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Clients' Purposes

Architects talk much, as they should, about "educating the client," but the quality of architecture depends equally on how well clients understand their own intentions. THE client is, for better or worse, always the architect's collaborator. My research for the article on the Light of the World Church in this issue (pages 82–87) gave me encouraging insights into how such collaboration can work. Here the client, the consultants, and the architects all embarked together on a restudy of the parish church's needs. There was no question of the architects giving up any authority; they took part in the development of new objectives that became the basis for their design. When the building was complete, there were standards by which an informed group—including most of the users—could appreciate its success.

It is not easy to produce good architecture for a client whose goals are poorly defined—or as simpleminded as cheapness, conformity, or ostentation. The architect's task may be relatively easy in such cases, but the result is likely to be either something of little character at all or an uncensored expression of the architect's ego.

The recent P/A Awards jury attributed the discouraging quality of the commercial high-rise entries to a failure to reexamine the problem (P/A, Jan. 1986, p. 82). "The entries we reviewed," observed juror Thom Mayne, "showed an absolute acceptance of convention: There was no fight left in these guys." While I believe the "guys" he was referring to were the architects, there are probably clients behind most of them who want only the most conventional structure, with maybe some applied jazz in the skin or at the skyline. No wonder that is what they usually get.

Developer competitions are particularly likely to produce vague programs with no particular conviction behind them. Even where the competitors are asked to develop their own programs, there is little incentive to investigate deeply or take risks. The recent competition for New York's Coliseum site (P/A, Aug. 1985, p. 23) called for no higher goals than maximum price from the property. Although higher urbanistic objectives are allegedly involved in the city's South Ferry competition (P/A, Dec. 1985, p. 21), there are still apparent limits to the developers' effort and courage when the choice may be almost as random as a lottery.

Another recent proposal—for New York, too, sadly—shows the serious consequences possible when the developer starts out with the property in hand and a clear personal intention. Developer Donald Trump's simplistic scheme by Murphy/Jahn for a prime tract along the Hudson (P/A, Jan. 1986, p. 25) has been denounced by just about every architecture writer who has taken note of it. More than one of them have suggested that the scheme's central 150-story tower is intended mainly as a lightning rod to draw objections away from the six 70-story towers shown flanking it. If this is so, it would illustrate an all-too-common kind of client strategy: announcing falsely inflated intentions mainly as a distraction to ease approval of a subsequent, less outrageous proposal.

On the other hand, a client's intention to build a structure that will garner attention—even notoriety need not always discourage serious design effort. The owners of the Humana Tower in Louisville, for instance (P/A, July 1985, pp. 21–22), backed their bid for architectural recognition with informed criteria for judging their own in-house architecture competition, and they chose the scheme that showed the most thorough study of their specific needs. Whether or not your overall assessment of the resulting building is positive—as mine is—it would be hard to deny that it challenges some accepted assumptions, both formally and functionally.

To produce more architecture of substance, the profession needs more clients with a real grasp of their own needs and intentions. Much is said wherever architects meet about the need to educate clients. Usually, this refers mainly to giving them some much-needed orientation for judging architecture and understanding how architects work. Such efforts, ranging from elementary school classes to the AIA's Forum for Architecture outreach program toward potential clients, are constructive. But appreciation of architecture does not in itself make good clients. If we are to get good clients, the profession must "educate" them to examine, determine, and communicate their own real purposes.

John Monis Dife

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Views

Wright block, correct details Pilar Viladas's good report on the Storer house by Wright [P/A, November 1985, pp. 112–117] included captions to the illustrations. There a comment is cited, made by Robert L. Sweeney, the outstanding bibliographer of Wright, claiming that the reinforcing rods set between blocks were inadequately protected from water damage. "Wright failed to make the channel joints between the blocks sufficiently large to contain enough concrete to protect the steel. . .

I wondered what this might indicate in those later Wright houses, called "Usonian Automatic." I'd heard no complaints about them. So I called Eric Wright, the restoration architect for the Storer house. He assured me that the claim was not accurate. The blocks used to build retaining walls were cracked by pressure, admitting water that rusted the steel rods; but other blocks, standing free in air, showed no such trouble. Tests showed the steel in good condition, he said. Your readers might be interested. Edgar Kaufmann, Jr.

New York

Robert Sweeney replies: There is likely to be ongoing debate over my assertion that the perimeter channels of the textile blocks were of insufficient diameter to protect the metal rods from water damage. The textile block system as originally realized was not waterproof. Where water has reached the rods deterioration has resulted. The difference of opinion focuses on the method by which the moisture enters. An engineer and a building contractor who inspected the Storer House support my thesis in general and note parenthetically that code today requires more concrete than was used in Wright's system. Eric Wright replies that he has found evidence of failure only where the blocks are subjected to lateral stress in retaining walls, where ivy has crept between the blocks, and where walls have been broken into for

repair. Where cracks have not resulted from external forces, he feels that the rich mixture of the cement surrounding the rebars has been adequate to protect them, and that the more porous blocks function further as a sponge to draw away moisture.

Reinforced concrete block construction was in its infancy in the 1920s. Wright admitted that the textile block system never passed beyond the experimental stage, and he continually modified the forms of the blocks through the decade. The channels for the blocks for the Storer, Freeman, and Ennis Houses are 11/2 inches in diameter. Drawings for the A.M. Johnson Compound and Shrine project indicate a square channel but do not give dimensions. Wright returned to the circular form for San Marcos in the Desert project but increased the diameter in proportion to the size of the blocks. He returned to the 11/2" dimension for the Usonian Automatic houses.

What architects know

I enjoyed your musing editorial, Architects: What Kind of People (December, 1985), in part, no doubt, because I share so many of your opinions. Personally, I came to study architecture from a background in literature and anthropology and found many of my (not-very-broadly-educated) professors unabashedly suspicious of "talkitecture" (the inability to communicate ideas better graphically than verbally). Eventually the graphic skills were developed, but even now there is the gap first evidenced to me by those who would deny the common ends of architecture and literature . . . the dimensions of philosophy and of social commentary.

The languages of architecture and literature, in joining fancy with craft and hedging specificity with ambiguity, can marry art with philosophy. The specificity of philosophy necessitates a fanatical discipline in the use of language, excluding almost all architects from its productive discussion.

While I accept the accuracy of your statements, it seems a shame that articulate architects should become our business representatives and the leaders of our professional bureaucracies rather than, perhaps, our professional conscience. If architecture is to contribute more to our society than its decoration, it must be more than self-referential, and we must be more than craftsmen.

And if you regard the paucity of articulate professionals as a weakness, why does your journal not provide a letters column? Or is there really that little reaction to the substance of your articles? *Thomas S. Howorth*

Howorth & Associates, Architects New Orleans, La.

[Thanks for the thoughtful response. This *is* the letters column.—Editors]

Guggenheim reaction

Odd architectural solutions to unusual problems frequently indicate that the design program is flawed and must be reexamined. After all, architects are not noted for being thoughtful programmers. They primarily respond to written recipes or owners' shopping lists for new facilities. In the case of the Guggenheim Museum (P/A, Dec. 1985, p. 25), it is clear that the owner and the architects need to re-examine the program and the architectural proposal.

The original building suggests appropriate forms and materials relative to an addition or alteration. A self-conscious "modern" tower slab is by no means suggested by any aspect of the original Frank Lloyd Wright design. Why not let it speak for itself without contradiction?

One wonders why a leading architectural firm, regardless of the client's requirements, would propose such a bizarre addition to a Frank Lloyd Wright building. Maybe the project is beyond their ability, or is this only another example of a new architectural trend which began with the Whitney Museum addition?

New York City finally got

something by the greatest of American architects. Must its significance be compromised? Listen to the neighborhood friends of the Guggenheim Museum building. They seem to have more architectural sense than the professional architects. *Charles Reed, Jr. State of North Carolina School Planning Architect*

Raleigh, N.C. [While the present proposal may be flawed, the writer doesn't specify what forms are suggested by the original. We have seen

Wright drawings with a slab rising in this general location, but farther away, with a strongly gridded wall. That doesn't appear adaptable to the present program and available site. We are more skeptical about New York neighbors, who are too often reacting to personal inconveniences such as additional traffic or their own blocked views.—Editors]

Yerba Buena clarification

James Stewart Polshek & Partners are designing the performing arts center of the Yerba Buena Cultural Center (P/A, Dec. 1985, p. 22) with a budget of \$14 million. Fumihiko Maki is designing the visual arts complex, budgeted at \$9 million.

Storer House credit correction

In the article on Frank Lloyd Wright's Storer House (P/A, Nov. 1985, pp. 112–117), the architects were incorrectly credited with matching the color and texture of the new concrete textile blocks to those of the old. Full credit for this work should have gone to Peter Purends, who was responsible for all masonry and concrete block restoration and manufacturing.

Photo credit correction

In the article on the State of Illinois Center (P/A, Dec. 1985, pp. 72–79), the photo on p. 77, bottom left, was by Deidi von Schaewen.

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P/A News Report

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Mies van der Rohe, Barcelona Pavilion, 1929.



Glass skyscraper project, 1922.

Mies van der Rohe Returns Triumphant

In the years since his death in 1969, Mies van der Rohe has achieved a kind of mythic stature. The master Modernist has managed to escape much of the mudslinging that has plagued his more unfortunate contemporary Walter Gropius, target of Tom Wolfe and subject of a none too complimentary exhibition at Harvard University (P/A, Nov. 1985, p. 25). That show prompted TAC, the firm that Grope founded, to issue a formal protest. Mies devotees, however, need fear no such necessity. The centerpiece of this year's Mies Centennial, an exhibition at the Museum of Modern Art in New York, promises a safe, scholarly review of his *oeuvre*.

The MoMA show, which opened February 10 (through April 22), will travel to the Museum of Contemporary Art in Chicago (May 8– (continued on page 23)





Antoine Predock, competition-winning scheme for the Fine Arts Complex, Arizona State University.

Predock at ASU

Antoine Predock of Albuquerque, N.M., has been selected to design the \$15 million Fine Arts Complex and John C. Galvin Playhouse on the campus of Arizona State University. Predock was one of five finalists picked from 57 applicants; the (continued on page 26)

Milan Triennale: Domestic Project

At the 1986 Milan Triennale, which opened January 18, visitors to the cafeteria sat on inflatable seats in a computerized structure, and ordered pizza, fast food, and Viennese coffee from electronic vending machines. The new cafeteria's combination of modernity and tradition, designed by Denis Santachiara, is in tune with the theme of The Domestic Project: Archetypes, Mechanisms, Perspectives in Home Living, a new exhibition that promises to be the most important and ambitious project of the revived Milan Triennale. The Domestic Project is the brainchild of architect Mario Bellini, who is on the Triennale Board and responsible for the installation. He claims that the exhibit represents the first time that (continued on page 24)



New town in New Jersey.

Bofill's Palisades Palazzi

The Spanish architect Ricardo Bofill may soon be bringing his unique brand of neo-Baroque, precast-concrete architecture to the United States. His firm Taller de Arquitectura has recently completed preliminary drawings for a series of monumental apartment complexes of up to 1500 units to be built in West New York, N.J., directly across the Hudson from midtown Manhattan. Bofill's Italianate scheme will echo the extravagant proletarian palaces he has built in the new towns around Paris. The plan's two crescent-shaped buildings flank a central trapezoidal building, each arranged around a grand court (continued on page 23)

Esherick Homsey Dodge & Davis of San Francisco, Calif., will receive the 1986 AIA Architectural Firm Award. The 40-yearold firm is known for such award-winning works as the San Francisco Cannery Building and the new Monterey Bay Aquarium.

Pershing Square, the five-acre park in downtown Los Angeles, is to be the subject of a two-stage international design competition. An interdisciplinary jury representing the various fields of botany, landscape architecture, history, art, and architecture will select five finalists. **Deadline for first-stage entries** is May 30, 1986. Contact Janet Marie Smith, Pershing Square Management Association, 523 West Sixth St., Suite 200, Los Angeles, Calif. (213) 624-5115.

Parsons School of Design in New York, in cooperation with the Graduate Faculty of the New School for Social Research, will launch the first graduate program in architecture and design criticism in September 1986. The one (calendar) year program is intended not only to train new critics but to bridge the gap between academic critical theory and commercial journalism. Contact program director Herbert Muschamp at Parsons for more information.

Robert Stern's eight-part TV series on architecture entitled Pride of Place debuts March 24 at 8 P.M. The book, of the same title, is due out March 17.

Mark Mack of San Francisco, collaborating with artist Douglas Hollis and landscape architect George Hargreaves, has been selected to design a new cultural center at Candlestick Point State Recreation Area in San Francisco. The team was selected after a limited competition by the Office of the State Architect and the Department of Parks and Recreation.

A new team will study San Francisco's Mission Bay area. ELS Design Group will handle the urban design portion of the project; Daniel Solomon & Associates, housing; Angela Danadjiera and Konig Associates, landscaping; Anthony/ Fleming & Associates, community facilities; Kwan-Hennai, office and R&D; all under the general direction of EDAW. **Previous architects for Mission** Bay redevelopment were I.M. Pei & Partners. (continued on page 28)



Berlin Housing; Richard Meier & Partners.

Unbuilt Projects: NYC/AIA Awards

Recognizing that "the work of many of our most creative minds, for reasons beyond their control, never sees the light of day," the New York Chapter of the AIA this year sponsored its first competition for unbuilt projects. Eligibility was restricted to architects practicing in one of the five boroughs of New York City. The work itself, however, proved as international as the jury, an all-star cast composed of architects Thomas H. Beeby of Chicago, Mario Botta of Lugano, Switzerland, and Elizabeth Plater-Zyberk of Coconut Grove, Fla.; critics Douglas Davis and Kenneth Frampton, both of New York, and Heinrich Klotz, director of the Architecture Museum, Frankfurt, West Germany.

The request for submissions permitted work in two cate-

gories: commissioned work and noncomissioned work, the latter including competition entries and other theoretical work not done for academic credit. The jury, however, made no such distinctions in its selections; several jurors, in fact, noted their disappointment in "fantasy" submissions. Commented Douglas Davis, critic for Newsweek, "The constraints imposed by clients, site, region, context, and function liberate rather than confine the imagination.'

Sixteen Honor Awards went to projects by the following architects: Bobrow & Fieldman, Steven Forman, Green Card Architects, Steven Holl, Karmi Associates, Richard Meier & Partners (two), Michael Mostoller, Proposition: Architecture, Russo & Sondor, James Tice and Fay Sueltz, UKZ, Inc. (two), USA Design Group, and Wolf Associates (two). Ten Awards went to

Walter David Brown, Der Scutt, Giuliano Fiorenzoli, Gwathmey Siegel & Associates, Richard Meier, Peterson Littenberg Architects, Robert A.M. Stern Architects (two), Wolf Associates, and Charles Wolf and Kathryn Dean. Two citations went to Kohn Pedersen Fox and Wolf Associates (the leader at four total). Seven additional projects were selected for exhibition.

The Chapter made a point of asking entrants to list all individuals involved in the design of a submitted project. Winners were recognized in an awards ceremony Jan. 21. The winning designs are currently on display at the chapter headquarters at 457 Madison Avenue (photographs, through Feb. 20) and the National Academy of Design (original drawings and models, through Feb. 14). The program will be repeated on a biennial basis. Daralice D. Boles



Single Family House, Tel Aviv; Karmi Associates.



Mies (continued from page 21) Aug. 10) and the New National Gallery, Berlin, Mies's last major work (Nov. 13–Jan. 15, 1987) before finishing in Barcelona. Drawing on MoMA's Mies Archive, the exhibition will feature both built and unbuilt work, including furniture designs, documented through 300 drawings, photographs, eight architectural models, and two largescale mockups of structural details.

MoMA will show the architect as artist; a second show opening on March 26 at the Illinois Institute of Technology, a living monument to Mies both as campus and curriculum, will study the architect as educator. Student projects from the Mies studio are to be shown, captioned by his critiques. This show will also travel to London and Berlin, and two smaller photographic versions will tour universities and other institutions throughout the U.S. and abroad beginning in September.

The long awaited reconstruction of Mies's Barcelona Pavilion,



Mies van der Rohe.

icon of the Modern movement, opens to the public in April with appropriate pomp and circumstance. The reconstruction is a triumph of empirical research: The original pavilion was dismantled immediately following the Barcelona Exhibition of 1929, and the parts shipped out of Spain to disappear without a trace. Still worse, no accurate drawings survived. The architects responsible for the reconstruction-Cristian Cirici Alomar, Fernando Ramos Galino, and Ignasi de Sola Morales-had to rely on photographs and good guesswork, confirmed by the original foundations that surfaced when site excavation began.

In addition to these events, several new volumes on Mies have appeared. Two of them— Franz Schulze's *Mies van der Rohe: A Critical Biography* (University of Chicago Press) and Wolf Tegethoff's Mies van der Rohe: The Villas and Country Houses (The Museum of Modern Art/The MIT Press) were sponsored by the Archive. Garland Press will publish the first four volumes of a catalogue raisonné illustrating 2000 works. A second biography entitled Mies van der Rohe by David Spaeth has been published by Rizzoli. (All three to be reviewed next month in P/A). Add in Arthur Drexler's catalog, which accompanies the MoMA show, and a second volume of essays by five Mies scholars, and you have a nearly complete if not definitive portrait of the architect in this, the centennial year of his birth. Daralice D. Boles

Suffolk County Competition

The nationwide competition to design a new courthouse complex for Suffolk County in Islip, Long Island, has resulted in the selection of Mitchell/Giurgola Architects of New York and Philadelphia. Their scheme for the 80-courtroom complex was chosen from the field of finalists including Kohn Pedersen Fox Associates, New York; John Carl Warnecke & Associates, New York; Isozaki/Bentel/Sharat, Tokyo and New York; and Arthur Erickson, Toronto. These were culled from an original list of 61 qualifying firms by a technical jury for program compliance and an architectural jury for design merit.

Mitchell/Giurgola's proposal was praised for its integration into the landscape. The solution bisects the site with a diagonal wall separating traffic and parking from courtrooms and park, including a man-made lake. All entrances and circulation are concentrated in this wall of colored stone and marble, to which are appended separate precast concrete clad courtroom and office buildings. The complex is to be built in three stages, ending in 2020.



Suffolk County Courthouse.



Bofill's Palisades palace.

Bofill (continued from page 21) and punctuated by a series of triumphal arches. In the center of all this is to be a traditional Italian campanile, no doubt to let the folks in N.Y. know West N.Y. is there.

The apartments are part of a vast scheme by Arthur Imperatore, a New Jersey truckingmogul-turned-real-estate-developer, to build a small city of 30,000 inhabitants on the 367 acres of prime riverfront property he owns in West New York and neighboring Weehawken. The two-mile-long site, which is adjacent to the New Jersey entrance of the Lincoln Tunnel, will eventually contain offices, stores, hotels, restaurants, and marinas in addition to the apartments. The mini-city could be just a fast ferry ride away from the soon-to-open Jacob Javits Convention Center, and Manhattan's booming West Side, a fact that has not been lost on Imperatore, who wants to initiate ferry service to midtown this year, pending the approval of the Port Authority.

What Imperatore wants, though, is not necessarily what he'll get. Residents of the two riverfront communities are wary of the kind of large-scale development he has in mind. He was turned down by Weehawken two years ago for a plan to build a series of 40-story high rises that would have dwarfed the 100- to 150-foot-high Palisades. The developer is now attempting to obtain zoning changes from neighboring West New York for the more modest Bofill-designed project. Imperatore is asking for a height increase from 3 to 12 stories and a change of density from 30 to 50 percent. One of the reasons Bofill is attractive for the developer is that the architect can deliver high-density, low-rise

housing with enough status appeal both to dazzle the local government into giving him the zoning he needs and to attract the upscale buyers he wants to offset the relatively low (for New York) height limitations.

The author is a Contributing Editor at Metropolis magazine.

Inner City Infill: Housing for Harlem

Inner City Infill, a national housing design competition, is sponsored by a heavy-hitting combination of the New York State Council on the Arts, the Harlem Urban Development Corporation, Manhattan Community Board #10, and the New York Landmarks Conservancy. The purpose of the competition is to focus attention on the need for affordable and socially responsible housing in the inner city. The actual site is a 2¹/₂-block package of 5 separate parcels in Central Harlem, the last neighborhood in Manhattan as yet untouched by the forces of gentrification raging in other sections of the city. The sponsors hope to put together financing for construction of the winning scheme

The complex history of Harlem is sensitively evoked and thoroughly described in the highly detailed and well-illustrated competition brief prepared by Competition Adviser Theodore Liebman of the Liebman-Melting Partnership. The program emphasizes contextuality, focusing on infill and rehabilitation of existing buildings as the most effective means of revitalizing the area and exploring the potential for change. The four first stage finalists an-(continued on page 24)

P/A NEWS REPORT



ASU Fine Arts Complex.

Predock (continued from page 21) other finalists were Edward Larrabee Barnes, New York; ELS Design Group, Berkeley, Calif.; Arthur Erickson, Vancouver, and Barton Myers, Toronto.

The complex will include a museum for university art collec-

tions (currently less than five percent of the university's holdings are on public view), a theater, dance studio, outdoor sculpture garden, and support and rehearsal facilities.

Predock's scheme was selected by a jury consisting of architects Henry Cobb of I.M. Pei & Partners, New York, Hans Kammerer of Kammerer and Belz Kucher & Partners, Stuttgart, and Donlyn Lyndon of Lyndon/ Buchanan & Associates, Berkeley, Calif.; Gerald McSheffrey, dean of the College of Architecture and Environmental Design at ASU; landscape architect Hideo Sasaki; and two ASU administrators. Construction of all three phases of the fine arts complex should be completed in 1990.

The PC Edge in Architectural Offices

In 1985, the personal computer definitely became the beckoning standard for architctural firms planning to automate design and drafting. With more sophisticated software and powerful microcomputers, PC CADD cut into projected markets of minicomputer CADD systems, according to two reports conducted by my automation research firm, Graphic Systems, Inc. (GSI).

Our December 1985 GSI report titled "A/E Automation: Market 1986," found that approximately 20 percent, or 2400, architectural firms are currently using a CADD system. Fifty percent more firms currently plan to initiate CADD. For the remaining 30 percent of holdouts, more than 70 percent are merely waiting for CADD technology to stabilize.

Most industry analysts predict that by the end of 1989, every architectural firm in the country, if not the world, will have a CADD system. Our recent study bears out that prediction and indicates the date could be sooner. On the other hand, it is expected that the average architecture firm will spend only \$50,000 over the next five years on automation. This means most firms will be turning to microcomputers or, at most, workstations based on 32-bit microprocessors. By the mid-1990s, there will have been a productivity boom in architecture in this country resulting from the effec-



tive use and integration of computer technology.

Firms initiating CADD in 1986, according to the second GSI report, the December 1985 update of "PC CADD: A Buyer's Guide," will have an easier time learning and implementing CADD software. The report notes that user-friendly techniques are influencing PC CADD production.

In addition, one of the major issues that will face PC CADD users in the next two years is integration. Already, some PC CADD vendors are offering packages that can exchange graphics data with their competitors' packages. *Eric Teicholz*

The author, a computer consultant, is president of Graphic Systems, Inc., Cambridge, Mass.

Advertisement

Small Firm's New Golf Ball Draws Hole-in-One Letters from All Over U.S.

Seller Guarantees Ball Will Cut Strokes—or Money Back

64 Times More Accurate

By Mike Henson

NORWALK, CT—A small company in Connecticut is selling what might be the most hook-free, slice-free ball in golf. Unsolicited hole-in-one letters from men and women all over the U.S. suggest it is 64 times more accurate than a well-known distance ball. Some report holes-in-one the first time they use it!

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In light of tests and that file-full of hole-in-one letters, the company guarantees Guidestar will cut a golfers score dramatically. If it doesn't they will take back the balls within 30 days used, and refund their price promptly.

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To order Guidestar send your name and address to the National Golf Center (Dept. G-274), 500 S. Broad St., Meriden, CT 06450; (or call 203-238-2712). Include \$21.95 (plus \$1.75 shipping) for one dozen; \$19 each for two dozen or more. Six dozen cost only \$99. *Free* shipping on two or more dozen. You can split your order between white and Hi-Vision yellow on a dozen basis.

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In Progress

A housing project in San Diego, an infill arcade in Indianapolis, a police headquarters in Elizabeth, N.J., and two office buildings in Washington, D.C., are all under construction or due to start construction this year.





1 Marina Palms Apartments, San Diego, Calif. Architect: Rob Wellington Quigley, San Diego, Calif. This 180-unit apartment complex of wood frame and stucco construction, designed for Meric, National, and Halenza, occupies a full block in downtown San Diego. The four façades recognize different surrounding conditions: the relatively grand scale of the Market Street boulevard, the more intimate scale of Union Street, the retail arcade on G Street, and the "gateway" of Front Street. The four corners are treated as special conditions, two with observation towers for tenants. Construction begins this month.



2 The Goodman Quad, Indianapolis, Ind. Architect: Beyer Blinder Belle, New York. This urban infill project completes a key block on Monument Circle. Pedestrian arcades lined with 250,000 square feet of retail space cut through the block, culminating in an 80-foot-high, 100-foot-wide dome, which is covered but not climate controlled. A new 800-seat chamber music hall sits at the end of the diagonal axis through Monument Circle, and a complex of eight movie theaters is located below ground. Construction begins late this year.

3 Elizabeth Police and Municipal Court, Elizabeth, N.J. Architect: The Grad Partnership, Newark, N.J. This 80,000-square-foot facility reestablishes the street wall, disguising a 440-car parking lot that serves both the court complex and commuters. The two-story main building, with its curved entrance facade of gray brick and metal panels, combines court and police facilities, while the adjoining block houses a repair garage and ambulance dispatcher. The \$15 million complex should be completed this fall.

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5b

4 Commercial Office Building, Washington, D.C. Architect: Don M. Hisaka & Associates, Cambridge, Mass. The bowed window wall of this 230,000-square-foot office building is set atop an historic 1925 brick and limestone facade. The new metal, glass, and masonry façade rises 90 feet to match the height of adjacent buildings. A three-story retail arcade cuts through the building from 24th Street to a skylighted atrium lighting the interior of 30,000-square-foot floor plates. The scheme is now under construction in Washington's West End, a mixed-use area near Georgetown.

5 Evening Star Building, Washington, D.C. Architect: Skidmore Owings & Merrill, Washington, D.C. The historic 1899 Evening Star Building occupies a prominent site across from the Old Post Office on Pennsylvania Avenue. This scheme for the Metropolitan Partnership will restore the façades of the 1899 original and its 1922 addition. A new addition on Pennsylvania Avenue, clad in white marble to match the original, plays upon its Beaux-Arts detailing. A new roof addition seeks to unify the three separate parts of the project. The 238,000-square-foot complex is to be completed in 1987.

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Perspectives

Building on a history of innovative urban planning, the city of Bologna tackles the problems of its sprawling suburbs.





The declining importance of rail freight permits the reconstruction of the zone around Bologna's produce market in the 19th-Century working-class area called Bolognina, directly north of the old city wall (top). Detailed urban design studies call for new connections, including a vehicular spine, tying Bolognina more closely to the historic core. A new, glass-roofed market—a reminder of the neighborhood's original raison d'être—is a visual gateway (a real one for those using the pedestrian overpass). Like those in Louis Kahn's Philadelphia studies of 1956–57, the drums at the intersections of the spine are parking garages (above). A piazza on the eastern side of the commercial area beckons to the older Bolognina. The cross axis that begins here brings residents and workers to a new park along a former industrial canal.

Bologna's New Master Plan

With the adoption of a new master plan in 1985, Bologna presses its unique concept of the city as "collective memory" and bene *pubblico* (common inheritance) outward from the historic core to encompass the characterless suburban areas that surround it. The new plan is radical in its intentions and its methods. Major goals include overcoming class distinctions that separate neighborhoods and reducing the discrepancies in urban quality that differentiate the center and the periphery. At the same time, the Bologna plan is more directly architectural than comparable projects in the U.S.: It aims to create a unifying formal structure for the entire metropolitan area.

Innovative urban planning

Planning and urban design have a long history in Bologna. The first master plan, adopted in 1889, envisioned a major extension of the city onto fertile plains to the west, north, and east. A rational grid of square blocks was proposed starting from the old city wall, which was replaced by a ring of tree-lined boulevards. It took nearly 70 years to build all the planned blocks. Eventually, even those originally set aside for piazzas and parks were taken over by speculative builders.

From the first, the expanding railway network cut into the clear orthogonality of the plan. Less desirable areas began to fill up with dense apartment clusters. The more salubrious areas were taken up by single-family houses in garden-city settings. After World War II, immigration, population growth, and waves of office conversions in the core created further demand for space at the periphery. The ring created by the 1889 plan became increasingly fragmented and anomic. Homogeneity of use and of social class was the rule. Following a classic zoning pattern, new development showed

little of the complex quality of the historic city.

In the 1950s, a master plan was drawn up calling for a Bologna of one million people (its population at the time was only 440,000; it is now 460,000). The increased population was to inhabit an ever-widening ring of suburbs, and the old city was to be transformed into a modern central business district. Only a few of the most important architectural monuments were to remain. Reaction to this proposal was intense. A new master plan emphasizing preservation was quickly substituted. Then, after an intensive period of research and analysis led by architect Pier Luigi Cervellati, the remarkable and now renowned plan of 1970 was approved.

Bologna contains one of the largest collections of medieval and renaissance buildings in Europe, linked together by miles of arcades. The program conceived for the city by Cervellati and his colleagues was based upon the revolutionary principle of "integrated conservation"the preservation of not only the physical but the social structure of the historic city. To accomplish this, public housing funds were used solely to rehabilitate historic houses. In the private sector, the availability of subsidized mortgages was linked to rent control to minimize gentrification. Restrictions were placed on office conversions in residential and industrial areas to stop displacement and reduce downtown traffic volumes. Libraries, civic centers, schools, and other public facilities were redesigned to fit the stock of vacant churches and palaces that might otherwise have been demolished. This program has now largely succeeded-the historic core retains its popular character and the number of dwellings there has actually been increased-and the strategies developed for it are widely imitated in Europe. In this period the outlying neighborhoods received some attention in the form of civic centers, sports facilities, and parks. However, the focus on rescuing the historic center limited the resources available for restructuring these areas.

Focusing on the periphery

The 1985 master plan by Roberto Mantulli, Giancarlo Mattioli, Roberto Scannavini, Giacomo Agostini, Vittoria Toschi, and Franco Morelli attempts to bring the city into a new equilibrium. It is intended to give the peripheral zones more Designs for the postwar neighborhood of Due Madonne exemplify principles of the new master plan. The major connector street has been restructured as a district spine. With its pedestrian arcades and light-rail transit, the spine is conceived as a key public space lined with mixed-use structures. The linear continuity of new development contrasts with the spotty site planning characteristic of the 1950s and 1960s. Every Bologna neighborhood is seen as a complete city, so office buildings, decentralized from the core, punctuate and cross the spine, providing local employment and daytime activity. Low-rise, high-density is the preferred residential model. New buildings reinforce the street and create the extensive green areas, after a delay of nearly a century, first called for in the master plan of 1889. (Right: The Due Madonne district as it appears today; below: proposed central spine.)





of the character of the traditional city and to give perceptual form to the overall urban area. These goals require a limit to growth and the establishment of a visible edge to the city. Dense infilling and reclamation of underused railyards will enable Bologna to build while preserving the valuable farm belt outside, just as it has saved the historic city within. Among the plan's key design concepts are the creation of a system of neighborhood "spines" and the replacement of monofunctional zoning with a more complex mix of building types and uses regulated by detailed urban designs. New structures are to be sited to create traditional streets. Those that link the countryside and the historic core become the spines that structure the individual districts. Arcaded public collectors in the urban

tradition, these spines will contain major shops, services, and workplaces.

New office development long a threat to the character of historic Bologna—is to be located outside the old city, clustered with retail, recreational, and cultural facilities to create a series of improved neighborhood cores. This reorganization not only reduces commuting and facilitates public transportation (a trolley network is planned), but enlivens individual districts, giving each a special function in the city as a whole.

Bologna's new urban design program extends the idea of the city as collective memory to include the record of efforts (and failures) since the onset of the industrial revolution. The design of individual neighborhoods seeks to reveal hidden traces of the recent past (industrial canals, roads, unrealized elements of the 1889 master plan) and to bring order to the postwar present. In Bologna it is said that only a city that comprehends its entire past is in a position to determine its future. *C. Richard Hatch*

The author is a Professor in the School of architecture at New Jersey Institute of Technology. An Architect in private practice in New York, he is currently adapting the Italian model to a depressed area of Oueens.

Illustrations and photographs courtesy of Commune di Bologna.
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P/A Calendar



Arata Isozaki, Eiko Ishioka, performance space, Walker Art Center, April 20.

Exhibits

Through February 16

High Styles: 20th Century American Design. Whitney Museum of American Art, New York.

Through February 23

Profit by Design. Design Centre, London.

Through February 23

The Golden Eye: An International Tribute to the Artisans of India. Cooper-Hewitt Museum, New York.

Through March 8

The Critical Edge: Controversy in Recent American Architecture. University Art Museum, Berkeley, Calif.; also **May 8– June 8**, Nelson Atkins Museum, Kansas City, Mo.

Through March 16

Architecture within Switzerland. Architekturmuseum in Basel, Basel, Switzerland.

Through March 23

About Place: Contemporary American Landscape. Institute for Art And Urban Resources, P.S. 1, Long Island City, N.Y.

Through April 1 1986 Design Council Awards. Design Centre, London.

Through April 6

The Architect and the British Country House. Octagon Museum, Washington, D.C.

Through June 30

Dwellings of West Africa. Lowie Museum of Anthropology, Berkeley, Calif.

February 5–March 1

Mies van der Rohe & Paul Rudolph/Architectural Drawings. Max Protetch Gallery, New York.

February 17–March 14 Transforming the American Garden: New Landscape Designs. The Urban Center, New York.

February 23-March 2

Great Women Designers of the Twentieth Century. Arango/ Dadeland, Miami.

March 4–May 25

Built for the People of the United States: 50 Years of TVA Architecture. National Building Museum, Washington, D.C.

March 7–April 27

Naum Gabo: Sixty Years of Constructivism. Solomon R. Guggenheim Museum, New York.

March 11-28

Werner Seligmann: Recent Work. Harvard Graduate School of Design, Cambridge, Mass.

March 26–September 30 The Great World's Fairs and Expositions, 1851–1939. Miami-Dade Community College, Miami.

April 20–July 20

Tokyo: Form and Spirit. Walker Art Center, Minneapolis.

Competitions

February 22

Deadline, 28th Annual S.M. Hexter Interiors Awards. Contact S.M. Hexter Co., 979 Third Ave., New York, N.Y. 10022.

February 24

Deadline, International Association of Lighting Designers Intern Program. Contact Marion Greene, IALD, 30 West 22nd Street, New York, N.Y. 10010.

February 28

Deadline, request for materials, Ybor City Gateway Competition. Contact Stephanie Ferrell, Historic Tampa/Hillsborough County Preservation Board, 452 W. Kennedy Blvd., Tampa, Fla. 33606 (813) 272-3843.

February 28

Deadline for requests, Metal Roofing Competition for students and young professionals. Contact Follansbee Steel Corporation, P.O. Box L, Follansbee, W.Va. 26037.

March 7

Submission deadline, 1986 Engineering Excellence Awards. Contact American Consulting Engineers Council, 1015 Fifteenth St., N.W., Washington, D.C. 20005 (202) 347-7474.

March 31

Nomination deadline, Changing Light: 6th Annual Arango International Design Exhibition. Contact Arango Design Foundation, 3235 McDonald St., Coconut Grove, Fla. 33133 (305) 661-4229.

May 2

Deadline, Industrial Design Excellence Awards, IDEA 86. Contact IDEA 86, Industrial Designers Society of America, 1360 Beverly Road, Suite 303, Mc-Lean, Va. 22101-3671.

June 6

Postmark deadline, 10th Annual Halo Lighting Awards. Contact The Hanlen Organization, 401 North Michigan Ave., Chłcago, Ill. 60611 (312) 222-1060.

Conferences

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A Style for the Year 2001

Planning Committee : Fumihiko Maki, Kōji Taki, Hiroshi Hara, and Osamu Ishiyama

Contents

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P/A Practice

Building Failures: Mark Williams describes the precautions to take when specifying and installing terrazzo

Law: C. Jaye Berger discusses what to look for and what to look out for in professional liability insurance

Failures: Rustic Terrazzo Case Study

1 The Problem

Less than one year after installation, the rustic terrazzo sidewalks for a commercial project located in a mid-Atlantic state began to deteriorate. Aggregate had dislodged, and considerable cracking was evident. Material had dislodged where the sidewalk was subject to heavy foot traffic. In other places, the problem was negligible.

2 Background Data

Terrazzo is a composite material composed of aggregate, and a cementitious or chemical binder/ matrix that is well suited for interior and exterior floors and walls. Once the terrazzo is poured and cured, it may be ground and polished or etched to depress the matrix and expose the face of aggregate chips.

The origin of terrazzo dates back to ancient times. The Romans made a mixture of crushed brick and lime mortar, which they ground and polished after the composite hardened. During the Christian Era, terrazzo mosaics were constructed by placing stone or marble pieces in specific designs.

Today, terrazzo is used extensively, and classified by size/appearance of aggregate:

A Standard Terrazzo: Composed of aggregate chip size #1 and #2, probably the most common type of terrazzo. B Venetian Terrazzo: Composed of aggregate chip size #3 through #8, with smaller aggregate between the large aggregate.

C Palladiana Terrazzo: Composed of large random fractured slabs of marble, up to 15 inches in dimension, with smaller aggregate in between. D Rustic Terrazzo: Composed of aggregate chip size, #1 and #2, with the matrix depressed to expose the face of aggregate chip.

Standard, Venetian, and Palladiana Terrazzo are constructed with aggregates such as marble and onyx, which are capable of being ground and polished. Rustic Terrazzo is constructed with granite, quartz, quartzite, and/or silica aggregate, since grinding and polishing is not required.

Terrazzo is further classified by type of binder/matrix:

A Cementitious, composed of Portland cement.

B Chemical, composed of epoxy, polyester, polyacrylate, latex, or conductive matrix.

This report focuses on Rustic Terrazzo, examining one uncharacteristic example of poor performance.

3 The Causes

The failure of this terrazzo sidewalk represents an example of incorrect materials and improper installation. Contributing factors include:

A Contract Documents—The project specification was "very loose" about acceptable standards, and would have benefited from reference to The National Terrazzo and Mosaic Association (NTMA). NTMA was formed 63 years ago, and has developed extensive documents for specifying terrazzo. NTMA considers Rustic Terrazzo the most difficult to install. Their guide specifications clearly state acceptable materials, mixes, and execution, and the use of these standards would have been prudent practice.

B Size of Aggregate—Much of the aggregate in this installation is a very small size. NTMA recognizes the significance of aggregate size as it relates to the durability of Rustic Terrazzo. NTMA Technical Bulletin #62 includes an advisory warning, which reads: "Caution. Do not use aggregate smaller than 1/4 inch. The recommended sizes being equal parts of #1 (1/4 inch) and #2 (3/8 inch)." This installation used a high percentage of aggregate less than 1/4", which is difficult to bond adequately. Frequently, project designers prefer a high percentage of very small aggregate, because

(continued on page 58)

Law: Understanding Liability Insurance

Our increasingly litigious society has caused architects to become more and more concerned with purchasing and maintaining professional liability insurance. Rising premiums, however, have forced many architects to spend more time than ever before thinking about the value of their insurance coverage when it is needed.

Many architects who carry professional liability insurance mistakenly view it as a panacea for any litigation problems they may encounter. Although having this insurance is a tremendous help when there is a lawsuit, it does not solve every problem. All policies have a deductible and coverage limits. There are also certain kinds of lawsuits that are not covered by these insurance policies at all.

Although most architects carry professional liability insurance, relatively few understand how these policies work. Even though the majority of architects will not have a problem with coverage under their policies, it is important nevertheless to understand that there may be certain situations in which coverage may be denied in whole or in part. This article will discuss how policy coverage is implemented, the types of situations which the policies do and do not cover, and some of the kinds of lawsuits in which architects become involved.

Types of Policies

Professional liability policies are usually on a "claims made" basis. This means that the insurer is responsible for the defense and payment of those "claims first made against the insured during the period when the policy is in force." The emphasis is on when the claim is made, rather than when the problematic event or act occurred. Thus the insurer knows at the expiration of a given policy all the claims that will be reported against the policy and paid for out of the pre-(continued on page 54)



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Law (continued from page 53) miums for that policy. This means that, even if an architect had insurance in 1985 for a project, he must maintain that insurance even after the project is completed or until the applicable statutes of limitation run out, in case a claim is made at a later date.

"Claims made" policies should be distinguished from the old "occurrence" coverage. This type of policy covered acts, errors, or omissions that occurred during the policy period. The insurer defended and paid for any claims that arose out of those occurrences at any time in the future. This type of professional liability policy is rarely, if ever, used today.

Claims Covered

Professional liability policies cover damages due to liability from any negligent act, error, or omission in rendering or failing to render professional services. The insured (the person who took out the policy) is covered, as are his employees and anyone else for whom he is legally responsible. The most common claim is for errors in the preparation and review of plans and specifications.

Claims Not Covered

There are a variety of claims which professional liability policies do not cover. One important area they do not cover is claims made by the architect against his client for unpaid fees. These lawsuits are, however, often met with a counterclaim against the architect for errors and omissions, which is covered by insurance.

Professional liability policies also do not cover claims made against architects for intentional acts, such as fraud, misrepresentation, or interference with another's contract. If an architect explicitly agrees in a contract to assume liability for a consultant, for example, that will not be covered unless that liability would have attached to the insured even without a contract.

Another important area not covered by policies is estimates of probable construction cost. As with many potential liability areas, the best advice for any architect is to practice preventive medicine by having good contracts with his clients drafted by an attorney. This is only a sampling of the exclusions in professional liability policies. Architects should review their actual policies for a complete list of all the exclusions.

There are several other situa-

tions in which an insurer may not have a duty to defend the architect:

• When the insurance carrier can establish that the defendant was not insured at the time of the loss. For example, the architect may have been doing business under several names and the entity named in the lawsuit was not insured under the policy.

• When the injury or claim occurred outside of the policy period. For example, an architect lets his policy lapse in 1985 and is sued in 1986. At the time the claim is made in 1986 he is not insured, even if he had insurance for the prior 20 years.

• When the insurer receives late notice of the claim. For example, the insured, when served with a summons and complaint, begins to defend the action and only advises the insurer that he has been sued eight months later.

• Noncooperation in the defense of the lawsuit by the insured. For example, the insured refuses to make himself available to answer questions or attend depositions.

What Is A Claim

A "claim" usually means that the architect has actually been sued in a court of law. It also includes. however, demands for arbitration and demands for money or services by a client, even if there is no lawsuit yet. For example, a client may send the architect a letter stating that something was negligently designed and demand that it be redesigned or else legal action will be necessary. These less obvious "claims" must also be reported to the carrier, just as lawsuits must, in order to ensure future coverage.

Not only must the claim be made, but it must also be reported in writing to the insurance company during the policy period. There can be situations in which the insurer is notified of a claim such as that mentioned above during the policy period, the policy lapses, and then a lawsuit is filed and the insured is still covered by the policy. This is why it is important for the architect to keep his attorney apprised of all developments on projects to determine when and how the insurance company should be advised of claims.

How to Activate the Policy

Policies are activated by sending a letter to the insurance carrier advising of the claim. It is recommended that this be done by your attorney to ensure that it is done in accordance with the reporting requirements of the policy. The insurance company will then review the lawsuit and appoint an attorney. Occasionally, they will appoint the attorney requested by the architect, but more often than not they will appoint an attorney they regularly work with.

In larger lawsuits it is sometimes helpful to have your own attorney monitor the lawsuit. This is especially useful if you have any doubts about the effectiveness of your representation by the insurance company's appointed attorney or if your potential liability may exceed the policy limits.

Who Is the Insured

It is important to make sure that the proper names are identified in the policy. If the policy is taken out by an individual architect and that architect later does business using different names, those other businesses may not be covered under the policy. So the names of all of the organizations and firms under which the architect does business should be specified. If the architect is insured as "James Smith, R.A.," for example, and also does business as "Smith Design Associates," both should be named.

Extent of Policy Coverage

Merely having liability insurance does not mean that the architect is totally protected from claims and resulting damages. Every policy has monetary limits. Say a policy has a limit of \$500,000 for each claim and an aggregate of \$2,000,000. If there are three claims against the architect each for \$1,000,000, and judgments are entered in those amounts, the amount of insurance coverage obviously will not be enough. This occurs in a relatively small number of cases. When this possibility arises based on the damages demanded in the lawsuit, the insured party is usually advised to retain his own attorney, at his own expense, in addition to the attorney provided by the insurance company, to protect his interests.

Every policy has a deductible. The insurance company's obligation to pay damages is only for the amount in excess of the deductible. If, for example, the policy stipulates a \$1000 deductible, the insured party pays expenses up to that amount and then the insurance company begins paying expenses. There is a new wrinkle in this area. At one time if an architect had \$1,000,000 in coverage, the insurance company would, if necessary, pay \$1,000,000 plus attorney fees. Now, the attorney fees are taken out of the policy coverage. So if the policy is for \$1,000,000 and there are \$100,000 in attorney fees, there is \$900,000 left to cover any judgment or settlement of the claim.

Defense of Lawsuit

The insurance company designates an attorney for defense and pays the costs and expenses of the attorney, and any settlements or judgments. One littleknown right that an insured party has in most states is to select his own attorney at the insurance company's expense if the insurance company reserves its right to defend him. This arises when certain claims in the complaint are covered by the policy, such as negligence and breach of contract, and others are not, such as fraud and misrepresentation. In this situation the insurance company must pay the architect's attorney's bills until there is a determination of whether he is liable for any types of activity excluded from coverage.

The reasoning is that in such a situation, no matter how ethical the attorney retained by the insurance carrier may be, he cannot help but favor the carrier when defending such a case. The carrier's interest in such a situation is to prove that the legal theories against the insured party are not covered by the policy; the insured party wants to show that they are.

Types of Lawsuits

The most common type of lawsuit against an architect is for negligence. Such lawsuits usually have a laundry list of ways in which the architect was negligent, such as inadequate supervision, errors in design, and cost overruns.

Conclusion

It is wise for architects, engineers, and interior designers to carry professional liability insurance, but it is equally important that they understand what is provided by these policies. This will help eliminate false expectations and help design professionals plan other ways of cutting down on potential liability, such as having carefully drafted contracts. They must also seek advice from attornevs before lawsuits occur so that efforts can be made to prevent or avoid litigation. C. Jaye Berger, Esq.

The author is a lawyer with offices in New York City.



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Community Beacon

Behind the modestly stated symbolism of a P/A-Award-winning church designed by Hoover Berg Desmond lies a reexamination of the needs of a Roman Catholic congregation.

RELIGION is usually the most dispiriting category in the P/A Awards competitions, a grab-bag of formal contortions committed in the name of faith. A notable exception, Light of the World Church won an Award from the 31st P/A Awards jury, with praise for its clarity, modesty, and the "almost spiritual elegance" of its organization (P/A, Jan. 1984, pp. 96–98).

The finished church is true to the winning scheme, yet has assets that the jury could not have foreseen. One of these is its site, on a rise that overlooks the expanding Denver suburbs, with a backdrop of mountains; another is the exceptional collection of liturgical objects created in response to a thoroughly reexamined parish church program, which has shaped the building as well.

Karl Berg, principal in charge for architects Hoover Berg Desmond, speaks of this as a church "on the cutting edge of Catholic liturgy." The pastor, the Reverend Francis Syrianey, had been chairman of the liturgy commission of the Denver diocese, and at the outset he assembled a design team that included a liturgical consultant and a liturgical artist, both priests with a keen interest in reassessing the parish church. The congregation was drawn into the process through building committee participation, lectures, discussions, and newsletters. They had been holding services in a high school gym and in a Lutheran church and felt that the "church" was essentially the *people* who gathered, rather than the edifice. They wanted an unostentatious structure that would help fill a local need for community facilities. Hence this somewhat self-effacing building with no cross visible on its exterior.

The design program, developed jointly by design team and parishioners, is based upon the publication Environment and Art in Catholic Worship, issued in 1978 by the National Conference of Catholic Bishops. The principal departures from tradition here involve the character of the worship space, the placement of the baptismal font, and a separate chapel for reservation of the eucharist. The main worship space here is not a typical sanctuary, but rather a large, simple room, with liturgical furnishings on movable platforms that can be rearranged or removed to make room for dinners or dances. The only fixed liturgical object in the space is the baptismal font, standing prominently at the doorway to symbolize entry into the church. The reserved eucharist is removed to a chapel off the foyer, set apart for private devotions and small ceremonies, which remains a sanctuary when the main space is given over to secular events. (Details of these liturgical provisions and the furnishings designed for them are discussed on page 86.)

Many of the programmatic intentions can be read from the exterior of the church. Peaked roof forms mark the principal spaces inside, but are quite nonmonumental in their varied pitches. The notching of the building into its hilltop helps maintain an unpretentious scale, while buffering it from the cold winds and traffic noise to the north.

The only symbolic form, the tower, is an extension of the only fixed element in the worship space, the baptismal font. In the tower can be seen the interplay between the overall square grid of the church plan and the circular geometry introduced at this special point; the resulting form, capped by a quarter-conical light monitor, is assertively asymmetrical, yet maintains its identity from almost any viewpoint. Pragmatically, the glazed pinnacle sheds a shaft of light down on the font; by night, it can clearly be read as a symbolic "Light of the World," although liturgical artist the Reverend John Buscemi says this is an after-the-fact interpretation.

While not literally symbolic, the modular grid of the church's plan (following pages) lends significant order and consistency to its diverse parts. Yet there is some conflict between the grids and axes of the design and the actual activities within. Those attending mass, for instance, pass unceremoniously across an axial gallery that has great formal prominence; after crossing a rather shapeless foyer, they slip through a cramped corner into the main worship space, where the focus of ceremonies along one side wall denies the axial volume. But even these conflicts must represent issues unreconcilable among the participants in the design process, since nothing here was just left to chance. *John Morris Dixon*

Light of the World **Catholic Church**

Liturgical landmarks

To meet the thoroughly reconsidered liturgical needs of this church, special items were designed by liturgical artist the **Reverend John Buscemi with** Christopher Lessard of the architects' firm and fabricated by local craftsmen. The baptismal font (1) takes the form of a granite boulder, split by crossing channels that lead circulating water down to drains in the tile floor. An iron mobile candelabrum by the same designers hovers above. The floor pattern, like the tower above it, expresses the interplay between the cylindrical volume around the font and the grid of the building as a whole. Beneath the floor, foundations are in place for an immersion pool, in case the parish should use one in the future. Location of the font just inside the doors to the main worship space encourages parishioners to reenact their entry into the church symbolically at the font itself, rather than a substitute holy water basin.

Furniture for worship services (2, 3, and page 84) interprets age-old chair and table forms in cherry wood, with joints as ornament, much in the manner of early Wright or craftsman styles of that period. The objective is dignity befitting the ceremonies, without glorifying the participants. In the chapel (2), the glass tabernacle for the reserved eucharist echoes the form of the octagonal space, with its conical roof and glass block walls.

The sculpture in the courtyard (4), only fixed cross in the church, is placed and scaled to bring the cross down to the level of the human observer-and designed to be omnidirectional. The interplay of circle with squares appears again here, the central opening symbolizing, as at the font, the passage from the earthly to the spiritual realm.

"God does not need liturgy; people do, and people have only their own arts and styles of expression with which to celebrate."—Environment and Art in Catholic Worship, National Conference of Catholic Bishops, 1978.







Project: Light of the World Catholic Church, Littleton, Colo. Architects: Hoover Berg Desmond, Denver (Karl Berg, principal in charge; George Hoover, Christopher Lessard, Gerald Olson, Ĉassandra Ensberg, Daniel Braun, project team). Client: Light of the World Parish. Site: knoll with highest elevation in area, fine views of mountains to west, arterial street to north. Program: 800-seat worship space and related facilities, to be built in three stages. Phase I completed with 500-seat sanctuary, 15,900 sq ft total.

Structural system: concrete caissons, grade beams, and slabs; steel column-and-beam frame; roofs of bar joists with metal deck or glulam trusses with wood decking. Major materials: brick veneer, glass block, double insulating glass, gypsum board, exposed structural wood, flooring of quarry tile, wood, carpet (see Building Materials, p. 172). Mechanical system: gas-fired boiler and glycol/water chiller with dual-zone fan units. Consultants: KKBNA, Inc., structural; Garland Cox & Associates, electrical; Hadji & Associates, mechanical; David L. Adams, acoustical. The Reverend Eugene A. Walsh, S.S., liturgical consultant; the Reverend John Buscemi, liturgical artist. Altar furniture, baptismal font, courtyard sculpture, and other liturgical items designed by the Reverend Buscemi, with Christopher Lessard of Hoover Berg Desmond.

General contractor: Marantha Construction Co.

Costs: \$1,265,000 (bid, 1982); \$1,540,000 (actual, completed 1984), including site work, landscaping, and interior finishes; liturgical items, \$39,000; furnishings, \$45,000. Photos: R. Greg Hursley, Inc.

Ties that Bind

In a suburb of Helsinki, Kristian Gullichsen designs a church that expands Modernist vocabulary and looks to ancient sources to create a more associative new architecture. THE recent work of Kristian Gullichsen represents a significant departure from the Miesian inspired rationalism that characterized his earlier buildings, a rationalism that dominated Finnish architecture for more than a decade beginning in the late 1960s. In searching for a more expressive architecture incorporating referential and associative forms, and evolving away from a sensibility grounded in industrialized production as exemplified by the "Moduli" summer house system developed with Juhani Pallasmaa in 1969, Gullichsen has not forsaken Modernism. For he perceives "that the original conception of Modernism contains endless potentials of relevant architectural expression, including the notions of history, from the southern commercial area to the housing development north of the complex. Entry from the south is defined by the bell tower, a sentinal or beacon of curved white stucco with a cross etched into its surface, while a modest gateway frames the transition to the northern residential areas. The secondary walkway forming the eastwest axis brings the existing parish hall on the eastern edge of the property into the composition, while connecting to a residential street at the western boundary of the state. At the point where the residential street touches the walkway, an espalier archway—a direct reference to Le Corbusier (page 123 of the 1910–1929 volume of the *Oeuvre Complète*)—marks the western end of the axis and frames the

memory, and meaning." By not renouncing the recent past and continuing to explore the potentials provided by the architectural language of the Modern movement, Gullichsen, in concert with a number of his Finnish contemporaries, is building on the traditions and attitudes established by Alvar Aalto, Erik Bryggman, Arne Ervi, Aulis Blomstedt, and others.

The Kauniainen church, as with the Malmi church completed in 1981, exemplifies Gullichsen's current exploration for means to expand Modernist vocabulary and thereby create a more associative architecture. For what initially appears as heroic "white" cubic architecture is, in fact, a fabric embracing a breadth of expressive and representational forms and images. While influences from Modern painting along with the traditional and historic architecture



of Finland and the Mediterranean inform the design, the work of Aalto, Le Corbusier, and the Swedish architect Sigurd Lewerentz is mentioned by Gullichsen as explicit sources for expression, which provide a methodologic as well as a stylistic foundation. For each of the three not only evolved a richly expressive and personal language from the constructs of Modernism; over the course of their careers each habitually strove to reconcile the Modern, traditional, and historical sensibilities rooted within their work.

Located in a wealthy western suburb of Helsinki, the context of the parish center is complex. The site is a south-sloping, triangular property located north of the Kauniainen train station, adjacent to a small commercial block, and surrounded by an amalgam of housing complexes. The property appears as a residual space, its awkward shape resulting from the adjacent developments. Moreover, an existing parish hall and detached tower, designed by Keijo Petäjä (dating from 1961), had to be incorporated into the design. Gullichsen's response was to create a complex that gathered these autonomous, undifferentiated suburban elements into a comprehensible totality, yet simultaneously making a building qualitatively different from the world around it.

Two streets, forming a cross-axis, regulate the site, while the presence of two large walls, an exterior courtyard, and a cavernlike sanctuary space establish the formal and spatial order of the building. Although forcefully presented in the completed building, the parts, while maintaining compositional clarity, do not stand as mere diagrammatic gestures of an idealized order; for in Gullichsen's hands they attain tectonic development as particularized forms, spaces, and elements acknowledging and accommodating the myriad pressures mediating between concept and realized building.

The north-south line of the cross-axis defines the major street, a stepped walkway recalling the alleyways of a Mediterranean village, embracing the larger context by providing access through the site entry to the complex. Near the main entrance to the building, the east-west street widens to signify the importance of this location, and at the same time accommodates the gathering activity appropriate at both portal and street crossing.

Two walls-a whitewashed western wall and an undulating brick southern wall-create a defensive, embracing enclosure protecting the complex from the surrounding environment. The enfolding edge formed by both walls is of a constant height, forming a datum that regulates the plan order, accentuates the stepped character of the site, and anchors the skylights rising above it. The differing material qualities assigned to each wall define its particular purpose and position within the composition. This differentiation also establishes a set of contrasting associations-dualities such as sculp-

tural versus planar and tangible versus abstract—which form the thematic program for the detail development of the design. The undulating brick wall mediates between the office wing and the sloping, parklike setting, while gesturing to the larger context of the Kauniainen train station and commercial center to the south. This serpentine brick cliff, with its vine-covered wood trellis, is, as acknowledged by Gullichsen, "somehow derived from Alvar Aalto." Such a reference should not be underestimated in this instance, for his association with Aalto is twofold: Not only did Gullichsen grow up in the Villa Mairea, he also worked for Aalto. Though Aaltoesque in spirit, the brick surface also affiliates itself with the earlier brickveneered parish hall.

The billboardlike western wall—termed the "wailing wall" by its designer in acknowledgement of the very high taxes paid by the inhabitants of this wealthy suburb—stands in marked contrast to the undulating southern wall. Forming the eastern edge of the stepped street, and rendered in white stucco, the wall contains a set of juxtaposed images: dualities such as thin versus thick, hovering versus rooted, general versus particular, and modern versus traditional seem to vacillate in an intentional tension. Initially, the white planar wall reads as an ephemeral Modern surface—taut, pristine, and cubic. At the same time, a dark granite base roots the surface to the site and street, while the possibility of a thicker, more traditional form of wall construction is alluded to by the depth implied in its apertures. A series of secondary architectural elements—entryways, windows, and exedra forms—animates the flatness of the wall.

Either carved into or modeled upon the continuous plane, Gullichsen places and forms these elements to convey essential knowledge regarding the activities behind the wall. A cubic two-story opening with a blue painted ceiling penetrates the wall at the entry to the interior courtyard. Three exedra forms, references to Classical architecture and Sigurd Lewerentz's work, punctuate the wall: One, a



SECTION LOOKING EAST

curved surface modeled upon the wall, forms an internal staircase; a second, carved into the wall surface, acknowledges the position of the baptismal font within the sanctuary; while the third, a low sculptural element with skylight that houses the sacristy, is detached from the wall and located on the western side of the street.

At the crossing of the two streets, a large splayed indentation in the wall defines the entrance to the sanctuary. This portal incorporates decorative motifs carved into the plasterwork above the patterned brick panels and heavy bronze door. The religious iconography is quite explicit, derived directly from Carolus Lindberg's scholarship on Finnish medieval church architecture. The bell tower is formed where the white plane turns the corner to meet the brick wall. The white mass erodes away, its internal surfaces painted gray to set off the tower.

In Finnish medieval churches a stone wall defined a sacred world within the larger landscape, a courtyard containing church and graveyard that was qualitatively different from the adjacent farmlands. Contrasting the Modernist images found in the Kauniainen church, the courtyard mediates between the original parish hall and Gullichsen's design. Gullichsen places a vine-wrapped colonnade and trellis that acts as protective passageway and visual screen on the eastern edge of the courtyard, effectively neutralizing the parish hall. The walls forming the courtyard are punctuated by large, rather matter-of-fact window openings of the office wing and support spaces for the church.

The entry hall, through its position and shape, acts as a small plaza gathering the courtyard, entry, and sanctuary together. It is both inside and outside, a quality created by the curved glass surface, the gridded Romeo and Juliet bay window, lighting fixtures, floating ceiling plane, and planting. Its light-filled openness is contrasted by the cavernlike sanctuary space, a subterranean room anchored in the hillside and reached by a low, sloping corridor. The procession down is intended to bring forth the remembrance of early Christian underground worship. A forced perspective is created by the splayed walls forming the transitional path, a journey syncopated by three lightwells in the eastern wall and four columns denoting passage into the church hall. The simple cubic interior of the sanctuary, as in many contemporary Finnish churches, is spare: white walls, wood ceiling, and tile floors. The pulpit, altar, and baptismal font, in keeping with Evangelical-Lutheran doctrine, are given equal prominence within the space. The sense of being anchored in the earth is reinforced through the use of skylights and clerestory windows. A triangular skylight focuses light on both the altar and the western wall, while light over the choir washes down a wall that will eventually have vines growing on it. The punched character of the small clerestory windows, located near the ceiling, provides a sense of thickness and protection to the walls. The convex exedra form of the baptismal font is slit by a narrow window that cuts through the ceiling and is transformed, at the location of the walkway on the exterior, into a thin waterfall that comes to rest in a small pool: Sky and earth are connected by light and water.

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The second-floor parish hall seems a miniaturization of the sanctuary, with its light-washed, vine-covered wall. Bay windows of differing qualities overlook the street and entry hall, while a view into the sanctuary is provided by a small window. The shallow vaulted ceiling of the first-floor parish hall, used primarily for additional sanctuary seating, appears derived from Lewerentz's Björkhagen church or Le Corbusier's weekend house in Paris. An undulating curve in the ceilings of the two sitting rooms is a more explicit reference, coming directly from the ceiling in the master bedroom of the Villa Mairea.

One further image is intended to pervade the complex: an illusion of ruin created by the extensive use of planting. While the greenery, found on both exterior and interior surfaces, has yet to mature, it is Gullichsen's intention that it "will contribute towards imparting a look of eternity to the complex, turning it into an old mossy ruin." As with Aalto before him, Gullichsen's use of planting represents the fundamental antagonism between built form and the forces of nature. "The inevitable damage which will occur, the plaster will fall here and there, and the other ravages of time," he continues, "are, in fact, welcome." *William C. Miller*

VESTIBLOR VESTIFLOOR The author is an architect and associate professor at Kansas State University, Manhattan; his Alvar Aalto: An Annotated Bibliography was published by Garland in 1984.





SECTION LOOKING WEST







At the south end of the church (above) an undulating brick wall with trellis is derived from Aalto. The vestibule (left) joins courtyard and sanctuary; its inside/outside quality created by the curved glass surface is heightened by the gridded bay window, lighting fixtures, floating ceiling plane, and planting.



The simple interior of the sanctuary is spare; the pulpit, altar, and baptismal font are given equal prominence. The baptismal font, though, extends from a slit in the ceiling down through a narrow window and into a waterfall terminated in a small pool. The sense of being anchored in the earth is reinforced through the use of skylights and clerestory windows. **Project:** Parish Center, Kauniainen, Finland. **Architect:** Gullichsen, Kairamo, Vormala Architects, Helsinki (Kristian Gullichsen, partner in charge). **Client:** Lutheran Parish, Kauniainen.

Site: south-facing slope including original parish hall and bell tower of 1961.

Program: church hall for 200, with 150 additional overflow seats in adjacent parish hall, two clubrooms, and offices, totaling 17,000 sq ft. Structural system: reinforced concrete walls and floors. Major materials: concrete, red brick cladding, white stucco finish. Consultants: Göran Engroos, landscape; Gullichsen, Kairamo, Vormala, interiors; Aarre Kijanen, structural; Timo Sarpila, mechanical; Joel Majurinen, electrical. General contractor: Hartela Oy. Costs: \$2 million, approximately \$116 per sq ft. Photos: Simo Rista except middle, p. 91, William C. Miller.



Partial map of Berlin; IBA projects in red.

Numerous projects have already been completed for Berlin's International Building Exhibition of 1987.

SEVERAL years ago the city of West Berlin announced its IBA '84, the latest in a series of Interational Building Exhibitions staged by German cities during the past century as a living demonstration of innovative approaches to housing (P/A, Jan. 1982, pp. 197–204). Because governmental changes in Berlin had delayed funding, IBA's date was postponed to 1987.

The task the organizers set was enormous. "Living in the City" is the theme, and the idea is to weave together parts of the city-over 150 sites were chosen-torn by war, unsympathetic urban renewal, and neglect. Two administrative sections of IBA have focused on different areas of Berlin and used somewhat different methods. The section headed by Josef Paul Kleiheus concerns itself for the most part with building-generally infill proj-ects-and it invited scores of internationally renowned architects, as well as local firms, to compete for the approximately 100 sites it had pinpointed. Most of the projects shown here were produced by this section. The other part of IBA, headed by Hardt-Waltherr Hämer, concerns itself less with new construction and more with repairing existing buildings and stabilizing the social order-as far as is possible architecturally-by using community consultation and self-help procedures. Its field of operations is principally the Luisenstadt and Southeast Kreuzberg parts of the city, originally (in the late 1970s) slated for demolition and occupied by impoverished squatters. Two of the new buildings commissioned by this IBA group are by the Berlin architects Baller (p. 98) and by Portuguese architect Alvaro Siza.

About 20 percent of the 100 sites planned by Kleiheus's group have been completed, and many more will be done by 1987, when IBA's contract runs out. Generally, IBA specified the building line, the heights (usually a minimum of six floors), and the program for the projects. Street-level

shops, considered highly desirable, have not yet succeeded, as they cannot be subsidized as housing can, and the population in most IBA areas is still too meager to support commerce. IBA is hoping the government will provide other necessary infrastructure elements, such as schools. Traditional Berlin housing characteristics have often been integrated: inner courtyards glimpsed from the street, largish entry/stairhalls. To keep the larger projects varied, and to involve most of the invited architects in IBA (even if their schemes were not proceeding), sites were divided up among numerous designers, following the master plans of the winning submissions. Post-Modernism, in its heyday when IBA began, had the sympathy of its organizers. Both the strengths and the follies of the PM approach are seen in the IBA results. No technical innovations were sought, except for one group of energy demonstration houses. Generally, prefabricated concrete slabs are supported on bearing block walls. IBA originally expected greater experimentation with housing layouts, but under the pressure to realize projects, the normal German Housing Manual standards had to be followed.

Despite the fact that there is no housing shortage in Berlin, there are waiting lists for IBA housing. Salary level establishes eligibility for accommodation, as in the British Council system, and includes low middle income people, such as teachers.

That IBA has accomplished as much as it has is almost miraculous. As it was set up, it can make "recommendations" to the developers who are partners with the City in building the projects, but it has no real executive power, and is too dependent on political sympathies.

In 1987, bus tours will take visitors around to the sites. Few model apartments will be shown, as apartments will have been rented. But the methods used to weave together the city will be on view. *Susan Doubilet* P/A Portfolio: IBA Update



Rauchstrasse

Despite the participation of seven individualistic architects—most of them internationally renowned and all of them given a free rein, stylistically—this complex in central Berlin's South Tiergarten area manages to be the most serene of IBA's larger projects. The reason for this lies in part in the nature of the surrounding neighborhood and in larger part in the orderly master plan designed by Rob Krier in response to the context.

The neighborhood was developed in the 19th Century as an exclusive residential area with generous villas adjacent to a landscaped park, called the Tiergarten, designed by Peter Joseph Lenné. From 1936 into the 1940s, it became an extensive Diplomatic Zone. Krier picked up the metaphor of the freestanding villa, while creating a small central park that contrasts with the picturesque Tiergarten by being long and quite formal.

All buildings are five stories high. At one end of the site is the wide, centrally curved 63-unit building by Krier himself, acting as gatehouse to the site and as screen from the adjacent traffic artery. Behind this gatehouse, the site is lined by three square buildings along both edges, designed by six architects (see site plan). At the northwest corner of the site, balancing an existing L-shaped building to its south and beckoning back, with its tower and its brown brick/yellow trim to Krier's gatehouse, stands Aldo Rossi's 30-unit housing block.

One can begin to see how the landscaping will contribute to the unity of the experience. The central park, almost an allée, is gently depressed and lined with

> ARCHITECTS: 1 ROB KRIER 2 BRENKER/TONON 3 VALENTINY, HERMANN 4 GIORGIO GRASSI 5 HANS HOLLEIN 6 HENRY NIELEBOCK 7 ROB KRIER 8 ALDO ROSSI 9 EXISTING BUILDING







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trees (one must imagine their effect when full-grown), and its forced perspective, resulting naturally from the slight taper of the site, ends at the east in an "amphitheater" formed by the gatehouse's curved shape. Conversely, the 13-footwide area surrounding the buildings provides the ground-floor tenants with grassy terraces somewhat defined by being raised three feet above the central public zone and above the paved lateral streets where parking is permitted.

Krier, deploring the devastating effect that economic development has had on housing standards, conceived of the building plans as compensating for the limited living spaces by "the imaginative use of diversified layouts." In the two buildings he designed, he gave corner apartments diagonal vistas to maximize the sense of space, and provided oval and circular rooms for spatial variety. Given the small dimensions of these rooms and their double service as circulation spaces, one wonders how effectively the tenants can use them. The six square buildings were originally conceived with four apartments per floor, each with two views, around a large stairwell. Economics, however, forced the inclusion of an average of five units per floor (Mario Botta dropped out in protest, to be replaced by Hans Hollein); and fire regulations necessitated a much smaller stairwell than originally desired. Most of the architects managed to devise interesting stairwells, notably Giorgio Grassi and Krier, while Hollein used details to trick extra effects out of limited dimensions: gold ceiling in the lobby, lights as column "capitals" on the landings. With respect to the unit layouts, Hollein's seem to be the



nost successful and, in fact, the most popular: He used Krier's device of the diagonal vista, while providing a more balanced and elegant apportioning of the usable spaces. Rossi's units were laid out unimaginatively by local architects. The apartments, a total of 239 in the complex, range from 1½ to 5 rooms (two 7-room units in the gatehouse).

Strict massing and material controls (brick for the two end buildings, stucco for the square ones) dictated the overall effect of the project, but individual architectural results vary. Hollein's building, with its angled balconies, corner bow windows, and curved exterior walls creating the illusion of a flying roof form, makes the most of the imposed limitations, its joyous nature enhanced (though some would not agree) by its folded entrance canopy, painted "cracked ice" wall treatment, and pink, yellow, blue, and coral coloring. In sharp contrast, but with fine results, Brenner and Tonon of Berlin achieve a severe 1920s Modernist purity in their building. The success of Grassi's carefully spartan building is compromised by an incised northern courtyard questionably deep and narrow even if designed for Mediterranean conditions. Rossi, on the other hand, brings his traditions northward most gracefully. Individual loggias are set into the building envelope, and the simple block and tower seem quite Germanic, clad in Schinkel-Schuleresque yellow-banded brown brick.

Krier's gatehouse building is overly fussy on the courtyard side. On its entrance façade, however, despite some detailing flaws, it is monumental. Brickclad, skylighted staircases embrace its curved stucco façade, and its emphatic centrality is reminiscent of the Karl-Marx-Hof. Herein, perversely, lies the dichotomy of the scheme: A bucolic scene of pastel villas, not a tough urban one as implied, lies behind this powerful front.












Phosphate Elimination Plant

At the suggestion of IBA, Gustav Peichl of Vienna was commissioned by the State of Berlin to design this water depollutant plant in Tegel, a north Berlin community with a large lake and a harbor (see p. 101). Water runoff, badly polluted by industrial and household waste, is diverted from a major drainage channel before entering the harbor, and is passed into one of three open tanks (above) for chemical treatment. The principal building (both photos) contains the control room, labs, and chemical storage tanks. It is notable for its ship imagery within and without, and for its grinning "face" (Peichl is ever the caricaturist) that looms above the smooth grassy mound surrounding the treatment tanks. (Engineers: Sulzer; Marks; Berlin Waterworks. Local architects: Volker Patke.)



Fraenkelufer housing

The organic structuralism of this infill/ renovation housing complex by Berlin husband-and-wife team Hinrich and Inger Baller not only differs stylistically from the stuccoed containers at Rauchstrasse, it also was commissioned by a different client with different attitudes: Hämer's IBA group (p. 93). The block where the Baller project stands was the birthplace of the squatters' movement. Dilapidated and gap-toothed, its row of buildings were to be torn down when the Ballers, in a winning competition submission, proposed to repair the salvageable buildings, infill the block's corner (above), inset two new buildings along the street (on the bank of the Landwehr Canal) while giving access under them to an inner court, and continue the housing along the inner wall of the court (this











page, top), against the firewall of the adjacent lot.

If at first glance the buildings seem stylistically willful, closer examination reveals a structural lyricism that can result only from structural logic. The Ballers explain that every structural part is rational in direction and location and possesses a minimum profile. In this, they are inspired by Pier Luigi Nervi and designers of modern concrete bridges. (They cite also, as inspiration, the work of Gaudí, the Baroque churches of Balthazar Neumann, Berlage, and the Chicago School.) Perhaps surprisingly, the building is as economical as minimum Berlin public housing standards demand—unlike some of the other IBA projects, such as Ritterstrasse (overleaf) and Rauchstrasse, which were subsidized at a higher rate. Economy was assisted by the Ballers' understanding of structural techniques. Formwork for in-situ and prefabricated concrete work was simple and repeated throughout the project, contrary to appearances. Curved balconies (middle and bottom right), cast in a factory, were created by pouring one section, allowing it to set, then tilting the form and pouring the remaining part—a process that the Ballers had observed as standard in prefabrication workshops. Variations were also achieved, using the same molds, by nailing strips in different patterns, so that different parts of the molds were used. The stairway (bottom left) was a simple cylinder with cutouts. Woodframed windows, which seem highly varied, are for the most part repetitive, and the operable sections are all identical. All balcony railings are repeated, and their complexity is deceptive: The solid steel tubes are bent and welded, but because all joints are overlapped, welds need not be as perfect, and as expensive, as a simple butt joint.

Old buildings are knit to new by the addition of certain details, such as balconies, and by the skillful use of mezzanines to provide modern ceiling heights without compromising existing façades, a technique brilliantly used by the Ballers in the restoration of a war-scarred Bruno Taut building nearby.

The court landscaping is organic and follows the request of the residents. Parking, located beneath the rear building, is so well integrated with the landscape that it is (for once) a pleasant element.

Ritterstrasse North

Rob Krier designed the master plan of this two block scheme, the southern two quadrangles of which, with 146 apartments and four shop spaces, were completed over a year ago. In keeping with Joseph Kleiheus's principles of apportioning design responsibilities in order to build in a natural variety, the houses, though contiguous, are designed by different firms. Among them are Bangert, Jansen, Scholz, Schultes of Berlin; Ganz and Rolfes, also of Berlin, who designed a handsome brick elevation (middle) in harmony with the adjacent public utility building; and Rob Krier himself, whose house on Feilnerstrasse (top) was built as homage to, and after the pattern of, a house by Schinkel that stood on the site. Under the eaves of Krier's building are medallions alternating with relief masks of famous architects. This building will face a small central square when the northern section is realized. The beginnings of eventual connecting wings are awkwardly visible now.

This complex is more closely controlled as to materials (stucco, except on the major street façades, where brick is used) and architectural elements than was the earlier project just south of Ritterstrasse, also planned and in part built by Krier (P/A, Oct. 1982, pp. 90–93). Still, harmony has not quite been achieved, especially in the courtyards (bottom left), where overzealous landscaping in the central shared area does nothing to calm the effect of scores of unofficial private gardens proudly individualized.

















Other schemes

Moore, Ruble, Yudell of Los Angeles have designed a recreational, cultural, and housing (top left) complex for the harbor, recently extended by dredging, in the north Berlin community of Tegel (p. 97). Tegel, with villas (including Schinkel's Humboldt Mansion), more modest housing, and the Borsig Locomotive Works of the 19th Century, is now an important recreation and shopping area, having a lake and forests, and convenient public transportation. Piles are being driven for an artificial island with a poolhouse, while the first public building, a library, will begin construction soon. Villas for this complex have also been designed by Stanley Tigerman, Robert Stern, John Hejduk, Paolo Portoghesi, and others.

John Hejduk has designed two schemes for the Friedrichstadt area, one, for a small site, acting as gateway and clock (top right). Other schemes for nearby sites are being prepared by Doug Clelland of Great Britain, Gino Valle of Italy, and Raimund Abraham of New York. Other projects in the neighborhood, complete or nearing completion, include housing by Arata Isozaki, the Czech firm of Stavoprojekt, the Dutch architect Herman Herzberger, and the Berlin firm Kollhoff, Ovaska.

Rem Koolhaas is planning a building near Checkpoint Charlie (middle), with facilities for police, customs, and the Allies at ground level, and apartments above. Across the street will be a housing scheme by Eisenman/Robertson, and nearby, ones by Aldo Rossi (bottom) and by Oriel Bohigas.

Other notable IBA schemes by O.M. Ungers, Antoine Grumbach, Kurt Ackermann of Munich, and Vladimir Nicolic and others (five energy demonstration buildings) have been completed. Schemes by Stirling and Wilford (Science Center) and Vittorio Gregotti are under construction. And projects by Hans Hollein (Cultural Forum), Paolo Portoghesi (Italian Embassy restoration), and Kisho Kurokawa (Japanese-German Cultural Center in the former Japanese Embassy) are soon to proceed. About to be announced are the winners of a competition to design a sports park, including several structures, near the Tiergarten (to allow that 19th-Century park to return to its original contemplative purposes). Competitors include Emilio Ambasz, Agrest/ Gandelsonas, and Rafael Moneo.

Docklands Demise?

Revitalization of the London Docklands is proceeding apace. Critics claim the British Government's desire to spur quick development has overridden long-term concerns for quality architecture and sensitive urban design.



1 Isle of Dogs

View looking northwest from the Royal Naval College, Greenwich (foreground), across the Isle of Dogs, which fills a deep meander bend in the River Thames. Critics say the "Greenwich Axis," extending from All Saints Church, Blackheath, to Hawksmoor's St Anne's Limehouse, has been obliterated by the market-led development in the Enterprise Zone.





"NEVER before in Britain in this century has so much development taken place so quickly, in such an unconstrained way and over such a large area." Thus, the British weekly *Architect's Journal* recently summarized the state of London's Docklands, an area of eight square miles to the east of the City whose regeneration has, since 1981, been the task of the Conservative government quango, the London Docklands Development Corporation.

The LDDC, accountable to the Department of the Environment, was established to reverse the decline and dereliction in the four designated regions comprising Docklands: Wapping, due east of the Tower of London; Surrey Docks on the South Bank of the Thames; the Isle of Dogs, a peninsula in the river's deep meander bend; and the Royal Docks, furthest east yet still only five miles from the City. The docks, some dating back to the turn of the last century, were rendered obsolete by the technological revolution in cargo handling since the 1960s brought on by containerization and bulk shipping.

While the LDDC keeps up a barrage of annual reports loaded with heady statistics and carefully cropped glossy photos, eyecatching billboard advertisements proclaim Dockland's proximity to central London. Yet the quality of architecture and urban planning for this vast area has drawn an equally constant stream of criticism from designers, politicians, and the local community. Commenting on the LDDC's 1984 exhibition, one critic declared, "Here is an architecture for post-Thatcher Britain—mean, frightened, grudging, confused, piecemeal, and short-sighted."

The LDDC replaced the Labor-dominated Docklands Joint Committee in 1981 and the new leaders' private enterprise thrust is typified by the real estate development backgrounds of the original and current board chairmen: Sir Nigel Broackes, chairman of Trafalgar House, and (since July 1984) Christopher Benson of Metropolitan Estates and Property Company. The corporation was handed large tracts of land previously owned by public bodies, such as local 2a, b Elephant Lane Elephant Lane, a mixed housing and office development in Rotherhithe, has just been completed to the 1983 competition-winning design of Corrigan, Soundy, Kilaiditi. The 76 dwellings feature *oeil-deboeuf* windows in gabled brick façades. The site plan respects the existing north-south street pattern and terminates in a small plaza, a colonnaded river walk, and a jetty.

government, the Gas Board, and the Port of London Authority, and set out to lure the private sector. It was given a major boost in this mission when, in April 1982, the only Enterprise Zone (EZ) in London was established in the Isle of Dogs (1); the incentives here include exemption from local rates (taxes) for commercial and industrial uses until 1992; up to 100 percent capital allowances for new construction; no Development Land Tax; and a much simplified planning system.

But the enterprise initiative has not proved to be the expected panacea. In a monitoring report to the Greater London Council dated December 1984, urban and land economists Roger Tym & Partners concluded that the land values had probably doubled or tripled since EZ designation, but that public investment in land acquisition, infrastructure, and site preparation, all critical factors in the Isle of Dogs' development, had exceeded rates relief and capital allowances. "The EZ initiative . . . is not the retreat from public sector intervention which may have been initially expected," they wrote. Higher rents, the product of EZ designation, had offset the potential benefit of rates exemption for some 30 percent of respondents, the advantage accruing instead to private developers or landowners. Although the incentives have brought work to the area, the new firms employ relatively few local residents. New business does not therefore necessarily mean job opportunities for those of the adjacent boroughs of Tower Hamlets and Newham, in parts of which there is up to 20 or 30 percent unemployment. Anger at the replacement of democratically elected representatives (the Joint Committee) by a central government authority (LDDC) is compounded by the loss of former workplaces, as waterfront buildings are bought up by private developers and converted into luxury apartments.

Housing is just one of the sore points. The LDDC is not a housing authority and thus cannot build houses for rent, but stipulates that 40 percent of homes built on its land should be "affordable," that





3 New Concordia Wharf The conversion of this 1855 grain warehouse to some 60 apartments, fitted out to shell stage only, was carried out by Pollard Thomas & Edwards, who succeeded Nicholas Lacey on the job. The complex, which also contains office and studio space plus communal facilities for residents, is characteristic of much rehabilitation undertaken in the Docklands.

4 British Telecom

British Telecom occupies two Patera units on Canary Wharf. The Patera system of prefabricated industrial buildings is designed and manufactured by architect Michael Hopkins. His Telecom complex is the best of a batch of high-tech sheds built to house light industry and corporate clients in the first wave of development on the Isle of Dogs. The two Telecom buildings would have to be removed, together with Terry Farrell's Limehouse Studios, if the Canary Wharf financial center (figure 9) is approved.

P/A Critique Urban Design

5 Heron Quay

Nicholas Lacy Jobst & Hyett's Heron Quay development on the Isle of Dogs for Tarmac Brookglad may be expanded if the Canary Wharf scheme immediately to the north (9) is given the go-ahead. The completed first phase consists of office buildings clad in dark red vitreous enamel panels, on a brick podium. The original scheme plans 200 residential units, plus office, light-industrial, and retail space.



is, less than \$57,000. While the corporation proudly proclaims that home ownership has trebled to 15 percent in its first four years of existence, the new private housing remains way out of reach for most local residents, especially in the Borough of Newham, which has a serious shortage of housing for rent, and a calamitous inheritance of 1960s housing stock. Although 16 percent of houses built and occupied on LDDC land were bought by housing associations for rent and/or shared ownership, so far only one such scheme enjoys a prime waterfront site.

In the private sector, dismal neo-vernacular estates have sprouted on LDDC sites in the eastern areas of Beckton and Cyprus, built by volume house-builders such as Wimpey, Barratts, Comben & Broseley. Closer to the Square Mile of central London, many handsome wharves with spectacular river views have been refurbished as luxury residences (3) where a three-bedroom apartment can cost over \$425,000. New housing schemes of architectural interest include Jeremy Dixon's Dudgeon's Wharf (6) at Manchester Road, Isle of Dogs (for Costain), and MacCormac Jamieson and Prichard's Shadwell Basin development at London Docks (for Sanctuary Land). Two architect/developer competitions produced architecturally distinguished housing for sites in Rotherhithe, Surrey Docks: the Cherry Garden Pier scheme (7) by Ralph Lerner and Richard Reid (now no longer in partnership), and the Elephant Lane development (2) by Corrigan, Soundy, Kilaiditi.

The absence of a clear urban design policy for the Enterprise Zone has drawn sharpest criticism from the architectural profession. The LDDC's stated development strategy is "to secure maximum private investment and in turn provide guidance to prospective developers on the environmental qualities sought." The urbanistic consequences of this sequence of priorities are abundantly clear all over the Isle of Dogs with its motley collection of light industrial buildings (4), garish in their "high-tech" modernity, and distinguished only by a

6 Dudgeon's Wharf

Jeremy Dixon's housing scheme for Costain, at Dudgeon's Wharf, Manchester Road, Isle of Dogs, repeats his success in residential design elsewhere in London: at St Mark's Road, North Kensington, and more recently at Lanark Road, Maida Vale, and Ashmill Street in Paddington. Dixon, like Lerner & Reid (7), places tall pavilions on the waterfront and arranges formal streets behind. A wide avenue runs from the river to a crescent on the land side of Saunders Ness Road. This axis is marked by pairs of four-story pavilions at each end, which anchor the pitched-roof townhouses in between.

7 Cherry Garden Pier

Lerner & Reid's housing scheme for developer Lovell Farrow was selected for construction at Cherry Garden Pier in Rotherhithe, although it originally placed third in the LDDC's 1984 architect/developer competition. The design groups seven-story, brick-clad blocks around communal gardens with taller pavilions on the river. Construction has recently been halted because of the discovery of remains of King Edward III's 14th-Century hunting lodge on the site. blatant insensitivity to either the waterside or each other.

The LDDC, moreover, lacks the power to prepare a conventional development plan even though it is charged with development control within its boundaries. This dilemma is apparent in its Guide To Design and Development Opportunities, the nearest thing to an urban design plan for the Isle of Dogs, published in late 1982, and prepared by LDDC Chief Architect Edward Hollamby, with Professor David Gosling and "Townscape" authority Gordon Cullen. In a penetrating critique titled "Off To The Races, Or Going To The Dogs?," (Architectural Design, vol. 1/2 1984) Michael Wilford, James Stirling's partner, found this document vague, jargon-laden, and symptomatic of "confusion and lack of purpose" on the part of the LDDC, which evidently did not wish to prejudice private-sector investment by declaring an explicit plan. The buildings erected since the plan's publication bear out Wilford's contention that few developers would pay much attention to the Guide's recommendations, since it lacked the authority of a statutory development plan. "By pitching its design objectives so low, the Corporation has denied itself the opportunity of achieving anything but a mediocre visual and experiential environment." Wilford agreed with Gosling's own conceptual studies, relegated to the Guide's Appendix, which emphasized the need for a well-defined public realm to pull together the "inevitable variety of architectural form and quality entailed in the Enterprise Zone concept." The planning potential of the "Greenwich Axis"-connecting Hawksmoor's St. Anne's, Limehouse; Inigo Jones's Queens House, Greenwich; and All Saints Church, Blackheath-now seems irrevocably lost amidst high-tech sheds, neo-vernacular housing, and the elevated track of the \$109,340,000 Docklands Light Railway (DLR), which carves a crooked path across the Isle of Dogs with all the futuristic pathos of a World's Fair monorail.

The single most controversial project for the Isle of Dogs is currently the Canary Wharf development (9). A consortium of U.S.









8a, b China Wharf Jacobs Island Company is the developer of the new China Wharf in Surrey Docks, designed by Campbell, Wilkinson, Zogolovitch & Gough, and of the adjacent New Concordia Wharf (figure 3). This residential scheme employs a "scissor" plan to orient all living rooms towards the river and bedrooms towards a courtyard.

investment banks, led by First Boston Corporation, has an option to construct a 10-million-square-foot financial center on the 70-acre site. The design, by Skidmore Owings & Merrill, Chicago, with I.M. Pei & Partners, New York, and the British architects YRM, includes three 790-foot towers and underwater parking for 20,000 cars. Worth \$4,260,000,000, the scheme anticipates the 1986 deregulation of the British Stock Exchange and aims to capitalize on London's strategic location in a time zone between New York and Tokyo. The LDDC hailed the proposal as a "major vote of confidence in Docklands." However, the *Architect's Journal* dubbed the scheme the "Docklands Monster," and said it would "make nonsense of whatever passes for an urban design policy in the area . . . would have a devastating effect on the scale and form of the area . . . and would introduce a building form which, while well suited to North America, is surely discredited in Britain."

The scheme is now subject to further detailed discussion, focusing on transportation facilities, especially road and rail connections. If it goes ahead, the scheme would entail demolition of Terry Farrell's Limehouse Studios conversion, finished in 1983, and would eclipse Nicholas Lacey, Jobst and Hyett's Heron Quay commercial/residential development just to the south, the first phase of which is nearing completion. There are doubts, too, about the argument that financiers will be prepared to move east out of the city. Delegates at a recent city conference on the physical impact of deregulation dismissed the Docklands incentives as insignificant when considered against the vast sums that firms will spend to squeeze into the Square Mile of central London. As one delegate remarked: "The Isle of Dogs? Who needs it? People want to be where the action is . . . here in the City."

The last remaining opportunity for distinguished urban design lies in the Royal Docks, whose vast proportions—equivalent to the stretch of central London from Marble Arch to the Tower, and from the Euston to Waterloo—make it imperative to avoid the kind of laissez-faire development that has already marred the smaller docks to the west. The LDDC has recognized the scale and significance of the Royals in hiring Richard Rogers & Partners as consultant architects and urban planners, with William Gillespie & Partners as consultant landscape architects. The draft development framework published last January is based on Rogers' proposals. These outline three major development nodes along the north side of the Royal Victoria and Royal Albert Docks, plus a subsidiary node to the south, towards the Thames Barrier, a silver-clad flood-tide prevention mechanism.

The proposed master plan is derived from analysis of the infrastructure necessary to ensure the Royals' evolution as a minimetropolis of international significance. It takes into account the tremendous water resource, the provision of green open spaces as "lungs," and the various forms of transportation: the STOLport (short take-off and landing) planned for the quay between the Royal Albert and King George V Docks, with a flight radius to major British and northern European cities; the second-phase extension of the DLR; the proposed East London River Crossing; and the proposed river bus service linking Docklands and central London.

Rogers' plan contains no specific building designs, but makes suggestions for a series of common quayside elements along the dockside at one-half kilometer intervals, with sites for business and residential development in between. To date, as the *Architect's Journal* concluded, "Docklands contains . . . the most appalling mismatches between sites and buildings, needs and means, money and quality, aspirations and achievements." The Royal Docks, as the largest urban development site in Europe, surely deserves better than the dog's dinner served up in the Isle of Dogs. *Janet Abrams*

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9 Canary Wharf

This 10-million-square-foot financial center, proposed by a consortium of U.S. investment banks and designed by SOM, Chicago, with I.M. Pei & Partners, New York, and British architects YRM, has met opposition since it was approved in principle by the LDDC last October. The 70-acre project, situated in the Isle of Dogs Enterprise Zone, is not subject to the usual design review procedures, but the Greater London Council, backed by local community groups, has called for a public inquiry.

Most controversial are the three 790-foot towers, containing one third of the total office space, and sited on axial entry roads. SOM says these "landmarks" would "enrich the London skyline"; opposing conservationists say they would have an "overpowering effect" and that the view north from Greenwich would be "irreparably damaged."

Designing for Design

Two interiors for the furniture giant Herman Miller—one by Donovan and Green, the other by Tigerman Fugman McCurry Ltd.—exemplify the company's growing search for new design solutions.

IF the last two years are any indication, Herman Miller is busy getting back on track-the design track. The Zeeland, Michigan-based company, which revolutionized the furniture industry with designs such as Charles and Ray Eames's molded plywood chairs and Robert Probst's Action Office system, appeared to many observers to have lost sight of its longstanding commitment to the innovative individual designer during the last decade, when it was busy becoming the nation's second-largest office furniture manufacturer. Now, after a major management reorganization, the \$500 million-a-year, publicly owned company is once again under the leadership of its founding family (Max De Pree, Miller's chairman, president, and CEO, is the son of company founder D.J. De Pree), and the buzz-phrase heard most often around its headquarters is "design-driven"-as opposed to "market-driven," which is what Miller had become in its race to expand. Now not only has the company renewed its commitment to innovative design, with items such as Bill Stumpf and Don Chadwick's Equa chair line, and Ethospace interiors, designed by Stumpf in collaboration with Jack Kelley and Clino Castelli, but it has also extended its support of outside designers to the realm of interior design.

One of the company's pet projects is the Pavilion, which opened last summer in Grandville, Mich. Intended as a prototype for a "superspace" that is equal parts showroom, education and resource center, workshop, and think tank, the Pavilion was designed by Donovan and Green, a New York firm known for their graphic, audio-visual, and exhibition design, with lighting designer Richard Nelson. The project is aimed at clients, dealers, architects, interior designers, students, and, last but not least, Herman Miller employees themselves. It is a product of the company's frustration with the inherent limitations of the conventional showroom-a frustration shared by many manufacturers. As David L. Armstrong, Vice President of Marketing, explained it, "Showrooms as we know them are just 'window shopping.' . . . It is important to keep people in this environment longer. It should bear repeated visits, and should show the company, not just its products." It should also let you experience the company in ways that Armstrong calls "consumable, participatory, and interactive," and allow the company to show "lots of little ideas" that would take up valuable display space in a more traditional showroom.

After interviewing a number of designers, Miller chose Donovan and Green for their "humanistic" attitude. In developing the project, a "design statement" was ruled out in favor of architecture that served as background for the material on display. The desired effect, Armstrong told the designers, was "like walking into a hardware store." Displays were to be interactive rather than static; as Nancye Green noted, "Process is just as important to the company as product." However, the designers were also obliged to balance their own identity with that of the company, in the same way that Miller had to juggle its commitment to support the outside designer with its desire to maintain a consistent corporate image. "Corporate culture" is another phrase often heard at Herman Miller, and it describes not just a traditional attitude about the importance of design, but also a participatory approach to management and innovation that includes employees at every level of the company. The Pavilion, while it is still in the fine-tuning stages, is probably one of Donovan and Green's more self-effacing efforts. But there exists in it the potential to provide visitors with an unprecedented resource for information, experimentation, and exchange of ideas-an involvement with a manufacturer that goes well beyond the usual placing of an order.

By contrast, Miller's showroom in Chicago's Merchandise Mart is very much an architectural "stage set," a strong design statement that, nonetheless, was designed not to crowd the furniture. Architect Margaret McCurry of the Chicago firm Tigerman

The 26,000-square-foot Pavilion in Grandville, Mich., designed by Donovan and Green, was created in an existing building that once housed part of Herman Miller's Health/Science division (Booth Hansen & Associates' 1981 entrance and rotunda addition are visible on axonometric). Upon entering the Pavilion, visitors can examine a time line charting Herman Miller's history, and an archival exhibition of chair designs (facing page, bottom right), or they can pore over exhibits that explain the company's structure and operations, including videotapes of products being made in a factory (facing page, bottom left). At the far end of the building, a large open space houses demonstrations of Miller products: for example, visitors can see just how electricity is distributed through the panels of Ethospace interiors by means of hundreds of tiny lights driven by electrical impulses. The Pavilion also includes a media resource center for books and reference materials, a small store, three "living rooms" for informal meetings, two auditoriums for audiovisual presentations, three conference/dining rooms, and a café. The multilevel "Spanish Steps" area (facing page, large photo), displays the full range of the company's seating, from the Eames molded plywood chair to Stumpf and Chadwick's Equa chair, which is shown in both fully assembled and "exploded" forms.







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Interior Design Herman Miller





Fugman McCurry (with Robert Fugman and Rick Dakich) worked closely with designer Rick Edwards of Miller's Facility Management Group on the project, which opened last June. McCurry, who had previously designed an "atrium" and presentation space for the showroom earlier that year, was called back to renovate the entire showroom for NEOCON and the public unveiling of the Ethospace system, which has a strong architectural component. Having designed the presentation space in an elegant rendition of concrete block, McCurry decided to extend the building-material metaphor through the entire space, using other basic materials-brick, timber, and steel-in an archetypal post-and-lintel design. Miller expressly wanted not to imitate actual office settings, preferring instead to play up the *possibilities* of its products, especially Ethospace, which has a vast array of parts and options. McCurry's bay system was, she felt, appropriate for the modular qualities of Ethospace and for Action Office. The space has a toughness that is softened by the playful soffit grid of wood branches (the Primitive Hut meets the mechanical system), and the showroom had the desired strong impact at NEOCON, appearing stylish but not trendy. McCurry feels that the unusually close collaboration between the architects and client made



the project proceed smoothly, while Rick Edwards maintains that his presence as a Miller representative fostered a sense of mutual trust.

Perhaps the most surprising sign of the times at Herman Miller is its recent commission to Frank O. Gehry & Associates for a manufacturing facility in Sacramento, Calif. The first phase of this longterm project, which will ultimately encompass over a million square feet on 156 acres, is expected to begin within a year. While the controversial Venice, Calif., architect has designed a furniture showroom (for SunarHauserman), this is his first manufacturing plant, and his largest corporate project yet. By conservative industry standards, this is risktaking of a major magnitude. However, when you look at the players, it isn't such an unlikely alliance after all. Gehry's architecture blends a highly personal vision with a pragmatic regard for client needs and budgets, and Miller built its reputation on a belief that an idea or design with integrity would find its own market, rather than the other way around. And both Thomas D. Wolterink, Miller's Vice President of Facility Management, and Max De Pree admired Gehry's "down-to-earth, sensitive quality," and his "humanistic approach" to architecture.

While a consistent design outlook has yet to emerge at Herman Miller, the company seems to be relying much less on the sure bet and much more on the long shot in its search for talented designers. That is just the attitude that once took it out of the reproduction furniture business and into the forefront of modern design, and, at a time when so many furniture companies would rather be big than innovative, it may put Herman Miller back on the cutting edge. *Pilar Viladas* For Herman Miller's 13.000square-foot showroom in Chicago's Merchandise Mart, designed by Tigerman Fugman McCurry, the "beginnings" of architecture are expressed in an archetypal post-andlintel imagery, using four different materials, each in its own zone. The entry/reception area (facing page, bottom left) has red brick piers. The two side zones use timber (east, this page, top right) and steel (west, not shown), and the rear zone along the south window wall is built with concrete block. Rather than try to conform to the Mart's building grid, the architects created their own, which complements the modular, architectonic qualities of Miller's Ethospace system (facing page, top). This grid is reinforced by the crisscrossed branches that form the dropped soffit. While the branches appear to be supported on brackets, they are in fact suspended from the ceiling; the brackets are plastic foam. The tilefloored atrium (this page, top left) bridges the media room and rear display zone to form an area that can be closed off for special presentations. Natural light, a rare commodity in Mart showrooms, comes from the window wall and the central light well, both of which are thinly veiled with an iridescent curtain fabric.







Style and Substance

Although its small but steadily growing body of built work is typical of fledgling practices, Koning Eizenberg Architecture has already struck a precocious balance between design sense and common sense.

TO be young, gifted, and working in Los Angeles makes you a member of a pretty big club these days. Because L.A. is a city with relatively wide open spaces and an unquenchable thirst for both the innovative and the trendy in design, there's plenty of small-to-medium-scale work around for those with enough style and/or knowhow. Hank Koning and Julie Eizenberg have both. The husband-and-wife team left their native Australia in 1979 to get their master's degrees in architecture at UCLA, and they've been here ever since. In the five years of Koning Eizenberg's existence. the firm has produced a small but impressive body of residential work that is both stylish and substantial, and a practice that combines youthful energy with an unusually pragmatic business sense.

"Pragmatic," in fact, sums up the architects' outlook in general. "The more limits there are, the better," declares Julie Eizenberg. Their most expensive residential project yet, the duplex in which they live, cost \$67 a square foot; they now think it's "overloaded" formally and not "background" enough. In other projects, the owners acted as contractors and the architects supervised construction, "the only way we could make any money on them," they explained. They share office space, and often join forces, with a team of graphic designers to offer a broader range of services to clients, especially developers, and are now doing a signage and renovation project at the Farmers' Market in Los Angeles. The architects are currently at work on their second residential development project (their duplex was the first) in the Hollywood Hills, and they'd like to do a lot more along those lines. But for all their get up and go, Koning and Eizenberg also share a well-developed interest in public-sector work: They have several projects under way for the Community Corporation of Santa Monica, a nonprofit group funded by the city to provide affordable housing; and they want to design schools, another unglamorous building type that rarely finds its way to the top of a young architect's wish list. However, Koning Eizenberg still considers itself a design firm. The two partners design together, while other aspects of their practice (which includes their colleague John Davis) are clearly delegated. Koning cheerfully tackles production and detailing, while Eizenberg has become the resident marketing expert.

The firm's work has a refreshingly consistent sense of order and discipline. Koning and Eizenberg's graduate thesis was a study that developed a compositional grammar for Frank Lloyd Wright's Prairie Houses. They created three new house designs using this grammar—a move that outraged some of their teachers at UCLA, who misinterpreted it as an attempt to replicate Wright's designs rather than a demonstration of the grammar's applicability. Koning and Eizenberg maintain that they are more interested in the notion of a grammar than in the specifics of a style. "We really are antihistorical," says Eizenberg. They are not, however, amnesiac: The bay window and overhanging roof in their Given-Dennis duplex addition are unmistakably Wrightian. But at heart and by training, the architects are Modernists who believe first and foremost in making spaces, who prefer the compositional aspects of a building to the symbolic ones, and who believe that light, volume, and landscape are the best sources of richness in architecture. It is not surprising, therefore, that they should name R.M. Schindler and contemporary artist James Turrell among those whose work they admire, the former for his "inside/outside" architecture, the latter for his work with light, which Eizenberg argues "every architect should be able to do.

The firm's work clearly reflects the current L.A. scene, yet still bears a strong personal stamp. Their use of materials owes an obvious debt to Frank Gehry ("You can't help being influenced by him if you work here"), yet their detailing is more traditional and their gestures smaller scaled, as in the studio they designed for sculptor Michael McMillen. Their own duplex reveals the ecelectic formal and planning influences of Charles Moore (for whom the architects worked as students and whose buildings made a strong impression on them), but they keep ornament and historical allusion to a minimum. Such a consistent mixture of discipline and humor, and of pragmatism and social consciousness is increasingly rare among young architects. Hank Koning and Julie Eizenberg prove that somewhere between the starving artist and the shameless opportunist there is a middle ground that is anything but middling. Pilar Viladas



The architects' latest development project is a Hollywood Hills duplex on a steep, triangular site that called for a small building footprint to minimize excavation costs. The two 1600-square-foot units are, therefore, treated as individual towers, each set on a 20' x 20' garage plinth, and each containing three one-room floors: studio; dayroom; and bedroom. Bathrooms and kitchens for the units will be housed in separate buildings that are joined to the units by stairs.

For the Given-Dennis duplex in Santa Monica (1984), the architects reemphasized the H-plan of a classic California bungalow by skewing their expansion of an undistinguished 1940s vintage bedroom addition (into a 600square-foot rental unit, photos right), cladding it in a different siding and painting it a different color, to distinguish it from the original house. The symmetry of the house plan was further stressed by relocating doors to create an enfilade through the enclosed veranda. The remodeled master bath/ dressing room is also seen on the plan; it is treated as a distinctly "new" element. The addition's prow-shaped bay window and overhanging roof recall Wright's Prairie Houses, the subject of the architects' master thesis, but they maintain that the influence was more subliminal than overt.









Under Santa Monica's rentcontrol guidelines, it is illegal to remove an existing rental unit. So, in this low-income housing (right), the architects recently brought an illegal apartment up to code by adding a ground-floor living room and second-floor bedroom. They also added two second-floor bedrooms to another unit, and created a parking lot, which is required by planning commission regulations. The bold forms and colors of the additions add a lighter touch to what the architects considered an "institutional-looking" building.











A 1200-square-foot studio for artist Michael McMillen (1983) hugs the alley side of a small lot in Santa Monica, across the yard from an existing house. The open space on the second floor (near left) is illuminated by a strip of windows and two operable skylights. A variety of small, odd-sized windows frame views of the alley (far left), which provides client McMillen with a rich source of the cast-off bits and pieces he collects for use in his sculpture. On the west side of the gray-stucco building, a "window" set on the diagonal reveals the staircase behind it.

In the California Avenue duplex in Santa Monica (1982), their first development effort, the architects wanted to provide the two units with both a shared garden and private outdoor spaces, and take advantage of the views of the park across the street and of the surrounding rooftops. In their parti for the 46' x 110' lot, the front unit is a formal "garden pavilion" of pink stucco with metal-reglet "quoins." An intermediate "orangerie" contains studio spaces for both units, while the rear unit, the informal "tractor shed," contains the architects' own house, garages, and service rooms for both units. Staggered living rooms and sundecks ensure privacy for each unit, while the common garden offers a sense of mutual security. In Koning and Eizenberg's own living area (facing page, bottom left and right), sliding wooden screens serve as sunshades, and much of the furniture was designed by the architects.



All photos: Tim Street-Porter















Electrifying Floors

With an increase in the amount of office wiring has come an increase in the variety of floor systems that house it. What matters is their flexibility, capacity, and cost.

THERE'S fierce competition for the office floor beneath your feet. It rages among the manufacturers of wiring systems, each striving to deliver—through the floor—the most cable, at the lowest cost and with the greatest flexibility, to every desk in an office.

Three issues make that competition particularly difficult to judge. First, the lack of industry-wide testing standards and the variation among systems makes equal comparisons almost impossible. Second, the impact that these systems have on other aspects of a building makes their selection contingent upon many other decisions. And third, the rate at which these systems change makes their study an almost continuous process.

What's important for the architect to keep in mind is that while these wiring systems have primarily an electrical function, their selection cannot be left up to the electrical engineer or the telecommunications specialist. They require an integrated approach that only the architect can bring to the problem. "The distribution method," says Brian Ferguson of CEPA, "affects the HVAC, the structure, the lighting, the furniture layout—if the architect doesn't integrate those systems, who will?"

While wiring distribution has always had a wideranging effect on buildings, the systems themselves weren't always so numerous or so complicated. The first floor-based system emerged in the teens, soon after the electrification of the office, and consisted of wired ducts buried in the slab. The 1930s brought, along with a telephone on every desk, the first major alternative: electrified metal decks containing wires within enclosed cells. But the real boom in systems development didn't occur until the last few decades, when products such as pokethrough conduit, raised floors, and flat cable emerged. Their development wasn't coincidental. The last few decades have seen the widespread acceptance of the open office and a proliferation of telecommunications equipment, all dependent upon the delivery of power, telephone, and data cables through the floor. "It's become such a confusing and fast-changing field," says Gary Hall of Hammel, Green, & Abrahamson, "that you have to study the various distribution alternatives with each project.'

There are six categories of wiring distribution systems. Poke-through and power-pole systems



I Poke-through system; 2 Raised floor system; 3 Power pole system; 4 Cellular deck-system; 5 *Elat conductor colle; 6 In floor ducted system*



run in the ceiling plenum, poking a conduit through the slab to the floor above or running a power pole from the ceiling to the floor below. Ducted and cellular deck systems sit within the slab, running wires through metal ducts or enclosed cells in the floor deck. Flat cable runs on top of the floor slab but under the carpet. And raised floors run wire through a plenum above the slab.

Poke-Throughs and Power Poles

Of those six categories, the poke-through systems often have the lowest first cost. "That makes them particularly popular among developers who want to minimize their initial investment or who don't know their tenants," says Norman Castallani of Raceway Components. The installation of these systems involves drilling a hole through the floor slab or opening a preset sleeve in the slab, inserting a fire-rated fitting into the hole, and connecting either conduit or flexible plug-in wiring to it from the ceiling plenum below. The low first cost comes not so much from the installation itself, but from developers postponing the installation until a space has been rented, or shifting the costs onto the tenants. Poke-through systems also offer easily accessible and ample work space in the ceiling plenum, and a minimal visual impact on the space above.

Yet, poke-through systems don't have unqualified support, at least among some consultants. ("It's the easy way out," says Robert McFarlane of The Wilke Organization.) Several features account for this. Some people question the effect pokethroughs have on the fire or structural integrity of a floor. While the fittings have sleeves that contain intumescent seals, and according to the National Electrical Code, they must have a minimum spacing of two feet on center (or one fitting per 65 square feet), "who's watching to see that seals are tight or the spacing correct?" asks Gary Hall. "It's not hard to turn a floor into Swiss cheese."

Poke-throughs also have less capacity and flexibility than other systems, although they may be adequate for many uses. "With the average workstation occupying 125 square feet," says Norman Castallani, "that allows two penetrations for every worker, more than enough for most people's needs." Large amounts of computer equipment on a desk, though, could quickly fill two poke-through fittings. The same could be said about the difficulty of moving poke-through outlets. "Owners learn to live with it," says Castallani, even though it can involve wet-drilling through the floor slab, disrupting other tenants, and paying crews overtime to work after hours. Yet with 30 to 40 percent of the market, poke-through systems, whatever their problems, must be doing something right.

Power poles have a smaller market share and quite different strengths and weaknesses. They, like poke-through systems, run cabling in the ceiling plenum, although usually in enclosed ducts rather than through conduit. Where the two systems differ is in the method of distribution: Power poles distribute through the hung ceiling to the floor below. That makes the relocation of outlets much easier, since it requires only unplugging, moving, and reconnecting poles. The system ensures greater security for data lines, since they run within the office's own ceiling plenum. And because they don't affect the fire or structural integrity of a building, power poles have no limitation on their number or spacing.

The appearance and connotation of power poles remain their greatest drawback. "They can create visual clutter if not worked into the design," says Donald Geibel of Walker. Efforts at making the poles less visually objectionable include providing them with colored finishes or incorporating them into partition systems. Even then, power poles connote to some people "government buildings and back offices," says Robert McFarlane. Given some of their advantages over the more popular pokethrough systems, however, power poles deserve more consideration.

Wired Slabs

The wire distribution systems that run through the floor slab—ducted and cellular decks—together hold the largest share of the market. The ducted systems consist of metal ducts, buried in the floor slab and connected, via a perpendicular trench header duct, to the electrical risers in the building. The top of the trench header stands flush with the finish floor and has removable plates to give electricians access to the wires. The ducts themselves have dividers to separate the power from the data or telephone cables to prevent electrical interference, and have outlets installed prior to pouring the floor

Poke-Throughs and Power Poles

Poke-through distribution systems (upper left in drawing) run data, communication, and power cables through the ceiling plenum. The individual fixtures, connected via flexible cable to junction boxes or directly to the utility closet, consist of a junction box, a sleeve inserted through the slab, and an outlet serving the floor above. Intumescent seals maintain the floor's fire rating. Since codes limit the spacing of outlets to two feet or one fixture per 65 square feet, some people question the system's long-term flexibility and capacity. Nevertheless, it does offer a low first cost and simple installation.

Power poles (lower right in drawing) connect via flexible conduit to raceways in the ceiling plenum. The poles, easily installed and relocated, serve the floor below. While their integration into partition systems can make them less obtrusive, some people object to the appearance of power poles.

Poke-through systems

Advantages:

- Installation can be delayed until space is rented
- Cables easily accessible in ceiling plenum
- Minimal visual intrusion

Limitations:

- Outlet relocation disrupts floor below
- Possible security problems with data cables in another office's ceiling
- Limits on outlet spacing (2 feet on center) and total number of outlets (1 per 65 square feet)
- Care required during installation to ensure fire integrity of floor

Power pole systems

Advantages:

- Poles easily relocated
- Installation can be delayed until space is rented
- Cables easily accessible in ceiling plenum
- Data cables secure in office's own ceiling
- No limits on spacing or total number of outlets

Limitations:

Poles visually intrusive

 Poles can connote a "back office" image

P/A Technics: Wire Distribution

In-floor Ducts

These wire distribution systems (right) run cable from the utility closet through a trench header duct, which has removable upper plates flush with the floor. The trench header duct feeds the cable to perpendicular distribution ducts; these are typically spaced about five or six feet on center and have preset or afterset outlets flush with the floor. The ducts contain separate channels for data, communication, and power cables. Since the ducts are nonstructural, they stand on top of the structural deck. (In a concrete building, that entails making a second concrete pour.) The ducts have good capacity, and when used with flat cable, considerable flexibility. The initial cost of ducted systems, though, is high. Some consultants list auditoriums, libraries, and other functions with relatively fixed furniture arrangements as the best use of underfloor ducts.

In-floor ducted systems

Advantages:

- Minimal visual impact
- Preset outlets easily relocated
- Can be used with flat cable for added flexibility
- Organization of wires simplified
- Cables protected from damage or security breach

Limitations:

- Potentially less capacity in distribution ducts than cellular deck
- Extensive sheetmetal work re-
- quired at installation
- Nonstructural ducts require second concrete slab when used in concrete buildings

Without flat cable, connections among equipment in an office can involve lengthy cable routes
Spacing of ducts often wider than

that of activated cells in cellular deck



slab or marked inserts for the installation of outlets at a later date. The spacing of the parallel ducts is rarely less than five feet; and the outlets along each duct rarely less than 18 inches.

While duct materials, in the past, have included steel, concrete, clay, or mineral fiber, they are now usually metal. And while they once had almost 100 percent of the floor distribution market, they now have only about 15 percent of it. "But," says Donald Geibel, "ducted systems won't die. They can be modified to meet different needs, they have good capacity and flexibility, and they have a minimal aesthetic impact on an office."

The one drawback mentioned by most people is the high initial cost of ducted systems. Because the ducts have no structural role, they must stand on top of the structural deck embedded in concrete. In the case of a reinforced concrete building, that means pouring a second slab. They also involve considerable sheet metal work. "Costs vary with each job, however," cautions Donald Geibel. "Ducted systems can be more cost effective than cellular floors."

Some people also question the flexibility and capacity of these systems. "They're best when servicing furniture that doesn't move very often, such as that in libraries," says Donald Hickey of Flack & Kurtz. "They also don't have the capacity of cellular decks." In defense, "The combination of ducts and flat undercarpet cable," says Donald Geibel, "has proven to be quite popular in offices. As cables continue to get smaller, capacity also will cease to be an issue. Besides, the battle for cable capacity is fought in the trench header, not in the distribution system, and ducted systems can have trench headers as large as those with cellular deck."

If sales serve as the basis of comparison, though, cellular deck has a decided advantage, with about 30 percent of the market. Cellular deck shares some of the same features of ducted systems. They both have trench headers that feed cables to parallel chases in the slab, and they both have either "preset" or "afterset" outlets whose spacing can vary depending upon the density of desks in an office.

They differ in two important ways, though. First, cellular deck systems contain the power, data, and telephone cables within the enclosed cells of the floor deck itself. In metal decking, plates, welded

or snapped to the corrugated surface, form the cable cells. (Codes require that the activated cells receive additional fire-proofing on their underside.) In concrete plank decks, the cable runs through the planks' hollow cores. As the only wire distribution system to integrate structural and electrical components, cellular decks offer savings on both material and labor costs. "Every steel-framed office building has a metal deck anyway," points out John Teslovich of H.H. Robertson, "so you have half the system in the building already."

Second, cellular deck systems can have a much greater cable capacity than ducts. While ducts rarely have a spacing any closer than five feet, every cell in the structural deck can be filled with cable, allowing more room for cables and a closer spacing of outlets. "Cellular deck has been used with flat cable and access flooring," says Teslovich, "but usually the cellular deck can handle everything."

Some manufacturers admit to some limits in the flexibility and capacity of cellular decks. "While cellular decks offer great flexibility in getting cable close to a workstation and in moving outlets," says Ambrose Walsh of Midland-Ross, "they can require a lengthy routing of cable down one cell, through the trench header, and up another cell just to connect two pieces of equipment in an office. There also have been problems accommodating data cabling. In one recent building, the cells containing data cables filled up in two years."

Companies have begun to address some of these problems. Since data lines demand much more room than power cables, some products now have cells of varying sizes to house different types of wiring. Facilitating connections among computers has come with decreases in the spacing of data cells and with outlets that can accommodate flat conductor cable.

Cellular deck, despite those limitations, has a good reputation. "In New York's financial district," says Donald Hickey, "tenants will accept nothing but cellular deck, and they're an unusually sophisticated group when it comes to telecommunication services."

Flat on the Floor

Flat conductor cable, developed by NASA and marketed only since 1980, represents a major rethinking of the wiring distribution in buildings (see



P/A, July 1983, pp. 106-109). Rather than clustering standard cables in conduits, ducts, or cells, it spreads the wires into thin cables and runs them, protected by a plastic or metal bottom shield and a steel top shield, beneath the carpet tiles. The codes limit the carpet tiles to 30 inches square, and require their easy removal with a pressure-sensitive adhesive. To prevent the abrasion of the cable, the floor slab must be free of dirt or rough patches. And to prevent the disruption of data and voice signals by the electrical wires, manufacturers recommend separately routing those lines to a desk and crossing them at 90-degree angles to minimize their contact. Where flat cables cross, or where they are spliced, tapped, or folded to receive a branch cable or to change direction, the thickness of cabling can create lumps in the carpet tiles. To minimize carpet wear, the stacking of flat cables should not occur in circulation routes. Flat cable also should not be laid until most construction work is complete, because heavy loads can damage the cable.

The advantages of flat conductor cable include the ability to run wires wherever needed, to delay installation costs until tenants have rented a space, and to relocate outlets quickly with a minimal disruption of, or visual intrusion upon, an office. Costs associated with other distribution systems, such as drilling through the floor slab, installing ducts, or adding a second raised floor, are eliminated with flat conductor cable.

Flat cable, like every system, has some drawbacks. For instance, while the undercarpet location of flat cable minimizes its visual impact on an office, it does require the use of carpet tiles, which some people consider less desirable than broadloom. Also, some cabling, particularly the thick coaxial data cables, is not easily covered by carpet.

Manufacturers point out that carpet tiles now have tougher backings, denser weaves, and more patterns to either bridge over or hide cables. "Using dark colored, textured carpet and loop rather than cut pile," says Gregory La Fontaine of Brand-Rex, "also helps disguise cable locations."

Another concern expressed by some wiring consultants is the limited length and capacity of flat cable. "In cable over 50 feet in length, signals can attenuate to the point where they might not be able to serve the equipment," says Robert McFarlane. "Flat cables," says Donald Hickey, "are more like a high-tech extension cord than they are a primary distribution system. To do a whole building in flat cable, which is more expensive than normal wiring, is not cost effective." Cable manufacturers acknowledge those limits in length and capacity, but emphasize that flat cable can meet most normal office data needs and that, when used with other horizontal distribution systems or when linked to multiple risers in columns and in the core, the length limitations don't pose a problem.

A temporary deterrent to the use of flat cable is its prohibition by some local codes. That stems, in part, from some uncertainty about the long-term fire safety of flat cable, and in part, from opposition to the new technology among some electricians' unions. Flat cable will need time to prove itself, even though, as its growing sales indicate, it has already done so in the minds of many.

Floors in the Air

The sixth category of distribution system runs power, telephone, and data cables beneath a raised floor. There are several types of raised or access floors, distinguished mainly by their substructures and panels. The substructure consists of steel or aluminum pedestals that are adhered to the floor and that have threaded shafts to allow for height adjustment. The pedestals, with either bolted or snap-on connections, support the floor panels at their corners or along their edges using stringers. The bolted panels provide a more rigid structure, although they increase the time it takes to lift a floor section. The bolted stringers have panels that are easier to lift, but the stringers themselves decrease the accessibility of cables. In the typical office, where a solid feel often matters more than the mobility of panels or the accessibility of cables, bolted access floors make great sense.

Snap-on panels and stringers offer less rigidity, but easier installation and faster panel relocation. The snap-on stringers also provide less of an obstacle because of the ease with which they can be removed. While no rule applies as to their use, these floors work better in laboratories, computer rooms, and other such functions that require considerable flexibility and cable accessibility.

The panels themselves, usually two feet square, utilize such materials as aluminum, chipcore edged

Cellular Deck

Cellular deck (left) integrates structural and electrical systems by running cable through the enclosed cells of the metal floor deck. (It's also possible to run wires through the cores of concrete planks.) As with underfloor ducts, trench header ducts feed wires from the utility closet to the activated cells, which in turn feed preset or afterset outlets. The capacity and flexibility of cellular deck is enormous if every cell is used, although the cost of doing so can be very expensive. Even without activating every cell, though, the spacing of outlets is often closer than that of underfloor ducts. Since data and communications cables usually require more space than power cables, many manufacturers offer cells of varying widths. Although other distribution systems have greater capacity and flexibility or a lower initial cost, cellular deck offers enough in all of those areas to make it one of the most popular systems on the market.

Cellular deck systems

Advantages:

- Minimal visual impact
- Integration of cells in structural deck reduces cost and field labor
- Depending upon the number of
- activated cells, cable capacity can be large and outlet locations flexible
- Preset outlets easily relocated
- Organization of wires simplified

Limitations:

 Added fire protection required under activated cells

 Without flat cable, connections among equipment in an office can involve lengthy cable routes

P/A Technics: Wire Distribution

Flat Conductor Cable

Flat cable (right) runs data, communications, and power cables between the floor slab and carpet tiles. The cable is protected by a plastic or metal bottom shield and a steel top shield. Because the cable itself is more expensive than conventional wiring and because the signals through data cables can attenuate if they travel more than 50 feet, flat cable is often used in conjunction with another primary distribution method, such as multiple risers or underfloor ducts. The advantages of flat cable include the easy installation and relocation of outlets, a relatively low cost (since it doesn't involve the building's structure), and considerable flexibility. Limitations, in addition to that of length, include the required use of carpet tiles, the possible telegraphing of overlapping cables through the carpet, and the opposition to its use in some code jurisdictions. Most people, though, admit that flat cable is invaluable in connecting equipment and in delivering cable to hard-to-reach locations in an office.

Flat conductor cable

Advantages:

 No limits in spacing or routing of cables

 Outlets quickly installed and easily relocated

Minimal visual impact

• Installation can be delayed until space is rented

Limitations:

• Carpet tiles must be used with flat cable

• Floor slab must be free of any

abrasive material or surfaces

• Overlapping cables can create a lump in carpet

- Can be damaged by heavy construction loads
- Data cables limited to about 50foot lengths
- Not allowed in some code jurisdictions
- Best used as an extension to a
- primary distribution system
- Cable more expensive than conventional wiring



with steel, cement-filled steel, or reinforced concrete. The aluminum offers light weight, strength, no magnetic interference, and no possibility of rusting or flaking, but it costs more, making it more common in high-performance applications such as clean rooms. The chipcore panels have a low cost, but a higher combustibility and greater reverberancy than other panels. The cementitious panels have considerable rigidity and have a more solid feel and sound. The one drawback is their weight, although manufacturers don't see that as significant. "They add about 10 pounds per square foot," says Timothy Goligoski of Floating Floors, "which is only one tenth of the typical live load."

Panels can have a variety of floor coverings. Some manufacturers permanently adhere carpet or align the panel and carpet joints to simplify access to the floor plenum. Others recommend overlapping the carpet and panels (with a release-type adhesive under the carpet tiles to facilitate their removal) to obscure the panel joints.

Access flooring, among horizontal distribution systems, has the most flexibility and the greatest capacity. Relocating outlets can be as easy as lifting, moving, and reconnecting activated panels, "taking as little as 15 minutes," says John Kidd of Tate. And with plenums as high as three feet, access flooring can handle huge amounts of cable. "It's the only system," says Gary Hall, "that can handle almost any variable."

Another advantage of access floors lies in their potential for the integration of mechanical and electrical systems. Some companies have installed floors that use the underfloor plenum for HVAC ducts or as an unpressurized supply-air plenum, offering employees the possibility of individual climate control.

The primary disadvantage is their high initial cost, the result of building, in essence, a second structural floor. Manufacturers minimize the added cost ("Our studies," says John Kidd, "show that access floors cost at most 20 percent, not as some people claim 50 percent, more than cellular deck.") and emphasize the long-term savings of access floor, particularly if an owner frequently relocates equipment and outlets. But several manufacturers warn against judging any distribution system on the basis of cost. "Because systems are so different," says Stuart Cline of Inryco, "you don't always know if cost comparisons cover the same things. It's better to base comparisons on performance."

Aiding that comparison, at least among access floors, will be the standardized tests now being developed by CISCA, the Ceiling and Interior Systems Construction Association. "The tests will cover such things as rolling, impact, and static loads," says James Whittaker of CISCA. "Because the tests developed by access floor manufacturers were not that different, the standards should be ready for adoption by mid-1986."

A traditional complaint of access flooring is that it adds to the height of a building. Every manufacturer disputes that, saying that the six inches or so needed for the routing of cables can be accommodated easily within most normal floor-to-ceiling heights. John Kidd of Tate even insists that "access floors can reduce overall heights in buildings. By raising the access floor from 6 to 12 inches and combining the HVAC and wiring distribution in its plenum, you can almost eliminate the ceiling plenum," he says.

Another manufacturer is exploring the possibility of integrating the structural and access floor to reduce the overall floor depth and the cost of building redundant floors. "A ten-to-twelve-inch floor depth," says Ambrose Walsh of Midland Ross, "is just not necessary. We're looking at ways of shrinking that depth with concrete and steel deck that can do all that access flooring does."

A final complaint leveled, somewhat unfairly, against access floors is the tangle of cables that can develop within their plenum. While that often occurs, it's an unfair criticism because the organization of cable is not the floor manufacturer's responsibility. It's the responsibility of the owner and designer. "Access flooring isn't a panacea," says Robert McFarlane. "It doesn't relieve us of having to organize cabling; it makes that even more important. If you run cables as the crow flies, you're going to get a real mess."

Wire Management

That brings us back to the integrative role of the architect with these systems. The architect's contribution doesn't begin or end with the selection of a wire distribution system. Preceding that selection must come an analysis of the client's cabling needs.



A large amount of data cabling, for instance, might require the use of a raised floor; the frequent movement of desks might lead to the use of flat cable, raised floor, or preset cellular deck; or a low density of relatively stationary equipment might allow the use of poke-through fittings or ducts. "Too many designers," says Robert McFarlane, "select a cable distribution system before they examine the owner's needs. It should be the other way around. They should take the worst case, in terms of the client's cabling requirements, and then decide which system to use."

Also preceding the selection of a cable distribution system should come an analysis of its relationship to other systems in the building. For example, cellular metal deck implies a steel framed building; a raised floor presents opportunities for the integration of the HVAC system; power poles ease the use of furniture-based lighting; and ducted systems suggest furniture locations. Evaluating those relationships should begin with the earliest design stages. "During schematic design," says McFarlane, "the building's footprint and core will suggest possible distribution methods and riser locations, while a profile of the type and density of equipment or the volume of cable used by the client can help determine the size of risers or the spacing of outlets." If no such analysis occurs, "it can lead to an oversized system," he says, "with trench headers too big or raised floors needlessly high, or it can lead to bottlenecks, with too many cables coming together or crossing at the same place."

While the architect's input should begin with the analysis of the building and the owner's cabling needs, it shouldn't end until a wire management plan has been prepared. Without such a plan, owners often lose track of cable locations, add new cables instead of reworking or pulling old wires, and eventually clog the distribution system. It is in the architect's interest that this not happen, if for no other reason than not to be blamed, however unfairly, for specifying an inadequate system. Developing a wire management plan, says Ann Mesch of CEPA, involves "rating the cables in a system according to their vendors and their needed accessibility and layering them accordingly. The cables of equipment vendors need to be separated; the cable routes organized and identified; and the location of cables specified. The management plan

should not only be included in the drawings, but be incorporated in contracts with equipment vendors."

Analyzing cable requirements and managing cable routes may seem far removed from what is normally thought of as architecture. But so is cable distribution far removed from a normal building system. It isn't just a combination of floors, wires, plenums, and slabs; it's an integration of these elements to solve needs at once architectural, electrical, structural, and mechanical in nature. Its selection involves architecture in the broadest—and best—sense of the word. *Thomas Fisher*

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Further Reading

The recently published Building Systems Integration Handbook (Richard Rush, Ed., John Wiley & Sons, New York, 1986) contains information on these systems and their relationship to other building systems. The Construction Specifications Institute has recently published a monograph on access flooring (CSI, 601 Madison Street, Alexandria, Va. 22314, June 1985). An interesting comparison of the costs of these systems appeared in the Spring 1984 issue of Architectural Technology.

Raised Floor

Access or raised floor (left) lends itself to superlatives: it has the greatest capacity and flexibility and the highest initial cost of any wire distribution system. The system has several variations. Its two-foot-square panels can be supported at their corners by pedestals or along their edges by stringers. They can be made of chipboard, aluminum, steel with cement fill, or reinforced concrete. And they can be covered with loose-laid carpet tiles or with any number of materials laminated to the panel. While the capacity and flexibility of access floor has made it the standard in computer rooms, those same features have begun to make it popular for general office uses as the number of cables and the frequency of relocating equipment increase. The high initial cost of access floor becomes less of an issue when viewed over the long term because of the low relocation costs. A problem mentioned by many people is the mess of wires that can accumulate within the access floor's plenum, making the organization and management of cables that much more important.

Raised floor systems

Advantages:

• Almost unlimited cable capacity and routing

Outlets easily relocated

• Potential for housing HVAC system underfloor and potentially reducing floor-to-floor height

Limitations:

- High initial cost
- Some systems less resistant to heavy rolling loads
- Some panels create a hollow
- thumping sound when walked upon
 Flexibility of system requires man-
- agement plan for wiring

Technics-Related Products



Mult-A-Cell II[®] access floor delivery modules are simple to install, use, and relocate as cable service requirements change. They provide flush-to-the-floor cable service. A five-page, fourcolor brochure outlines the capacity of the modules for power, data, and phone services. Midland-Ross Corp., Electrical Products Div.

Circle 200 on reader service card

Access 2000[®] flooring system is designed to enhance location and relocation of electrical wiring and support services in electronic offices, while providing the strength and quiet of a conventional concrete floor. Cables, HVAC systems, and mechanical services are safely hidden under raised floor panels, with power and communication hookups accessible. The 24-inch-square panels are fire-resistant and supported at each corner on pedestals attached to the subfloor. A full-color brochure illustrates Access 2000 components and shows typical installations. Floating Floors, Inc.

Circle 201 on reader service card

Teletape[®] undercarpet telephone cable has all components and accessories needed to connect communications systems in a modern office. It is compatible with all telephone systems including those with integrated data distribution. Teletape is taped to the underfloor and covered by modular carpet tiles. Also available is Datatape[®] flat undercarpet data distribution cable for nonintegrated phone and computer systems. BrandRex Company, Telecommunications Wire & Cable Div. *Circle 202 on reader service card*

Cell-Duct[®] in-floor raceway is designed for use in concrete floor depths of 21/2 inches, allowing a one-inch concrete covering over the duct. Inserts and junction box heights are also available for concrete depths of $1\frac{1}{2}$, 2, $2\frac{1}{2}$, and 3 inches over the duct. Three-service flush floor fittings accommodate two duplex receptacles and low tension cables. One opening provides access to all three service raceways. The system is described and illustrated, with detail drawings and specifications, in a 12-page brochure. Square D Company. Circle 203 on reader service card



N·R·G Flor[®] Systems consist of preset inserts to accommodate receptacles and cable connections. The N·R·G Bloc IV Preset Insert provides telephone, power, and data services at a single outlet fitting. The systems can handle up to 200 phone stations, 39 #10 wires, and more than 100 computer terminals. They are adaptable to both steel and concrete construction. Inryco, Inc.

Circle 204 on reader service card

Liskey access floors brochure describes the panels and their fastening methods. Panels can be all steel or steel-encased wood core. Supports include rigid grids with stringers secured to pedestals; Snap-On[®] structures for floor heights 18 inches or less; and stringerless with freestanding pedestals for heights 12 inches or less. Also covered are electrical boxes, air delivery accessories, and floor covering options. Donn Corp. *Circle 205 on reader service card*



Wireway®-3 in-floor electrical distribution system simplifies the installation and adaptability of electrical and communications wiring in new, nonresidential buildings. The system reduces time requirements for engineering, fabrication, job-site handling, installation, and office layout planning related to power, lighting, electronics, and communications (PLEC) deliverv. It creates a three-channel in-floor raceway for PLEC cables by placing a trough section in an open rib of a formed steel floor deck sheet and adding cover plates. Wireway-3 is available in four Servicell[®] design options to meet various capacity requirements. Bowman Construction Products, Elwin G. Smith Div., Cyclops Corp.

Circle 206 on reader service card

Versa-Trak® undercarpet wiring for power, telephone, and data communications is illustrated and described in a fourcolor, four-page brochure. Components of each type of wiring are explained. The undercarpet cables are UL listed and National Electrical Code approved. Thomas & Betts Corp. *Circle 207 on reader service card*

Access Floors brochure explains requirements for different types of installations and performance criteria for dynamic and static loads. Panels are described according to the selection criteria. Understructure systems, floor coverings, and accessories are explained. The 20-page brochure also describes the Task-Air³⁹ system of conditioned air distribution through the access floor. Specifications are included. Tate Architectural Products, Inc.

Circle 208 on reader service card

Undercarpet cabling system selection guide describes the features and benefits of UL-approved AMP undercarpet cabling for power, telephone, and data distribution. It includes the AMP Undercarpet Fiber Optic System bringing the advantages and increased information handling capacity of round fiber optic cable to undercarpet wiring. The system eliminates the need for underfloor ducts, utility poles, and poke-throughs, offering greater flexibility in new construction and renovation. It is used with carpet squares, and is ideal for open-plan offices. AMP Products Corporation. Circle 209 on reader service card



Cable and accessories for data communications in industry are presented in an illustrated 100-page catalog. Bulk cable, undercarpet cable, network cable, cable assemblies, and a wide variety of custom assemblies and interface equipment are included. A Reference Data section provides interface charts, cross-reference data, color codes, etc. Vertex Computer Cable and Products, Inc. *Circle 210 on reader service card*

Walkerdeck[®] cellular deck is designed as a building's power, lighting, electrical, and communications (PLEC) distribution system. It consists of cellular deck, noncellular deck, preset inserts, activation kits, Intermittent Bottom Trenchduct[®], or Bottomless Trenchduct[®]. A 40-page Technical Users' Guide describes and illustrates the system and provides structural and electrical data and specifications. Walker, Div. of Butler Manufacturing Company.

Circle 211 on reader service card

S-Floor[®] elevated floor consists of fiber-reinforced silicate panels with steel molded in for strength. The panels are connected by steel plates, pedestals, and spring-tensioned fasteners. S-Floor is described and illustrated, with detail drawings and specifications, in an eight-page brochure. Innocrete Systems. *Circle 212 on reader service card*

The Raceway Flush Poke-Thru offers two services: 15 or 20 amp, 125V duplex receptacle; and two individual openings for lowtension wiring for telephone, signal, or data communications. It is factory prewired, terminating in an integral junction box. It requires no abandonment plate and is compatible with any thickness slab above a 2½-inch minimum. The Raceway Flush Poke-Thru is described and shown in a six-page color brochure. Raceway Components, Inc.

Circle 213 on reader service card

Q-Floor/Taproute system, with GKX cellular steel floor deck and Tapmate IV preset insert outlets, offers increased capacity, greater flexibility, and outstanding life-cycle cost-effectiveness. It can carry more than 40 No. 10 electrical power wires, more than 200 three-pair telephone cables, and more than 100 quarter-inch coaxial cables. Easy access to all three types of cells is provided by spacious Tapmate IV preset insert outlet boxes concealed within the floor structure. H.H. Robertson Co.

Circle 214 on reader service card

The Flexway⁽¹³⁾ undercarpet system provides flexibility for power, telecommunications, and data wiring systems. Besides design flexibility, the system allows quick, easy renovation and reduces installation time. Each system and its components are described in a 14-page color brochure. Burndy Corp., Electrical Group. *Circle 215 on reader service card*

Three types of raised floors,

described in a four-page color brochure, are suitable for different areas. Type 2 is especially for heavy-load areas such as in power plants, control centers, and manufacturing plants. Type 4 anhydride panels provide sound absorption, fire protection, and a monolithic appearance suitable for offices and bank buildings. Type 5, steelprotected chipboard, can be used in computer centers, laboratories, office buildings, and manufacturing plants. Mero Corp.

Circle 216 on reader service card

Tec-Crete® access flooring consists of a 1½-inch-deep electrogalvanized steel enclosure filled with high-strength concrete. It combines the tensile strength of steel and the compressive strength of concrete, offering rigidity and overall structural integrity. Panels have silencer buttons on each side to eliminate edge-to-edge panel contact. Floor coverings can be carpet tiles, vinyl tiles, or high-pressure laminate. Tec-Crete is described in a 12-page brochure, which includes specifications. C-TEC, Inc.

Circle 217 on reader service card

Designlok carpet modules of Anso[®] IV nylon are 18 inches square with built-in soil, stain, static, and wear resistance. There are 6 patterns in 6 base colors, each available in 4 to 6 colorations. Stylelok solid color cut pile carpet modules are available in 16 colors, 6 of which coordinate with Designlok. Bigelow/ Heuga.

Circle 218 on reader service card

Four carpet tiles feature Eurobac[™], a dimensionally stable and resilient backing that enhances the acoustic properties and fire resistance of the tile and provides a cushioned feel. Eurobac is incorporated into Prelude, a plush velvet in 14 tweed colors; Piazza, made with polypropylene yarn, in 10 heathertones; Spectrum (15 colors) and Seascape (8 colors) made with nylon yarn. Interface Flooring Systems, Inc.

Circle 219 on reader service card





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Mount this beautifully handcrafted cabinet right on the wall and watch it open to reveal a white porcelainon-steel writing surface, a telescoping easel panel, and special Magic Panels with rich, black Velcro[™] fabric over cork. Hidden away is a full size DA-LITE[™] projection screen that pulls up instantly for slide and

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WEST WEEK '86

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Progressive Architecture's Official Guide







Pacific Design Center March 19, 20, 21 Art, Technology, and Desig **Section** Collection by Baker Furniture. The simple elegance of this executive office furniture, designed by William Sklaroff, is a departure in transitional design. It is both contemporary and traditional. The collection is available in multiple configurations appropriate for the executive office. For more information on corporate design and custom projects and all the Baker Executive Office Collections, write or visit our national Contract showroom, Suite 917. The Merchandise Mart, Chicago, Illinois 60654. Phone (312) 329-9410. Or contact any of our showrooms listed below.

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266		10
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PDC Showrooms



American Seating

System R office panels can be adapted to a technical environment with the addition of Laboratory and Technical component options. The panels are available in a variety of sizes and finish treatments.

Circle 103 on reader service card



Arc-Com

Geosystem Graphics 1 and 2 create a comprehensive system of coordinated fabrics for contract users. Four multicolored jacquard designs are available in 58 colorways.

Circle 104 on reader service card



Artemide

Damocle, designed by Mitchell Mauk, is a halogen wall sconce, with mount and diffuser of black plastic. Flexible black metal rods serve as both electrical connection and support.

Circle 105 on reader service card



Atelier International

New finish options for AI's Bellini System (designed by Italian architect Mario Bellini) include beige laminate horizontal and vertical surfaces and a mahogany finish bullnose edging. *Circle 106 on reader service card*

WEST WEEK '86







Baker Furniture New from Baker is a square

cocktail table designed by John Saladino, one of a series of metal occasional tables in the Facade Collection.

Circle 107 on reader service card



Beelner & Thomas

The Intercase System is a complete line of modular components in a contemporary style, available in a variety of materials. Components include desks, credenzas, and seating. *Circle 108 on reader service card*



Gretchen Bellinger

Rowboat is a textured weave of 100 percent cotton, the most recent addition to Gretchen Bellinger's Adirondack summer collection. Rowboat is available in five neutrals to coordinate with other fabrics in the collection.

Circle 109 on reader service card





The Toby chair, designed by architect Oswald J. Beck, is part of the Classic Designs in Wood Collection. The chair is available in 12 versions, including a stackable armchair, lounge seating and two-seat sofas. *Circle 110 on reader service card*





Brown Jordan

Designed by Robert Frinier and the Brown Jordan staff, the Cabaret Collection is a group of dining and lounging furniture. The outer frame features a new elliptical extrusion design. Seating surfaces are mesh pad or side-to-side double-wrapped straps.

Circle 111 on reader service card


Brunschwig & Fils Titania Texture, based on designs found in early Roman mosaics, is available as an all-cotton woven textile in three goldaccented color combinations.

Circle 112 on reader service card



China Seas

Night & Day are textured, reversible 100 percent cotton fabrics handwoven in India. Available in two versions, Plain and Stripe, they match on one side and reverse to coordinate. *Circle 113 on reader service card*



Corry Jamestown

QQ seating from Corry Jamestown offers four types of work chairs, all with either swivel/tilt or posture back options. Designed by Robert Taylor Whalen, QQ is also available in a conference model with a pedestal base.

Circle 114 on reader service card



Executive Office Concepts EOC features Datalink, an expandable system of modular furniture. Designed by Rich Thompson, Datalink components are available in four heights and either veneer or laminate finishes.

Circle 116 on reader service card



Design Tex

Perrault is a tough yet sophisticated woven jacquard of cotton and viscose. It is 54 inches wide and available in a variety of colors.

Circle 115 on reader service card

VEST, WEEK '86





Fixtures Furniture

The rio octagonal table joins the rio chairs. The table features a perforated metal top, and is available in 11 epoxy colors for indoor use, 7 polyester enamel colors for outdoor use, and a variety of laminates.

Circle 117 on reader service card



Forms + **Surfaces** The CT400 Series of ceramic tile

features a granitelike surface texture and strength. In fact, finely ground particles of granite are employed in the manufacture of the tiles, which are available in a range of sizes and shapes for commercial use. *Circle 118 on reader service card*



GF

New from GF is the Fabrics and Finishes Program, a color system applied to a selection of textiles, chair shell colors, laminates, veneers, and enamels. The system was developed with the aid of Patty Younts, a color researcher and design consultant. *Circle 119 on reader service card*



Gunlocke

The Director Series of conference tables offers an extensive variety of combinations of exotic veneer tops and solid wood edge rails. Specifiers can select inlay, edge rail, edge shape, and veneer tops as well as size, shape, corner details, and bases to create custom table designs. *Circle 120 on reader service card*



Haller Systems The Haller System is a complete modular office furniture system. New for West Week are computer-support accessories and a Quick-Ship program. *Circle 121 on reader service card*

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Pilade, shown below, is a series of low voltage halogen spotlamps in die-cast aluminum with built-in transformers and adjustable diffusors. This versatile series features table, wall/ceiling, clamp-on and track models. All models are available for use with either the MR16 projector lamp (Pilade MR) or the PAR36 (Pilade PAR), and can be equipped with optional glass or wire mesh filters

Oreste, a series of regular 120 Volt incandescent spotlamp fixtures, is also available. Both series were designed by Ernesto Gismondi.

To receive more information about Pilade, Oreste, and Artemide's full line of lighting, furniture and accessories, write Artemide on your letterhead, or circle number **319**

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Circle No. 330

WEST WEEK '86





Kimball/Artec

The Lorado Lounge Chair from the Artec division of Kimball offers anatomically contoured cushions and a flexible backrest. Designed by German Burkhard Vogtherr, the chair is part of a seating system that includes sofas and sidechairs for use in corporate and hospital settings. *Circle 131 on reader service card*



Kirk-Brummel Mount Street from Kirk-Brummel Associates is a 100 percent cotton woven textile imported from England. A geometric diamond pattern, outlined in tatting, creates a textured effect. *Circle 132 on reader service card*



Kittinger

1986 marks the 50th year of the Williamsburg[®] Reproduction Program at Kittinger. A bombé chest-on-chest has been recreated to celebrate the event. The reproduction, like the 1780 original, is crafted of mahogany and white pine, with handfinished brass hardware. *Circle 133 on reader service card*



Knoll

Designed by Vignelli Associates, the Handkerchief Chair is constructed of molded reinforced polyester on a steel frame, and is available in several versions: arm, armless, upholstered, and Zolatoned—in a variety of colors. *Circle 134 on reader service card*



Koch + Lowy

The Nautilus halogen lamp, designed by Piotr Sierakowski, is available with a black suededfinish Nextel column and gray or red inset and trim. A fullrange dimmer is located on the column.

Circle 135 on reader service card

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WEST WEEK '86





Boris Kroll Fabrics

Boris Kroll introduces a collection of small-scale patterns and textures designed for the office environment. Patterns and textures include Pindot, Optics, and Chariot. All fabrics in the collection are color coordinated. *Circle 136 on reader service card*



Krueger

Krueger features four additions to the Com Worksurface and Storage System. The additions include a three-circuit electrical network, and new privacy, modesty, and freestanding acoustical panels. *Circle 137 on reader service card*



Jack Lenor Larsen

Syncopation carpet features a carved and cut all-wool pile with a cotton and jute back. The multistripe pattern is available in a medley of colors. *Circle 138 on reader service card*



Lee Jofa

Aphrodite is part of the Marbles II textile collection designed by Ellen Smith Ashley. The pattern is available in four colorways, on both glazed and unglazed cotton. *Circle 139 on reader service card*

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WEST WEEK '86





Maharam

Safety Series is a 75 percent modacrylic/25 percent nylon wallcovering and upholstery fabric in a crisp, cottonlike texture. Available in 4 patterns and 104 colorways, Safety Series has a high durability rating. *Circle 140 on reader service card*

Herman Miller

Ethospace interiors allow people to shape their office environments to suit their work styles. The system of space frames with snap-on tiles is available in a variety of colors and materials. *Circle 142 on reader service card*



Metropolitan

The Arm Chair Group, designed by Brian Kane, is a small-scale lounge group that offers an assortment of design options for chairs, loveseats and sofas. Variations include five arm forms, long or short frames, and bases of stainless steel or painted metal.

Circle 141 on reader service card



Modern Mode

Stratus, a panel system designed by Norman Cherner, stacks in combinations of three horizontal units for a number of different height configurations. Texture and color variations are also possible.

Circle 143 on reader service card





Monteverdi-Young The Arm Chair and Open Arm Executive Client Chairs from Monteverdi-Young feature walnut frames with lacquer finishes and antique bronze casters. The chairs are upholstered in leather and fabric in a range of colors. Circle 144 on reader service card



Nienkämper

The Raffles Table features an oval tubular frame with a choice of clear, smoked, or bronze glass top in three versions. The frame is available in mirror-polished or high-gloss black finishes. Circle 145 on reader service card



Paul Associates The Halogen Wall Sconce is part

of a collection of contemporary lighting from Paul Associates. The design is also available as a floor lamp.

Circle 146 on reader service card



Harvey Probber

The MESA Executive Desk Collection includes desks, credenzas, CRT furniture, conference tables, bookcases, breakfronts, and wall-hung cabinetry. Finishes and pulls are available in either contrasting or matching combinations of lacquer and veneer.

Circle 147 on reader service card



Randolph & Hein

The Linder Armoire features a curved façade. Designed by Martin Linder, the armoire is of ash veneer with a Japanese glaze. It is also available in custom sizes and finishes.

Circle 148 on reader service card



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18 Design Cost Analysis for Architects & Engineers

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ST, WEEK '86





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Stroheim & Romann Stroheim & Romann features the Chesham Collection from Liberty of London. Bauhaus, a colorful geometric, shows the influence of the German Modernists. The 100 percent cotton fabric is available in 4 colorways. *Circle 156 on reader service card*



SunarHauserman

Architect Michael Graves has redone part of SunarHauserman's PDC showroom to feature Design Option/Cameron fullheight panels, from a system of panels and freestanding furniture designed by Douglas Ball. *Circle 157 on reader service card*

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WEST WEEK '86







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Books

Campus: An American Planning Tradition by Paul Venable Turner. The Architecture History Foundation, New York, and The MIT Press, Cambridge. 1984, 337 pp., 309 illus., \$35.

The Life and Work of Henry Roberts, 1803–1876, Architect by James Stevens Curl. Phillimore & Co., Chichester, 1983, 273 pp., illus., \$40.



The LIFE and WORK of HENRY ROBERTS 1803-1876 Architect

JAMES STEVENS CURL

Campus and Social Housing

Campus

"Bright college years, with pleasures rife/ The shortest, gladdest years of life." So began the song of the university where I learned both about American culture and about architecture. That university aculturated me into its version of the American Dream and ethic not so much with sports, pranks, or even serious intellectual discourse, as through the physical design of an extraordinary set of architectural masterpieces and didactic collegiate ensembles. Paul Venable Turner, in his Campus: An American Planning Tradition, spends several hundred well-illustrated pages trying to explain and elucidate how the physical planning and design of the American collegiate environment has developed into one of the most potent models for a real or idealized state. Certainly the American campus is the place where the American ideal of an institutionalized self-education of man into both a social and a natural composition of rational harmony has been best realized. At the same time, the amount of time and energy spent on the design of these campuses has made life in them indeed sweet and full of architectural pleasures. Unfortunately, Turner seems to have neither romantic memories nor a clear thesis on the function of the American university to serve as a curriculum for his typological survey of more than three centuries of campus design.

Turner quickly defines the unique quality of the appearance of even the earliest collegiate buildings. Instead of monastic precincts in crowded urban centers, American colleges were at first, as Dickens noted about Yale, "erected in a kind of park ... dimly visible among the shadowing trees." This isolation both reinforced the native American architectural dialogue of man-made order and innocent, natural splendor, and encouraged the formation of the campus as a Jeffersonian "academic village" or utopian model for urban development. Ironically, what Americans most wanted to do, though, was to imitate European, and more specifically English, models. The university was the place where the rough pioneer was educated into civilized, imported values. This tension between an innovative innocence, which allowed for the creation of new building forms and the desire to clothe America with all of the secure traditions of an established order, was eventually beautifully realized by Jefferson as a series of deliberately disparate architectural elements, centered on an ideal and new library type based on perfect geometry and classical models, and reaching out towards the natural landscape, yet restrained both by simple brick walls and a row of Classical columns. The tension it built, not its forms, lies at the heart of much of American campus planning. To Turner, there is no tension, only the succession of a series of discrete architectural forms responding to the specific needs of academic institutions.

Yet Turner never clearly defines those needs, nor does he define the cultural context in which both the colleges and their buildings were developed. He proceeds from the quick description of the original buildings of Harvard, Yale, and William and Mary to the innovations in the placement of related buildings made in the planning of the University of North Carolina and Princeton (where the word "campus" was first used) without pausing to inform the reader about more than the barest outlines for the reasons for founding these institutions, their curricula, their place in their community, or their ideology. This lack of contextual placement does not become problematic until the author himself admits bafflement at the lack of imitators of Jefferson's powerful University of Virginia model, without pausing to wonder

whether the failure of the ex-President's idealistic curriculum and his agrarian cooperative ideals might not have something to do with the fact that only a century later, when the Virginia campus could be treated as a historical type in its own right and could be used for then current nostalgically reactionary political and educational goals, such successful campus architects as McKim, Mead and White reused the forms, if not the functions, developed by Jefferson.

When Turner surveys the emergence of land-grant colleges after 1857, he similarly mentions, but does not focus on, the differences of scale and audience that led to a completely different set of forms for these brand new institutions. Instead, he tries to put forward Frederick Law Olmsted, few of whose campus plans were ever executed, as a major influence on the design of whole campuses, as opposed to isolated buildings. He thereby glosses over the increasing split between the older, established Ivy League-type colleges, which were increasingly becoming closed bastions of privilege, and the large, utilitarian, and open complexes, which housed the ever more diverse functions of the large state universities.

Even in his discussion of the collegiate complexes of this century, which range from the liberal arts idyls of Kenyon and Wesleyan to the megastructural processing plants of the State of New York, and from the community commuter shopping mall colleges of California to the locked gates of Harvard, Turner seems more interested in defining specific design strategies that can be applied to the typological transformation of any, however vaguely defined, college, than he does in examining case studies or specific campuses. The book is breathless in its depth of research, and shallow in its survey. In the end, Turner calls for campus design that will prove "... the power that a physical environment can possess as the embodiment of an institutional character" without ever defining



College of William and Mary, Williamsburg, Va., 1740. Colonial Williamsburg photograph.



University of Missouri, Columbia, Main Building, 1875, Stephen Hills. Library of Congress.



State University of New York, Albany, Model for master plan, 1961, Edward Durell Stone Associates.

that environment, that institution, or that power.

Yet Turner's catalog of great campuses does reveal a dazzling array of forms and compositions, none of which seem to escape the erudite author's attention. The transformations wrought in the English courtyard college, the influence of Beaux-Arts planning and the large sports stadium, the placement of buildings in a row, a u-shape, or a quadrangle are all traced according to the campus where they first appeared, and then where they were most fully developed. In this manner, *Campus* is an invaluable reference book for any student of the history of this specific type of American building. What is lacking is any discussion of the myth and meaning of the campus. I share with the author an enthusiasm for the American campus because it does allow architecture to show how it can propose an ideal, yet realized community of people in close relation both to a larger community and to nature. Even in the most urban campuses and most elite bastions of privilege, the power of design to actualize such a community through the didactic clarity in the composition of its architectural elements remains unsurpassed. Turner's beautifully researched, written, illustrated and laid-out volume will provide theoreticians and practitioners alike with a tool for design strategies with which to carry on that tradition. *Aaron Betsky*

The reviewer, an architect and architectural critic working in Los Angeles, is currently writing a monograph on James Gamble Rogers.

Henry Roberts

In The Life and Work of Henry Roberts, James Stevens Curl blends biography, architectural history, and social history in an effort to acquaint us with the character and accomplishments of the Victorian architect and social reformer Henry Roberts. Beginning with a sketch of Roberts's career, Mr. Curl proceeds to describe his chief architectural projects, concentrating, quite appropriately, on Roberts's best known works, his model housing for working-class families. The book is well illustrated, featuring plans and elevations of Roberts's most important works, as well as numerous reproductions of drawings, lithographs, etc., of Roberts, his family, and his completed works.

In addition to examining Roberts's contribution to architecture, Mr. Curl is also at pains to set his work in the context of the broader, evangelically inspired reform movement of the age. As he notes, the typhoid and cholera epidemics of the 1830s did much to increase public awareness of the appalling sanitary conditions of the urban working class and helped instigate a widespread demand for housing reform. Active at a time when the devastating effects of industrialization on the urban poor had become too obvious and too widespread to ignore, Roberts was in the forefront of the evangelical crusade for housing reform-a crusade that sought to better the spiritual welfare of the poor by bettering their squalid material conditions. Mr. Curl dwells particularly on Roberts's proselytizing work for the Society for Improving the Condition of the Labouring Classes, which was founded in 1844 and of which Roberts was a charter member. He concludes his study by reviewing Roberts's

influence on legislation for housing reform in Great Britain as well as his considerable, and lasting, influence on workingclass housing design in England and on the Continent. A series of appendices collect a variety of historical and architectural minutiae: sample leases and construction costs for the model dwellings, a set of rules for the lodgers, Roberts's specifications for a project, and so on.

Roberts began his career as a student of the distinguished Neo-Classical architect Robert Smirke—the architect of the British Museum—and his early work includes competent if somewhat formulaic examples of the genre, most notably Fishmongers' Hall (1832) in London. He also designed several private dwellings and Gothicstyle churches. But he is remembered mostly in connection with his innovative designs for urban working-class housing.

Like many architects working under the budget constraints common to such projects, Roberts has been criticized for crowding and overbuilding. But he was one of the first to design fully self-contained apartments for working-class families, and his use of balconies to provide a separate entrance for each unit was widely imitated. Typical was his design for model housing at Streatham Street, Bloomsbury (now renamed Parnell House), which featured a central courtyard with access to each unit via a balcony, communal bath and wash house, and self-contained apartments that included a living room, two bedrooms, kitchen, and water closet. This and his model housing designs for the Great Exhibition of 1851 are generally considered his most important and successful works.

Working-class housing is neither the most engaging nor the most memorable chapter in archtectural history; it simply has not, as a rule, attracted the best energies of the best architects. But within its annals Roberts has secured himself an honored place. As John N. Tarn notes in his balanced and lucid study, Five Per Cent Philanthropy, An Account of Housing in Urban Areas between 1840 and 1914, Roberts "was a real pioneer of housing design, the father of the whole working-class housing movement." By 1862, Tarn continues, he was "probably the greatest living authority on the planning and construction of model dwellings" for the working class. Mr. Curl echoes-indeed, he amplifies-this praise, (continued on page 164)



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and his book is essentially an attempt to elevate Roberts from his accustomed place as a footnote in late 19th-Century architectural history to a more featured role.

With this in mind, Mr. Curl champions Roberts's moral and social achievements no less than his architectural ones. Roberts, he explains, was a devout evangelical Christian, and many pages are devoted to his tireless pamphleteering on behalf of housing reform. (It is perhaps not immaterial to note that his success as a lobbyist translated not only into better living quarters for the poor but also into substantial commissions for himself.) Roberts's continued good works were thwarted, however, when it was discovered that he, a married man and a spokesman for the Society for Improving the Conditions of the Labouring Classes, was having an affair with (as Mr. Curl puts it) "a lady of humble origin." This did not sit well with Roberts's colleagues in the Society and the scandal that ensued effectively ended his career.

Mr. Curl obviously has tremendous admiration for the person and work of Henry Roberts. Unfortunately, his prose, while it may indeed imitate the sensibility of his subject, does little to enlarge our appreciation of his merits. In the first place, Mr. Curl has a great deal of difficulty with straightforward, historical narrative. He is redundant, and he allows an abundance of insignificant detail to clutter his pages and obscure the overall story he is attempting to tell. Further, he is infatuated with the trappings of "society"with royalty, titles, and the likeand this gives his book a slightly comic, "other era" feel. Both of these faults can be best demonstrated by quoting from his text. One could pick pretty much at random, but one of my favorite passages describes Roberts's wedding:

"During the mid-1840s Henry Roberts was planning to marry. The lady of his choice was Catherine de Swetschine, the daughter of a Russian nobleman, Demetrius de Swetschine. Mademoiselle de Swetschine was twenty-seven when Roberts became her husband on 15 April 1847 at a ceremony in the Parish Church of Paddington. Henry Roberts was thus one day short of being forty-four when he entered into matrimony.... The Rev. Bapist Wriothesley Noel officated at the marriage ceremony. Henry's brother, Charles Roberts, was there, as was James Foster of the London City Mission, and J. Coles Symes. The marriage was reported in The Times. The best man was" Well, It was "the Hon. Arthur Fitzgerald Kinnaird," a fellow zealot and eventual Vice-President of the Society for Improving the Condition of the Labouring Classes. But does it really help to know this?

Reading through *The Life and Work of Henry Roberts*, one is not surprised to learn that Mr. Curl is best known as the author of works on funerary architecture, *The Victorian Celebration of Death* (1972) and *A Celebration of Death* (1980). For there is something unmistakably funereal, something cloyingly pious, about the tone of this book. "Having lived so close to Roberts for so long," Mr. Curl writes in his concluding remarks,

"... one can only feel humbled by his immense achievements, saddened by the personal tragedies of his life, and deeply moved by his humanity and practical sense of caring. Having handled some of his personal possessions, letters, and pieces of ephemera that fortunately survive among the papers of the family, and having found his elusive grave at long last, one feels immeasurably close to the man.... In the Evangelical cemetery in Florence, his grave shaded by a wall and by mature trees (Plate 61), lies a great man, perhaps one of the best of all eminent and not-so-eminent Victorians."

But sadly, in attempting to boost the reputation of Henry Roberts, Mr. Curl is faced with one insuperable problem: Roberts's real but decidedly modest accomplishments as an architect. If adjectives alone could confer genius, then Mr. Curl might indeed have been able to convince us that Roberts was possessed of extraordinary talents that had somehow been overlooked. But praise, alas, is not enough. Even after the excessive tribute provided by Mr. Curl, Roberts remains what he has been all along: a dedicated if somewhat unattractively moralistic reformer whose achievements as an architect merit a brief mention in any study of the period. Roger Kimball

The reviewer, a recent doctorate of Yale's Modern Studies Program, frequently contributes to The New Criterion and other magazines.



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P/A in March



HongkongBank Headquarters, Hong Kong. Architects: Foster Associates

Hong Kong's High-Tech Tower

For its March issue, P/A has taken the unprecedented step of devoting all feature pages to a single structure, the remarkable HongkongBank New Headquarters by Foster Associates of London and Hong Kong. Almost every element of this 47-story aluminum-clad tower has been the subject of research and innovation: the structural system, the precise metal cladding, the vertical circulation systems, the daylighting, and virtually all of the mechanical parts. The issue is an occasion to review the history of high-tech, the basics of high-rise buildings, and other subjects suggested by this audacious structure.

Future Issues of P/A

In April, P/A will bring you a collection of articles on energy in architecture, including the latest on HVAC systems and some postoccupancy evaluations of buildings designed for energy conservation. In the same issue will be a major feature on Maki's Wacoal Center in Tokyo, a new kind of urban building. The May issue will bring you the results of P/A's annual furniture competition, a Technics study of high-tech labs, plus several refreshing examples of new American architecture.



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New Products and Literature

122 Technics-Related Products169 Lighting and Fixtures170 New Products and Literature



Club floor lamp from AI.



Grip 36 fixture with PAR 36 lamp, Lazin.

Lighting and Fixtures

Designed as "the perfect reading lamp," the Club floor lamp by Pier Giuseppe Ramella, available from AI, is highly adjustable. The conical metal base rises 35 inches, and an extendable arm adds another 11 inches. The halogen lamphead and discshaped diffuser of frosted acrylic rotate through almost a full circle. High- and low-beam settings increase Club's versatility. *Circle 102 on reader service card*



Shogun Wall by Mario Botta, Artemide.

The Grip 36 fixture was designed by Gary Payne of Magnan Payne Associates specifically for use with his PAR 36 lamp. Constructed of wrapped aluminum rods, the Grip 36 has an adjustable arm that allows the lamp to slide up and down and rotate on two planes. Available from Lazin Lighting, the fixture comes in both track and surface-mounted units, and will hold line or lowvoltage PAR 36 lamps. *Circle 101 on reader service card* Designed by Swiss architect Mario Botta for Artemide, Shogun is a group of lamps featuring adjustable, curved diffusers of perforated white metal. Shown is the wall sconce. The diffuser's resemblance to the wicker armor worn by Japanese feudal warriors inspired the name. Shogun is also available in floor and wall versions, with black-and-whitestriped bases.

Joanna Wissinger Circle 100 on reader service card



Alpine wallcovering, designed for contract use, consists of 19 patterns and 133 colorways. The collection, available in 27-inch and 54-inch widths, has a Class-A fire rating and highly durable and washable surfaces. J.M. Lynne Company. *Circle 220 on reader service card*

The GGL roof window is available with an electric operator concealed behind the ventilation flap at the top of the sash. Model EB control option quickly opens and closes the window unit from a remote switch, making it suitable for out-of-reach installations or for the handicapped. The unit is available for eight sizes of Velux GGL series roof windows. Velux-America, Inc.

Circle 221 on reader service card

Fox Lite ventilating skylights

have insulated, triple-glazed domes hinged to single-piece, self-flashed molded curbs. They are supplied with insect screens and manual operating units, with optional motorized operators. A seamless outer shell prevents leaks, drips, and drafts. Models are available in five sizes from 16" x 24" to 32" x 32". Fox Plastics Corp.

Circle 222 on reader service card

Visual Presentation Systems are trim wall cabinets for confer-

ence, training, and lecture rooms, offices, or modular workstations. They contain a variety of communication tools: flipchart, porcelain writing surface, and tackable door interiors for "chalk talk." Optional front and rear projection screens are ideal for slide presentations or overhead transparencies. Exterior finishes are hand-rubbed hardwoods and solid color or woodgrain laminates. Draper Shade & Screen Co., Inc. *Circle 223 on reader service card*

Recessed facial tissue dispens-

ers have been added to the Accent Series of washroom accessories. Model 9878 holds a standard box of 200 tissues; Model 9878-36 holds a 300-tissue box. Both dispensers are available in 14 standard colors. They are fabricated from heavygauge galvanized steel, and faceplates have a solid plastic laminate bonded to a phenolic core. Recessed mounting discourages vandalism and conserves washroom space. Bradley Corporation.

Circle 224 on reader service card

Key Klamps threadless slip-on pipe fittings for low-cost guard railing construction save pipe cutting, threading, and assembly time. Long lengths of pipe can be run through the fitting without having to be cut and threaded at every intersection and cross over. A hex wrench tightens the fitting in place. Key Klamps are designed to be used with standard one-half-inch to two-inch iron pipe. Kee Industrial Products, Inc.

Circle 225 on reader service card



The Manco Suspended Table is a legless, ceiling-suspended table that pushes up out of the way. It is very efficient for nursing homes, senior centers, hospitals, and other facilities using large areas for various activities. The table has a counterbalance system that simplifies up-down operation. It comes complete with heavy-duty ceiling fixture, suspension arms, and table. Electric operation is optional. Manco Corporation.

Circle 226 on reader service card

Doorman[®] heavy-duty door closer is designed for heavier doors like those found in older homes, condominiums, and offices. Designed for either metal or wood doors, it makes them "slam-proof" and saves energy when used on exterior doors by keeping in warm air in winter and cool air in summer. It has a hold-open setting and a closing speed and latching speed to make sure doors are closed safely and securely. Ryobi America Corporation. *Circle 227 on reader service card*

The Tuxedo occasional

armchair for residential and contract use has high sides and back, a loose cushion, and tightly fitted upholstery. The handcarved beechwood frame is available unfinished or with IPF finishes. The chair is 29 inches high, 26 inches wide, and has a seat height of 18 inches. IPF International.

Circle 228 on reader service card



The Dufy Collection of fabrics is a translation of French Impressionistic art by Raoul Dufy, produced by A&M Baker, London. There are four designs in 11 colorways, printed on heavily glazed 100 percent cotton chintz, 54 inches wide. The Petals (shown) is an interpretation of petals on petals, toned and shaded to create depth and dimension. Other designs are The Flames, Floral Stripe, and The Bird in the Flowers. Kirk-Brummel Associates.

Circle 229 on reader service card

Architectural Construction & Engineering Directory (ACE)

provides architects and engineers information about codes, specifications and standards. and vendor products relating to building design, facilities maintenance, and construction. ACE is organized into three major parts: A directory structured around the AIA MASTERSPEC® that complies with the 16-division MASTERFORMAT[®]; an alphabetic list of over 290 references to professional and trade associations and institutes; and a manufacturer's index of over 9000 construction-related vendors. Information Marketing International.

Circle 230 on reader service card



The Aurora series of office seating includes high and low back Flex chairs, sidechairs, stenographer, and task seating. There are six upholstery styles, six arm treatments, and three base options, offering several combinations to satisfy most design tastes. Stenographer and task seating have seats and backs contoured for comfort. Bases are finished in chromium or one of 16 Kaleidakoat colors. Flex chairs keep pressure off the legs while maintaining contact with the floor. Brandrud Furniture, Inc. Circle 231 on reader service card

The Expressions Collection of vinyl composition tile features through-tile patterns. Available in eight colors, the 12" x 12" x 1⁄8" tiles have coordinating cove base and one-inch accent strips. Expressions flooring offers exceptional durability and resists abrasions, scratches, and stains. It can be installed over most subfloors; installation over a Quiet-Cor foam underlayment adds quiet, comfort, and insulation. Tarkett, Inc.

Circle 232 on reader service card

Driprint polyester "intermediate" films have reformulated front and back coatings for improved handling and reproduction characteristics. The films are used for duplicating original drawings for filing and distribution, for creating new drawings, and for protecting original drawings from excessive handling. Fifteen different Driprint films are available in sepia or black image colors, in thicknesses from .002 to .007 inch. Dietzgen Corporation.

Circle 233 on reader service card

Quartz lamp electric infrared heaters are all-weather units that melt snow on parking ramps. They can be mounted on heavy wall conduit posts about eight feet apart. Models are available that give an asymmetrical beam pattern so that there is no overlap and an efficient heating pattern. Aitken Products, Inc.

Circle 234 on reader service card

ProComm replacement window model 680 is designed with two fixed lites, giving the appearance of a double-hung model. It is available in thermal and nonthermal frames with double insulated glazing. Standard finishes and custom colors are available. Season-all Industries. Circle 235 on reader service card

Ultrawall[®] movable partitions 20-page idea file illustrates new

workstation ideas using fullheight partitions with suspended systems furniture components. The partitions add flexibility to new or existing furniture systems in new or remodeled spaces. Small areas can be used to create found-space workstations, or entire floors can be rearranged to meet changing needs. United States Gypsum Company. Circle 236 on reader service card



Syllables commercial ceiling system consists of five families of design-related panels that can be combined in different ways to create individualized installations. Made possible through computer technology and stateof-the-art manufacturing equipment, the ceilings are expected to have an impact on commercial interior design. Applications for Syllables are mercantile buildings, restaurants, banks, and areas of office buildings such as conference rooms, lobbies, dining rooms, and executive offices. Armstrong World Industries.

Circle 237 on reader service card

Nova Electronic Touch-Switch, available for nondimmed lighting circuits, provides on/off control of incandescent and fluorescent lights. Up to ten switches can be used for a single circuit, providing optimum flexibility for lighting controls. They can be ganged with other Nova units, and one-piece faceplates are available for unified appearance. The Nova series is covered in a four-color, four-page brochure. Lutron Electronics Co., Inc. Circle 238 on reader service card

The Click System of aluminum extrusions and connectors for all types of interior architecture is described in two new brochures. One provides introductory information on some of the more common applications; the other shows the complete range of parts. Click Systems, Inc. Circle 239 on reader service card



The Casa faucet collection, of all-brass construction, is available in chromium or white finish. The group includes kitchen and lavatory faucets, tub and shower units, Roman tub spouts, and bidet faucets. The faucets are available with a choice of handles. Moen Group, Stanadyne, Inc.

Circle 240 on reader service card

Pro Architectura ceramic tile consists of five color lines with a total of 19 individual shades that harmonize. It can be used for decorative accents such as stripes, diagonals, checkerboard patterns, letters and numbers, or color sequences: light and dark, cool and warm, bold and subtle. The color lines are Basis, which includes primary colors red, yellow, and blue; Blue, a full spectrum of blue tones; Greige, one soft gray and one light beige; Postmodern, novelty colors in subtle shades; High-Tech, gray tones plus black and white. Villeroy & Boch (USA), Inc.

Circle 241 on reader service card

Recessed folding shower seat, Model B-521, for the handicapped supports up to 500 pounds. Made of 16-gauge type 304 stainless steel with satin finish the seat raised to the up position fits into a recessed wall box and is flush with the surrounding wall surface. Designed for use in hospitals and nursing homes, it is also suitable for correctional facilities where lack of space is a problem. Bobrick Architectural Services.

Circle 242 on reader service card

The VIP Classic is a combination microcassette dictation unit, full-featured telephone, and telephone answering system designed to eliminate up to three office units from the executive's desk. Capabilities include: a speakerphone for hands-free conversations; speed dialing with storage of up to 28 numbers; redial of the last number

and auto-redial that recalls busy numbers every 60 seconds up to ten minutes; LED display of time of day, number dialed, and elapsed time of conversation; telephone record of important phone conversations; and an alarm system to remind the user of important appointments Lanier Thought Processing Division, Harris Business Information Systems.

Circle 243 on reader service card

Pocket Pro 1 portable computer eliminates time sheets for architects and designers by keeping an accurate time log. The handheld computer stores all information in memory for up to a month and operates for an extended time on its rechargeable battery. It features a timer interrupt button, flexible hourly rates, a billing code, and subject matter for each event. Billing information and reports can be read directly from the display, printed on a serial printer, or transferred to another office computer. Innovel, Inc. Circle 244 on reader service card

Metal ceilings and walls shown in a color brochure are stamped from original dies dating back to before the turn of the century. Cornices and girder nosings are included, with height and projection information. The Nostalgia Collection, also included in the brochure, consists of cast-aluminum lamp standards, fountains, urns, and sconces and wrought iron designs for gates, grates, windows, doors, and fences. Pinecrest.

Circle 245 on reader service card



Geoblock Landscaping System, an alternative to hard surface

pavements, supports pedestrian and vehicular traffic while maintaining a thick cover of grass. Interlocking blocks are made from lightweight, high-strength reinforced plastic. Available in heavy-duty 36" x 12" x 2" size and lighter duty 36" x 12" x 11/8" size, blocks can be cut easily with a hand or power saw for custom fit around obstructions. Presto Products, Inc.

Circle 246 on reader service card

Adapta Station® computer workstation adapts to people and the way they work. Screen and keyboard adjust for maximum comfort and reduced fatigue. Three models are available to match workstation requirements: Standard, Mechanical, and Electrical. Borroughs Div., Lear Siegler, Inc.

Circle 247 on reader service card

Ceramic tile products catalog features full-color reproductions of approximately 200 colors, patterns, and textures available in several sizes, and applications in actual installations. The 20page catalog contains drawings of trim shapes available in each line, colors, sizes, recommended applications, and general specifications. Gail Architectural Ceramics.

Circle 248 on reader service card



A modular ceiling system that can be installed as easily as any suspended ceiling meets onehour fire requirements of most contract applications. A wide variety of colors and special finishes are available. Innovative Ceiling Systems. Circle 249 on reader service card

Commercial flooring catalog for 1986 covers solid vinyl and vinyl composition floor tile. The 20page catalog contains full-color illustrations of commercial patterns in vinyl composition tile, Luxury vinyl tile, Vinylcraft custom-designed floor tiles, and strip and vinyl cove base. General information on sizes, uses, installation, light reflectance values, and brief specifications are included. Azrock Floor Products.

Circle 250 on reader service card

Recessed and high intensity discharge (HID) lighting catalog reviews candle power distribution curves, footcandle spacing charts, and cones of light calculations for each product. The 84page catalog provides information about lamp sources, lighting applications, and the optical effects of reflectors, baffles, and lenses. Halo Lighting. Circle 251 on reader service card (continued on page 172)



Softline, a new laminating process, gives the impression of a continuous door covering on kitchen cabinets, from the face panel to the complementary colored, contour door edge laminate. Designs by Alessandro De Gregori of Italy are four kitchen door colors with an optix grid and matching shades for door trims, as well as a selection of complementary countertop tints. Laminates were produced by Formica Corporation. Capri Kitchens, Inc.

Circle 252 on reader service card

Mercer floor and carpet mold-

ings of resilient vinyl are available with mirror or matte finish in several colors. Products include wall base, stair treads, stair nosings, saddles, and carpet edges. Mercer Plastics Company, Inc.

Circle 253 on reader service card

A compact rotary storage unit provides double-face access from a single side or double access from two sides. Each unit has adjustable shelving available in legal or letter size, with seven or eight tiers. The file can accommodate letters, legal files, computer printouts, tape reels, or books. Aurora Steel Products. *Circle 254 on reader service card*

Ridge UniventTM provides ventilation of warm air that has risen to the attic. It prevents heat build-up that can cause moisture condensation on the underside of the roof, with the potential for roof deterioration. It also helps reduce air conditioning loads in summer. According to the manufacturer, wind action over the roof draws air out of the attic through the vent while keeping out rain and snow. There also are models that can be used with nontraditional roof designs. Air Vent, Inc.

Circle 255 on reader service card

Gypsum Shaftwall Assemblies brochure explains the advantages and limitations of Series V, which is suitable for elevator shaft, stairway, and mechanical services enclosures. The 12-page brochure discusses component features, framing procedures, and recommended location of joints. There is a chart of structural data, and details show construction of two-hour rated walls and framing of doors and mechanical penetrations. Genstar Gypsum Products Co. *Circle 256 on reader service card*

Building Products Catalog for 1986 features product data about lumber, insulation, metal products, structural wood panels, gypsum products, paneling, roofing, and siding. A new section covers engineered board products including medium density fiberboard, industrial particleboard, and hardboard. Georgia-Pacific Corporation. *Circle 257 on reader service card*

Echelon 30-ounce dense cut pile broadloam, made from 100 percent Commercialon® soil-hiding nylon, is highly twisted and continuously heat set for appearance retention. It is offered as broadloom carpet or modular carpet tiles in 20 designer colors. J&J Industries, Inc.

Circle 259 on reader service card

The Promenade tile series, designed for commercial applications, is suitable for both interior and exterior installations. Its textured surface inhibits slipping in high traffic areas. Promenade is available in five colors: Alpaca, Nectarine, Cinnamon, Malibu Sand, and Suntan. It comes in two sizes, 8" x 8" and 4" x 8", with matching 4" x 8" surface bullnose. A description of Promenade is included in the company's 20-page 1986 catalog. Monarch Tile Manufacturing, Inc

Circle 260 on reader service card



Roma sidechairs by designer Roberto Giussano are clad in thick Military leather, saddlestitched onto a welded steel structure. The leather back is contoured for comfort; seat panel, made of high-density molded fiberboard, is supported on steel cross members. The seat curves downward at the front, giving the feel of an upholstered chair. Tubular steel legs have smooth plastic glides. The chair is available in five colors: black, white, Bulgarian red, gray, and natural. Monel Contract Furniture, Inc.

Circle 258 on reader service card

Stationary and operable louvers in various sizes with many blade configurations are described in a 16-page catalog that provides detailed material and construction specifications. AMCA certified performance data are included for many models, showing pressure drop, water penetration, and free area, to help select proper louver types and sizes. Arrow United Industries, Inc.

Circle 261 on reader service card



The SwirlFlo[®] series of water coolers includes a two-level wheelchair model with two fountains. The lower one projects out for wheelchair use; the other is set at conventional height for regular use. Each support arm has its own integral recessed bowl. Most SwirlFlo models have the Flexi-GuardTM safety bubbler to prevent accidental mouth injuries; a contoured basin to minimize splashing; and an inline flow regulator to provide a constant stream from 20 to 100 psi. Elkay Manufacturing Company.

Circle 262 on reader service card

Architectural fountain systems brochure illustrates the use of water as an element of architecture. Illustrated in color are fountains and waterfalls. The WaterWorks® System, a prepackaged unit that includes pumping, filtration, and electrical systems for direct-burial or skid-mounted types is featured. A selection guide for determining the WaterWorks system required is included. Imperial Bronzelite, Architectural Lighting & Fountains.

Circle 263 on reader service card

Building Materials

Light of the World Catholic Church, Littleton, Colo. (p. 82). Architects: Hoover Berg Desmond, Denver. Brick veneer: Summit Brick. Glass block: Pittsburgh Corning. Skylights: baptistry tower, Rocky Mountain Skylight; gallery, Sunglo. Doors: exterior, Simpson; interior, Alpine Woodworking. Tile: American Olean. Carpet: Walters Index. Wood flooring: Perma Grain Products. V.C. tile: Azrock. Acoustical tile ceiling: United States Gypsum. Fiberglass shingles: Manville Corp. PVC ballasted sheet: Barra Corp. of America. Joint caulking, sealants: General Electric, Pecora, Tremco. Fiberglass insulation: Manville Corp. Paint: exterior, Tnemec; interior, PPG, Tnemec. Stain: Olympic, PPG. Hardware: hinges, Stanley; locksets, Sargent; floor closers, Rixson-Firemark; concealed bolts, Von Duprin. Lighting: exterior, Kim, Prescolite, Lightolier; interior, NL, Lightolier, Prescolite, Metalux. Plumbing: fixtures, Kohler; fittings, Chicago Faucet; flush valves, Sloan; toilet stalls, Global; washroom accessories: Bobrick Boiler: Ajax. Fan units, chiller: Carrier. Environmental control system: Barber-Coleman. Furniture: Alpine Woodworks, Woden Woods, Sauder. Chair fabric: Architex. Plastic laminate: Wilsonart. Audio-visual: phase unit, Arion; projector, Kodak. Acoustical: infrared emitter, receiver, Sennheiser; loudspeakers, JBL, Sennheiser; turntable, Technics; AV tape deck, Tascam; auxiliary tape deck, Akai. Dimmer panels: Electro-Controls.

Profile: Koning Eizenberg Architecture, Santa Monica, Calif. (p. 110). Given-Dennis duplex, Santa Monica, Calif. Exterior siding: Champion. Windows:

Shugg. Skylights: Classic Skylights. Paint: Ameritone. Hardware: Ironmonger; Schlage. Exterior lighting: Hubbell. Interior lighting: Halo. Bathroom fixtures: American-Standard. McMillen studio, Santa Monica, Calif. Skylights: Classic Skylights. Roll-up door: Porvene. Paint: Dunn Edwards. California Avenue duplex, Santa Monica, Calif. Windows: Torrance; Fleetwood. Carpet tiles: Interface. Paint: Dunn Edwards; Ameritone. Hardware: Baldwin; Schlage. Lighting: Hubbell; Lightolier; Halo. Bathroom fixtures: American-Standard. Plumbing fittings: Chicago. Heating system: Carrier.

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Architectural firm in Tampa specializing in large scale development, commercial and public assembly facilities is seeking candidate to fill the following position: Project Architect—must have 10 years min. experience in all phases of design and construction administration. Registration in State of Florida and/or NCARB Certification required. Reply to Box #1361-473, Progressive Architecture.

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FACULTY POSITIONS TO BEGIN FALL 1986

Applications are sought for position at Assistant Professor level. Appointment to this position is on tenure track. Additional information available by writing: Chairperson, Faculty Search Committee, School of Architecture, Washington Univ., St. Louis, MO 63130. Washington University is an Equal Opportunity/Affirmative Action Employer.

NORTH DAKOTA STATE UNIVERSITY Department of Architecture, seeks applicants for four assistant professorships be-ginning Sept. 1986. Three positions tenuretrack; all renewable 9-month basis. Applicants must have graduate degree in architecture or related field, or first-professional degree with extensive professional work Registration, professional experience, and teaching experience desirable. Responsibilities will include studio teaching and lecturing in appropriate field of experience or interest. Resume and three references should be sent by 1 April 1986 to: Search Committee, Department of Architecture, North Dakota State University, P. O. Box 5285, Fargo, ND 58105. NDSU is an Affirmative Action/Equal Opportunity Emplover.

Project Coordinator-For structural steel construction. Using drafting techniques, draws plans for structural steel construction; estimates projects costs; supervises iron workers in erection of structural steel in the field. 4 yrs. college B.S. in Civil Eng'g. or Architecture required. 3 yrs. experience in the job or as an Architect required. Educational background must include at least 1 course or seminar in Critical Path Management (CPM). 40hrs/wk. 7A.M. to 4P.M. \$36,900/yr. Send resumes to Illinois Job Services, 910 S. Michigan, RM. 333, Chicago, IL 60605. ATTN: Ms. Jaskowiak, Ref.#4663-J. An employer paid ad.

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Texas A&M University. Department of Architecture, is seeking outstanding candidates for fulltime tenure track positions, for undergraduate and graduate programs, effective September 1, 1986. In addition to general architectural design, design media, and computer applications experience, the department has a particular interest in adding to its Interior Architecture faculty. Rank and salary dependent upon qualifications. A professional degree in architecture and professional registration preferred.

Submit curriculum vitae, three letters of reference, and a letter of application stating your design and teaching philosophy to David G. Woodcock, AIA, RIBA, Head, Department of Architecture, Texas A&M University, College Station, Texas, 77843-3137, by April 15, 1986. Women and minority faculty are encouraged to apply.

The School of Architecture at The University of Tennessee seeks candidates to fill up to two tenure-track positions at the Assistant Professor level—two-thirds teaching time in design and one-third in related disciplines. Appointments will begin September 1, 1986. Qualifications sought are Masters Degree in Architecture or equivalent, experience in practice and teaching. License for practice preferred. Letter, resume, and three references to:

> Roy F. Knight Dean, School of Architecture The University of Tennessee Knoxville, TN 37996-2400

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