standardized within a given hotel.

Twelve feet (which was once the maximum width of commercial carpets) became the norm for room widths after its introduction by Holiday Inn in the mid-1950s. That dimension varies today from 11’6” for budget inns to 15 feet or more for luxury hotels. Attempts to differ from these dimensional rules of thumb usually invite frustration, simply because guest room size, quality, and room rate are closely interdependent. The three factors rise and fall in conjunction, due largely to the impact of construction and furnishing costs. The break from that pattern inherent in the configuration of hotel suites, which often are twice the size of conventional rooms at nowhere near double the rate, is compensated for by cutting back on public areas.
such as lobbies, restaurants, and lounges. These scaled-back public spaces are treated as amenities meant primarily for guests; patronage by outsiders is not encouraged.

**Becoming One's Own Supplier**

To further reduce room costs, Marriott's staff designs bedspreads, draperies, and carpets that outside contractors produce under the corporation's supervision. Carpeting, for instance, that might cost $16 per yard at the discounted market price can be manufactured for between $3 and $11 per yard. Hirsch knows the scenario all too well. "If the project starts coming out high," he says, "the first thing they look at cutting out are the multiples. If you can save $5 on a bedspread, and you multiply that by 1000 rooms, then that gives a saving of $5000."

At Hyatt, furniture and finishes are bid for each new hotel. Dressers, tables, lamps, and chairs are designed for each hotel and custom-made expressly for that hotel, a practice that costs the company significantly more in time than in money, says Nicolls. In Marriott's case, standardization is justified as a way of ensuring quality, as well. The company's procurement department maintains a library of materials and finishes that have been tested against the corporation's durability and safety standards (checking floor tiles for slipperiness, for example). And only those items may be specified in Marriott hotel rooms. In general, hotel room interiors must survive five years before they are refurbished. Durability counts, so striking the balance between institutional toughness and residential comfort is a constant struggle, Hirsch says. "The ideal room for some operators would be stainless steel," he adds.

Those are the compromises of which hotels are made. Rooms become a trade-off between the spaciousness guests adore and the economy required to make hotels profitable. In the final analysis, says Hyatt's Nicolls, the overriding concern is that "the guest should be able to live more comfortably in a hotel than at home." Room service, anyone?

**Further Reading**

P/A Technics
Up Against the Wall

Curtain walls are ubiquitous. They also are exacting and require careful design and detailing and adherence to recommendations of manufacturers.

THE diagnosis and repair of problems in curtain wall systems has become a realm of professional practice unto itself. Curtain walls are not inherently flawed or more prone than other building systems to problems; indeed, the broad range of nonstructural enclosures—each constituting some form of curtain wall—are among the most refined and exactlying designed of construction systems. When properly designed and installed, many represent the best walls the building industry can produce.

But, like most other parts of buildings, curtain walls are affected by age. A generation of Miesian steel-and-glass curtain wall buildings is now 35 years old and more, giving rise to an area of specialization that one engineer calls “building exterior gerontology.” Also, some buildings of that era pressed too hard on the limits of building science. (Our understanding of such phenomena as high-level urban winds, for example, was in early stages of development.)

Remedial interventions for old or new curtain walls may be simple, but rarely are they easy or inexpensive. In extreme cases, the cost of the remedy (say, complete removal and replacement of an exterior wall system) is matched only by the potential enormity of the problem it is designed to solve (say, crumbling pieces of stone and concrete, or shards of glass, spilling to the street below). Fortunately, most such problems show warning signs long before disaster strikes; and all can be averted by careful design.

Water, Water, Everywhere
Water leakage is by far the most common complaint levied against virtually all kinds of exterior non-load-bearing wall construction, both old and new. Leaks are usually a precursor to more serious difficulties; where there is unwanted water, more trouble is on the way.

One approach advocated by curtain wall design consultants, for both new designs and for repairs, is to provide a secondary water-management system behind a building’s primary, outer shell. This entails additional flashing and sealing, on the premise that moisture and water will inevitably find its way behind even the best of outer walls. In older buildings, such secondary water-shedding systems have been built after the removal and eventual replacement of reconditioned exterior components.

In newer buildings, most problems can be traced to oversights or flaws in original design and construction. The offenses to guard against are acts both of commission and omission:
Brick Curtain Wall

The entire gravity load for a brick veneer wall, from bottom to roof level, extended to a foundation wall edge, with no load-bearing ledges or tiebacks to the building’s primary structural frame. Serious problems arose where a brick penthouse, resting on a spandrel beam and the primary structural frame, joined the unattached brick curtain wall. Fractures developed along mortar joints where the walls intersected; interior water leaks worsened, despite attempts at remedial caulking of the damaged joints. In general, brick assemblies tend to grow over time as a consequence of accumulating moisture and debris that fills micropores and tiny cracks. Thus, the brick curtain wall tended to move upward, especially at its top; the penthouse assembly tended to move downward. The remedy: rebuild the brick curtain walls, carrying loads from the structure.

- Flashing. Many details are conceived on the drafting board’s neat world of two-dimensional representation. Unfortunately, wind, water, frost, and a host of other elements operate in three dimensions, recognizing few of the pencil point’s boundaries. Flashing details must anticipate all paths that water might take. Also, intended design details must be effectively communicated to those responsible for construction. Usually, these aims are best accomplished by drawing axonometric and isometric views, not sections.

- Workmanship. Newer curtain wall systems, because they are lighter, thinner and less redundant than their antecedents, are less forgiving of faulty workmanship. Some architects and engineers now advocate designs that anticipate wide variations in the quality of field installation. “Assume that the worst that can happen on the jobsite will happen,” says one consultant who has examined hundreds of cases, “and design from there.”

- Expansion and relief joints. Most architects and engineers, knowing that building materials and components will move once in place, design accordingly. Actual movements, however, can easily outstrip design assumptions. Also, expansions and contractions occur in all directions—not just vertically or horizontally over an expanse of wall, as is too often assumed. Experts say that common details often overlook this fundamental truth.

- Surface-applied sealants. While this is surely an era of unprecedented advances in exterior sealants, adhesives, and mastics, even these remarkable new materials cannot perform miracles. Where roof overhangs, architectural reveals, and setbacks at windows once provided a safety barrier—reducing the frequency and extent of exposure to water and sunlight at the most vulnerable points—sealants are now expected to suffice; too often, this strategy doesn’t work. According to one prominent curtain wall troubleshooter, the performance of many of these new materials depends on ideal conditions and difficult application procedures.

- Complex movements and interactions. Contemporary curtain wall systems involve combinations of differing materials and components whose interactions are not well understood. Thus, what works in theory (or appears to work in a small test assembly) may fail when placed in service. It is difficult with a mockup to predict the effect of the sun’s heat on the expansion of various surfaces and materials over a broad area. Wind tunnel tests also do not replicate precisely the actual conditions that will be experienced, especially when combined with the ravages of wildly fluctuating temperatures and rain. Materials shrink and expand over time; these
changes can become permanent, causing changes in the static and dynamic behavior of subsystems and whole assemblies.

Unsuspected Culprits
Careful attention to the advice and experience of manufacturers, fabricators, contractors, and consultants will help avoid most of these problems. Several other factors, not as widely recognized or well understood as those above, also contribute to curtain wall problems:

- **Dirt and debris.** These are always in abundant supply during construction. They may taint surfaces and materials, resulting in improper bonding and sealing. Even a thin film of dust can ruin the performance of the highest-grade caulks, adhesives, and sealants.

Airborne dirt and debris also exacerbate problems that arise long after construction is complete. Relatively small and harmless cracks created by natural thermal expansion can become clogged with wind-driven materials, preventing them from closing as they might otherwise do. This in turn leads to further water penetration and widening of cracks due to freezing. The cycle grows worse with each season, eventually requiring extensive repair. Total replacement may be necessary for a brick veneer wall on which a number of mortar bonds have been broken.

- **Interactions with building mechanical systems.** Excessive negative pressures in interior spaces, caused by improperly designed or operated mechanical systems, can result in the induction of moist air and rainwater at exterior cracks and seams that might otherwise remain relatively benign. Under such circumstances, a building can literally "suck" the outside in.

In a hotel built in the mid-1970s and clad in metal panels, mechanical induction of rainwater and moist air through panel joints led to severe corrosion and eventual deterioration of the unprotected panel backings; after replacement of deteriorated panels and remedial caulking, further problems were averted by adjusting the mechanical systems to balance interior and exterior air pressures.

- **Misdiagnosis and superficial or improper treatment.** What appears on the inside to be a leak coming from one source may in fact be the result of a leak someplace else, far away. Water is insidious and its paths are difficult to trace—especially where vast areas are concealed from examination. Large volumes of rainwater cascading from upper levels can cause problems below, whose source may not immediately be apparent.
Insulated Metal Panels and Strip Windows

Serious water leaks developed almost immediately at various points near horizontal bands of windows in this high-rise. Too much reliance was placed on surface-applied sealants and adhesives, particularly where the window frames met insulated metal panels and at panel-to-panel gaskets. Movement in the overall curtain wall assembly had caused the sealant bonds to fail and may have contributed to the opening of metal window corners and expansion joints. Investigators identified five generic places that water was able to enter the system, damaging interior finishes. The remedy is termed "experimental" by its designers, but it resorts to traditional means of protecting against water: Flashing was introduced at the window sills and heads. This was accomplished by cutting, rebuilding, and reinstalling the insulated metal panels.

Applying new surface sealants—plugging the apparent leak—at the wrong site can compound problems, because water is prevented from drying or passing back to the outside. Even where treatments appear to solve problems seen on the interior, water and moisture can continue to wreak havoc in areas that are not readily seen.

Tests of Time

One consequence of problems experienced in curtain walls of relatively recent vintage is a requirement by many construction lenders for thorough, independent design reviews, tests, and evaluations prior to bidding. This is true also for proposed repairs, replacements, and remedial treatments.

Yet even the construction and testing of full-scale mockups cannot always provide insurance. Prototypes and test assemblies are typically fabricated under the best of circumstances. They receive careful scrutiny at all stages from the architects, engineers, consultants, manufacturers, and technicians involved.

Such ideal conditions rarely exist in the field. What's worse, some engineers say, is that when problems surface in a prototype, there is a tendency to prescribe patches or other repairs that leave basic design flaws untouched.

Tests intended to accelerate the aging process and thermal cycling cannot simulate the full range of complex and significant (and sometimes unforeseen, or unforeseeable) environmental factors that will actually bear on a wall. As a further safeguard, some specifications—including those for remedial treatments—now call for painstaking post-installation tests and inspections.

Even then, however, in the wistful words of one seasoned curtain wall repair consultant, "The only true test is that of time." And, as we all know, time takes a toll, too. Thomas Vonier

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The author is an architect in Washington, D.C. He serves as P/A's correspondent there.
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The Graphiclad ornamental panel system transfers computer-generated designs onto aluminum panels by a halftone photographic process, which permits the illusion of depth in a flat panel. The panels—and the designs on them—come in a variety of colors. Cupples.

Excel metal wall panels come in two series of textural designs. The P Series, meant to recall solid cast metal without the weight and cost, is available in aluminum, stainless steel, copper, or bronze. The N Series features sharp-lined geometrical patterns and is designed for execution in aluminum. The Excel panels and other curtain wall products are included in an eight-page brochure. Tajima.

Seven glass curtain wall systems are described and illustrated in a 12-page brochure. Each system is tailored for low-rise, mid-rise, or high-rise structures. The brochure offers detail drawings, color photographs, and sample specifications. Amarlite Architectural Products.

Interlocking concrete stones provide sealed joints without the use of mortar or other adhesive in this facade system developed in Sweden. The stones, which are four inches high and two feet long, can be suspended from aluminum hangers attached to building walls. They are easily cut with a masonry saw and come in seven colors. Coloroc USA.

The Aurora Matrix finish system can be used in curtain wall assemblies to simulate granite or marble. The three-part system involves a base coat of colored matrix, a spray of colored aggregate, and an acrylic sealer that produces a monolithic surface. The system can be prefabricated or applied on site. Senergy, Inc.

The Dimension Series curtain wall system can incorporate two-inch Foamwall, aluminum, or three-centimeter granite spandrels within the same basic structure. This flexibility permits late changes in spandrel material and also facilitates the combination of different materials on the same facade. E.G. Smith, Inc.

Curtain walls, window walls, and ribbon windows are featured in this 12-page company brochure. Detail drawings and photographs describe the available systems and illustrate their use on a "case study" basis. The booklet includes sample specifications. Vistawall Architectural Products.

Curtainwall Screw Stud Framing systems are detailed in a 12-page technical bulletin. The booklet includes specifications, detail drawings, maximum span height tables, and data on insulation values. Also discussed is the COM-X exterior insulation system. Gold Bond.

(See Technics, Curtain Wall Cautions, p. 114)
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Federal Building

How does a building embody the noblest aspirations of a young country? What visual forms express the pursuit of life, liberty, and happiness? These questions have confounded some of America's most prominent architects since Pierre L'Enfant designed the Federal Hall for the meeting of the First National Congress in 1788, and Building a National Image: Architectural Drawings for an American Democracy documents that struggle.

Published as the catalog for the premiere show of the National Building Museum in Washington, D.C., this book contains an introductory essay by architectural historian Bates Lowry, and 107 color and many black-and-white plates of original drawings for the buildings erected by the Federal Government from the period between 1789 and 1912. We see submissions to architectural competitions, presentation drawings, working drawings, and "napkin" sketches. Together they lay out the seemingly infinite stages of the design for the U.S. Capitol and the Library of Congress, and give views of final schemes for an array of Federal projects, including the White House (originally referred to as the "President's Palace"), the Treasury Building, and the Patent Office Building. The book also contains drawings for the numerous projects that receive little or no attention in the standard architectural histories: The post offices, custom houses, and courthouses that seem relentless backdrops to any trip through the American landscape.

What these drawings show is that, as in politics, so also in architecture: Our national dream is not, and never was, one vision but the continuous intersection of wildly differing visions, with results sometimes fortuitous and sometimes not. In the plan for Washington, D.C., for example, we see the desires of the founding fathers meeting those of architect Pierre L'Enfant, the (continued on next page)

A Plains Legacy

By examining the work of a number of Plains architects, the six authors who contributed essays to The Spirit of H.H. Richardson on the Midland Prairies seek to continue revising the Modernist assessment of Richardson's legacy. Editor Paul Clifford Larson takes issue with what he calls Modernism's "anointment (of Richardson) as a precursor of modernism." The book demonstrates, through diverse essays and a wealth of illustrations, that Richardson was at least as important, and probably more so, for his innovations in late Victorian as he was for his contributions to the birth of Modernism.

In explaining the rise of Richardsonian architecture on the Plains from the 1880s to the turn of the century, the essays—especially Richard Longstreth's—on Richardsonian work in Kansas and Judith Martin's on the prairie city—emphasize the suitability of the style for the expression of optimistic urban aspirations. They demonstrate how architects from Minnesota to Texas borrowed from Richardson, whether bluntly, as in the Minneapolis City Hall, or slightly, as in the many Richardsonian details that were grafted onto buildings of other styles. In either case, the motive seems to have been to establish a sense of monumentality and permanence in a new land.

Besides the above-mentioned essays, the book includes a discussion of Richardson's influence on Chicago by Thomas J. Schlereth, a survey by Kenneth Breisch of the many Richardsonian courthouses and public buildings of Texas (where the style often took on a Hispanic tone), and a study of the natural resources of the region—the various clays and stones that made the Richardsonian style possible—by John C. Hudson.

The publication of the book coincides with a recent exhibition at the University of Minnesota Art Museum.

Mark Alden Branch


Photographing Buildings Inside and Out by Norman McGrath. New York, Whitney, 1987. 176 pp., illus., $32.50. McGrath, a noted architectural photographer, teaches through examples of his own work in this book. His readable prose includes information on equipment, lighting, and special situations.

The Architectural Index for 1987 ed. by Ervin J. Ball, Boulder, Colo., The Architectural Index, annual. 118 pp., $19.00. 1987 marks the 38th year of publication for this helpful guide to the architectural press. The year's editorial content for ten major architecture and interiors magazines is listed by architect, building type, subject, and location.

A New Theory of Urban Design by Christopher Alexander, Hajo Neis, Artemis An­ninou, Ingrid King. New York, Oxford Press, 1987. 251 pp., illus., $39.95. The authors offer seven rules meant to define "wholeness" in cities, and document a graduate-school project in which the rules were applied.

Encyclopedia of Architecture, vol. 1 ed. by Joseph A. Wilkes. New York, Wiley & Sons, 1988. 748 pp., illus., $200.00. Volume 1 (Aalto to Concrete) represents over a decade of work includes articles on history, technics, and design in a language suited both to professionals and to the general public. The four remaining volumes will be released over the next year.

By tracing the symbolic interpretations of the L'Enfant plan, Lowry suggests that its success (insofar as it was completed) is due far less to its embodiment of the aspirations of any of its progenitors, but to the flexibility of its form, which has encouraged successive generations of viewers to adopt it as expressive of their own needs. In 1795, the symbolism was political, as one writer interpreted the city's diagonal avenues as luminous rays shining from the Capitol to all parts of America, "signaling that Congress will always be informed about the true interests of the nation." In 1859, the symbolism was historical, each avenue representing one of the original 13 states with Pennsylvania Avenue "the keystone in the arch."

Equally important was the design for the U.S. Capitol, which was to be, in the words of Thomas Jefferson, "the finest temple dedicated to the sovereignty of the people, embellishing with Athenian taste the course of a nation looking far beyond the range of Athenian destinies." Its endless redesigning is illustrated here in copious detail. The building was worked on from 1790 to 1828, and the story of its construction reveals why it remains a series of unusually disjointive incidents, sometimes brilliant, sometimes run-of-the-mill. During those years, most of the nation's major architects had a hand in its design, and we see here the tentative, unprofessional drawings of Stephen Hallet and William Thornton (the two original designers), behind which Lowry claims lay the ideas of Thomas Jefferson and L'Enfant. We see as well the understated idealism of Benjamin Latrobe and Charles Bulfinch, working in the sparse Neoclassicism then popular, but also in fear of excessive grandeur. Lowry quotes one congressman who in 1824 voiced a concern that has become a constant in the history of American public building: "Of all governments a republic ought to appear with sober pomp and modest splendor. Not the dazzling radiance of a throne is here reflected, but the mild lustre, the serene majesty of the sovereign people."

When the Capitol was completed in 1828 it seemed that serenity had won out a little too forcefully over majesty, and the designs for remodeling and expansion in the mid-19th Century by Robert Mills and Thomas U. Walter show increased pomp—not to mention increased scale—in every direction. Real discoveries here are the drawings of Thomas Walter's draftsman, Auguste Schoenborn, which display incredible control, unusual sensitivity to color and light, and a delight in conceptual tricks. On one drawing showing the construction of a number of cast-iron pieces, a detail is depicted as if it were on a separate piece of paper laid atop the main drawing. On another, an ink and watercolor drawing for the interior of the Senate Chamber, Schoenborn sketches in pencil the feet of a niched figure that are masked by the penultimate row of seats.

Thomas U. Walter also designed the dome we see today. Throughout the history of the Capitol, the dome was recognized as the premier symbol of the American republic, and it was obsessively reworked: From Stephen Hallet to Thomas Walter, we see colonnaded domes, low-pitched domes, and gold domes. Although most of the designs are more in keeping with the building underneath it than Walter's shrill, high-pitched rotunda, his design has served well as a national symbol. An 1898 observer wrote: "None tread beneath this matchless dome, but feel the pride of country in the thrill of patriotic fervor... Nowhere upon the earth's surface can its proportionate and stately grandeur be equalled."
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These earliest projects for America’s monumental Federal architecture were idealistic and symbolic. As a government expanded and the need for the occasional icon was overrun by the steady demand for post offices, custom houses, and courthouses, Federal building became business as usual. In part because of this need to produce so much (35 buildings were erected in one year, 1855-56) and in part because stylistic fashion tended toward the historicist, the search for forms that would embody universal values was lost in a whorl of individualizing eclecticism. In this period, we see the beginnings of a new stage of mass production in architecture, with chief architect of the Construction Branch of the Treasury Ammi B. Young repeating some of his Italian Renaissance palazzo designs as many as ten times, changing only the details.

This development had an important impact on the representation of architecture in these drawings. As details were increasingly drawn in the main office to be executed on site, they, rather than the buildings themselves, often became the architect’s primary means of self-expression. Building an Image shows wood, plaster, and cast-iron ornaments painstakingly drawn with pencil, ink, wash, and watercolor. The interest in pictorial presentation is striking, especially in the drawings of Alfred B. Muller and William A. Freret: Scales are enlarged, perspectives flattened, and contrary details arranged into dynamic patterns.

Idealizing visions for Federal architecture were reinstalled with the City Beautiful movement, and in addition to Daniel Burnham’s famous MacMillan Commission plan we see a series of outrageous proposals by, of all people, John Russell Pope for the Lincoln Memorial. These seven drawings, for ziggurats, pyramids, funeral pyres, and contrary details arranged into dynamic patterns. Idealizing visions for Federal architecture were reinstated with the City Beautiful movement, and in addition to Daniel Burnham’s famous MacMillan Commission plan we see a series of outrageous proposals by, of all people, John Russell Pope for the Lincoln Memorial. These seven drawings, for ziggurats, pyramids, funeral pyres, and stark, blank colonnades not only show that Pope had a little Ledoux in him, but also point to one of the major flaws in the book. Why is the Federal architecture that we see so often conventional, flat, and outdated? It is a question Lowry, in his enthusiasm, never asks, although he answers it inadvertently. Building commissions are granted andtracted by the way the political winds blow. So many politicians are involved in the design of any major building that it is nearly impossible to end up with anything but dishwater. (Indeed, it is a miracle that the U.S. Capitol looks as good as it does judging from the story we read here.) Lowry neglects to tell the very revealing story told by William Pierson in American Buildings and Their Architects of how Robert Mills, having attempted some structural innovations in his Treasury Building, faced the prospect of its demolition before completion because several senators became convinced that it would not stand up. Politics aside, there also is something intrinsically conservative in monumental architecture. It is this conservatism inherent in the design of any public project, combined with an ingrained national ambivalence about celebrating grandly in an atmosphere of democracy, that makes most savants groan when the topic of Federal architecture is broached. But Building the National Dream shows that in addition to the Federal architecture in our various cities and towns, America has a tradition of silent monuments, works on paper expressing visions built.

Sarah Williams Kristel

The author is a Ph.D. candidate in architectural history at Columbia University.
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Designing with Dryvit is a two-volume encyclopedia of design resources that contains technical information to facilitate the selection, design, detailing, and specification of exterior insulation and finish systems. The information is also available on a disk for use with AutoCAD, which is supplied as part of the two-volume set. Dryvit.

Architectural Lighting Solutions catalog illustrates ideas for illuminating parking and landscape areas, building façades, and security and exit signage. This hard-back book also addresses low-level lighting needs and contains registration cards for architects and specifiers to place themselves on mailing lists for up-to-date product announcements. Devine Lighting.

The Velux 4 chair from Morso’s Dinamic Collection innovatively combines wood, metal, wicker, and leather. Bolognese architect Massimo Iosa-Ghini designed the collection to reflect the Bolidismo movement’s influence on design. Curvilinear, streamlined shapes accentuate the 16 tables, chairs, and upholstered pieces that make up the collection. Palazzetti.

The Sally 1987 side table designed by Shiro Kuramata rests on casters and stands 29½ inches high. The metal and glass table is part of the Memphis Milano® collection introduced at the Milan furniture fair. Artemide.
NEW PRODUCTS AND LITERATURE

The Triangle Series of frost-proof, commercial-grade tiles features labor-saving precut triangles with matching 10" x 10" field tiles and trim. Color choices include black, blue, white, gray, and rose. United Ceramic Tile.
Circle 102 on reader service card

Gypsum wallboard drywall products are described in a 52-page, full-color construction bulletin, whose technical sections detail product characteristics, code approvals, fire/sound ratings, application instructions, and architectural specifications. Gold Bond Building Products.
Circle 202 on reader service card

Vertical atrium applications can make use of the 2800 Trusswall Framing System, featuring rounded vertical extrusions connected with 5/8-inch-thick aluminum webs. Spaced up to two feet on center, the webs are machine welded to the two extrusions, which form a front and rear chord. Kawneer Company.
Circle 103 on reader service card

This modular lighting system from Litech, System 135, provides multiple circuit lensed, baffled, or parabolic diffused fluorescent lighting. Finish colors include black, red, Chinese lacquer red, and clear anodized. Track lighting and embedded halogen lighting are also available. Artemide.
Circle 107 on reader service card

CRYSTALENE cotton fiber tracing paper, transparentized with a high-grade mobile synthetic, enhances reproduction because graphite does not penetrate its fibers. Repeated erasing and redrawing poses no risk of ghosting. Keuffel & Esser Co.
Circle 108 on reader service card

Modular Furniture Systems are a new line introduced by Harden Contract. The Executive Return Desk features a central locking system and center pull-out dictating slide. One pull-out writing table, two box drawers, and a bottom file drawer compose the desk pedestal. Thirty-inch-high beveled glass door units with task lighting are offered on the modular hutch system. Harden Contract.
Circle 109 on reader service card

A new CAD Scanning System offers automatic dimensioning/scaling, multiple layers and colors, dynamic text entry, and the ability to create user-defined symbols. Auto-Scan Systems.
Circle 110 on reader service card

POLY-MAR HD solid plastic partitions for schools and public restrooms are described in two brochures that answer questions about product performance in lavatory environments. Santana Products Co.
Circle 204 on reader service card

Six tiny MR-11 display lighting lamps will be added to the Precise line of MR-16 lamps. The MR-11s will be available in narrow spot, spot, and narrow flood beam patterns in 20- and 35-watt ratings, all with maximum diameters and lengths of 35 mm. General Electric Company.
Circle 111 on reader service card

Glass rods and tubes with convex and concave profiles offer interesting optical features for lighting and decorative uses. Available as a soda lime or borosilicate glass, Conturax comes in standard 59-inch lengths and in various diameter profiles. Schott America.
Circle 112 on reader service card

Nylon push-pull handles are designed for heavy-duty use in schools, gymnasiums, hospitals, and shopping malls. Hiawatha.
Circle 113 on reader service card

Wall-hung refrigerated drinking fountains, which meet Public Law 90-480 specifications for wheelchair accessibility, are budget-priced and easy to install. Sunroc Corporation.
Circle 114 on reader service card

Ornamental handrails in wood, glass, aluminum, brass, and stainless steel are detailed in a brochure on the firm's EconoRail products. Newman Brothers, Inc.
Circle 205 on reader service card

AAES publications, reports, and reference works are listed in an up-to-date brochure available at no cost. American Association of Engineering Societies.
Circle 206 on reader service card

Modular carpet systems in both cut and loop pile construction are offered in a variety of designs. Ground colors include solids, multicolors, and heater effects. The carpet tiles come in either 18- or 24-inch squares, and there is a choice of three backing systems. Lees Commercial Carpet Company.
Circle 115 on reader service card

Two corner shower door units, the “corner entry” and the “neo-angle,” conserve space and are decorative and economical. Kinkead Division, USG Industries.
Circle 116 on reader service card

Powerbond technology affixes soft surface flooring to solid vinyl to make Pro-Fitness, a new aerobic floor covering made from Timbrelle nylon, by ICI Fibres. The benefits include sound control, resiliency, easy maintenance, safety, and resistance to odor and mildew. A range of 24 colors is offered for application in health clubs, shower and locker rooms, gymnasiums, and sports facilities. Collins & Aikman.
Circle 117 on reader service card (continued on page 134)

The benefits include sound control, resiliency, easy maintenance, safety, and resistance to odor and mildew. A range of 24 colors is offered for application in health clubs, shower and locker rooms, gymnasiums, and sports facilities. Collins & Aikman.
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NEW PRODUCTS AND LITERATURE

The PETAL armchair in genuine leather is welted and designed with a pieced cover effect and a slight fluting in the arm. It measures 28 inches wide, 28 inches deep, and 32 inches high. Reynolds Design Group. Circle 118 on reader service card.

Dynamic entrance areas can be created with the Entara system of coordinated components, including aluminum extrusions, framing members, rails, sub-assemblies, stiles, and hardware. A brochure details the system and the company’s capabilities. Kawneer Company, Inc. Circle 207 on reader service card.

Exterior wood panel and lap siding are described in an eight-page brochure that explains the association’s new performance standards for these products. American Plywood Association. Circle 208 on reader service card.

Foamular extruded polystyrene insulation and related products in tapered roofing systems are described in a six-page brochure highlighting two sloped roofs. UC Industries, Inc. Circle 209 on reader service card.

The Suspended Ceiling Module is a lightweight seamless, molded fiberglass panel available in three sizes and three corner shapes to fit standard ceiling grids. Graphics may be non-illuminated or internally illuminated with either permanent or changeable messages. No additional ceiling support is required. Partial downlighting is optional. Apco. Circle 119 on reader service card.

Electric signs for retail outlets and other outdoor advertising are the subject of a six-page brochure which covers sign material, extrusions, and sign-face vinyl. Cooley Sign Systems, Inc. Circle 210 on reader service card.

A screw fastener for stucco-like wall systems is bottom-beveled and made of DELRIN instead of polystyrene to resist cupping. The universal fastener is applicable for metal, wood, and masonry. Pleko Products, Inc. Circle 120 on reader service card.

The Building Systems Automation Manual, designed to help building system designers, operators, owners, and managers, has 15 chapters grouped into two subject categories. Part 1 presents an overview of building automation from a management perspective. Part 2 concentrates on the technical fundamentals of a building automation system. Individual chapters or the entire manual can be ordered. The Trane Company. Circle 211 on reader service card.

Two 60-page catalogs describe the complete line of Pella® windows, doors, and sloped glazing systems for home and commercial building. The catalogs introduce the new Pella Outswing Traditional French doors and expanded circlehead window offerings. Rolscreen Company. Circle 212 on reader service card.

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NEW PRODUCTS AND LITERATURE

Water sculptures and landscape elements enhance public and commercial environments. Designs include calm reflecting pools, computer-controlled bowling archways, and fire fountains, an interaction of sound, fire, and water. Underwater light fixtures illuminate without hot spots or conspicuous hardware. Water Entertainment Technologies.

Circle 122 on reader service card

The OADC Intelligent Image Scanner converts text or graphics into binary code for processing by several IBM, IBM-compatible, and Apple Macintosh personal computers. Microsystems International.

Circle 123 on reader service card

The 1500 S.T. (straight transition) is a complete sloped silicone glazing system with a minimal transition sightline. Recommended for smaller installations and remodeling applications, it is flexible enough to handle end walls and hip corners. Kawneer Company, Inc.

Circle 124 on reader service card

Diamond Weave vinyl wallcovering has had 24 colors added to the collection. Saturated jewel tones, an extended range of gray, and new neutrals complement the color selection offered for these 54-inch fabrics. Genon.

Circle 128 on reader service card

The STOR-A-DOOR hinge permits appliance doors to swing open, then slide back into the closet along side walls. The hardware comes fully assembled on plywood panels and needs only to be fastened to closet walls. Stor-A-Door Division, J&J Peterson Co.

Circle 129 on reader service card

Mero NK System, a patented direct glazing space frame system, is described and illustrated in a new brochure. This system eliminates the need for skylight rafter or purlins, allowing the acrylic glazing system to attach directly to the outer chord of the space-frame structure. Mero.

Circle 214 on reader service card

(continued from page 134)

Uses of plywood in large-scale shelving are illustrated in a revised guide covering panel grades and specifications, design criteria, fabrication, and finishing techniques. American Plywood Association.

Circle 213 on reader service card

Weather Perfect acrylic flat exterior house paint is easier to apply and has better masking properties than in the past. Performance of the improved product is covered by a limited six-year warranty. Sherwin-Williams Stores Group.

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A stacking guest chair, Fianco is made from one piece of plywood, cut and folded. The simple shape offers a comfortable seat and arm position. Kasparians, Inc.

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Cement roofing slates containing no asbestos meet ASTM E-108 (83) requirements for Class A usage. The rigid, fiber-reinforced, textured blue-black and gray-green slates can also be used for fascias, mansards, and façades. Eternit Inc.

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(continued on page 138)
There are many striking examples of how TCS (terne-coated stainless) has become an integral part of a total architectural concept... expressed so beautifully as roofs on the Procter & Gamble building and on the many roofs of PPG Place. Weathering to a predictable warm, natural gray, TCS blends quietly with the buildings' architectural expression.

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Scandinavian saunas are described in a full-color, 16-page catalog. Installation photos show saunas in bathrooms, exercise rooms, and pool and garden settings. Basic information covers the history of the sauna, how it works, and assembly instructions. Finnleo Saunas. Circle 215 on reader service card

Glassblock products in the Decora pattern and Essex AA pattern with LX inserts are available as standard rather than special-order products. The LX inserts are thin, fibrous glass sheets fused in place when the two halves of the glass block are joined. They control glare and solar heat gain. Pittsburgh Corning Corporation. Circle 130 on reader service card

Hydraulic dock levelers save space and are mounted under the deck. A foot-operated latch releases the ramp from the stored position and settles it against the truck bed. A pliable lip can be extended to permit end loading. The five-foot-long, 30,000-pound capacity units come in six-foot widths as well as six-foot six-inch and seven-foot dimensions for serving wider trailers. Rite Hite Corp. Circle 131 on reader service card

The new Art Deco Collection, adapted from the archives of both Radio City Music Hall and Schumacher, consists of woven and printed fabrics, wallcoverings, and floorcoverings. Characteristic of the Collection is Rockette Border, a vinyl top-coated wallcovering, based on a bronze bas-relief under the Radio City Music Hall marquee, that is available in brass or platinum. Schumacher. Circle 132 on reader service card

The Bio Chair has a dual axis back which adapts to each posture change without knobs or controls. The cantilevered arms allow unrestricted side-to-side movement. Adjustments include height and tilt tension control. Six different chair types, including matching side chairs, are available. American Seating. Circle 133 on reader service card

The Edo Collection, designed by Kisho Kurokawa, recalls the Edo period furniture with its high-gloss lacquer finish. Matte black or a combination of matte black and aubergine may be specified for this chair. Other pieces feature a high-gloss lacquer finish. Casaforn. Circle 134 on reader service card

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(continued on page 140)
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Steel doors and frames are the subjects of an eight-page catalog which includes detailed specifications and details of the company's manufacturing and installation capabilities. Ceco Door Division.
Circle 216 on reader service card

Batten roofing systems of aluminum, stainless steel, and copper are featured in a metal roof, spire, and steeple catalog describing the company's design, fabrication, and installation capabilities. Overly Manufacturing Co.
Circle 217 on reader service card

Ash & Trash receptacles of fiberglass, steel, and stone for hospitality and other contract interiors are described in a brochure highlighting nine new marbles and granites for stone sand urns. Peter Pepper Products.
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The T-Star electronic touch switch with Status Light indicates on/off mode when lighting fixtures are not visible. Lutron Electronics Co.
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A compact refrigerator/freezer called the Hot 1 is for commercial applications. It supplies up to 15 pounds of ice per day and has a 5.8-cubic-foot capacity. Marvel Industries.
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Plotter supplies, including pens and media, are described in five four-page brochures that stress the system concept to plotting. Bruning Division.
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Standing seam metal roofs and complete metal building systems are described in a series of booklets designed to minimize maintenance problems. American Iron & Steel Institute.
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PA in July

Buildings Below Grade
The July issue will feature two former P/A award winners: the Lucille Halseal Conservatory in San Antonio, Texas, by Emilio Ambasz & Associates and the Cedars-Sinai Comprehensive Cancer Center in Los Angeles by Morphosis Architects/Gruen Associates. The buildings offer two very different solutions to building underground.

Also in July
Other articles in July will include an examination of various strategies and tools useful in marketing architectural services, a portfolio of three New York buildings by Kohn Pedersen Fox Associates, and an exploration of the uses of brick.

Future Issues
The August P/A will explore in detail the Australian Parliament House by Mitchell/Giurgola & Thorp Architects. Interior Design will be the focus of P/A in September.

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Mary Catherine Pepchinski

The author is a New York architect living and working in West Berlin.
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