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LEWIS MUMFORD AUTOBIOGRAPHY: A REVIEW BY MARTIN FILLER

BUILDING TYPES STUDY: SHOPPING CENTERS

FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

APRIL 1982

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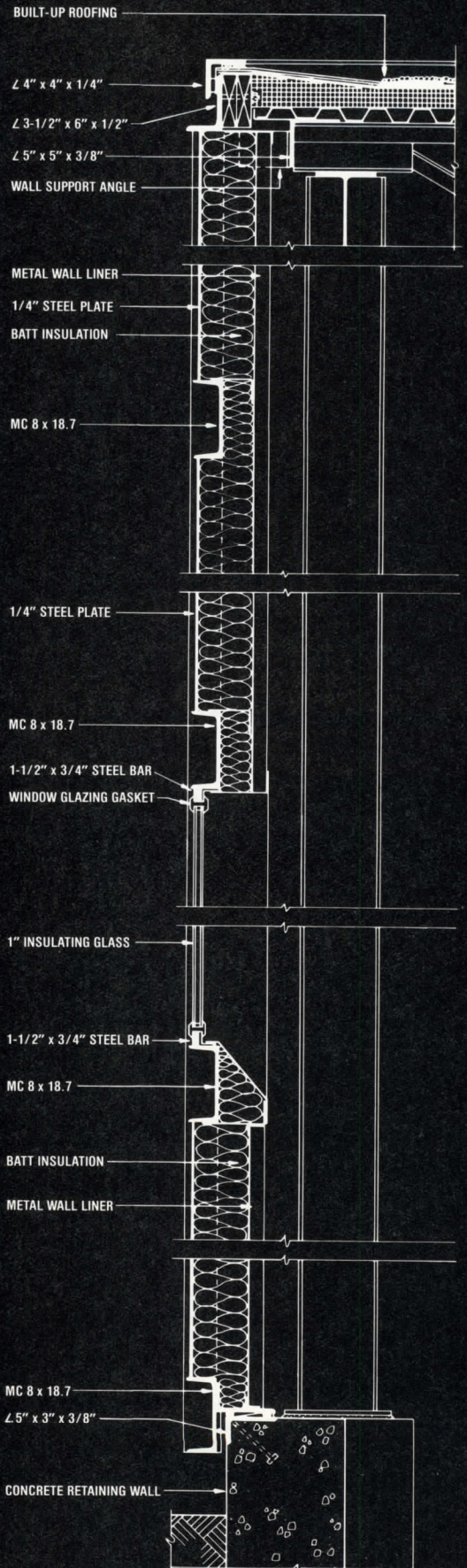


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On thinking about our cities and towns before all the decisions are made for us

In the altogether excellent and evocative interview with Paul Rudolph in last month's issue (page 90), one argument particularly interested me: "I saw [during a trip to Europe in 1948] that since time began people could add, subtract, remodel, redefine their cities in the most dynamic manner—and that style had little to do with it. The 20th-century penchant for specialization and its great teachers suggested that the planners would determine large-scale three-dimensional design and architects would fill in the details. Alas, it doesn't work that way. The freestanding building, an object in space, seldom contributes to urban design, but that concept dominates America today. Groups of freestanding buildings, each with no sense of hierarchy, unrelated to its neighbors, following laws completely unto itself, cannot give a sense of place."

That line of thinking by Rudolph got me thinking about the article, "Designing Downtown Pittsburgh," in the January issue. In that piece, author (and urban design consultant) Jonathan Barnett argues that "The phrase 'urban design' is still as much a presumption as it is a description, but something remarkably like urban design has been taking place in downtown Pittsburgh. It is not fully controlled by the Mayor, or by public participation and criticism, much less by urban design consultants, but it is produced by an intricate interplay of factors that can be guided but not given a definitive direction."

Well, if we can't have "definitive direction" in city planning in this complex, bottom-line oriented, tight-budget world, then I'd argue that trying to "guide that intricate interplay of factors" is better than doing nothing, which is what is happening in most cities.

Why can't city officials and investors and developers (and, of course, architects) in more cities and towns see the wisdom of a comprehensive basic plan of the sort adopted in Pittsburgh? It involves preservation and land-use policies (based on a carefully-worked-out inventory of existing buildings, graded for significance on a scale of one to four, encouraging mixed-use and downtown retailing and downtown housing, and specifically discouraging any more single-purpose office buildings set off by empty plazas). It also is based on a transportation policy, public open-space strategies, standards for street lighting, signage and street furniture, zoning and development controls (requiring a review of every downtown-development propos-

al—and there is great pressure for this review to take place *before* the building is designed and doesn't *that* make great and good sense). And finally, the city has decided in advance its priorities for public spending.

This kind of planning process seems so immensely sensible that it is hard to believe that something like it cannot be managed in more cities. Contrast that process with just one of New York City's current planning imbroglios: John Portman brought his plans for the much-talked-about Times Square hotel and Broadway mall to New York City *almost ten years ago*. The arguments were hot and heavy then: Would a Times Square hotel be good for the city, bad for the city, good for the theater district, bad for the theater district, was it in the right place, were the subsidies too high and what about the two existing theaters on the site which would be demolished under Portman's scheme? The financing folded up in 1975; but in 1978, Mayor Koch resurrected the scheme and rearranged much of the public subsidy. At that point, theater interests developed an alternative design which would incorporate the existing theaters into Portman's design—at some considerable cost and delay, of course, to Portman, who is not interested. Early last month, after almost 10 years of debate, yet one more judge extended yet one more time an order preventing demolition of the existing theaters until the full Court of Appeals can decide whether to consider the matter. And that process—no matter which side of the debate you are on—is an absurd process, absurdly drawn out. The decisions could and should have been made years ago.

The moral is simple: How much better it is for everyone involved—and for the city or town involved—when there is a plan, when landmarks are known to be landmarks instead of being made landmarks when they come under pressure, when the city has established its growth priorities and knows which projects to push for and which it wants to discourage. The time for planning and policy-making is now—so that when a development proposal comes along, or when the government is looking for a developer, everyone knows what the rules of the game are right from the start. Everyone—the Good Guys, the Bad Guys, the government, the developers, the lenders, the architects—and especially and most importantly, the public—would benefit. —W.W.



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NEWS IN BRIEF
 NEWS REPORTS
 BUILDINGS IN THE NEWS
 DESIGN AWARDS/COMPETITIONS
 REQUIRED READING

The Alcan gas pipeline helped boost contracting for new construction in January by four per cent, according to George A. Christie, vice president and chief economist for the F. W. Dodge Division of McGraw-Hill Information Systems Company. The month's \$10.6-billion total of newly started construction was heavily influenced by the \$1.6-billion segment of the pipeline that runs between Illinois and Montana, without which newly started construction would have declined eight per cent from December's rate, according to Christie. "The two most important features of January's data, aside from the pipeline, were stability in the housing sector and a significant decline in contracting for nonresidential buildings," he said. Nonresidential building fell 15 per cent, totaling \$3.5 billion after seasonal adjustment, and signaling a possible end to the recent boom in office construction.

An exhibit, "Grand Central Terminal: City within the City," will open at the New York Historical Society on May 27. The exhibit, organized by the Municipal Art Society of New York, explores the development of Grand Central Terminal and its influence on the physical, economic and social life of New York City through photographs, drawings, slides, sculpture, vintage film clips, text panels and a multi-level model of Grand Central Terminal.

Joseph Esherick, FAIA, will receive the seventh annual Award for Excellence in Architectural Education by the AIA and the Association of Collegiate Schools of Architecture (ACSA). Esherick is chairman of the department of architecture at the University of California, Berkeley. This award is presented annually to a living educator who has taught at least 10 years and who has made outstanding contributions to the field of architecture. It will be bestowed on Esherick at the ACSA's annual awards banquet in Quebec City on April 6.

Robert M. Maxwell has been appointed dean of the School of Architecture at Princeton University. The 59-year-old Englishman has been a professor at the Bartlett School of Architecture and Planning at the University College London since 1962. He is internationally known for his critical writings linking modern architecture with related themes in contemporary art, literature and music. Maxwell is also a partner in the London architecture firm of Douglas Stephan & Partners. Four times a guest lecturer at Princeton, he will assume his new duties in September, replacing Dean Robert L. Geddes, who will continue to teach and practice architecture.

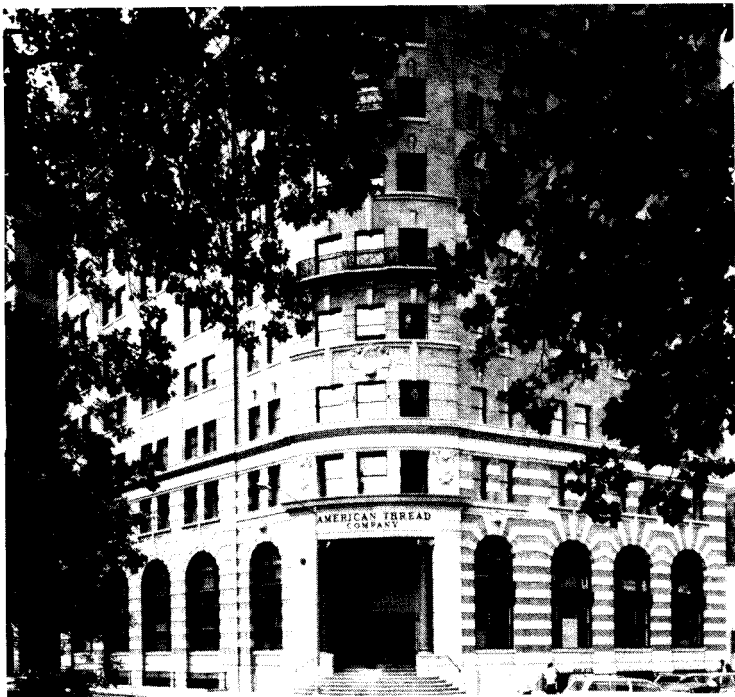
Nine properties have recently been designated National Historic Landmarks by Secretary of the Interior James Watt: Meadow Garden-George Walton House in Augusta, Georgia; Edison Institute in Dearborn, Michigan; Peavy-Haglin Experimental Concrete Grain Elevator in Minneapolis, Minnesota; Thorstein Veblen Farmstead in Nerstrand, Minnesota; Mutual Musicians Association Building in Kansas City, Missouri; Langstroth Cottage in Oxford, Ohio; Stan Hywet Hall-Frank A. Seiberling House in Akron, Ohio; Bear Butte, a large rock formation with special religious significance to the Cheyenne Indians, in Sturgis, South Dakota; and Holly Knoll-Robert R. Morton House in Capahosic, Virginia. The addition of these properties brings the list of Landmarks to 1572.

Three scientists and futurists will explore new architectural frontiers in outer space, under sea and on land, as part of the AIA's theme programs at the National Convention to be held in Honolulu this June: B. Gentry Lee, chief engineer of the Jupiter Project, which is aimed at exploring the planet Jupiter and its moons in the 1990s; Dr. Joseph MacInnis, a Canadian underwater researcher and explorer; and Dr. Gerard K. O'Neil, Princeton physics professor and futurist.

An exhibit, *Toward a modern reconstruction of the European city: Four Housing Projects*, will be shown at the Institute for Architecture and Urban Studies in New York City until May 28. Designs of four housing projects by the London-based Office of Metropolitan Architecture will be shown. Among the architects involved are Rem Koolhaas and Elia Zenghelis. They are to be built in Amsterdam, Rotterdam and Berlin. The IAUS is located at 8 W. 40th St.

An exhibit of Paul Rudolph's architectural drawings will be shown in Chicago at the Kelmscott Gallery from May 11-June 12. Paul Rudolph designed the Jewett Art Center at Wellesley College in 1952 and the School of Art and Architecture at Yale, where he served as chairman of the architecture school from 1958-1965. The Kelmscott Gallery is located at 410 S. Michigan, and is open Tuesday through Saturday, 10 a.m. to 6 p.m.

An exhibition of the cultural and intellectual life in Scandinavia will open this fall in several U.S. cities. "Scandinavia Today" will commence in Washington, D.C. on September 8, New York City on September 13, and Minneapolis on September 10. Exhibitions of paintings, textiles, design, graphics and photographs, concerts; theater; ballet; and lectures will be presented at cultural institutions throughout these cities. This celebration of the arts and culture of Denmark, Finland, Iceland, Norway and Sweden will also travel to some other cities this fall including Portland, Ore.; Madison, Wis.; Berkeley, Calif.; Philadelphia and Boston. For more information contact: The American-Scandinavian Foundation, 127 E. 73rd St., New York, NY 10021 212/879 9779.



Old-world luxury is combined with computer-age living

The 11-story American Thread Company Building, at 260 West Broadway in New York City, was designed at the end of the 19th century by William B. Tubby in the Renaissance revival style. In the heart of Tribeca, a dilapidated warehouse district and erstwhile residence of poor artists, the restoration of what was once to be a wool exchange introduces a new condominium concept. Though the building has been renovated in the old studio tradition of combined living and work space, its quality, size and revolutionary technological amenities set it apart from other renovation ventures.

The American Thread Company, which was renovated by Stephen Jacobs and Associates, is probably the first apartment building to include a computer terminal, called The Source®, in every apartment. Because each apartment's terminal is plugged into an established database, these home computers are easy to operate. Terminals can provide daily news and stock quotations, do word processing and personal accounting, learn languages, do catalog shopping and make travel and hotel reservations. The cost of The Source® includes a minimum \$10 monthly service charge and an additional \$4.50 to \$13.00 per hour of use (depending on the time of day).

In addition, each apartment is designed to provide maximum space flexibility, dividing naturally by shape and without walls. One large room, for example, might have two or three bathrooms opening onto it at different ends to allow easy division into work and living areas. Other conveniences that come with the building are a laundry room on every floor, a public photocopier, a rooftop garden, hot tub, sauna and exercise room. Each apartment contains modern high-quality kitchen and bath-

room fixtures and double-glazed windows and baseboard heating.

Apartment size ranges from one to five rooms, or 1,200 to 4,000 sq ft. The total development cost of the building, which contains 52 apartments, over half of which have already been sold, was \$9.5 million. At a cost of about \$130,000 to \$1 million (for the penthouse apartment), only one artist, has been able to afford to buy. The rest of the owners are designers, photographers, writers, business people—mostly in media-related fields—and a mystery musician whose name Jonathan Rose, the developer, would not divulge.

The modern touches and trendy tenants notwithstanding, Rose, who is the offspring of two generations of real estate developers, has succeeded in preserving the building's 19th-century splendor. Original moldings, wood paneling, columns, oak fireplaces, stained glass skylights and the lobby's mosaic floor have been preserved and renovated. Hardwood oak floors have been installed in all the apartments to blend in with the existing woodwork. In some cases new windows have been created, achieving a completely light and airy effect throughout most of the apartments.

Rose also commissioned artist Molly Burgess to create a piece of art that the building and Tribeca residents could enjoy. The resulting "Triad," a sculpture-collage of painted window-like squares in pastel colors, oblong mirrors and painted pipes on a white background, returns symmetry to a facade disturbed by haphazard placement of new windows. It also brightens the neighborhood, and serves as a reminder of the artists who, as Tribeca becomes "gentrified," may soon be moving elsewhere. —*Andrea Gabor*

New maps may chart the future of coastal development

One hundred and fifty-nine new maps designating "undeveloped coastal barriers" along the Atlantic and Gulf Coasts have been drawn up by the Department of the Interior. These maps, as well as 140 similar ones developed last year, may chart the course of development along 700,000 valuable ocean-front acres, on 680 miles of beach, in 16 states from Maine to Texas.

For builders and landowners the new maps will determine if potential buyers of homes or condos will be eligible for Federal flood insurance—without which mortgage lenders are reluctant to lend because of the threat of devastating losses from hurricanes.

For example, on a beach near Wilmington, North Carolina only five of 357 homes were left after Hurricane Hazel hit in 1954; today there are 2,000 homes there. In 1893, 2,000 people were killed when a storm hit Seabrook, Kiawah and Hilton Head Islands on the South Carolina Coast.

According to the legislation adopted in 1981, the acreage inside the boundaries of the 159 undeveloped areas would be ineligible for flood insurance after October 1, 1983. By law, the Department of the Interior must report to Congress its proposed final regulation by August 22 of this year.

Last year's 140 maps were drawn up in connection with a bill sponsored by Sen. John Chafee (R-R.I.) and Rep. Thomas B. Evans, Jr. (R-Del.) that would cut off Federal grants for the construction of highways, sewer and water lines, and other infrastructure that encourage development in undeveloped coastal areas.

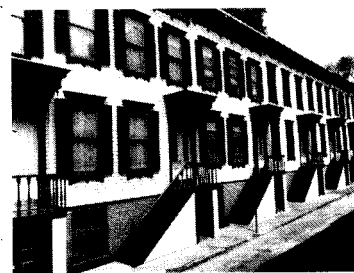
At a meeting of his sub-committee on environmental pollution, Senator Chafee said that he would prefer that one set of maps be adopted for determining both flood insurance eligibility and eligibility for Federal grants for the construction of infrastructure.

Many owners and their political supporters in coastal states and localities argue that the issue is one of private property rights and a Federal override of local zoning regulations. On the other hand, Sharon Newsome, of the National Wildlife Federation, argues that Interior's proposal would allow many areas with no building or infrastructure in place to be designated "developed." The Department, argues Newsome, ignored specific directions from Congress in defining, as developed, so-called phased development projects that include hundreds of acres of totally pristine coastal barriers.

According to Ric Davidge, chairman of the task force that drew up the maps, the phased development provision applies only to areas of

large single ownership, involving only about 2,000 acres in North Carolina, South Carolina and Florida.

"In the next 20 years, it could cost this government \$11 billion if we continue our current policy of funding development of barrier islands and beaches," said Chafee. "Private property rights are being protected. Landowners are free to do what they want with their land; but at their own risk." —*Peter Hoffmann, World News, Washington, D.C.*



Two Victorian renovations win annual Bard Awards

A jury of the City Club of New York, in its 18th Annual Bard Awards, has issued two awards for residential renovation projects in New York City.

An Award of Merit was given for the facade restoration of Sylvan Terrace, a one-block row of Victorian town houses in the Jumel Terrace Historic District in the Washington Heights section of Manhattan. The project, designed by Ferrara and Maruca, was paid for with Federal Community Development funding and administered by the New York City Department of Housing Preservation and Development.

A Citation in Architecture and Urban Design was awarded for the conversion of five buildings into a single co-op structure in the Park Slope section of Brooklyn. Garfield North was once a row of five multiple-family dwellings of a Victorian-style prevalent in San Francisco. The buildings have been connected by architects Saltini and Ferrara and converted into 67 small studio and one bedroom co-ops. Small gardens open off of the ground-level apartments and what was once a stable and corral in back have been converted into a garage. An attractive laundry room, which doubles as a meeting room, also has a connecting garden.

Proposed tax changes raise industry opposition

Architects as well as building owners are joining other sectors of the construction industry in strongly opposing the Reagan Administration's proposals to change taxation methods for the industry.

Robert M. Lawrence, president of the American Institute of Architects, in nearly identical letters to President Reagan and Secretary of the Treasury Donald T. Regan, says the Administration's plan to abolish what is known as the completed contract method of tax accounting is "short-sighted and not in the public interest." He acknowledged that AIA members do not use this method of accounting and therefore have no direct financial interest in this issue, but he told the President and the Secretary that the AIA is concerned that "an economically viable and highly competitive construction industry not be irreparably damaged by this attempt to accelerate tax revenues in order to recapture a portion of our necessary defense spending."

The completed contract method of accounting, which has been used since 1918, allows a corporation working under a contract of several years' duration to defer recognition of any gain or loss until the job is completed. Under the proposed change, contractors in construction, aerospace and other industries would be compelled to report each year's gains or losses on the basis of progress payments. The Administration estimates that these "tax enhancement" measures would generate \$3.3 billion in fiscal 1983 and \$5 billion in 1984.

"The construction industry is of pivotal importance to the economy; to force such a radical change in the many small, general and specialty contracting firms is to risk severe dislocations in an already weakened construction industry," said Lawrence. "From our independent position, we see the elimination of this accounting method as leading to a lessening in the competitive atmosphere of the industry and to a need for surviving firms to seek additional working capital in an adverse money market. Concomitant with these consequences is an increase in construction costs for private and public clients." Lawrence stressed that the AIA has supported the Administration's efforts to revitalize the economy. "As professionals well aware of the unique financial characteristic of the construction process, we ask that the Treasury Department more fully assess the impact that the elimination of the completed contract method of accounting would have on the economic recovery of this industry."

Meanwhile, an organization of building owners is attacking another proposed tax change that would end immediate write-off of interest and tax payments incurred during the

construction of commercial building projects and require that they be amortized over 10 years. Gardner McBride, executive vice president of the Washington-based Building Owners and Managers Association International, says his group has consistently testified against this change. "We oppose the principle of taxing business expense in general, regardless of whether it affects corporations or individuals," said McBride. The Administration estimates this change would generate an additional \$500 million in fiscal 1983, \$1.1 billion in 1984 and \$1 billion in 1985. —*Peter Hoffmann, World News, Washington, D.C.*

Housing legislation—pre-election drive underway

Washington's pre-election winds are suddenly thick with proposals to help the battered housing industry and the declining savings and loans that are still the major source of home mortgage financing. But Washington insiders agree that it is still unclear whether any significant help will be forthcoming this year, although spreading concern that the country might be facing a depression could build support for Federal action.

Concrete proposals to revive homebuilding and home buying are being pressed by homebuilders, mortgage bankers, the savings and loans and realtors.

Their allies in Congress, including Democratic banking committee leaders in the House and housing subcommittee leaders in the Senate, have introduced bills that are "pro-housing." Even the Administration has created an emergency task force, headed by Housing Secretary Samuel R. Pierce, Jr., to quickly produce recommendations to help homebuilding.

"This is the first good signal we've received in months," said Fred Napolitano, the National Association of Home Builders' (NAHB) new president. "It shows that the Reagan team is now willing to consider some proposals that would stimulate home sales and new home production."

But there is no consensus behind any of the new proposals.

Administration officials have been quick to rule out any measure that would have a significant impact on the Federal budget. Senate Banking Committee Chairman Jake Garn (R-Utah), is equally opposed to any idea that would add perceptibly to the Republican Administration's ever-rising deficits.

Senator Richard Lugar (R-Ind.), Chairman of the Housing Sub-Committee of the Committee on Banking, Housing and Urban Affairs in the Senate, who is up for re-election this fall, launched a \$5-billion, five-year interest-rate subsidy plan that would allow middle- and low-income families a mortgage with an 11.5 per cent inter-

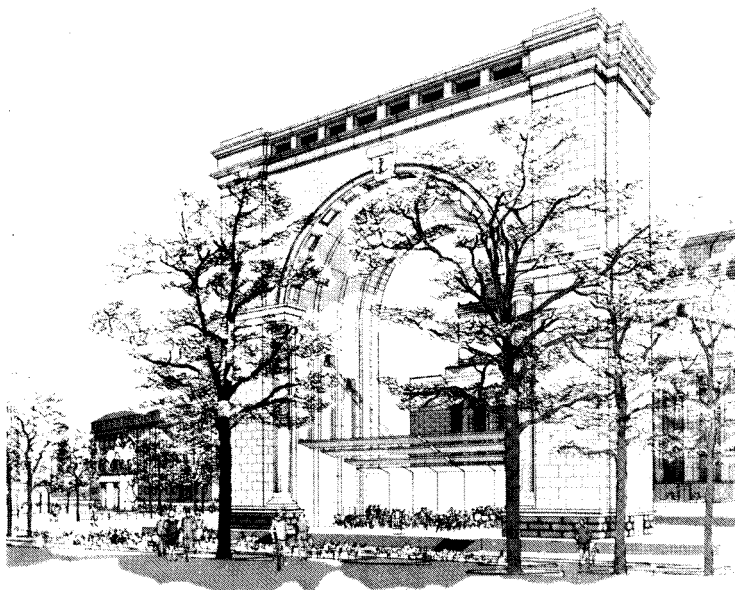
est rate at the outset. The rate would increase 0.75 percentage points per year over five years. "This program is a temporary emergency action to create jobs now in the housing industry by stimulating construction of an additional 360,000 to 450,000 new homes," according to Lugar. The subsidies would be recaptured at the time the house is sold or refinanced.

The National Savings and Loan League—which represents mostly large savings and loans—is seeking a Federal "warehousing" system for existing mortgages with relatively low interest rates that would cost the Treasury about \$8 billion over five years.

The League also endorsed a \$7.5-billion fund proposed by Fernand St. Germain (D-R.I.), Chairman of the House Banking Committee, to provide low-cost loans to thrift institutions that are in trouble. House Democrats, led by Congressman Henry B. Gonzalez (D-Tex.), Chair-

man of the Housing Sub-Committee of the Committee on Banking, Housing and Urban Affairs in the House, have proposed similar interest-rate subsidies for as many as 100,000 new single-family units, with some or all of the subsidy to be recaptured. Gonzalez and his allies would also commit about \$1.3 billion for what they call "an Urban Development Action Grant" for rental housing. It would replace the Section 8 program that the Reagan Administration is ending in favor of a proposed housing voucher program.

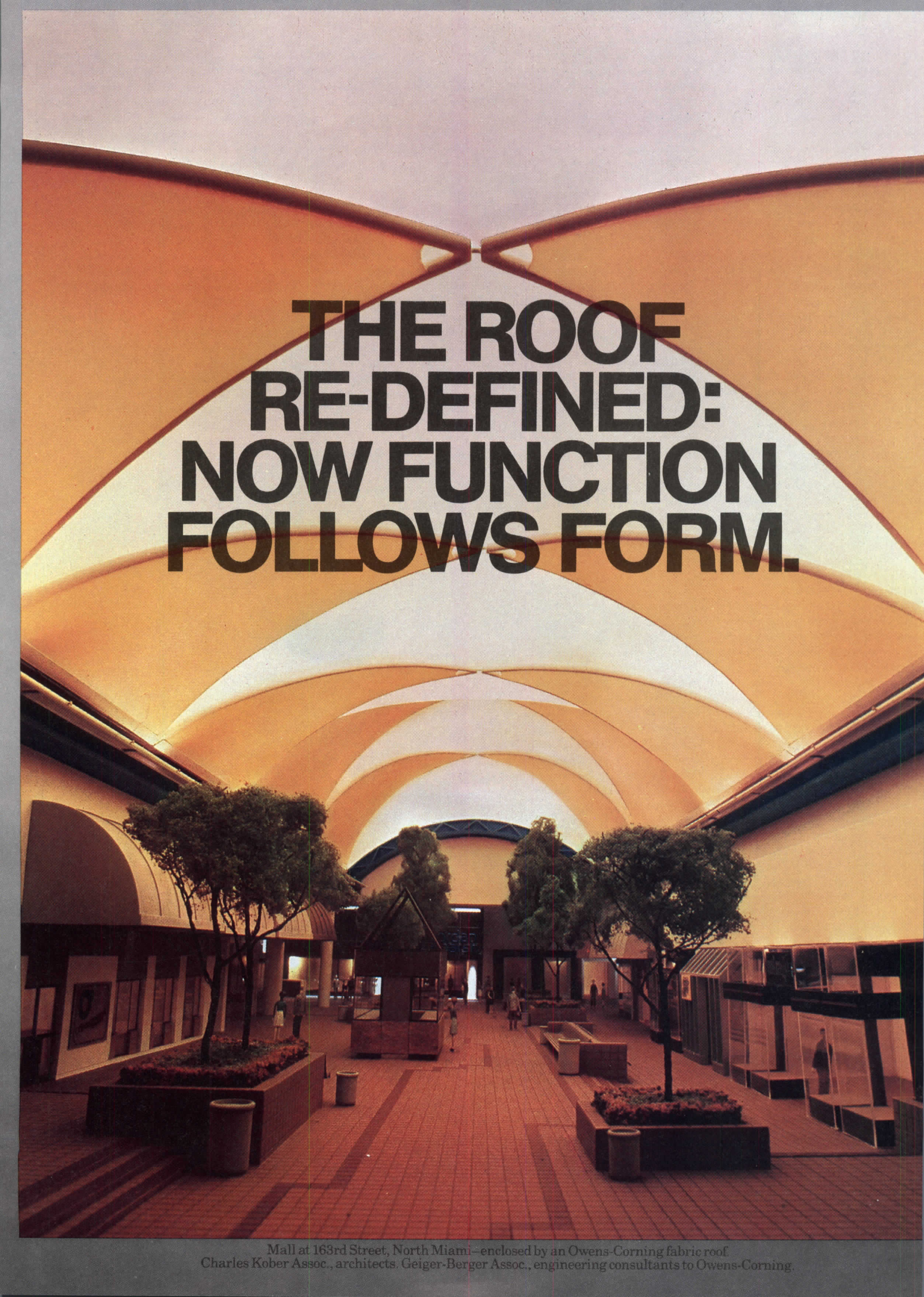
But, the President's housing commission, in its final recommendations for delivery to the White House April 30, focused almost entirely on long-range problems. The commission proposes to stimulate block grants to aid the new voucher program, and suggests that localities limit building codes to health and safety requirements and otherwise reduce zoning regulations. —*Donald Loomis, World News, Washington, D.C.*



New Washington arch attracts esthetic controversy

Five years in the making, plans for a grandiose, 10-story Navy Memorial Arch in downtown Washington, D.C. moved a step closer to reality in late February with the U.S. Fine Arts Commission's preliminary approval of the design. The arch, designed by the New York architectural firm of Conklin Rossant, will be located on Market Square on Pennsylvania Avenue between 7th and 9th Streets. It will be the centerpiece of the square and the surrounding area, which is being redeveloped under the direction of the Pennsylvania Avenue Development Corporation. It will house U.S. Navy memorabilia and the U.S. Navy Memorial Log of all men and women who have served in the U.S. Navy

since 1775, and will serve as a band shell for the U.S. Navy and other bands. Sculptor Stanley Bleifeld, of Weston, Connecticut, has been selected to decide what sculptural works will be incorporated in the arch exterior. The entire cost of \$10 million will be raised privately—so far, about \$500,000 has been pledged. The arch has, of course, had its critics, both among architects and Washingtonians, who declaim it as a poor imitation of Paris' Arc de Triomphe. Pending final approval by the Fine Arts Commission and the National Capital Planning Commission, the arch is scheduled for completion in 1984. —*Peter Hoffmann, World News, Washington, D.C.*



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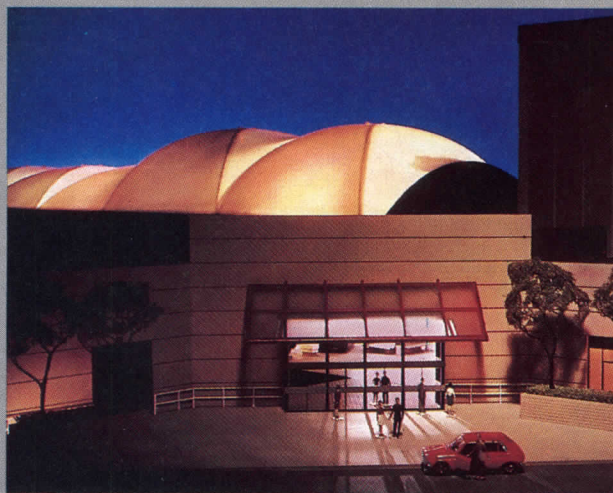
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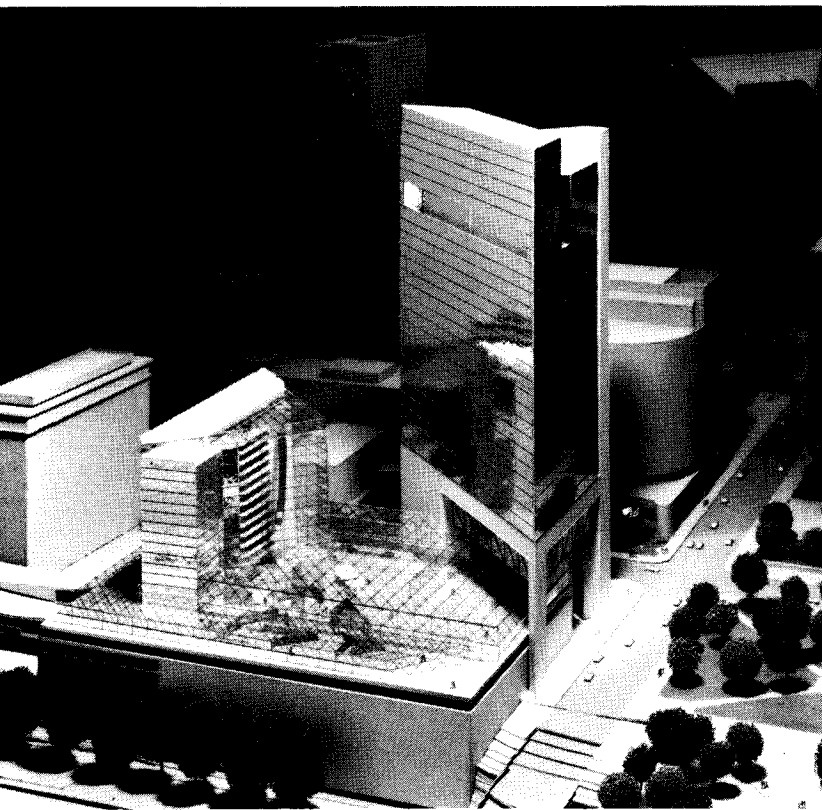
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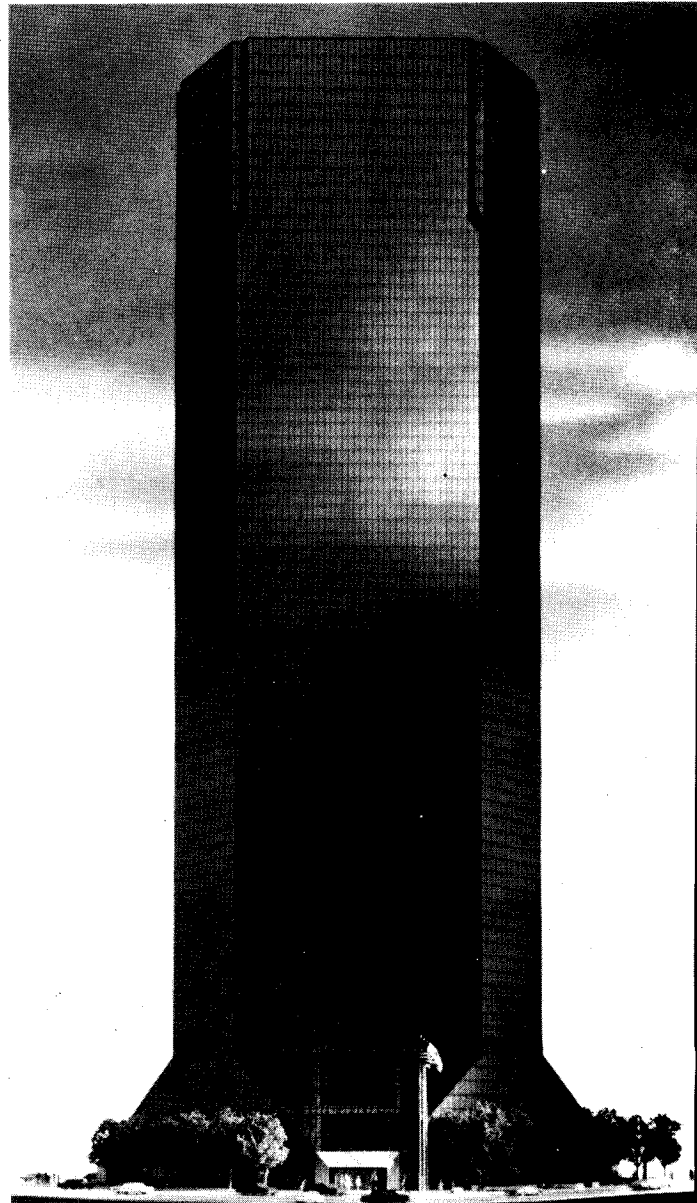
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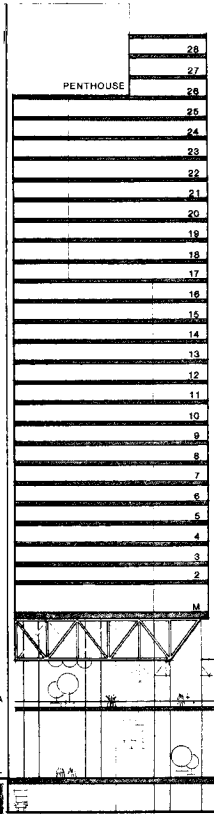


Faceted tower for lower New York City

The Continental Corporation's new 41-story headquarters at 180 Maiden Lane in Lower Manhattan, near the South Street Seaport, was designed by Swanke Hayden Connell Architects. Over half of the \$125-million building, developed by Rockefeller Center, will be occupied by the Continental Corporation. The building, which contains one million sq ft of office space and a four-story atrium, is scheduled for completion in early 1983.

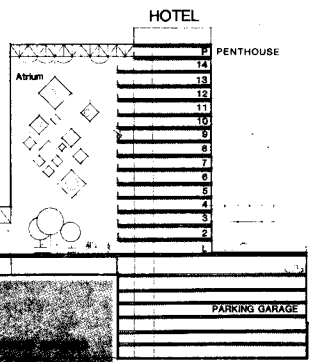


OFFICE TOWER



Convention center/hotel to be built over and around Cleveland Press Building

Cleveland's new \$128-million office and convention center is being built on top of the existing *Cleveland Press* building. The main lobby of the 27-story office tower will open onto an enclosed plaza, which will be created on the roof of the *Press* building. The plaza will include retail space. A convention center/hotel,



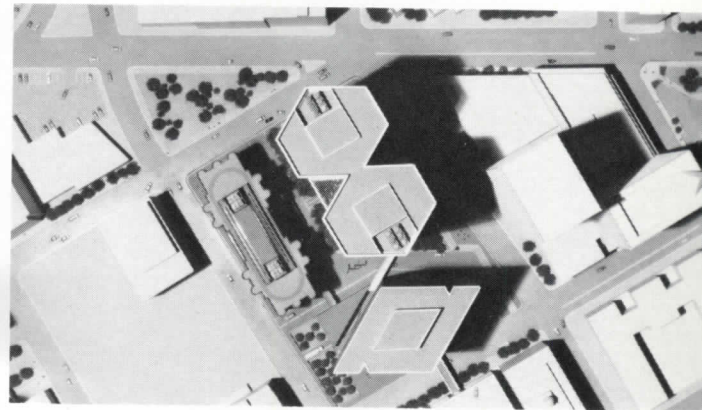
with a 14-story atrium constructed above a garage, will be connected to the office tower by an enclosed Galleria. The project is being designed by Dalton Dalton Newport of Cleveland and developed by the Cleveland Press Publishing Co. and Tishman Midwest Management Corp.

Two towers complete Dallas Centre

Two Dallas Centre and the adjacent 19-story hotel will complete a major mixed-use development located in the heart of downtown Dallas, known as Dallas Centre. Phase I of this project, called One Dallas Centre, was completed in 1979, and consists of a 30-story, diamond-shaped office building and garage. The new 52-story, 12-sided office tower, designed by Cossutta & Associates of New York in association with Fisher & Spillman of Dallas, will be completed in late 1983. The tower will be developed by Vincent A. Carrozza.



Mark Jenkinson

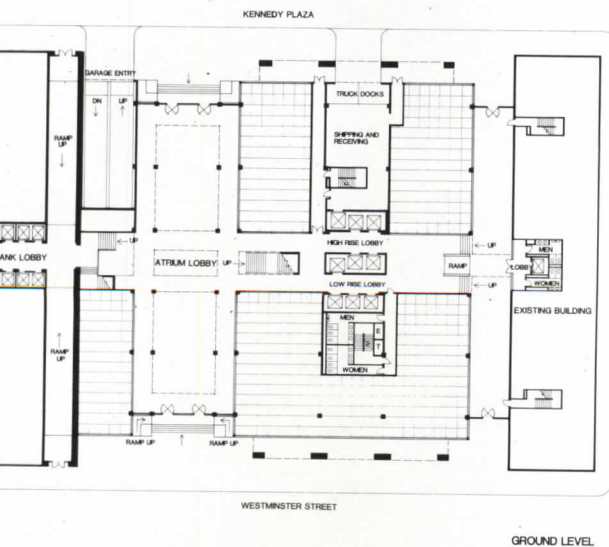


For Providence: mixed-use, mix of old and new

The \$50-million, 18-story mixed-use office building in Providence's financial district represents the largest single commercial real estate project in the history of Rhode Island. The project, designed by Hell-

mut, Obata & Kassabaum, consists of the renovation of the existing Second Exchange Bank Building and the original Exchange Bank Building, a new office building and one level of parking below. Construction

of the tower, which will contain about 350,000 sq ft of net rental space, is scheduled to be completed in late 1984. The project is being developed by Gilbane Properties, Inc. of Providence.



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The Union Texas *Petroleum and Internorth* buildings were designed by Morris☆Aubry Architects/Houston, Texas.

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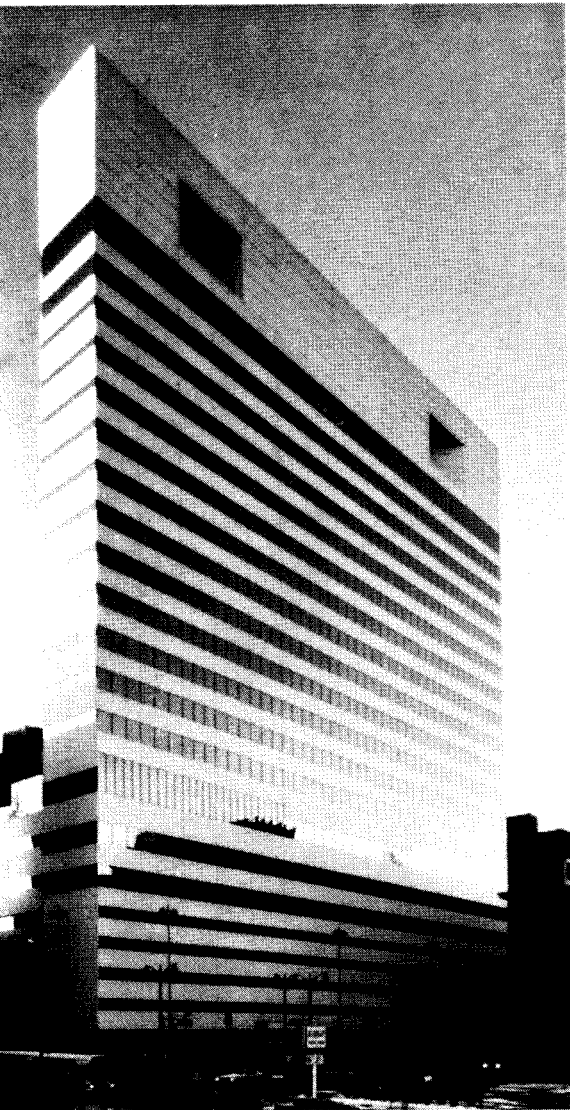
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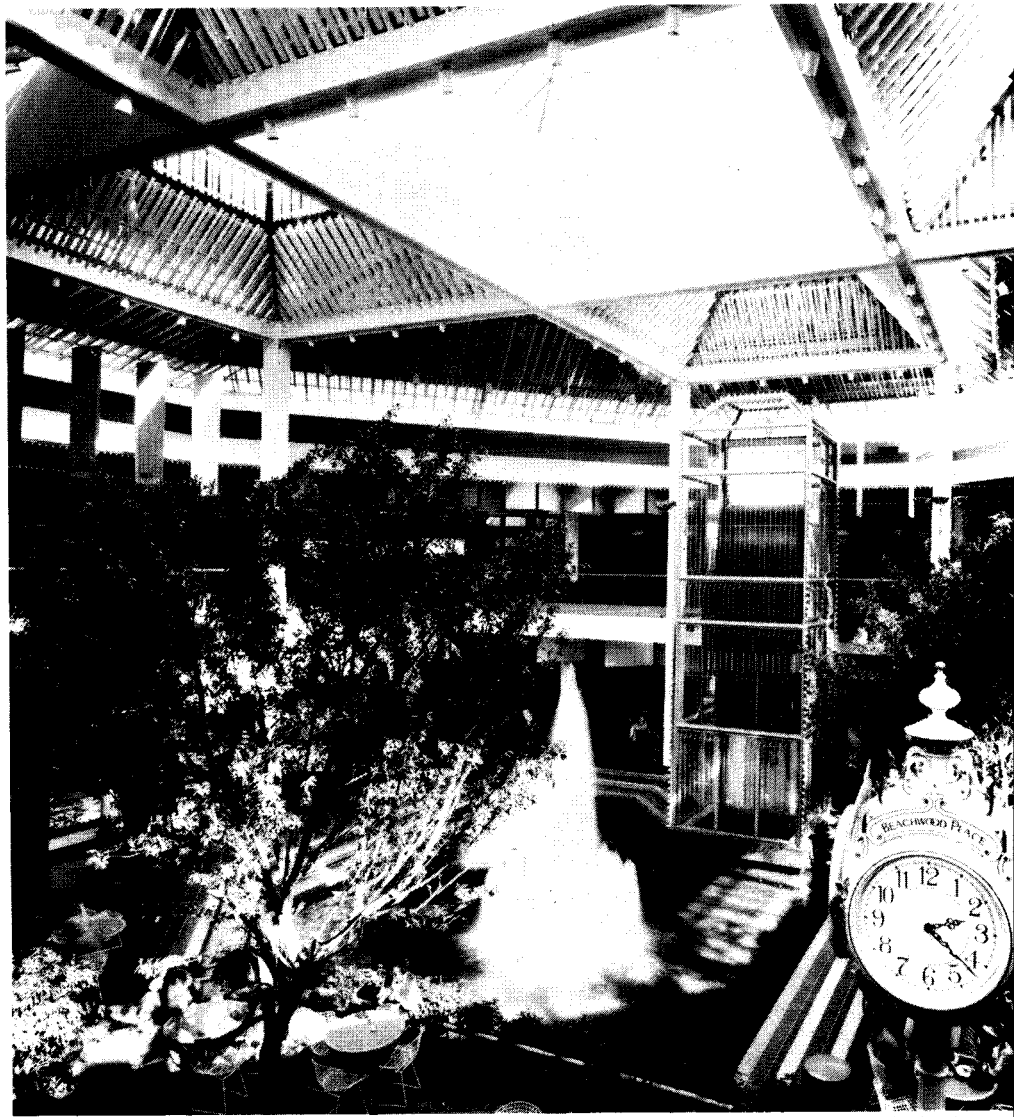
DESIGN AWARDS/COMPETITIONS

The five projects honored by the Baltimore Chapter of the American Institute of Architects in its 1981 Design Awards program are illustrated below, followed (overleaf) by the eight winners of "M" Awards presented this January by the Masonry Institute of Michigan. The three jurors on the Baltimore panel were Peter Blake, FAIA, dean of the Department of Architecture and Planning at Catholic University; Hugh A. Stubbins, Jr., FAIA, of Hugh Stubbins & Associates; and R. Randall Vosbeck, FAIA, former president of the AIA. Submissions were classed in two categories: new construction and adaptive re-use/renovation/rehabilitation. Entries in the seventh annual Masonry Institute awards program were reviewed by Richard Blake, FAIA, of Blake-Huettenrauch Associates; George Schuett, FAIA, of Schuett-Erdman Associates; and John Jacoby, FAIA.



1

Richard Anderson



2

David Whitcomb & Richard Anderson

BALTIMORE CHAPTER AIA 1981 DESIGN AWARDS

1. Federated Department Stores, Inc., Corporate Headquarters, Cincinnati, Ohio; RTKL Associates, Inc., architects. The walls of this 21-story tower are clad with off-white insulated aluminum panels and glazed with silver-mirrored, double-insulated panes. The jury commented: "The executive floors are dramatic in their spatial organization and in their orientation toward major views of the city. The roof gardens in the setbacks above the parking garages offer unusual amenities for a downtown office building. And the fenestration, which was designed in part to

respond to requirements of energy conservation, seems to deal with those problems successfully and with assurance."

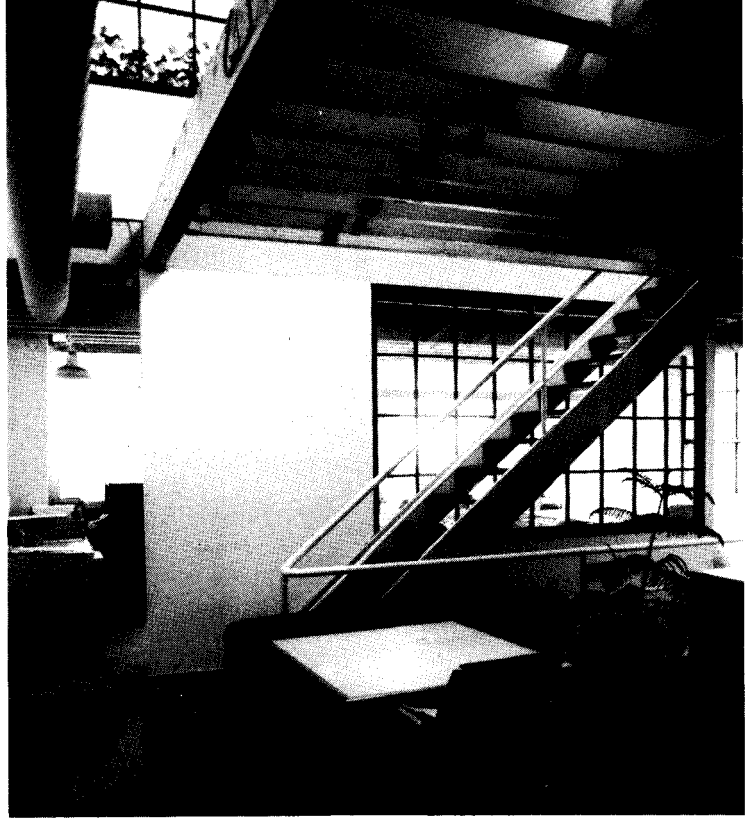
2. Beachwood Place, Cleveland, Ohio; RTKL Associates, Inc., architects. "Unlike most shopping malls in suburban areas, this one seems entirely in scale with the residential character of its neighborhood," observed the jury. "Although the interior courts appear overly busy in some respects, all details of signage, planting, fountains, illumination and sculpture were handled in excellent taste. Moreover, the major levels of the

center were well related to surrounding grades to ease movement through the complex." The project comprises 225,000 square feet of leasable area and two department stores.

3. The Grand Opera House, Wilmington, Delaware; Grieves/Armstrong, Childs, joint-venture architects. Renovation of the cast-iron-front theater, built in 1871, was a key phase in the upgrading of downtown Wilmington. Mechanical installations included computer-controlled lighting, and a new sound system. A ceiling mural was entirely repainted. "Al-



Ron Solomon



Diane Cho



David Whitcomb & Scott Kirk

though this was almost entirely a work of restoration, it demonstrates how much our urban scene can gain from this sort of effort. The restored facade is, quite clearly, a significant new asset to its neighborhood. . . ."

4. Struever Brothers & Eccles, Inc. Offices, Baltimore, Maryland; Cho, Wilks & Burns Architects. Part of a larger mixed-use warehouse conversion, the 2,000-square-foot office is the headquarters for a building contractor who specializes in renovation. The client wanted his new facilities to combine good craftsmanship and economical recycling techniques; jury

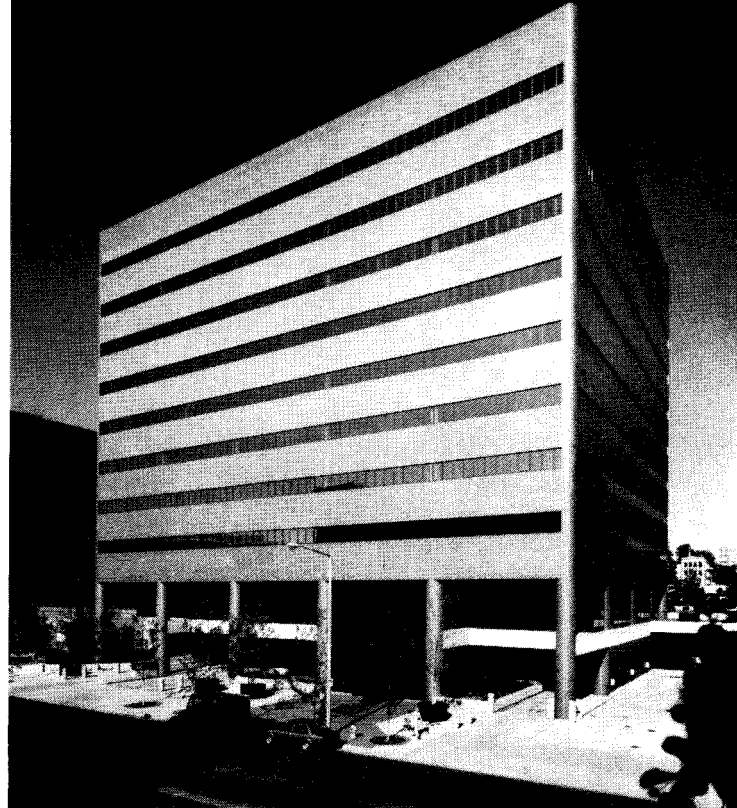
members found it to be a successful combination. "The interior entrance archway, the exposed ceiling joists on the upper floor, and the use of very ordinary stock windows, pipe rails, ducts and lighting fixtures—all kept within a muted range of colors—are simple devices that add up to a very pleasant and relaxed office environment."

5. Revitalization of Suburban Square, Ardmore, Pennsylvania; RTKL Associates, Inc., architects. Listed in *The Guinness Book of World Records* as the first shopping center ever built, the 54-year-old Suburban Square

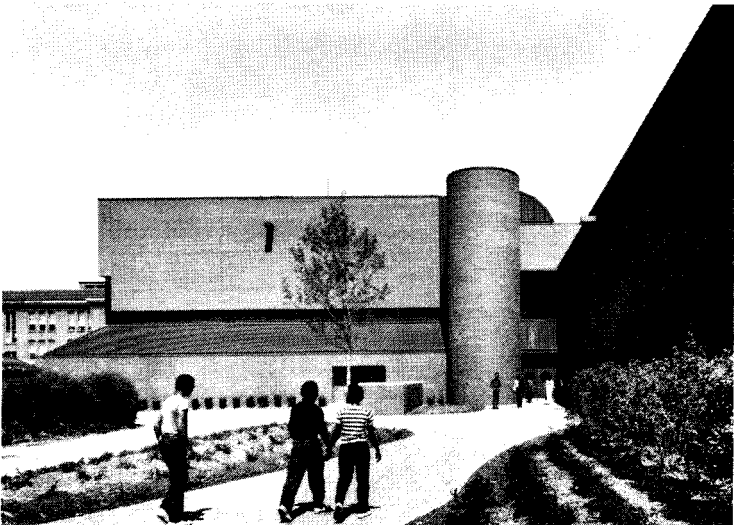
complex includes 250,000 square feet of stores and offices. The jury remarked: "An early shopping center has here been given a new lease on life by the elimination of unsightly parking lots, and the substitution of paved and planted pedestrian malls. In addition, the existing buildings have been replaced and given unity and a sense of style by the use of wide canvas awnings, lively typography, and neat storefront openings. The entire project demonstrates how simple and relatively inexpensive devices can revitalize a fairly typical commercial strip."



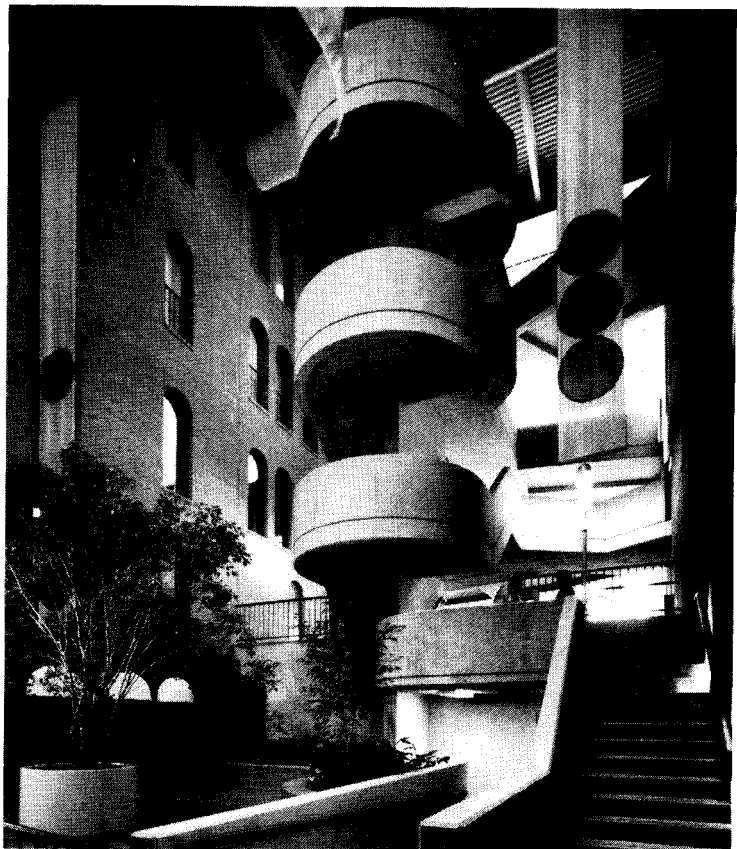
1 Balthazar Korab



2 Bob Shimer, Hedrich-Blessing



3 Balthazar Korab



5 Bob Shimer, Hedrich-Blessing



4 © Glen Calvin Moon

MASONRY INSTITUTE OF MICHIGAN "M" AWARDS

1. Gerald R. Ford Library, University of Michigan, Ann Arbor, Michigan; Jickling, Lyman & Powell Associates, Inc., architects. In addition to extensive daylighting, this energy-efficient design incorporates insulated cavities behind exterior brick walls, with back-ups of brick or concrete masonry. The jury found that "the simple, bold lines of the exterior masonry design, contrasted with the sloping terrain, seem to wed the building to its site."

2. Calder Plaza Building, Grand Rapids, Michigan; Daverman Associates, Inc., architects. "Through the use of a

small percentage of special brick shapes [at window sills, around columns and corners, and at soffits], the architect was able to attain a clean, striking appearance," the jury noted. "The recessed main-floor lobbies and the covered concourse add excitement to the design." Brick walls were built in place, using flying scaffolding which was moved upward as the structure rose.

3. Northern High School Addition, Detroit, Michigan; Eberle M. Smith Associates, Inc., architects. Completed last year at a cost of approximately \$10 million, the 150,000-

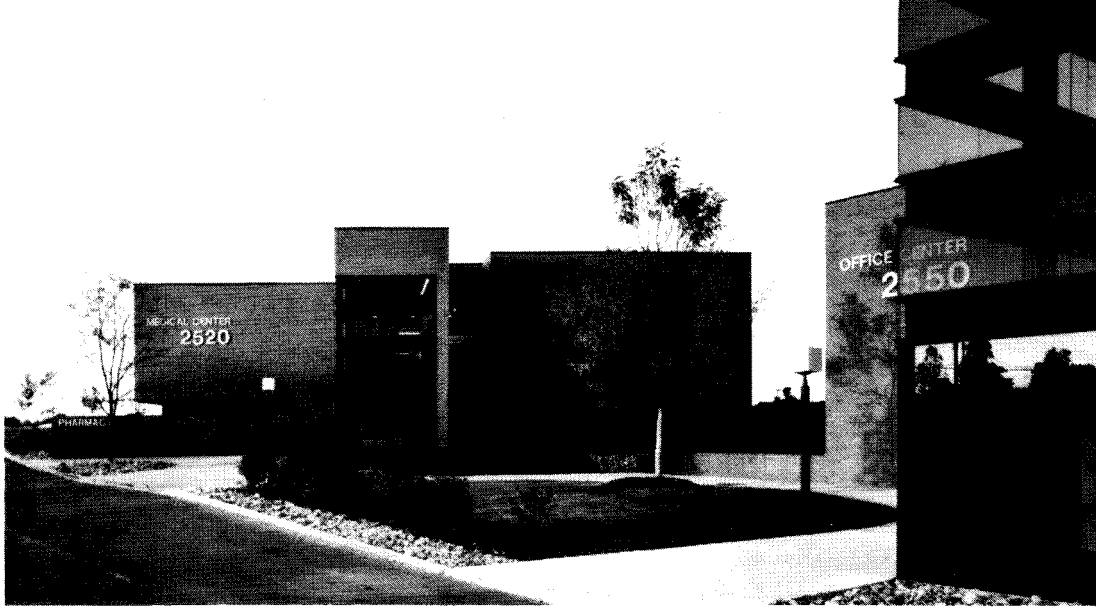
square-foot brick structure was added onto a 60-year-old, 2,000-student high school. An inward-looking design with minimal exterior openings responds to the energy needs and security requirements of an inner-city site. Classrooms face a brick-paved interior street. "Good space relationships," the jury concluded, "a bold approach."

4. Dining Areas, St. Joseph Mercy Hospital, Ann Arbor, Michigan; Harley Ellington Pierce Yee Associates, architects. Potted greenery, brick walls, and skylights were employed to create a warm, tranquil setting for

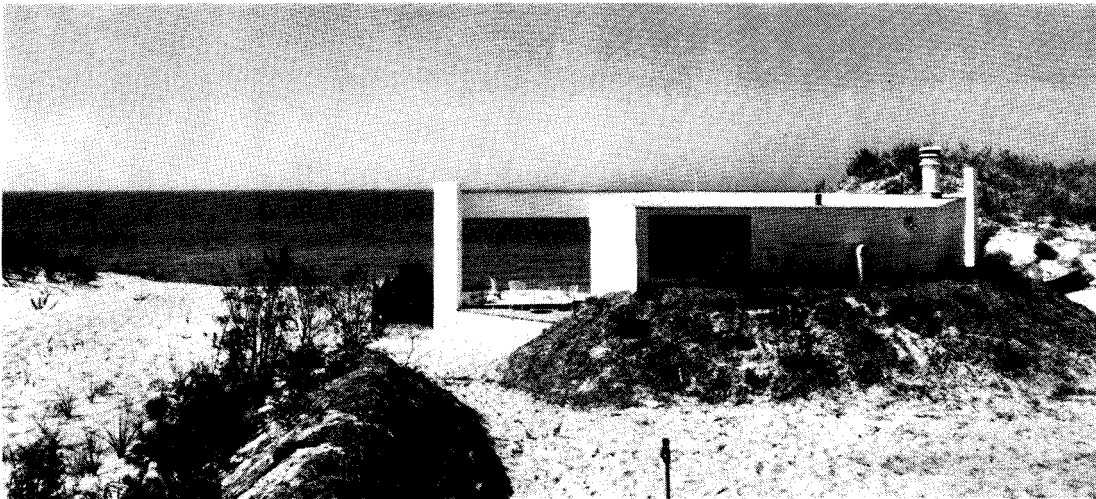
Calendar

Lafayette Square Northwest Quadrant Redevelopment Architectural Competition. Sponsored by the Lafayette Square Restoration Committee and City Equity Corporation, the competition focuses on the design of approximately 110 town houses and condominiums to be built in St. Louis by City Equity. Cash prizes totaling \$15,000 and the commission for the completion of design work will be awarded. The site fronts on 150-year-old Lafayette Square, the center of extensive renovation programs. Deadlines are June 15, for registration, and August 30, for entries (the registration fee is \$25). Registration forms and information are available by writing: Lafayette Square Design Competition, L.S.R.C., 2023 Lafayette Avenue, St. Louis, Missouri 63104.

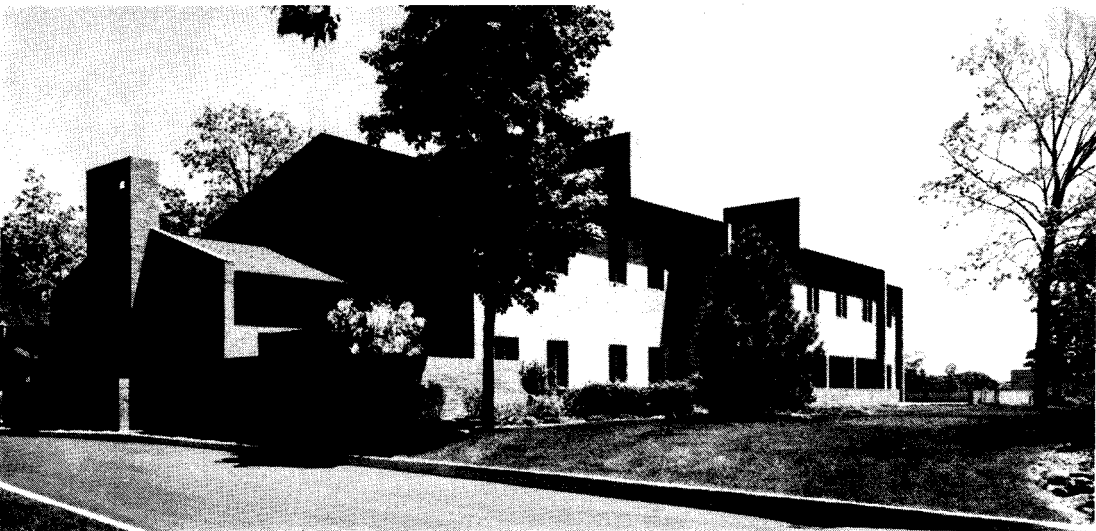
PCI 1982 Awards Program. The Prestressed Concrete Institute has issued a call for entries and named the jury for the 20th annual PCI Awards Program, honoring architectural and engineering design excellence in architectural precast concrete and precast concrete buildings and bridges. The jury for both building and bridge categories will be chaired by Robert M. Lawrence, FAIA, president of the AIA. The other panelists will be John H. Wiedeman, president-elect of the American Society of Civil Engineers; Stanley Gordon, chief, Bridge Division, U.S. Department of Transportation, Federal Highway Administration; Bruce J. Graham, FAIA, of Skidmore, Owings & Merrill; and J. Douglas Miller, MRAIC, president, Royal Architectural Institute of Canada. The deadline for entries is August 2. Entry instructions are available from the Prestressed Concrete Institute, 201 North Wells Street, Chicago, Illinois 60606.



Balthazar Korab



Balthazar Korab



© Glen Calvin Moon

dining rooms and food vending and service areas. The \$2-million project involved renovation of extant facilities as well as construction of a one-story, 10,000-square-foot cafeteria addition: "an extremely sensitive and well-founded use of masonry materials, particularly in interior spaces."

5. The Furniture Company, Grand Rapids, Michigan; Daverman Associates, Inc., architects. Four brick structures, the oldest of which dates from 1905, were joined to form a single office and retail building with 12,000 square feet of space. Enclosure of a service court created a

five-story atrium. Existing brick walls were cleaned, and their rhythm and scale inspired the articulation of a new facade. Arched windows repeat the form of the building entrance.

6. Bloomfield Medical/Office Pavilion, Bloomfield Township, Michigan; Rossen/Neumann Associates, architects. The architects aimed for an effect of quiet strength in these three two-story buildings at a busy suburban intersection. Extensive landscaping, a monochromatic color scheme, and consistent use of brick inside and out unify the various elements of the project. Bands of insulated bronze

glass emphasize the lobby entrances. "Straightforward use of masonry in concert with glass and steel gives this complex a very ordered and disciplined look."

7. Greager Summer House, Oceana County, Michigan; Rossen/Neumann Associates, architects. This two-story, 1,000-square-foot house is built into a 12-foot-high sand bank on the shore of Lake Michigan. Constructed with eight-inch reinforced concrete masonry walls laid in a stacked bond, the house is earth-sheltered on three sides, with double-insulated angled glass walls facing the lake. Vertical

block slabs and extended fascias frame the beach-front vista.

8. 710 North Woodward, Bloomfield Hills, Michigan; TMP Associates, Inc., architects. The client for this two-story office building wanted a structure that would blend into its residential neighborhood yet offer the "contemporary detailing" of competitive commercial structures. Energy-efficient cavity walls have insulation and concrete masonry units behind exterior brick. The jury cited the "clean detailing and simple planes of brick masonry [that] give the building an element of timelessness. . ."



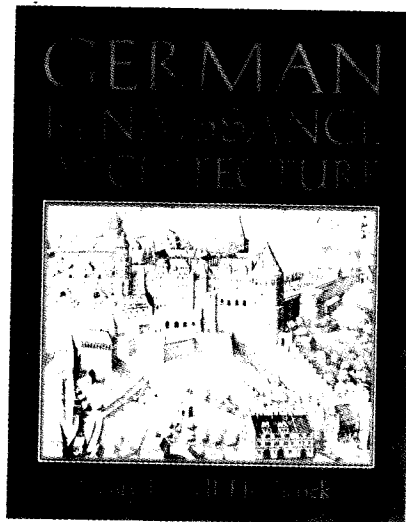
Knoll Textiles introduces Furrows Wallcarpeting



The courage of the comprehensive account

GERMAN RENAISSANCE ARCHITECTURE, by Henry-Russell Hitchcock; Princeton University Press, \$67.50.

Reviewed by Barry Bergdoll



Nikolaus Pevsner as a universal survey of the history of art. Apart from a period after German unification in the late 19th century, when the German Renaissance was charged with nationalistic overtones and widely imitated by the architects of Bismarck's Empire, there has been little sustained interest—even in Germany—in the monuments of the 16th century. The last major history of the period was published as long ago as 1928. Thus, with its 457 superb plates, textual descriptions, and compilation of the histories of hundreds of buildings of this missing period in German architectural history, Hitchcock's beautifully produced book is an indispensable addition to any architectural library. The need for such a survey is unquestionable, but the question of why it has remained so long unfilled is revealing. The loss and alteration of many of the buildings illustrated, and the location of a large percentage of the surviving examples in East Germany and Poland where they are difficult to visit, offer circumstantial reasons. But the heart of the matter is contained in the book's very title, which defends the coherency of a period that many have recognized uneasily, if at all. Hitchcock's chronicle claims that the buildings collected together have an internal coherence which is both "German" and "Renaissance," although neither term is amenable to precise definition. The book's premise is simple, but not uncontroversial, in its claim that "even though there can be no over-all definition of German Renaissance architecture, a series of overlapping stylistic episodes can be recognized that seem to have been to a large extent autochthonous."

The story begins and ends in Augsburg, but wanders freely across Germany in between, like an itinerant medieval mason.

Juxtaposition of two Augsburg monuments separated by a century—the Fugger Chapel of 1510-12 in the Church of St. Anna, and Elias Holl's City Hall of 1615-1620—dramatically illustrates the change that has occurred. The 16th century witnessed not only the emergence of a mature architectural style from a hybrid mix of Gothic and Renaissance details, but also the appearance of the modern professional architect clearly responsible for design.

Yet in between these two endpoints, Hitchcock seeks "to discover and . . . present a sort of historical plot" residing in a series of seemingly unrelated incidents and independent regional episodes. This "plot," if it can be discerned at all, is that of a picaresque novel rich in incident and subplot rather than the unfolding of a dramatic scenario. Each episode bears its own complex relationship to the over-all story of the hesitant, indirect, and often erratic absorption of Italian and Netherlandish details. These were conveyed principally by traveling artists and especially by printed books from Italy and above all from Antwerp. No single region, with the possible exception of the Weser, experienced a consistent development or dominates the scene at any moment. In short, the plot is complicated, fragmented and highly resistant to summarization; Hitchcock's text, like most epics, is lengthy and rambling as a result. Moreover, this checkered history of the progress of Renaissance forms is played out against a persistent background of the dominant late medieval building tradition, which reached a climax in that Indian Summer of German Gothic architecture, the so-called "Nachgotik" churches of the early 17th century. Thus, the very term "Renaissance," laden as it is with a set of irrelevant Italian standards, seems peculiar and merely conventional in a story in which the medieval "villain" survives the denouement.

Not only is "Renaissance" fraught with difficulties, but "Germany" itself is an amorphous and flexible concept in the 16th century. Subdivided into countless states and dukedoms, subject to the most Byzantine of genealogical fortunes, and rocked by the Reformation, German history offers little in the way of a foothold from which to survey a larger pattern in this kaleidoscopic picture. Unlike France or Poland, where the court sponsored the adoption of Italian architectural forms and even imported artists from Italy, there was no political center to foster an imported school in Germany. Even in church design, where one might have expected a direct reflection

continued on page 52

Barry Bergdoll is a graduate student in architectural history at Columbia University. His numerous contributions to architectural publications include "The Legacy of Viollet-le-Duc's Drawings" (RECORD, mid-August 1981).

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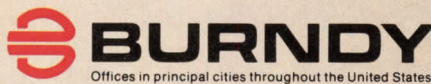
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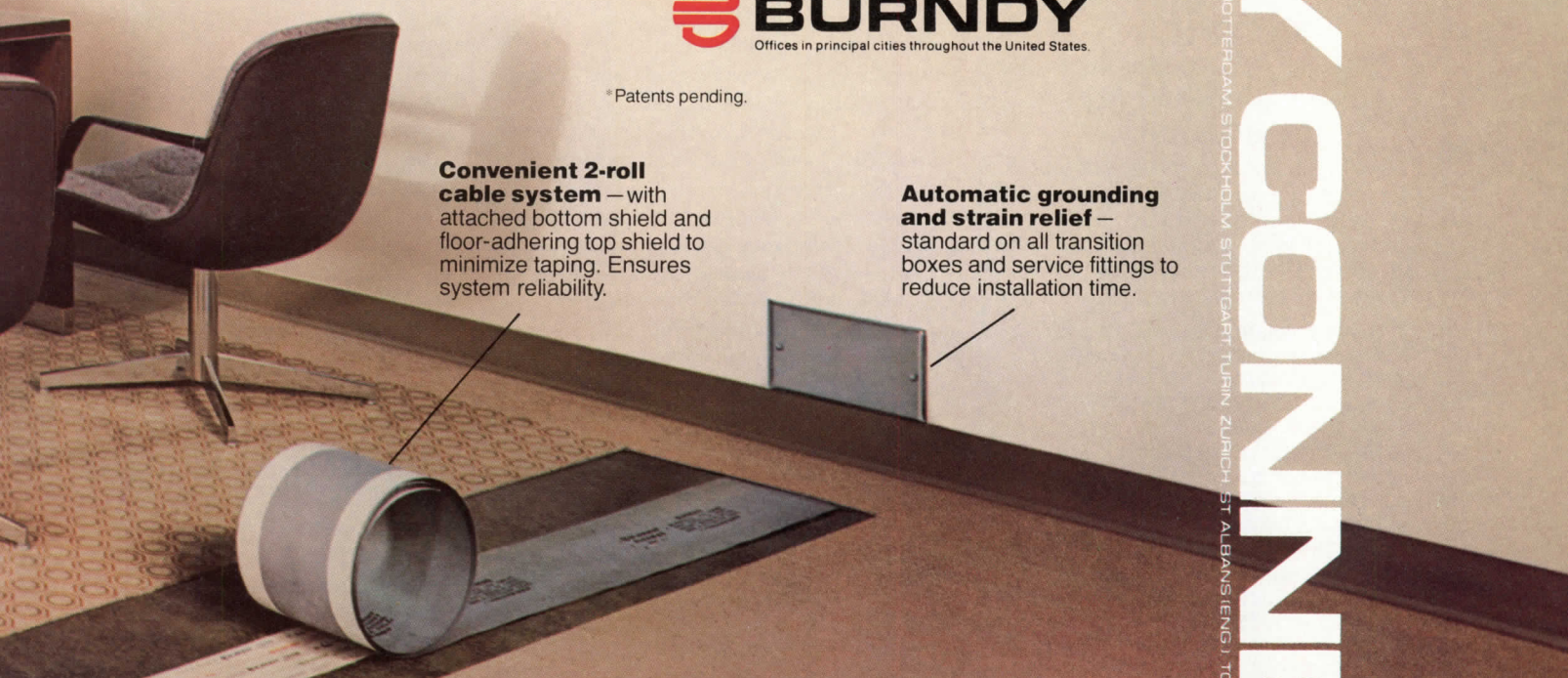
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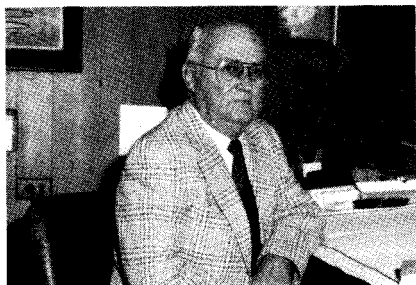
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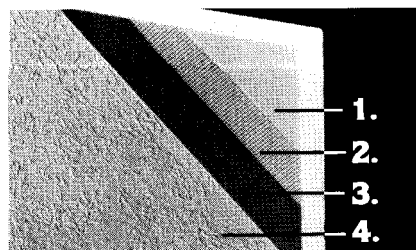
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REQUIRED READING *continued from page 49*

of the religious conflict in church building, no clear-cut distinctions emerge between Catholic and Lutheran types or stylistic preferences. Each German state, if not each individual building, would seem to be a reflection of its own complex nexus of relationships.

Even the word "architecture" is not without ambiguities in defining a Renaissance style based chiefly on ornament. Most befitting the subject is Hitchcock's application of what he has earlier named the "physiognomic approach" (in a related study published in 1978 entitled *Netherlandish Scrolled Gables of the Sixteenth and Early Seventeenth Centuries*). This approach analyzes not so much the whole building as its most expressive features, those which impart its "Renaissance" character. Indeed German Renaissance architecture was largely a matter of salient details, often subject to the most fantastically imaginative elaboration. The very concept of the architect was a late arrival on the scene, and the designer seems here closer to book illustrators and furniture makers with whom he shared an ornamental vocabulary and a collection of bizarre model books. The architectural body embellished by scrolled gables, boldly-scaled portals, and decorative oriels remained traditional, indeed medieval. Despite an increased concern with symmetrical fenestration, there was no development of a new spatial expression or of a new structural technique. Nor did new building types emerge. Not only were the forms of the Italian Renaissance absorbed more slowly in Germany than almost anywhere else in transalpine Europe—and then indirectly via Flanders, France, and Bohemia—but German architects remained unconcerned with Renaissance architectural theory until the very end of the period. Italian principles of composition and proportion were all but unknown. The few isolated examples—such as the ornate Ottheinrichsbau of Heidelberg Castle (1556-59), which was proportioned according to Serlio's treatise, and the *Stadtresidenz* at Landshut (1536-43), copied directly from the famous Palazzo del Tè in Mantua—remained without influence in Germany. Paradoxically, they are among the few examples of German Renaissance architecture which are widely known.

Only toward the end of the 16th century did these scattered incidents coalesce into two concurrent trends, most inappropriately—albeit apologetically—labeled "Northern Mannerism" and "The Academic Reaction against Northern Mannerism." "Northern Mannerism," an ornamental style derived from the illustrated books of Vredeman de Fries, Wendel Dietterlin, and others, delighted in an almost overripe elaboration of strapwork, decorative pinnacles, and grotesques. Perhaps the first style to be largely spread by printed plates, it coincided with the spread of one of the most profound revolutions in modern history, the Lutheran Reformation, itself much boosted by printed books.

At the same time, and often under the same patronage, a classical architecture on Italian principles emerged, chiefly in the work of the Swiss Joseph Heintz and his pupil Elias Holl in Augsburg. Holl, a sort of German Inigo Jones, was the first native architect to command the syntax and grammar of Italian classicism. He had toured Italy before beginning his career in 1600 in Augsburg, where the series of civic buildings he designed stand out against the general background of German architecture on the eve of the Thirty Year's War, much as Inigo Jones's buildings do in Jacobean England. Hitchcock is correct in arguing that the restrained and measured architecture of Holl, rather than the exuberant "Northern Mannerist" style, provides the starting point for the German Baroque. Holl's architecture initiated a sustained contact with Italy as the source for an architect's training and models; it marked the end of German independence from the architectural revolution of Brunelleschi and Bramante, that is from the heritage of the Italian Renaissance. The question thus remains open if German Renaissance architecture is not in fact better considered the final phase of the German Middle Ages.

A stylistic account of 16th-century German architecture must unavoidably frustrate readers intent upon narrative continuity, as would any quest for a plot in a collection of short stories. It is unlikely, however, that this period will be more willingly harnessed by a different approach—one concentrating on the fascinating issues of patronage which recur in Hitchcock's account, for instance. The very essence of 16th-century Germany was fragmentation and conflict. Numerous incidents arouse the interest of the social historian of architecture. The Fuggerei at Augsburg (1515-25), famed as the earliest social housing project, was the philanthropic foundation of the very banking family who first sponsored the use of Italian forms in German architecture. Its striking resemblance to German housing of the 1930s is ultimately more revealing about modern architecture's imagery than the modernity of the 16th century. The new town of Freudenstadt near Baden is but one of several ideal Renaissance town plans in which the geometric formations of fortifications were adapted to the design of a wholly new city. Planned to house religious refugees from the east, the new town was also to supply the work force for the silver mines of the Black Forest. But these threads of a social history are no more readily woven into a bold pattern than the tenuous strands of the stylistic story. Each requires the in-depth investigation of its particular context possible only in a specialized study. It is, indeed, this courage of the comprehensive account which leaves us once again in Professor Hitchcock's debt. German Renaissance architecture will never make a great story; but no one will consider any of its episodes again without first consulting "Hitchcock."

BUILDING ACTIVITY
 BUILDING COSTS AND FINANCING
 BUSINESS DEVELOPMENT
 CONSTRUCTION MANAGEMENT
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Dodge/Sweet's Construction Outlook for 1982: first update

The shaky start of the Reagan Administration's "Program For Economic Recovery" calls for some modification of last November's 1982 construction outlook. These changes do not affect the bottom line so much as they alter the character of 1982's potential for construction contracting and

building materials demand. One of the necessary adjustments to the former *1982 Outlook* is a downward revision of the housing forecast, from 1.4 million units to the range of 1.2 to 1.3 million. This shortfall became evident early in the winter when interest rates firmed unexpectedly. Not long after that, the release

of 1981's fourth-quarter GNP data, which revealed a sharp decline in economic activity, confirmed the suspicion that another recession was in the making. In deference to an embarrassed Administration (which had been pushing growth), the consensus economic forecast for 1982 initially took the form of a "mild recession/strong recovery" scenario. By February, however, this deferential outlook was rapidly losing whatever credibility it once had. The reality of a more severe recession now demands downscaling 1982's potential for commercial and industrial building. At the same time, it improves the odds on reaching the upper limit of the 1.2-to-1.3-million-unit housing forecast.

For most of the past year, the construction industry has been caught in the cross fire of a grim battle against inflation. Both the Administration and the Federal Reserve Board—each in its own way—insist they are winning the battle. Construction has been one of the casualties. Part of the problem concerns the inherent conflict between the supply-side and monetarist approaches to the control of inflation. The simultaneous application of monetary *restraint* and budgetary *stimulus* has the Fed blaming the Administration for inflation while the Administration blames the Fed for recession. And that's only the up-front part. In the background lurk the promise of further tax cuts and the dedication to a budget-busting military buildup.

Until these priority conflicts are resolved, the short-run consequences to the first year of Reaganomics—recession, high interest rates, and across-the-board cuts in non-defense spending—have the construction industry pinned down on all sides. In 1982, as in 1981, housing can't recover until interest rates break. Publicly financed construction faces a long wait until local governments are capable of accepting the responsibilities of the New Federalism. Meanwhile, private non-residential building, where the best potential lies, is sitting out the recession of 1981/82.

It is extremely rare to find all three sectors of the construction market suppressed at the same time. More often than not, cycles in nonresidential building (which are dominated by business capital spending) move in opposite phase from housing cycles (which are highly sensitive to *credit conditions*). This tendency toward counter-cyclical behavior of nonresidential and residential building activity

continued on page 57

1982 National Estimates Dodge Construction Potentials

Nonresidential Buildings

	1981 Actual	1982 Forecast	Percent Change 1982/81
Floor Area (millions of square feet)			
Office Buildings	317	250	-21
Stores & Other Commercial	404	380	-6
Manufacturing Buildings	185	170	-8
Total Commercial & Manufacturing	906	800	-12
Educational	74	65	-12
Hospital & Health	60	55	-8
Other Nonresidential Buildings	126	120	-5
Total Institutional & Other	260	240	-8
Total Nonresidential Buildings	1,166	1,040	-11
Contract Value (millions of dollars)			
Office Buildings	\$ 19,268	\$ 16,400	-15
Stores & Other Commercial	11,733	11,925	+ 2
Manufacturing Buildings	7,530	9,675*	+ 28
Total Commercial & Manufacturing	\$ 38,531	\$ 38,000*	-1
Educational	\$ 5,819	\$ 5,600	-4
Hospital & Health	6,218	6,100	-2
Other Nonresidential Buildings	7,681	7,750	+ 1
Total Institutional & Other	\$ 19,718	\$ 19,450	-1
Total Nonresidential Buildings	\$ 58,249	\$ 57,450*	-1

*1982 estimate includes \$2.0 billion synthetic fuel plant.

Residential Buildings

	1981 Actual	1982 Forecast	Percent Change 1982/81
Dwelling Units (thousands of units)			
One-Family Houses	674	800	+ 19
Multifamily Housing	450	500	+ 11
Total Housekeeping Residential	1,124	1,300	+ 16
Floor Area (millions of square feet)			
One-Family Houses	1,079	1,280	+ 19
Multifamily Housing	478	530	+ 11
Nonhousekeeping Residential	60	55	-8
Total Residential Buildings	1,617	1,865	+ 15
Contract Value (millions of dollars)			
One-Family Houses	\$ 38,363	\$ 49,600	+ 29
Multifamily Housing	17,821	21,475	+ 21
Nonhousekeeping Residential	3,879	3,800	-2
Total Residential Buildings	\$ 60,063	\$ 74,875	+ 25

Nonbuilding Construction

	1981 Actual	1982 Forecast	Percent Change 1982/81
Contract Value (millions of dollars)			
Highways & Bridges	\$ 11,126	\$ 9,950	-11
Sewer & Water	7,677	7,775	+ 1
Other Public Works	5,891	6,275	+ 7
Total Public Works	\$ 24,694	\$ 24,000	-3
Utilities	\$ 7,183	\$ 9,000	+ 25
Total Nonbuilding Construction	\$ 31,877	\$ 33,000	+ 4

All Construction

	1981 Actual	1982 Forecast	Percent Change 1982/81
Contract Value (millions of dollars)			
Total Construction	\$150,189	\$165,325	+ 10
Dodge Index (1977 = 100)	107	118	+ 10

Prepared March 1982 by the Economics Department, McGraw-Hill Information Systems Company, George A. Christie, vice president and chief economist.

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usually serves as a stabilizing influence in construction markets.

Under ordinary circumstances, the balance of this year would find construction markets settling into a familiar pattern. Recession, now almost three quarters along, would be dragging commercial and industrial building into further decline, just as it did in 1970 and again in 1975. Falling interest rates would provide the catalyst for a vigorous housing recovery, particularly with the support of today's highly favorable demographics. Depending on the severity of the recession, it would not be surprising to find the Federal government providing the stimulus of some extra public works construction, as it has so often done. By this sequence of events, construction has typically led the economy out of past recessions.

But these are not ordinary times. Among these familiar responses by construction to recession, only one, the weakening of commercial and industrial building, carries a high probability in 1982. The likelihood of increased public works spending this year is close to zero, because this Administration remains committed to tax cuts and military spending as the way to stimulate the next recovery. This leaves the demoralized hous-

ing industry as the main chance for short-run improvement in the depressed construction markets.

RESIDENTIAL BUILDING

Since the fall of 1979, when the Fed "officially" embraced monetarism, the hopes of the housing industry have fallen and risen with swings in interest rates. Mostly, it's been high interest rates and low housing volume. What happened during the brief period of monetary relaxation in the second half of 1980, however, proved that housing's response to falling interest rates can be swift and strong. Housing improved by nearly 50 per cent during that six-month period. Another round of credit tightening at the close of 1980 ended that spurt, but by the fall of 1981, as interest rates began to wind down again, there was reason to anticipate another housing rebound. It failed to materialize, however. By mid-winter, interest rates were defying the law of gravity—rising instead of falling, even through the economy was limping its way through another recession. The monetarist explanation for this curious happening is that M-1 escaped again and had to be recaptured, even at the cost of deepening and lengthening the recession.

It must be hoped that the \$10-billion "mystery bulge" that appeared in the money supply in January, prompting the Fed to tighten when it might have been easing, was a random event. If so, the unpleasant realities of recession should prevail in the credit markets over the months ahead, and interest rates will resume their downward course as business demand for borrowing slackens. Even so, the recent flare-up of interest rates, though short-lived, has already diminished the prospect for a housing recovery. In 1982, the Federal government will be skimming as much as one-third of the available credit, mostly to finance its huge deficit. Business demand for funds should be picking up toward year-end as recovery finally takes hold. This leaves the housing market only a few precious quarters in which to revive.

Allowing for the usual lag between short- and long-term interest rates, prime time for mortgaging ought to be from spring '82 until the end of the year. During this period, conventional mortgage rates are expected to retreat from their present 17+ per cent to about 14 per cent. With inflation at eight per cent, the "real" rate of interest on conventional mortgages would still be a relatively

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**1982 Regional Estimates
Dodge Construction Potentials**

First Update
March 1982

North-east	Connecticut, District of Columbia, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Eastern Pennsylvania, Rhode Island, Virginia, Vermont		
	1981 Actual	1982 Forecast	Percent Change 1982/81
Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	\$ 7,489	\$ 6,825	-9
Institutional and Other	4,406	4,075	-8
Total	\$11,895	\$10,900	-8
Residential Buildings			
One-Family Houses	\$ 5,791	\$ 7,325	+26
Multifamily Housing	3,242	3,825	+18
Nonhousekeeping Residential	726	700	-4
Total	\$ 9,759	\$11,850	+21
Nonbuilding Construction			
Highways and Bridges	\$ 1,897	\$ 1,775	-6
Other Public Works	2,775	3,050	+10
Utilities	441	1,000	++
Total	\$ 5,113	\$ 5,825	+14
Total Construction	\$26,767	\$28,575	+7

Mid-west	Northern Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, North Dakota, Ohio, Western Pennsylvania, South Dakota, Wisconsin, West Virginia		
	1981 Actual	1982 Forecast	Percent Change 1982/81
Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	\$ 6,658	\$ 8,575*	+29
Institutional & Other	4,281	4,175	-2
Total	\$10,939	\$12,750*	+17
Residential Buildings			
One-Family Houses	\$ 5,956	\$ 8,000	+34
Multifamily Housing	2,773	3,525	+27
Nonhousekeeping Residential	549	575	+5
Total	\$ 9,278	\$12,100	+30
Nonbuilding Construction			
Highways and Bridges	\$ 2,854	\$ 2,300	-19
Other Public Works	2,699	2,750	+2
Utilities	1,475	3,300	++
Total	\$ 7,028	\$ 8,350	+19
Total Construction	\$27,245	\$33,200*	+22

*1982 estimate includes \$2.0 billion synthetic fuel plant.

South	Alabama, Arkansas, Florida, Georgia, Southern Illinois, Kansas, Louisiana, Mississippi, Missouri, North Carolina, Nebraska, Oklahoma, South Carolina, Tennessee, Texas		
	1981 Actual	1982 Forecast	Percent Change 1982/81
Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	\$14,279	\$13,350	-7
Institutional and Other	6,900	6,825	-1
Total	\$21,179	\$20,175	-5
Residential Buildings			
One-Family Houses	\$17,043	\$21,900	+28
Multifamily Housing	6,996	8,400	+20
Nonhousekeeping Residential	1,552	1,400	-10
Total	\$25,591	\$31,700	+24
Nonbuilding Construction			
Highways and Bridges	\$ 4,275	\$ 3,875	-9
Other Public Works	4,563	4,800	+5
Utilities	1,285	2,100	+63
Total	\$10,123	\$10,775	+11
Total Construction	\$56,893	\$62,650	+10

West	Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming		
	1981 Actual	1982 Forecast	Percent Change 1982/81
Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	\$10,105	\$ 9,250	-8
Institutional & Other	4,131	4,375	+6
Total	\$14,236	\$13,625	-4
Residential Buildings			
One-Family Houses	\$ 9,573	\$12,375	+29
Multifamily Housing	4,810	5,725	+19
Nonhousekeeping Residential	1,052	1,125	+7
Total	\$15,435	\$19,225	+25
Nonbuilding Construction			
Highways and Bridges	\$ 2,100	\$ 2,000	-5
Other Public Works	3,531	3,450	-2
Utilities	3,982	2,600	-35
Total	\$ 9,613	\$ 8,050	-16
Total Construction	\$39,284	\$40,900	+4

++ = Over 100% increase

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high six per cent, providing one reason why the nominal mortgage rate can remain fairly steady at 14 per cent rather than surge again next winter.

Fourteen per cent mortgage money is not the stuff that housing booms are made of, but it should provide an environment in which "innovative" financing works better than it does at 17 per cent. While it appears that the bottom of the current cycle has been reached, there can be little hope for anything better than a rate of 1.0 million starts in 1982's first quarter. Modest improvement, to 1.2 million in the second quarter, followed by rates of 1.4+ million and 1.5+ million in the third and fourth quarters will be needed to reach 1.3 million for the year. The final quarter is apt to be the critical one.

If the mortgage rate reached by the end of 1982 remains resistant to upward pressures, the 1983 housing start total is tentatively estimated to be in the range of 1.5 to 1.6 million units.

NONRESIDENTIAL BUILDING

Contracting for nonresidential buildings held a strong and steady pace through 1981's deteriorating economic conditions, with quarterly index readings of 172-169-170-167 (1977 = 100). However, it took an unusual set of circumstances to accomplish what amounted to a remarkable balancing act.

In 1981, contracting for square footage of stores and shopping centers declined nine per cent, as would be expected in a housing crisis. Contracting for square footage of industrial building fell 14 per cent, as would be expected in a business recession. Contracting for square footage of institutional building fell 12 per cent, as would be expected in a squeeze on public spending. Yet, in 1981, all of these across-the-board declines in nonresidential building were offset by a 30 per cent gain in the booming market for offices. The lopsidedness of the nonresidential building market in 1981 is the key to its performance in 1982. Can office building continue to sustain this sector until the other categories begin to recover? How much life is left in the office boom? What are 1982 prospects for retail, industrial, and institutional building?

Offices

The October, 1981 edition of the *1982 Outlook* offered a more detailed analysis of the office building market than there is room for here. The main points were: 1) a rate of building in excess of 200 million square feet per year is not sustainable indefinitely (1981's total was 317 million); 2) a rate of building well above 200 million square feet has been needed for the past few years to reduce an accumulated backlog of demand resulting from extraordinary labor force growth in the late 1970s; and 3) this backlog has been largely eliminated by now.

Two recent developments hint that the office boom may have peaked. The number of large office buildings being started

dropped off sharply between the beginning and end of 1981, and the rate of total square footage started fell sharply in January, 1982. Although severe weather may have been a factor in January's break, the prospect of a deeper recession supports the case for a decline of up to 20 per cent this year.

Retail

With almost all of 1982's housing recovery confined to the second half of the year, the derived demand for retail building that ultimately will be generated by an improved level of homebuilding will arrive too late in 1982 to prevent a decline of five per cent. However, the potential for expansion in 1983 is good.

Manufacturing

Lowered expectations for 1982 industrial production and capacity utilization translate into a later recovery and reduced volume of contracting for manufacturing buildings this year than previously expected. At an estimated 170 million square feet, the 1982 total will mark the third successive annual decline from 1979's peak of 243 million square feet. Despite declining square footage, 1982 contract value of manufacturing building will be up significantly, owing to the start of the nation's first large-scale synthetic fuel plant in North Dakota. This \$2-billion undertaking will not involve much square footage of enclosed structures in the conventional sense of industrial construction, however. Since this long-planned project obtained its Federal loan guarantee as recently as January, 1982, it was not included in last October's *Outlook*.

Institutional

Last October's estimate of a further modest decline in contracting for schools, hospitals, and other institutional buildings needs little adjustment at this time. Commercial and industrial building, now estimated at only 800 million square feet in 1982, a 12 per cent decline from 1981, nevertheless will exceed the volume of such building started in the 1975 recession by nearly 250 million square feet. Offices account for most of the difference. Total nonresidential building in 1982 is now estimated at 1,042 million square feet for a value of \$57.4 billion.

A CONSTRUCTION MARKET IN TRANSITION

By the end of 1982, economic forces will be leading the construction industry out of the transition it is now experiencing. With inflation beaten down and with recovery re-established, some of the basic priorities of Reaganomics will become more dominant: the shifting of Federal programs to local governments and the trade-off between productive and military capital against social capital. These structural changes in our political and economic systems will greatly influence the direction of construction markets for many years ahead.

The Outlook

Nonresidential Building Contract Value

Seasonally adjusted annual rates, in billions of dollars

Year/Quarter	Total	Commercial/Industrial	Institutional	
1981	I	\$58.3	\$37.8	\$20.5
	II	57.6	38.9	18.7
	III	58.6	38.7	19.9
	IV	58.4	38.6	19.8
1982	I	\$54.1	\$34.6	\$19.5
	II	61.2*	42.1*	19.1
	III	55.5	36.2	19.3
	IV	59.0	39.1	19.9
1981	\$58.2	\$38.5	\$19.7	
1982	\$57.4	\$38.0	\$19.4	
% Change	-1%	-1%	-1%	

* Includes \$2.0 billion synthetic fuel plant (annualized)

Residential Building Contract Value

Seasonally adjusted annual rates, in billions of dollars

Year/Quarter	Total	One Family	Multi-Family*	
1981	I	\$69.3	\$46.0	\$23.3
	II	62.7	41.3	21.4
	III	56.6	35.5	21.1
	IV	51.8	30.8	21.0
1982	I	\$54.0	\$33.0	\$21.0
	II	68.5	43.2	25.3
	III	85.2	58.4	26.8
	IV	91.9	63.7	28.2
1981	\$60.1	\$38.4	\$21.7	
1982	\$74.9	\$49.6	\$25.3	
% Change	+25%	+29%	+16%	

* Includes Nonhousekeeping Residential Buildings

Nonbuilding Construction Contract Value

Seasonally adjusted annual rates, in billions of dollars

Year/Quarter	Total	Public Works	Utilities	
1981	I	\$36.0	\$27.6	\$8.4
	II	35.3	22.4	12.9
	III	25.6	23.5	2.1
	IV	30.8	25.4	5.4
1982	I	\$38.5	\$25.0	\$13.5
	II	31.0	23.5	7.5
	III	31.0	23.5	7.5
	IV	31.5	24.0	7.5
1981	\$31.9	\$24.7	\$7.2	
1982	\$33.0	\$24.0	\$9.0	
% Change	+4%	-3%	+25%	

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December continued 1981's bleak construction picture

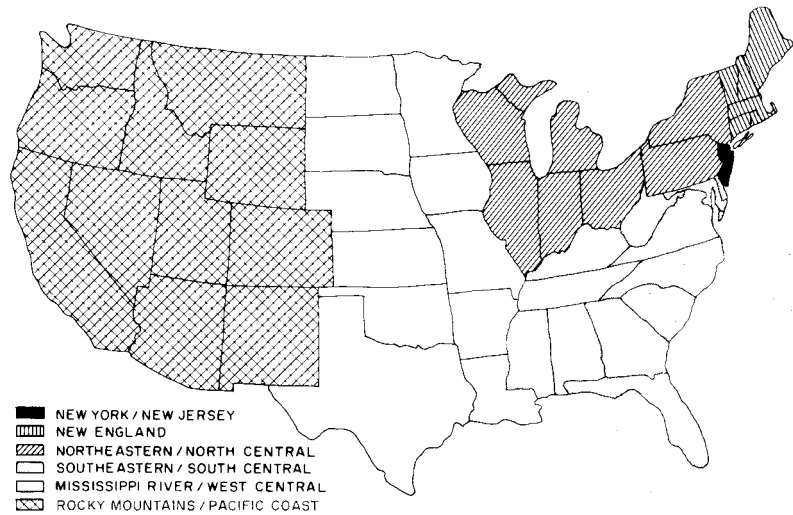
According to a survey by the McGraw-Hill Cost Information Systems Division for the period October through December 1981, the prices of most building materials continue to show the dampening impact that high interest rates, the Federal budget deficit and record-breaking cold weather exert on this industry. Plywood has again decreased by 1.9 per cent while concrete is up 2 per cent, block up 2.6 per cent, lumber up 1.7 per cent and asphalt shingles up 1.7 per cent. Construction volume remained low in the closing quarter of '81. The total dollar volume of construction in

1981 was on a par with 1980; however, taking into account a 10 per cent inflation rate, total construction for 1981 was less than in 1980. Housing starts in December increased approximately 13 per cent over previous months but remained below the 1980 level.

The projected Federal deficit and the resultant pinch on state funds have caused difficulties for the public work sector, but Federal investment incentives may help the private industrial sector. The 20 major U.S. Cities Index indicates that labor rates are still

on the increase. In spite of high unemployment, unions in the East are still trying to achieve parity with higher rates in the West. Some contractors report that collective bargaining talks are focusing on ways of coping with the recession and non-union competition, such as "no strike pacts," freezes on wage fringe benefits, and contract changes that would allow more competition between union and non-union contractors. Though some argue that a deep recession lies ahead, current projections indicate that the over-all construction picture will improve in 1982.

Districts	Number of metro areas	10/81 to 1/82 %	1/81 to 1/82 %	1/77 to 1/82 %
Eastern U.S.				
Metro NY-NJ	17	1.02	1.07	1.42
New England States	30	1.01	1.08	1.40
Northeastern and North				
Central States	116	1.00	1.06	1.48
Southeastern and South				
Central States	106	1.00	1.04	1.45
Average Eastern U.S.	269	1.00	1.05	1.46
Western U.S.				
Mississippi River and				
West Central States	123	1.02	1.07	1.49
Pacific Coast and Rocky				
Mountain States	101	1.03	1.09	1.53
Average Western U.S.	224	1.02	1.08	1.51
United States: Average	493	1.01	1.07	1.48




HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1974				1975				1976				1977				1978				1979				1980				1981			
	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	575.0	598.7	657.1	714.2	755.8	819.6	836.0	872.1	904.3	875.6	901.9	935.1	964.3	961.3	1023.5	1023.5	1013.3															
Baltimore	534.3	581.1	585.0	635.6	662.2	729.6	744.2	773.6	802.2	779.0	802.4	817.2	825.3	836.0	837.1	837.1	812.0															
Birmingham	421.2	448.9	551.9	585.4	609.2	704.1	718.2	724.5	751.3	736.8	758.9	757.4	764.9	781.6	797.7	797.7	797.7															
Boston	462.5	513.2	555.9	587.7	759.5	691.9	705.7	718.9	745.4	736.2	758.3	752.4	759.9	769.0	779.6	826.3	834.6															
Chicago	529.6	560.1	635.2	689.9	717.3	805.4	821.5	885.9	918.7	889.4	916.1	944.5	953.9	963.4	1000.8	1020.8	1020.8															
Cincinnati	500.1	550.6	609.8	656.6	669.5	750.7	765.7	810.0	840.0	823.0	847.7	868.3	876.9	887.4	939.5	958.3	920.0															
Cleveland	509.5	531.0	632.9	625.2	653.5	794.7	810.6	853.6	885.1	881.8	908.3	920.6	929.8	936.3	986.0	1005.7	1005.7															
Dallas	477.9	499.6	538.5	615.2	637.6	739.0	753.8	873.0	905.3	787.7	811.3	827.1	835.3	869.3	965.6	984.9	1014.4															
Denver	510.0	553.6	616.0	703.8	730.5	803.2	819.3	847.4	878.8	905.9	933.1	927.6	936.8	934.1	961.6	980.8	1010.2															
Detroit	538.7	597.5	617.2	664.2	756.6	840.6	857.4	865.5	897.6	860.5	886.3	911.3	920.4	945.9	1078.1	1099.6	1099.6															
Kansas City	444.9	509.1	547.3	603.0	631.8	657.7	670.8	711.0	737.3	735.2	757.3	771.2	789.9	791.3	818.2	834.6	876.3															
Los Angeles	531.8	594.1	673.1	756.8	784.2	886.3	904.0	955.4	990.8	978.3	1007.6	1022.3	1032.5	1056.0	1116.8	1139.1	1139.1															
Miami	485.5	558.9	592.5	628.4	649.0	686.1	699.8	736.9	764.1	742.8	765.1	777.0	784.7	788.7	840.6	840.6	840.6															
Minneapolis	488.6	538.0	564.1	629.4	651.3	793.4	809.3	824.3	854.8	827.6	852.4	848.3	856.7	871.2	934.3	952.9	962.4															
New Orleans	442.1	494.7	534.8	614.7	637.0	697.7	711.6	734.7	761.9	753.8	776.4	785.5	793.3	816.9	818.1	834.5	842.8															
New York	515.3	533.5	580.8	619.8	646.3	666.6	679.9	778.9	807.8	793.7	817.5	815.1	831.4	838.7	845.3	887.5	905.2															
Philadelphia	518.5	567.5	579.2	658.8	680.0	778.0	793.5	814.6	844.8	830.9	855.8	849.2	857.6	869.6	901.9	919.9	938.3															
Pittsburgh	465.6	509.5	526.3	589.6	614.0	692.2	706.0	736.5	763.8	746.1	768.5	773.0	788.4	795.4	864.0	881.3	907.7															
St. Louis	476.7	528.9	537.1	617.1	637.4	752.0	767.0	782.8	811.8	786.7	810.3	820.5	836.9	839.4	859.0	876.1	884.8															
San Francisco	672.5	753.3	820.8	963.2	990.0	1239.0	1263.8	1200.3	1244.8	1202.7	1238.8	1260.4	1285.6	1320.9	1411.7	1439.9	1454.2															
Seattle	450.2	515.1	570.5	629.6	669.0	700.7	714.7	761.0	789.1	763.3	786.2	807.6	823.7	829.4	879.9	897.5	906.5															

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 ÷ 200.0 = 75%) or they are 25% lower in the second period.

The image features two architectural sketches. On the left is a tall, curved skyscraper with a grid-like facade, labeled '333 Wacker Drive'. On the right is a large, low-profile pavilion with a series of slanted glass panels, labeled 'U.S. Pavilion'. The sketches are rendered in a dark, sketchy style against a light background.

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The architect as businessman: moving beyond the crisis of confidence

The need for architectural firms to implement a plan for effective management has been recognized by many as critical to financial success. The rapid pace of economic change, spurred by high interest rates and a persistent recessionary economy will, in the years ahead, mandate an increased need to maximize profits. With little opportunity to develop these skills, architects are more frequently seeking advice in this critical area. In the following article, lawyer Barry LePatner looks at the role of the architect as businessman, offers constructive techniques for improving business practices, and cites the methods currently used by several successful firms.

by Barry B. LePatner, Esq.

Architects, when asked to rank the various tasks they perform in their daily practice, will almost always rate the role of businessman/administrator at the bottom of the scale. For some, viewing themselves in roles other than that of designer is difficult, if not impossible. For others, the business side of their profession has a pejorative connotation: it is something they are neither trained for nor happy with. And yet, the attitudes of these same architects take a different turn when they are asked to discuss the subject of profitability. Each will tell you with alacrity that the competition is fierce and prospects for future business . . . well, the future is whatever walks through the door from one year to the next.

Sadly, most architects see themselves as poor businessmen required to deal with poorly paying clients, labyrinthine governmental bureaucracies, and unrelenting inflation. And as if design professionals were not content to suffer this inferiority complex in private, a recent article on the front page of the *Wall Street Journal* trumpeted a prominent architect's lament that "from a business standpoint, we're our own worst enemies."

A look at the reasons underlying this crisis of confidence can be most instructive. For unless architects can adjust to today's fast-changing world of business, many firms may not survive more than a few years; and even those who consider themselves successful will find their margin of profit narrowing as high inflation erodes their base of operations.

Barry B. LePatner has law offices in New York City, where he specializes in the representation of architectural and engineering firms. He is co-author with Sidney M. Johnson of *Structural and Foundation Failures: a Casebook for Architects, Engineers, and Lawyers*, published this year by McGraw-Hill.

Portions of this article appeared in the February, 1982 issue of the *LePatner Report*, a newsletter for the design professions published by the author.

In the name of competition, many firms elect to underbid projects—i.e. undersell themselves in the marketplace of professional services. Yet, the fact is that there are, according to the American Institute of Architects, only 60,000 licensed architects in the United States. Compare this figure with the 1,045,000 accountants, 499,000 lawyers, and 431,000 doctors practicing in this country.

Architects also cite competition as the reason why owners can openly threaten to "give the business to someone else" unless fees are negotiated downward. This argument treats all architects as fungible goods, easily duplicable in the quality of services provided. As a professional, each architect brings his or her own special talents to a project; replacement by another, however serious the threat, is not often possible or desirable from the standpoint of the owner—who has selected the designer principally *because* of those personal attributes.

Overcoming the Medici Complex

There is to be found in most architects what I have come to call the "Medici Complex." Viewing themselves as artisans, disdaining the idea of profit as a motivating force, they exhibit an unrealistic sense of gratitude to owners who retain their services. Much as Michelangelo spent a good portion of his life working on one Medici commission after another with little, if any, compensation beyond room and board and the honor of effectuating his creative designs, today's architect often adheres to a self-defeating mechanism. Thankful for the beneficence bestowed upon him by the owner, the architect embarks upon long-term projects hopeful, but not certain, that a reasonable profit will result from his labors.

Another factor contributing to an architect's negative feelings about business is his lack of experience with the financial concepts necessary to manage a business. Most readily acknowledge that they do things exactly the

way they were done in the firm they joined after completing their architectural schooling. Perhaps it was possible to run an architectural practice effectively and profitably 10 or 20 years ago without a knowledge of modern financial management tools. Today, however, securing against the ravages of inflation, high interest rates, and increased costs in every area of practice without compensating increases in income, can test the best of financial wizards. Navigating a firm on a profitable course with tight financial controls may be difficult, but charting a long-term program without such tools is akin to wandering the ocean without chart or compass.

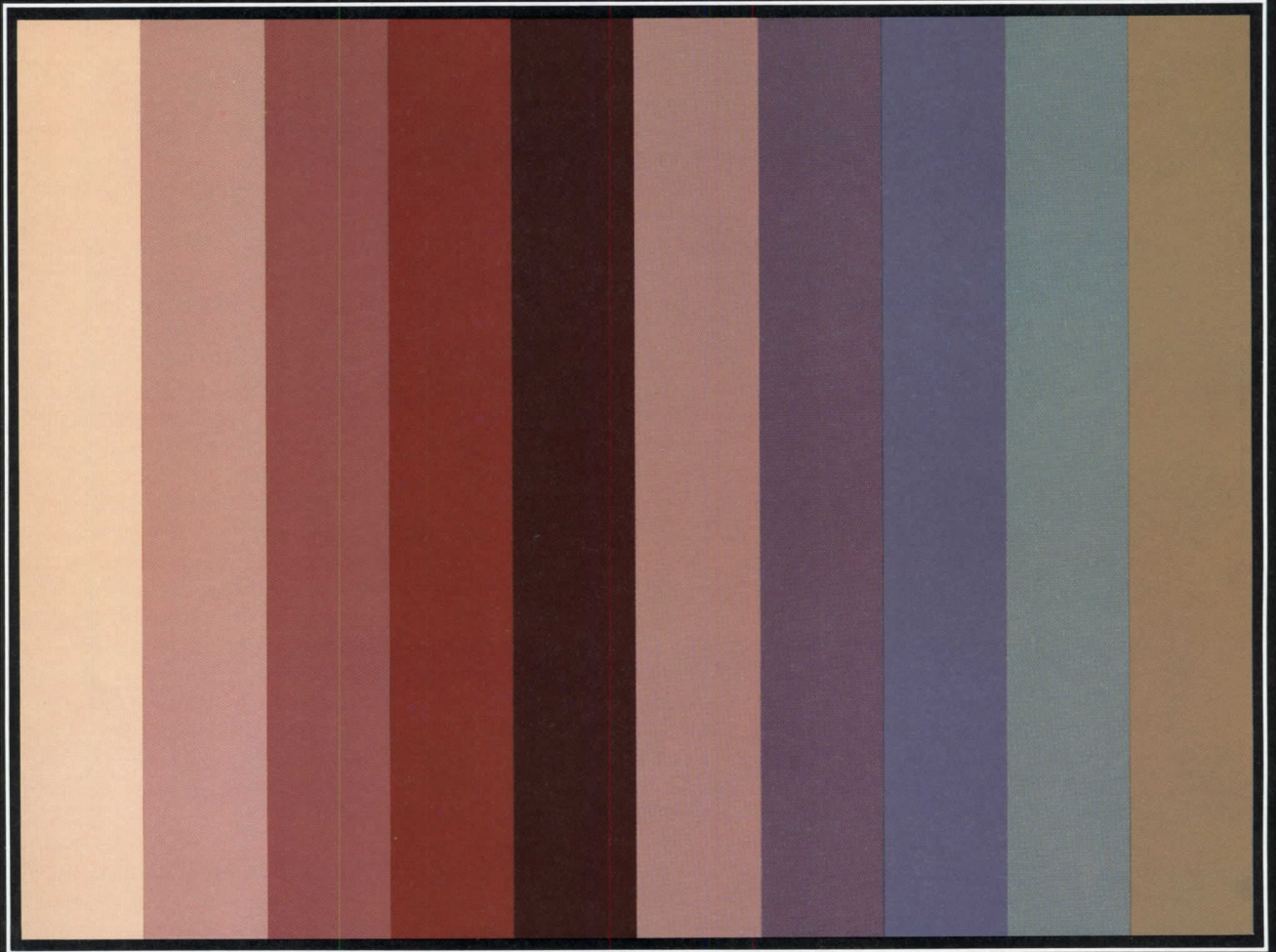
Pointing to the vagaries and vicissitudes of our economy, many design professionals express a sense of frustration bordering on disgust. Even highly successful firms are not immune to the cyclical effect of double-digit inflation on construction monies which filter down from year to year. Uncertain how to manage, beset by rising costs and the need to generate increased business merely to meet expenses, it is no wonder that the architect as businessman expresses an acute sense of economic angst.

Salary levels of registered architects employed in firms are relatively low. The AIA cites starting salaries for architects as averaging \$12,500 a year. Starting engineers often make over \$20,000 a year. Newly graduated accountants, lawyers, and most other professionals far exceed the salary scale of architects at every level of experience.

Overriding these facts is the public's general perception of the architectural profession. Most laymen readily express a lively interest in the role of architects in our society. One need only note the recent clamor over Tom Wolfe's best-selling book, *From Bauhaus to Our House*. Nevertheless, the public, and even many clients, rarely comprehend the precise manner in which architects transpose their creative ideas from drawing board to reality. Television has taken us into the courtroom and hospital to observe the reality (and sometimes unreality) confronting lawyers and doctors in their careers, and recent movies have shown us how journalists can go beyond reporting news to actually making news. Despite the apparent fascination with architecture, however, the public's image of architects remains two-dimensional. Without a true understanding of the many skills and

continued on page 65

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qualities needed to orchestrate a successful project, those who retain architects can never fully appreciate the multifaceted talents an architect must possess.

This last factor highlights the profession's difficulty in projecting a completely accurate picture of itself, i.e., in marketing the architect as a service business specialist offering what no other professional can. Seen in this light of exclusivity, an architect's image of himself can brighten considerably.

It is axiomatic that a good starting point for the pursuit of success is the careful study of those who have succeeded. Certain characteristics of good management are essential to all profitable businesses. Adapting methods of effective administration to one's own firm and recognizing that such techniques pay off is a first step down the road to improved management.

In reporting on the nation's Top 500 architectural and engineering firms for 1981, *Engineering News-Record* cited the fact that the most successful firms had grown predominantly by entering new markets and introducing an expanded range of services. Many of the larger firms sought out high-profit and equally high-risk foreign markets. Domestically, *ENR* found surprising strength in the areas of defense, energy, and manufacturing. Perhaps of most significance to smaller firms was a statistic comparing the prospects for future success among those who exercise initiative: only two of the Top 10 firms in 1965 remained in the Top 10 of 1981. Clearly, effective planning and management are the hallmarks of long-term performance.

Reporting systems are central to effective planning and financial management

Such systems help chart the vitality of a firm at any given time. They allow management to detect incipient problems for immediate action. Most of all they lay the groundwork for assessing a firm's opportunity to grow, ensuring that every project is being carried out on a profitable basis.

One such effective management system is used by The Eggers Group, P.C., a large architectural firm located in New York City. This system, instituted by Frank W. Munzer, president of Eggers, emphasizes planning, target-setting, and then monitoring the pulse of the firm's business (see ARCHITECTURAL RECORD, January 1982, pages 51 and 55). Targets are met by careful and frequent analysis of various reports. These include billing forecasts, cash flow, aged accounts receivable, marketing activity, new contract awards, and project management reports. These reports are closely reviewed as "accurate indicators of the status and future of the office as a whole as well as individual projects," according to Mr. Munzer. Only the effective use of such a system can ensure adequate cash flow, maximum involvement of project personnel, and the opportunity to determine whether possible new business is likely to be profitable.

The introduction of financial systems is, of course, only part (albeit an important part) of a firm's over-all management philosophy. The philosophy of a firm towards managing

its business affairs will always be a reflection of the character and strength of its principals. Where a design firm is headed by individuals who emphasize design to the exclusion of all else, business management and profits will likely be of secondary consideration. Only when a firm exhibits a careful balance of design excellence and business acumen can that firm be certain of a profitable future.

A balanced perspective includes the ability to manage the business relationship with clients effectively as a concomitant of creative design. Striking this balance poses a serious challenge to many architects, but unless the initial contact with a client conveys a strong sense of the business side of the project (yours and the client's) all future relations may be adversely affected. "You can't afford good design without good management," says Richard Seth Hayden, a principal of Swanke Hayden Connell Architects. Computerization of all accounting procedures, including project cost control, allows the principals of Swanke Hayden Connell to concentrate on design and other creative areas of practice while monitoring the business side of the office. "Since the practice of architecture is a service business," says Hayden, "and all we have to offer clients is the talent of our staff, financial stability, which leads to staff stability—normally unheard of in our profession—is mandatory."

Pricing the project is critical

Only by realistically applying conservative values to the anticipated cost of operating your firm during a project can there be any opportunity to ensure a profit. Executing a contract with advance knowledge that it will not result in a profit, merely to "keep a lot of employees on the payroll," is a poor example of *noblesse oblige*. Moreover, it is only a short-term expedient whose long-term drain on firm resources will have a dramatic impact on over-all profits.

Preparing a fee proposal for projects under consideration is an important step in steering a design firm toward a profitable future. This function should be relegated to someone who is fully aware of the firm's goals and financial direction. For New York-based MBA Architects and Planners, the proper establishment of fees for each project is an important determinant of the over-all success of the office. According to Allen Trousdale, senior associate at MBA, fees "must be high enough to achieve a reasonable profit against anticipated costs and yet low enough to be competitive. In difficult economic times, the maneuvering space between these edges narrows greatly. The old *laissez-faire* approach of 'guesstimated' percentages of estimated construction costs has become a dinosaur."

In order to establish its fees realistically, MBA has implemented a Fee Analysis Form that provides for dual and comparative methods of fee analysis, incorporating automatic crosschecks during the course of a project. "Prepared in advance," says Trousdale, "the analysis becomes an essential tool in fee negotiation and determination. It takes

the firm one step nearer to landing projects in a competitive environment."

Every firm must ask itself a series of probing questions designed to articulate a collective sense of purpose and identity:

- What type of firm are we today and what type of firm would we like to be within five years? Within ten years?
- Are we content with our clientele or should we be expanding the scope of our client base into new areas?
- What financial success do we strive for? Is it realistic? How can we reach this goal?
- Are we prepared to devote the necessary amount of time to implement a financial management system? Do we have a principal who will see that, once implemented, this system will be followed by all?

Blind reliance on standard AIA agreements may not be sufficient

The use of carefully prepared professional services agreements is another essential ingredient of fiscal success. Various state laws, recent court decisions, and the nuances of each project require careful review of each contractual undertaking. The addition of provisions which anticipate potential problems and provide for appropriate protection can be the difference between profit or loss.

Architects offer many reasons why they fail to have an attorney review a proposed contract before submission to a client. Sometimes firms do not have counsel; other times, they contend that counsel is not well-versed in this area of the law. Yet, where project fees may be hundreds of thousands of dollars and the contract calls for services over a period of years, the time/expense of such review by competent counsel will constitute only a small fraction of the design fee; avoidance of only one problem at the outset will more than offset what clearly should be seen as an investment in problem deterrence and loss prevention.

Negotiating critical contract provisions with the owner, e.g., an initial minimum retainer, the right to equitable adjustment of the fee if the project is suspended beyond a few months, the need for monthly billing and prompt payment by the client, must be thrashed out before work begins. Many architects shun these discussions, fearing that the client will be put off by the subject. On the contrary, experience has shown that putting these items on the table for discussion and articulately explaining the need for such provisions is imperative and can have the opposite effect of solidifying relationships.

Having personally been involved in many such negotiations, I can safely say that owners have more respect for architects who discuss these important business concepts than for those who choose to avoid the subject altogether. Remember, owners are in business. They retain architects for their specialized skills. They prefer to do business with, and pay for, an architect who will secure a fair profit from his services. The presentation of arguments explaining the

continued on page 66



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need for certain contractual provisions (or deletion of unacceptable proposals by the owner) can be handled in a dignified, professional, businesslike manner.

Design professionals' greatest failing may be their reluctance to collect money due them

The handling of aged accounts receivable can be a source of problems. Uncertain how to approach what they consider an unseemly topic, some architects allow monies due for services rendered to languish, until collection is unlikely. Aggressive pursuit of delinquent clients is mandatory. Often the amount of aged receivables represents a substantial percentage of a firm's potential yearly profit.

Rather than shy away from these situations, some firms are quite frank about their insistence on prompt payment of billings. Paul Segal, of Paul Segal Associates, comments: "We view our relationship with clients as fundamentally a trade of professional services for money. We provide premium quality service on a prompt and timely basis and think it only reasonable to expect a client to pay in the same fashion."

Articulating this point to clients, however, can be an exercise in frustration if it is not carried through during a project. On this point, says Segal, "We make it quite clear to our clients that the provision in all our contracts calling for payment of fees within 15 days means just that. If we have not received payment we call the client as a reminder. Ten days after that, if money has not come in, we stop work on the project." Segal's tight control on outstanding receivables may not be rigidly applicable to all firms or to all types of clients. What it does stress, though, is one means of ensuring that clients who retain the firm will not be given latitude to create a long-term cash flow problem.

Pursuit of new business is an area where all firms can take stock of themselves

Seeking business in specialized realms without the requisite experience or staff can be time-consuming and frustrating. Aggressive marketing to promote an area of firm excellence, however, is to be encouraged. Now that it is permitted under the voluntary statement of ethics, advertising (i.e., self-promotion) should prove a sound investment if the market you seek to reach is definable and your firm can fulfill the promises it makes in its promotions.

The above suggestions, standing alone, will not change a marginally profitable firm into an overnight success. Nor do they represent more than a handful of the techniques that architects can employ in an effort to improve profitability. But embarking on a course of planned financial management will help to maximize opportunities for success. By combining professional skills developed through training and experience with enlightened business planning, architects can stand taller and, one hopes, become a little more profitable, in the years ahead.

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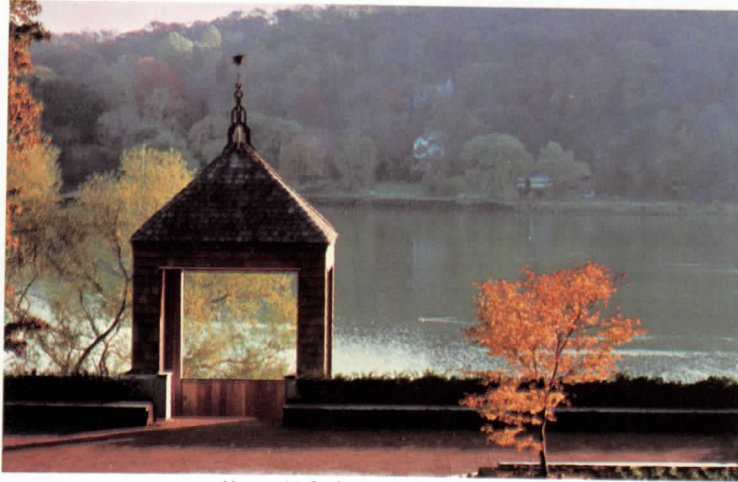
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PRESERVING THE QUIETUDE

Architects Moore Grover Harper have been working for nearly a decade with Nobel laureate James D. Watson on developing the campus and buildings of the Cold Spring Harbor Laboratory. The seven projects included in this portfolio illustrate their shared goal of accommodating the technological demands of modern biological research, while disturbing the beautiful site as little as possible.

At the edge of a promenade overlooking Cold Spring Harbor, a tiny, shingled gazebo offers a welcome vantage point from which to muse on the idyllic splendor of Long Island's North Shore. The view out across the water is to an unspoiled landscape—a sylvan hillside dotted with white clapboard houses reaching down toward the shore where whaling ships once set anchor. It's as if the clock had been stopped in the 19th century, preserving the picturesque hamlet nestled along the banks of the Harbor.

For those of us unfamiliar with the history of modern science, Cold Spring Harbor is simply another charming village to be glimpsed from the North Hempstead Turnpike as it weaves through Long Island. But for generations of scientists, this bucolic inlet has been home to a century of biological research. From an inauspicious beginning in 1890, when the Brooklyn Institute of Arts and Sciences established a Department of Zoology annex on the west bank of the Harbor, "The Biological Laboratory," as it was originally dubbed, quickly expanded its humble role as a summer school for high school biology teachers. A year after the first classes were held in an abandoned spinning mill, the Wawapex Society (a local real estate holding company) sponsored a research center for studying the propagation of fishes. Fourteen years later, the Carnegie Institution of Washington founded a "Station for Experimental Evolution," which was followed by a Eugenics Records Office; the two merged in 1921 as the Department of Genetics of the Carnegie Institution. When the Brooklyn Institute withdrew its support in 1924, affluent local residents rallied to the cause with funding, rechristening the Laboratory "The Long Island Biological Association" (LIBA). By the middle of this century, LIBA had amassed an 80-acre tract of land along the Harbor, claiming most of the extant buildings and an international reputation as the locus of seminal research in quantitative biology, molecular biology, and genetics. In 1962, the Carnegie

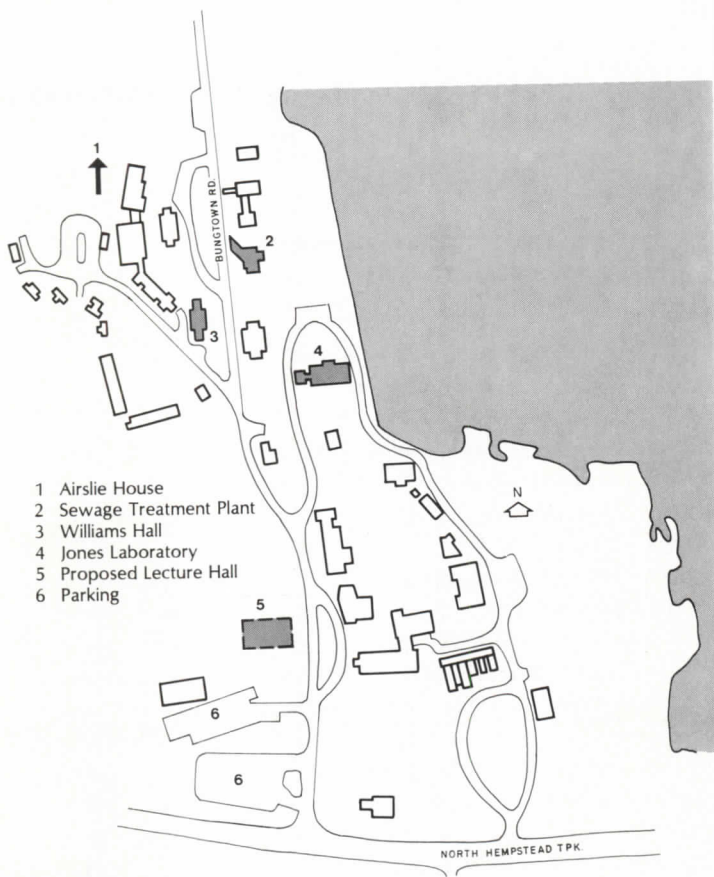
Institution withdrew the bulk of its support, and the post-doctoral research center was again reorganized as the "Cold Spring Harbor Laboratory of Quantitative Biology." Six years later, Dr. James D. Watson was named Director.

Though the first five years of Watson's tenure were spent divided between the North Shore and Harvard, the distinguished Professor of Biochemistry and Molecular Biology left Cambridge in 1973, with his wife Elizabeth, and the Cold Spring Harbor Laboratory had a full-time Director. In the move, Watson carried the Nobel Prize, for discovering the structure of the DNA molecule (with Francis Crick and Maurice Wilkins), and *The Double Helix*, a candid autobiographical account of that discovery. Alongside such unimpeachable credentials Watson brought another, less-quantifiable quality that made him particularly appropriate as Director—a rare sentimental warmth for the Lab, dating back to 1948, when, as a young graduate student, he attended one of the summer sessions: "As the summer passed on I liked Cold Spring Harbor more and more, both for its intrinsic beauty and for the honest ways in which good and bad science got sorted out." Twenty-five years later, the responsibility for maintaining the Harbor's quietude, "its intrinsic beauty," fell to Dr. Watson, and to Mrs. Watson, whose interest in architecture led her to graduate classes in historic preservation at Columbia University.

Architecture may be an unlikely sideline for a Nobel laureate in science, but on an excursion from a Stanford University symposium in the late '60s, Watson fell prey to the charms of the art, especially as produced by the accomplished partnership of Moore, Lyndon, Turnbull, Whitaker. A fortuitous visit to MLTW's Sea Ranch left an unforgettable impression—the rough-hewn wooden houses clustered into the bluffs of the craggy coast, their simple shed roofs pitched to parallel the slope of the land . . . the sympathetic



Ross Meurer



- 1 Airlie House
- 2 Sewage Treatment Plant
- 3 Williams Hall
- 4 Jones Laboratory
- 5 Proposed Lecture Hall
- 6 Parking

COLD SPRING HARBOR LABORATORY, Cold Spring Harbor, New York. Architects: *Moore Grover Harper*. General contractor: *Jack Richards, Cold Spring Harbor Laboratory Buildings and Grounds Department* (unless otherwise noted). **WASTE WATER TREATMENT PLANT**: *William H. Grover, Charles W. Moore, Robert L. Harper, project team*. **AIRSLIE HOUSE**: *Charles W. Moore, William H. Grover, project team*. **NEW LECTURE HALL**: *Charles W. Moore, William H. Grover, James C. Childress, project team*. **JONES LABORATORY**: *William H. Grover, Charles W. Moore, project team*. **WILLIAMS HALL**: *Glenn W. Arbonies, Robert L. Harper, project team*. General contractor: *Ted Camella*. **BANBURY MEETING HOUSE** (Lloyd Harbor, New York): *William H. Grover, Jefferson B. Riley, Charles W. Moore, project team*. Consultant: *Robert Hansen Associates* (acoustical). **SAMMIS HALL** (Lloyd Harbor, New York): *Charles W. Moore, Glenn W. Arbonies, William H. Grover, project team*. Engineers: *Besier, Gibble and Quirin* (structural); *Helenski Associates* (mechanical). General contractor: *MICON Construction Company and Cold Spring Harbor Laboratory Buildings and Grounds Department*.

blending of man and nature. On the strength of that impression, and faced with an 80-acre enclave of aging 19th-century buildings to maintain, Watson tracked down the only East Coast member of the MLTW-Sea Ranch team, Charles Moore, then Dean of the Yale School of Architecture, and partner in the Essex, Connecticut, firm Moore Grover Harper.

Watson was proceeding on the assumption that the sensitivity so adroitly expressed on the California coast could be transported 3,000 miles east; that the less grand, but no less tenuous, beauty of Cold Spring Harbor would strike the same architect's same responsive chord; and that anything less could jeopardize the gentle landscape he was committed to preserving. At Watson's request, Charles Moore and partner Bill Grover paid a visit to the Laboratory; they found an affable director/client, who did not demur from expressing his thoughts on the subject of architecture. "He specifically did *not* want the Salk Institute approach," recalls Grover. While the grandeur of Louis Kahn's pristine complex in La Jolla, California, brilliantly epitomizes the stark architectural finesse we have come to associate with temples of 20th-century science, Watson's predilections run antithetical to the stereotype. He believes that scientists work best in informal surroundings; that the interchange of ideas is critical to research, and should be encouraged and abetted; and that the necessary technological gymnastics should be kept out of sight. At Cold Spring Harbor, Watson had his ideal scientific community—an ad hoc assemblage of modest buildings, looking for all the world like a quaint New England fishing village.

Following that first meeting in 1973, Moore Grover Harper were presented the commission to renovate Watson's own house (photo top right). Over the decade just past, 25 separate commissions have followed: to date, the work has shown as much imagination as reserve, in a continuous series of sometimes novel, sometimes ruthlessly economical projects. The portfolio includes renovation, restoration, replication, adaptive use; only one new building has been completed, with a second now finishing construction, and a third on the drawing boards. Moore Grover Harper's longevity with Watson is inarguably linked to their willingness to respond to the disparate needs of the Lab—whether the replanning of a parking lot, the redesign of a single office, or an as yet unrealized bus shelter. In their role as "in-house" architects, they have necessarily assumed a double identity: part-time preservationists, part-time facilitators of the exigencies of modern scientific research. (They have also, on occasion, deferred to Mrs. Watson's considerable talent for renovation.) Their work is an appropriate—and sometimes elegant—compromise between the demands of technology, the limits of a nonprofit institution's budget, and the overriding esthetic mandate for leaving well enough alone.

The melding of the pragmatic and the picturesque is most succinctly characterized by the tiny, shingled gazebo at the edge of the promenade overlooking Cold Spring Harbor. When the Lab required a new sewage treatment plant, and the confluence of existing pipes located the facility in the side of a prominent embankment, Moore Grover Harper added virtue to necessity by supplying a rooftop terrace and the quaint toy-like pavilion. The finial perched above the gazebo is modeled after an adenovirus molecule illustrated in Dr. Watson's textbook on molecular biology. Bill Grover fabricated the copper tetrahedron in his basement. Though Dr. Watson is convinced that the whimsical emblem is three degrees off center, and workmen have ascended the gazebo three times to set it straight, even the most exacting eye would beg to differ.

—Charles K. Gande

In the beginning . . . there was Airlie House

Ross Meurer



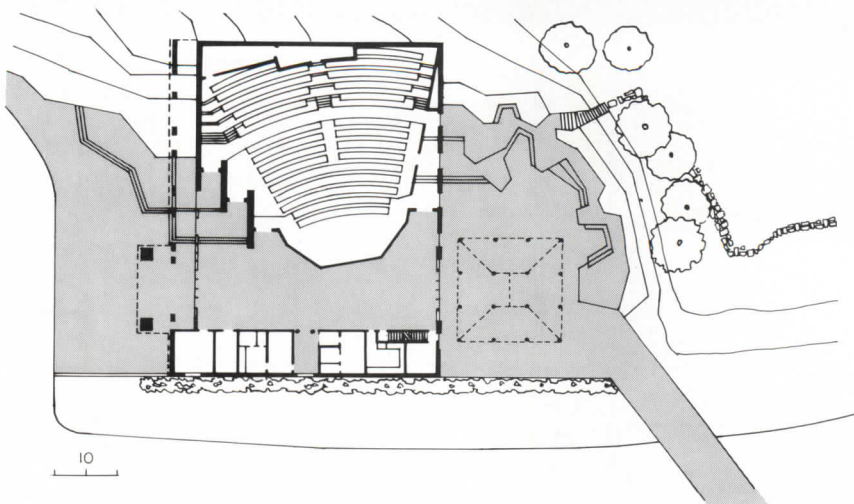
Moore Grover Harper's initiation into Cold Spring Harbor Laboratory came in 1973 when Watson left Harvard to take up permanent residence here on the North Shore. As director of CSHL, Watson inherited "Airlie," the rambling, shingled house at the end of Bungtown Road (site plan left), which has commanded a sweeping vista of the Harbor since 1806. Traditionally, the house had been occupied only during the summer; consequently, neglect had compounded deterioration. Watson and Moore Grover Harper opted for the long-term investment of total—vs. cosmetic—renovation. The house was completely gutted and remodeled, and a new plan introduced, responsive to Watson's disparate social and domestic needs. A three-story entry hall, with canary-yellow walls reaching up to a dormer, welcomes visitors to the generous living and dining areas flanking the hall: the family living quarters are appropriately isolated to the groundfloor rear and upstairs.



In the future . . . a new lecture hall

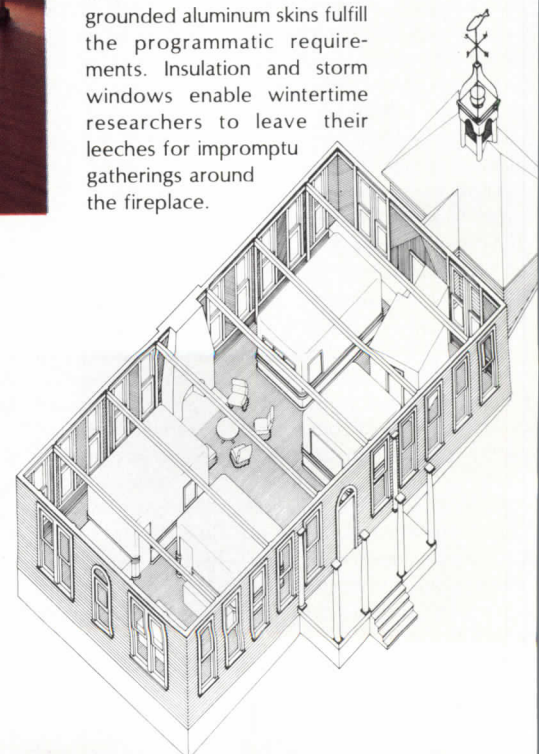
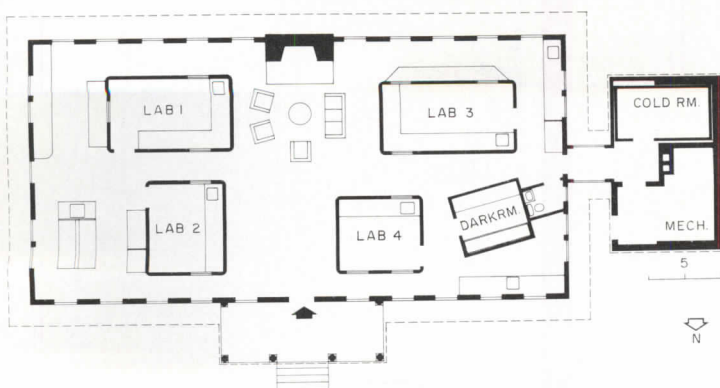
When the now-in-progress fund-raising drive meets its goal—and with Watson at the helm it's a question of *when*, not if—construction will begin on an \$1¼-million lecture hall. As the largest and most ambitious project to come from the Moore Grover Harper-Watson alliance to date, the 350-seat auditorium will be set into a low but prominent knoll at the main entrance to the Lab, overlooking the North Hempstead Turnpike (site plan left). The site was chosen for ease of vehicular access from the highway to an existing parking lot—keeping cars off narrow Bungtown Road. The decision to build came after an in-house feasibility study concluded that the existing lecture facility (housed in a 1950s building) could not be expanded to accommodate the target number of attendees to the various conferences, summer sessions, and international symposiums held at CSHL. The schematic design of the proposed lecture hall shows a

low, rectangular building with a medley of dormers cascading across the south facade. Deep red and dark brown brick corbel courses reinforce the horizontality of the structure, aided by a gray/green standing seam metal roof to meld with the enveloping trees. Though the new lecture hall will occupy a high-profile site, it is an intentionally understated, near domestic scale, design. Because the hall will operate year-round, at erratic intervals during the day, energy concerns were given high-priority status. The dormer at far left (model right) has been designed as a passive solar collector: an interior brick wall reaching up through the building to the height of the dormer will act as a masonry heat sink; the brick wall continues behind glass, behind the coursed arcade, for additional solar gain. During the warm summer months, an expansive slate terrace—complete with canvas tent—will serve as open-air "break-out" space.





Designed in 1892 as a marine biology lab, the shingled, one-story John D. Jones Laboratory had in more recent years been used as the summer home for a children's nature study program. But 19th-century charm is put into the service of 20th-century science under Watson, and the need for a neurobiology lab moved the children out in 1974, and Moore Grover Harper in. To better understand the type of research to be conducted in Jones, partner Bill Grover took a field trip to Harvard where he spent the day implanting micro-electrodes into the brain cells of barnacles. Though leeches, not barnacles, are the subject of study at Jones, Grover returned from Cambridge with an architectural checklist for laboratory design: because the experiments deal with light stimulation-response, light must be controlled; because the slightest vibration can dislodge the electrode from the cell, each lab must be structurally independent; because specimens are affected by temperature, each lab must have its own supply and return; and because electronic interference can create havoc in sensitive equipment, each lab must be shielded electronically. Four autonomous aluminum modules present a striking counterpoint to the shell's beaded-board walls and ceiling: concrete slabs for the labs, individual climate-control, and grounded aluminum skins fulfill the programmatic requirements. Insulation and storm windows enable wintertime researchers to leave their leeches for impromptu gatherings around the fireplace.



From renovation to replication



What began as a renovation of an 1840s Long Island farmhouse turned to replication when the stone foundations and wood structure of Williams Hall were deemed beyond repair. But neither Watson nor the Lab's building committee wanted a "new" building. Moore Grover Harper's *almost* faithful reproduction satisfied the five-apartment program and the "don't disturb the existing" warning. The 1977 Williams Hall is five per cent larger than the original; new roof windows make attic occupancy amenable.

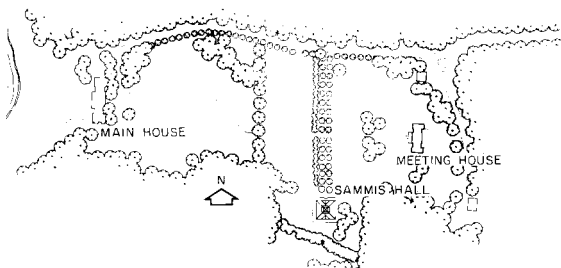
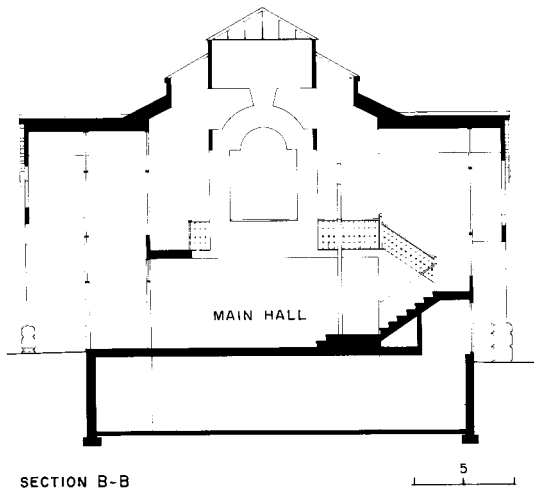
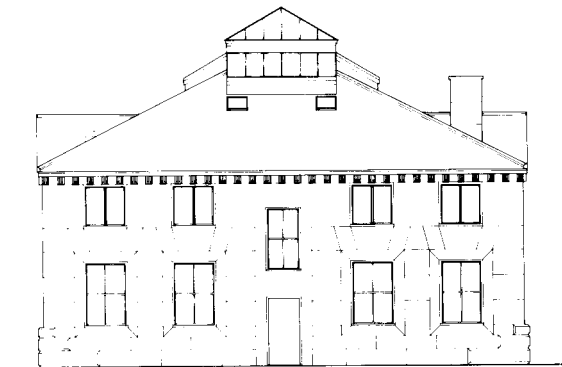
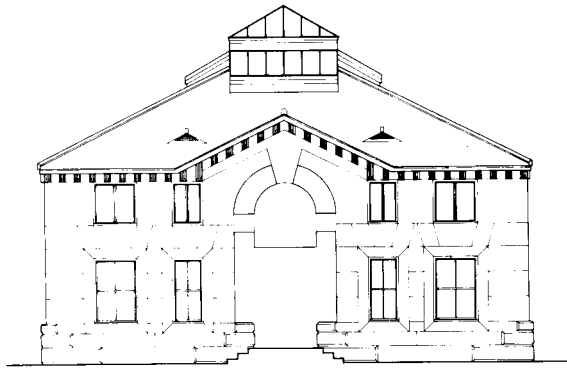


From cars to conferences



The Meeting House is the centerpiece of Banbury Center, a 45-acre annex to Cold Spring Harbor Laboratory, located across the Harbor in the Village of Lloyd Harbor. When conferees convene to discuss biological risk assessment, genetics, environmental health risks, or recombinant DNA, only the more architecturally astute will note that the proceedings are being conducted in what was originally a seven-car garage (servicing the estate of CSHL benefactor Charles Robertson). In 1977, Robertson gave his Mott B. Schmidt-designed estate to the Lab and Watson, who turned the commission to transform the Georgian-style garage into a conference center over to Moore Grover Harper. The driveway was replaced with sod and a brick walkway; the garage doors replaced with glass for a central, three-bay conference room, and brick for the two outer bays to accommodate a library, staff offices, and service facilities.

The Villa Poiana revisited



When the Banbury Conference Center program expanded the scope of Cold Spring Harbor Laboratory in 1977 (see "From cars to conferences," previous page), and the number of visiting scientists swelled beyond the 20-guest-room capacity of Charles Robertson's 1936 mansion, Watson, as always, turned to Moore Grover Harper to solve the housing crisis. The architects turned to their history books—specifically, Andrea Palladio's *Four Books of Architecture*. The commission for a 16-room guest house was especially welcome—this was, after all, to be the first completely new building of the architects' tenure at CSHL: they rose to the occasion with aplomb, striking just the right balance of grandeur and restraint.

The constantly vigilant economic eye of the Lab's Board of Directors suggested that the path of least Building Committee resistance could be found with simplicity and economy as guides. Though Moore Grover Harper took the cue, design was not compromised for frugality.

Prior to last year, the *allée* of gnarled apple trees set between the original Robertson Main House and the renovated Meeting House lay as if in wait for a terminus: S sammis Hall provides what heretofore was missing (site plan, below left). Despite the modest materials of the two-story guest house—wood frame construction, stucco, standard windows, asphalt shingles—a cribbing eye to Palladio's Villa Poiana (photo below) has made an economical structure an elegant one as well. Comparing S sammis Hall to the 1549 Villa Poiana, one

finds Moore Grover Harper's debt to Palladio considerable: the debt is compounded upon inspection of the *intended* elevations (left). In addition to borrowed massing, proportioning, and fenestration, individual details have clearly made the journey from 16th-century Vicenza to 20th-century Long Island: the open pediment, the generous window surrounds, the recessed entry, the arch (reinterpreted in an overscale shield suspended by a keystone from the tympanum). Even the pale terra cotta color of the stucco—mottled for historical verisimilitude—recalls the rural life of ancient Italy; the material—stucco—is that of the Villa Poiana. The modillions around the cornice went by the wayside when the Building Committee discovered them non-essential ornamentation; the rustication and quoins suffered the same fate.

Though aficionados of the current wave of "post-modern classicism" will no doubt delight in the literal, even unabashed, re-employment of Palladian motifs for S sammis Hall, even the *unrenthralled* will credit Moore Grover Harper for their kid-glove approach to rendering grand allusions. As if to reinforce S sammis Hall's contemporaneity, the Smith College Museum of Art selected the north elevation (top left) for the cover of *Speaking a New Classicism: American Architecture Now*, the catalog of the exhibition held last spring in Northampton.

The 16-room guest house takes its name from the conference center's benefactor, Charles S sammis Robertson; the shield over the entry carries the Cold Spring Harbor Laboratory logo, a double helix.

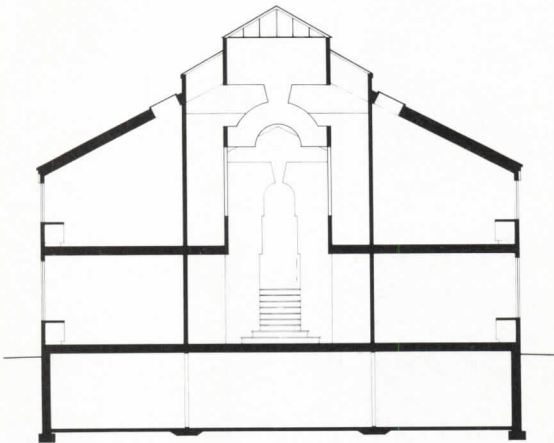


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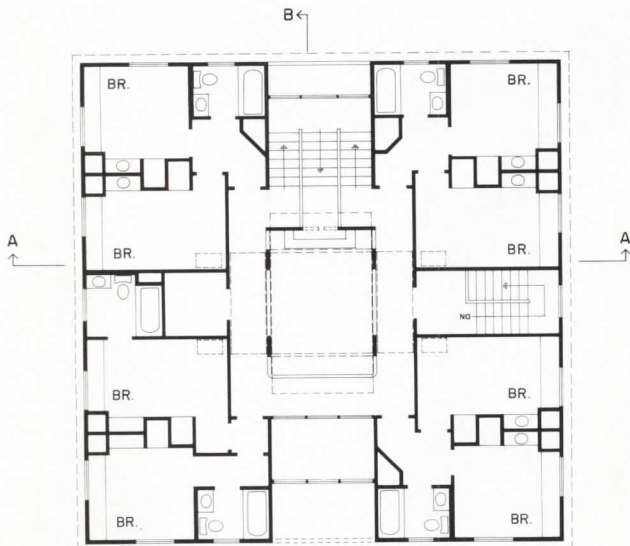


Balthazar Korab Ltd. photos

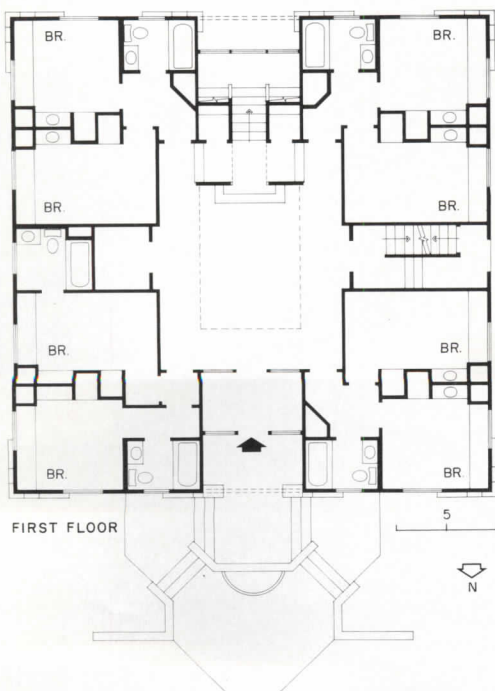




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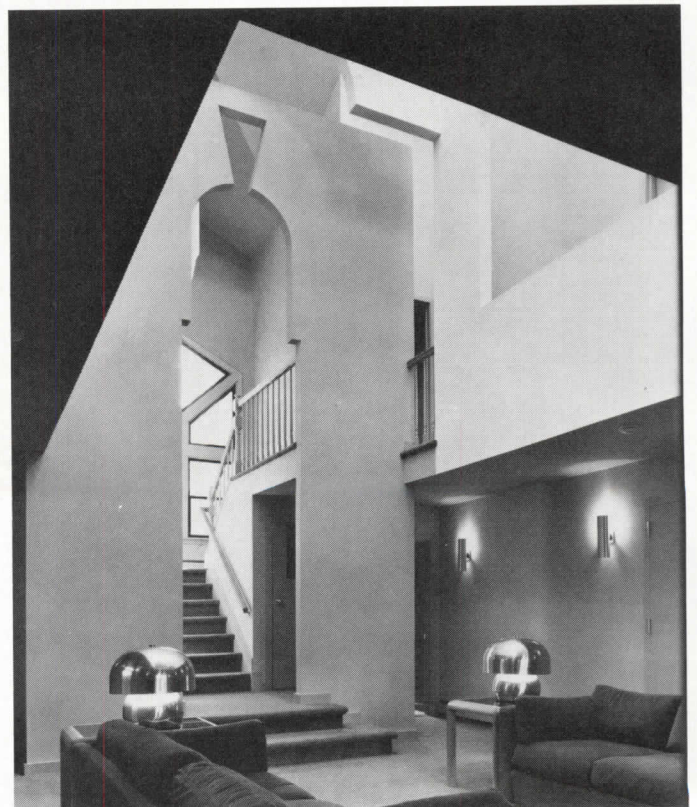
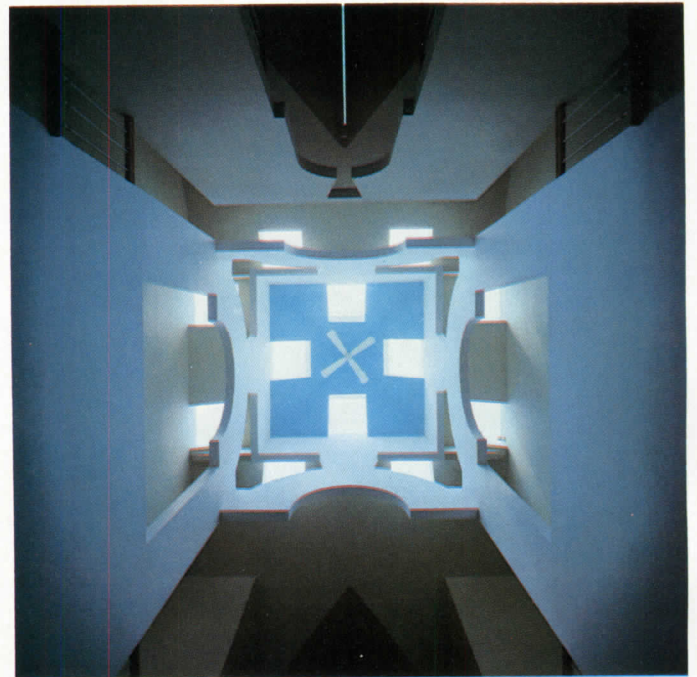


SECOND FLOOR



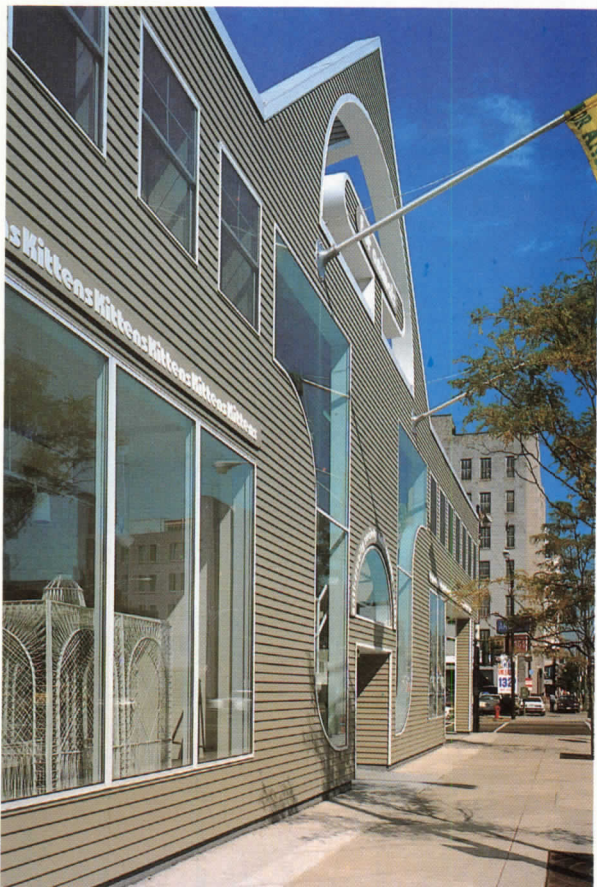
FIRST FLOOR

Eight two-bedroom suites surround a central living area, informally furnished to encourage scientists out of their small rooms and into ad hoc discussions. Abstract arches reach up through the core directing the eye to the cupola's skylight; a white enamel fan, suspended from the sky blue ceiling, recirculates warm air in the winter, and adds to the already abstract composition (photo below).





Tigerman puts a doggie in the window



At first cursory glance, the symmetrical device at the center of the Anti-Cruelty Society's facade might seem just a variation on an increasingly familiar "post-modern" motif. But see the dog! He has a friendly nose, bassetlike dewlaps and an expression that recalls Walt Disney's Pluto, well-meaning if not too bright. The design called for, though it has not yet got, a painted red tongue issuing from the doorway/mouth. Alternatively, those dumb eyes might be read as the key to a can of dog food.

The homey facade of the new shelter with its aluminum clapboard carries another, more important message, however, one that architect Stanley Tigerman hopes will revolutionize animal shelters. The society commissioned the building as an enlargement of its facilities in two older buildings on the site—a stone Art Moderne structure from the '30s, and a similarly institutional '50s addition with a glass curtain wall. Tigerman acknowledges an emotional as well as professional involvement in the commission: as a boy growing up in Chicago, he once had to bring his dying dog here for euthanasia. "The building always said something about killing."

That kind of message had to go. The residential scale and materials of the new building constitute a canny attempt—Tigerman calls it "metaphorical suggestiveness"—to put the proposition that no house is complete without a pet. The sales effort is hard-hitting, using a time-honored and shameless merchandising trick: a doggie in the window. On the other side of the entrance, kittens in the window exert their own appeal. If window-shoppers fail to get the message, signs above the windows make it clear: "kittenskittenskittenskittens" and "puppiespuppiespuppiespuppies." And to drive home the point that humans and animals go together, a family apparently lives over the store behind the double-hung sash.

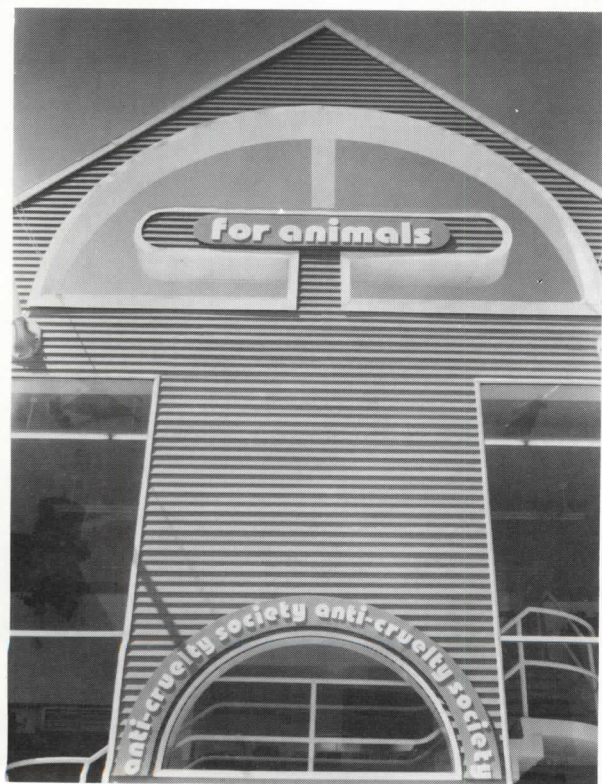
Apart from making pleas for adoption, however, an animal shelter has serious, sometimes unhappy, functional concerns. With a staff of 40, the Chicago Anti-Cruelty Society receives 30,000 animals a year, about 80 a day—cats and dogs lost or given up for adoption, as well as occasional birds and wounded wild life. The shelter gives the birds to approved dealers and returns raccoons and the like to the urban "wild." ("You'd be surprised how much wild life there is in the city," a staff member says.) But only about 35 per cent of the dogs and cats find homes. The remainder is destroyed.

The shelter keeps healthy animals for at least two weeks, often as long as a month. This routine results in a large animal population, creating inevitable noise and smell, and raising concern about communicable diseases. Since cleanliness is the first rule in dealing with great numbers of animals, concrete and concrete block surface floors and walls for efficient hosing. Generous ventilation, using 100 per cent outside air, disperses odors. Sound-absorbing materials—fabric panels on high balconies, a padded ceiling, banners—add color and diminish sound in the lobby.

In addition to would-be pet owners, the facility also receives some sick and wounded animals. Three emergency treatment rooms open off the new lobby, while a veterinary clinic occupies the 1930s building at the back of the site.

The care of animals clearly took precedence in the program. But even in a necessarily functional interior, Tigerman will have his little joke. He puts the staff in the doghouse—a yellow information kiosk just inside the front door.—Grace Anderson

THE ANTI-CRUELTY SOCIETY, Chicago. Architect: Stanley Tigerman & Associates, Ltd.—Stanley Tigerman, design; Robert Fugman, associate in charge; Wesley Goforth, assistant. Engineer: Shah Engineering Co. (structural/mechanical/electrical). General contractor: Bulley & Andrews.



Howard Kaplan photos

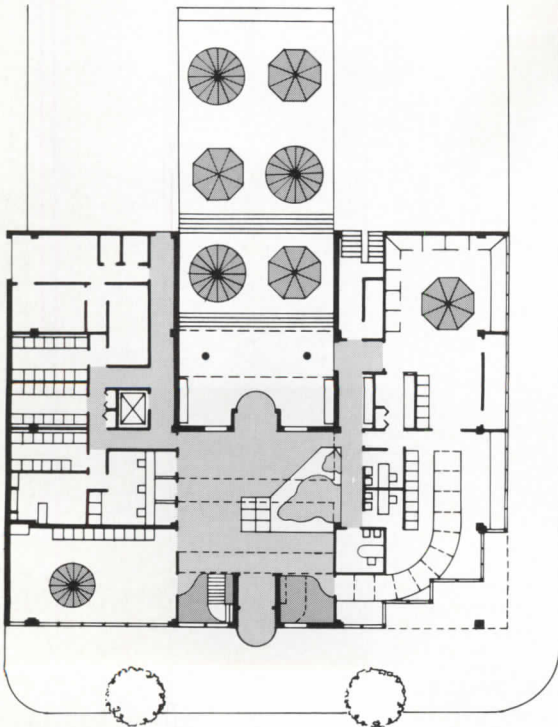


Architect Stanley Tigerman designed the facade of Chicago's Anti-Cruelty Society to look like a conventional, unthreatening neighborhood store. Gray aluminum clapboard wraps around the corner (di-

rectly above) to overlap one of two older Society buildings. The wraparound culminates in an aluminum and stone "erosion" at the base of the older building—"Tigerman takes a bite out of modernism."



FIRST FLOOR



SECOND FLOOR



The space inside the Anti-Cruelty Society must accommodate a large, changing population of small animals—hence the area given to cages and the hard, easily cleaned surfaces. The paramount purpose of the new building, after the safekeeping of animals, is the attractive presentation of pets to possible new owners. Architect Tigerman called for a gazebo in the kittens' window, and while the animals did not take to the enclosure, people enjoy sitting inside and fondling cats. A similar gazebo is planned for large dogs on the other side of the building. At the back of the reception area, an exercise yard can contain gazebos and umbrellas for expected human social gatherings. Humans are otherwise encouraged by open stairs and a welcoming, if functional, lobby. The receptionist's work counter has cat and dog cutouts.



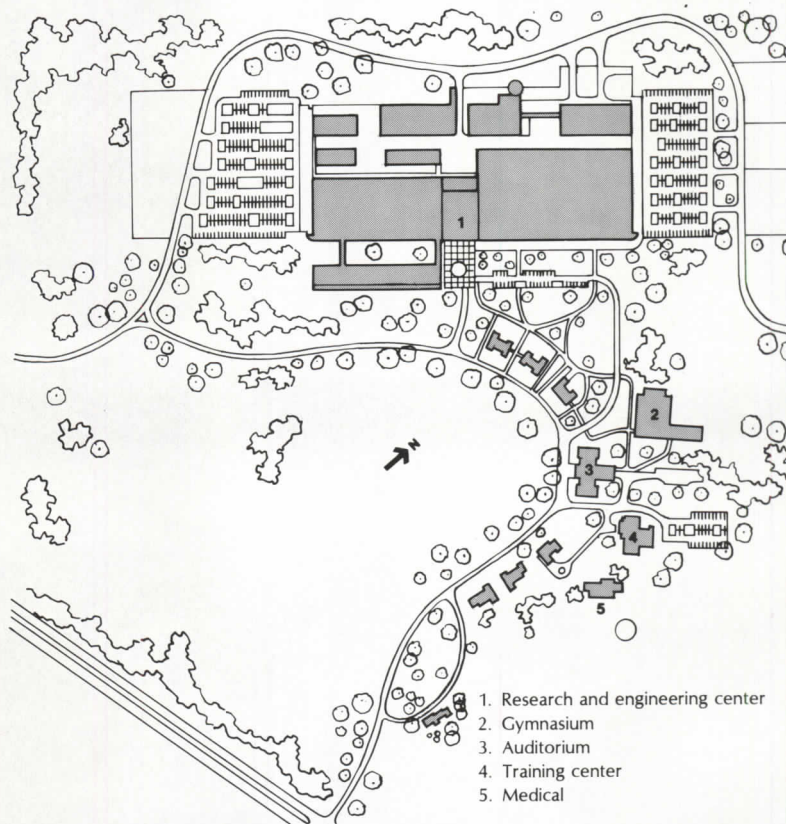
"THE MEADOWS": A SYLVAN CAMPUS FOR ARCO

Spokesmen for the ARCO Chemical Company are not indulging in corporate euphemism when they refer to the "campus" of their new research and engineering center in Newtown Square, Pennsylvania. Before it was purchased by ARCO five years ago, this 312-acre tract of grassland and woods, 20 miles west of the company's Philadelphia headquarters, had been the grounds of the Charles E. Ellis School for fatherless girls. To a remarkable extent, the pastoral setting of the ladies' seminary has been retained, despite the construction of a 640,000-square-foot petrochemical laboratory and office complex in its midst.

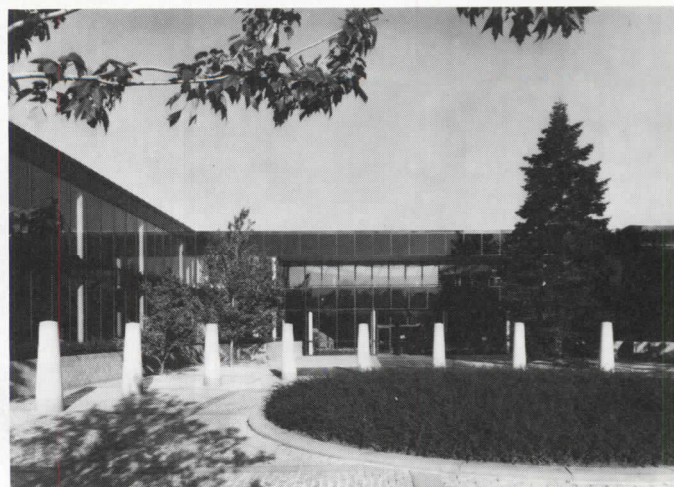
The master plan drawn up by joint-venture architects Davis, Brody & Associates and Llewelyn-Davies Associates not only takes full advantage of existing trees and land contours to reduce the apparent size of the ARCO facility, but provides for the reuse of old school buildings, a cluster of handsome stone structures alongside the winding entry drive. This sensitivity to siting—a controversial issue in the predominantly residential community of Newtown Square—helped Llewelyn-Davies and Davis Brody win out over seven other entrants in ARCO's limited design competition for the project, although the deciding factor was the architects' thorough integration of esthetic concerns with the technical and social complexities of a demanding program.

One of 11 companies sheltered under the corporate aegis of the Atlantic Richfield Company, ARCO Chemical manufactures olefins and polyolefins, aromatics, oxygenated products, and a variety of specialty and functional chemicals. At the Newtown Square facility, now called "The Meadows," ARCO staff refine existing petrochemical processes, develop new techniques and materials, and conceive production methods for their customers. The Meadows represents an important stage in ARCO's corporate growth, since it consolidates research and development activities which were previously conducted at far-flung locations elsewhere in Pennsylvania, in New Jersey, and Texas. In dovetailing the physical environments for these diverse operations, Davis Brody and Llewelyn-Davies set out not only to improve over-all efficiency, but to stimulate the exchange of ideas among the nearly 800 chemists, engineers, and other personnel employed by this division of ARCO.

A significant contributor to each phase of the project, beginning with the establishment of preliminary competition guidelines, was Herbert Bayer, a pioneering director of the Bauhaus workshop for typography and communication design in the 1920s and Atlantic Richfield's art and design consultant since 1966. Bayer has played an active role in shaping every aspect of the company's visual image, from its logo and advertisements to the design of office interiors and the selection of art objects to decorate them. At The Meadows, Bayer's influence extended beyond setting general esthetic principles to consultation with the architects and interior designers on specific details.



Robert Gray photos



Two-story curtain walls were detailed to convey an image of technological precision without dominating the ARCO Chemical Company's park-like site. Tempered visors, a darker tone than the green-tinted double-glazed window panes, reduce heat loads during months of greatest solar gain. Double-panel extruded plastic canopies also intercept direct sun rays. Recesses in the south facade (below) mark the location of atria in laborato-



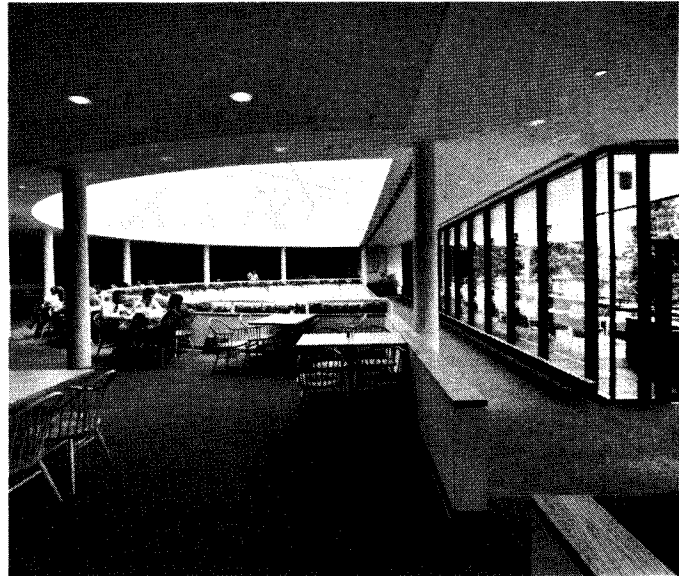
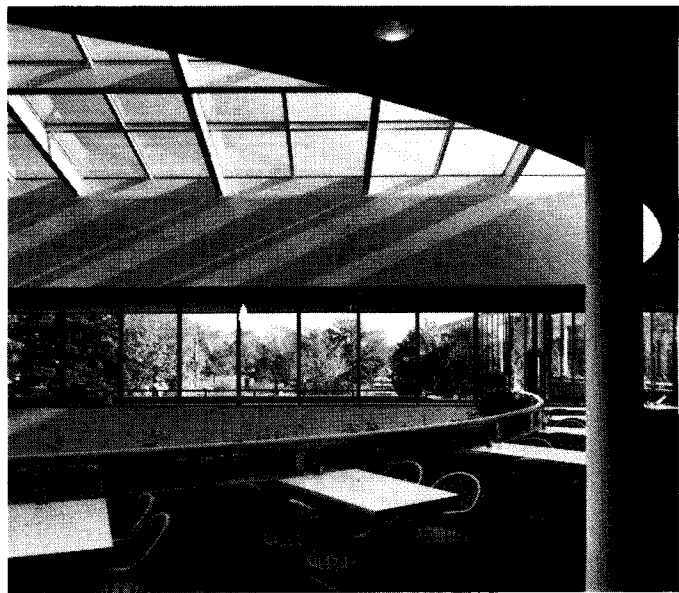
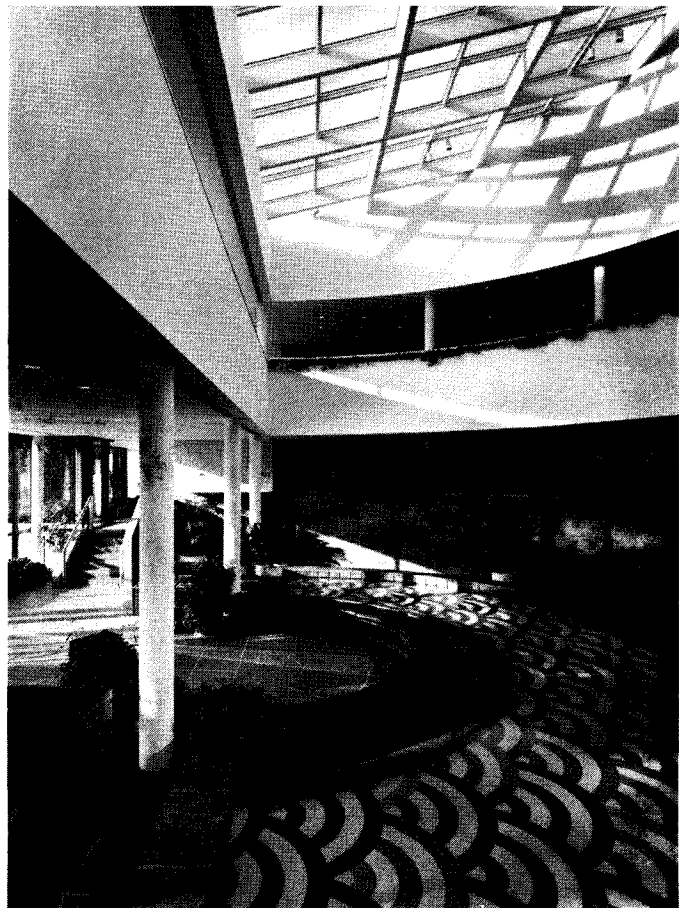
ry and office areas. The entrance plaza (opposite) is articulated emphatically by a series of 11-foot-high granite bollards designed by ARCO's corporate art and design consultant, Herbert Bayer. Joint-venture architects Davis, Brody & Associates and Llewelyn-Davies Associates conceived the plaza as a ceremonial entry court as well as an outdoor gathering place.

The success of the team effort orchestrated by Davis Brody and Llewelyn-Davies is apparent in the harmonious order that pervades the disparate elements of the building and relates it to the landscape. These are notable achievements, given the sheer size of the complex, a long list of stringent safety and security requirements, and the essentially introverted character of laboratories and industrial testing plants. Unfortunately, some of the more conspicuous decorative elements within the project too insistently bespeak a corporate taste for strong infusions of ornamental design. The showy effect of these embellishments—primarily confined to the public areas most likely to be seen by a visitor—seems all the more gratuitous since the restrained dignity of the building as a whole presents an admirable foil to the inherent beauty of its surroundings.

This deferential spirit is immediately apparent to the visitor who approaches along the former school lane, skirting an open field where hockey and softball used to be played. Old globe lamp standards are still in place, and the village-like group of slate-roofed school buildings has been neatly restored as guest quarters, conference facilities, a corporate training center, an infirmary, and a gym for ARCO employees. Except for a projecting wing of offices at the southwest corner of the new complex, the low horizontal mass of this sprawling two-story structure is visible only in fragments, glimpsed through dense clumps of trees. Rounded canopies of extruded plastic, reminiscent of conservatory sheds, further soften the profile of the 1,100-foot long curtain wall of blue-green solar-tinted glass. The colors of ground-face block retaining walls and Belgian block paving in the entry plaza repeat the soft grayish tan of stone used in the adjacent school buildings. A sweeping turnaround at the entrance is punctuated by a hemicycle of 11-foot-high granite bollards designed by Herbert Bayer. These overscaled pylons strike a disconcerting note of monumentality in front of this glass-walled building set in a gently picturesque landscape, as though they were the sole remnants of a grand *cour d'honneur*. But they leave no doubt that this is meant to be a ceremonial portal (most employees enter from the east or west, where the two main parking lots are located).

Inside the lobby, a skylighted semicircular pool, inset with mosaics in a scallop motif also designed by Bayer, reflects the form described by the bollards out front. The classical symmetry of the lobby, a two-tiered exedra encasing the pool, is a fitting prelude to a layout whose extended axial hierarchy and regular spatial modules would make sense to any Beaux-Arts master (see plans overleaf). For all the daunting complexity of its technical appurtenances, the building is clearly subdivided into distinct functional zones. The principal common areas—the lobby, and the library and cafeteria which overlook it—form a central core, flanked by wings of laboratories and offices. Functional sectors are also expressed in elevation, on the east and west facades, by a south-to-north progression from the curtain wall of offices and laboratories to the block wall that encloses testing areas to the ribbed industrial siding of warehouse sheds and pilot plants (see photo, page 114).

A series of six two-story atria running perpendicular to the south facade were introduced as a means of admitting daylight, open space, and views into the heart of the building. On the lower level, gray-paneled workstations for laboratory supervisors border these tall galleries; upstairs, butt-glazed partitions furnish a sound and fire barrier for a second office tier, without closing off the area visually. Even though they are equipped with benches for use



A 9,000-square-foot library, designed to house some 600 periodicals and 80,000 bound volumes, overlooks the lobby through butt-glazed partitions (below). Slate floors and ground-face block walls in the lobby set off the brilliant color of a Bayer-designed mosaic pool, whose surface reflects flickering light onto the soffit of the second-story cafeteria balcony. The 390-seat cafeteria is gently stepped to give diners clear views



over a vine-hung parapet toward exterior windows (opposite). Wall displays of Amish quilts, weather-vanes, and antique farm implements lend rustic character, in keeping with the research center's environs. A Herbert Bayer tapestry has also been hung here. The central dining area is supplemented by two conference dining rooms and a terrace facing the entry plaza.

during coffee breaks, the atria are not meant to serve as lounges or gathering places, nor are they heavily traveled circulation paths. The architects looked for a way to keep the atria from seeming empty, without resorting to elaborate planters or fountains, which they dismissed as inappropriate reminders of shopping malls and hotel lobbies. The solution was potted trees and colored tile floors designed by Herbert Bayer, who devised a different composition for each atrium. Bayer's geometric motifs echo the abstract patterns of the Pennsylvania Dutch quilts which have been hung as wall ornaments in the cafeteria. The simpler floor patterns, such as a stylized rendering of a reflecting pool (opposite), enhance the axial orientation of the atria. However, some of the busier designs seem patently contrived to enliven a vacant space, and merely dissolve the effect of architectural coherence, particularly when seen from the side (photo below).

Wherever possible, Davis Brody and Llewelyn-Davies strove to extend views and a sense of expansive, light-filled space into laboratory areas, without compromising safety or experimental controls. Ventilation was a crucial design determinant that confronted them at every turn. The air pressure in all laboratories must be kept slightly below that in the rest of the building, to ensure that fumes and exhaust will not drift into hallways or offices. Most experiments are conducted within enclosed fume hoods, which can maintain an internal air flow as rapid as 100 feet per minute.

The architects employed a 10-foot module based on the dimensions of standard fume-hood installations to unify all laboratory zones throughout the building. Of course, it was necessary to modify this basic schema according to the particular needs of the various research departments brought together here, notably the chemicals group (formerly located at another site in the Philadelphia area, and now housed in the west wing of The Meadows) and the polymers group (formerly in Pittsburgh and now in the east wing). The chemicals staff had long favored laboratories without doors, as a means of minimizing spills and breakage while moving from room to room. They welcomed the idea of large, open spaces in their new west-wing quarters. In contrast, the polymers staff, whose experiments sometimes involve the possibility of explosive reactions, felt safer in closed compartments with small adjoining prep rooms, a need which is reflected in the denser plan of the east wing. Nevertheless, the consistency imposed by the 10-foot module suggests the close cooperation that now exists between these two phases of ARCO research. Laboratories in both wings are grouped along service corridors which supply them with air, nitrogen, hot and cold water, steam, and gaseous hydrocarbons. Cabinets and fume hoods are surfaced with brilliant primary hues, and to the eye of the non-scientist, the array of glass vessels, tubing, and other laboratory apparatus against broad planes of intense color affords a stunning vision of authentic high-tech design.

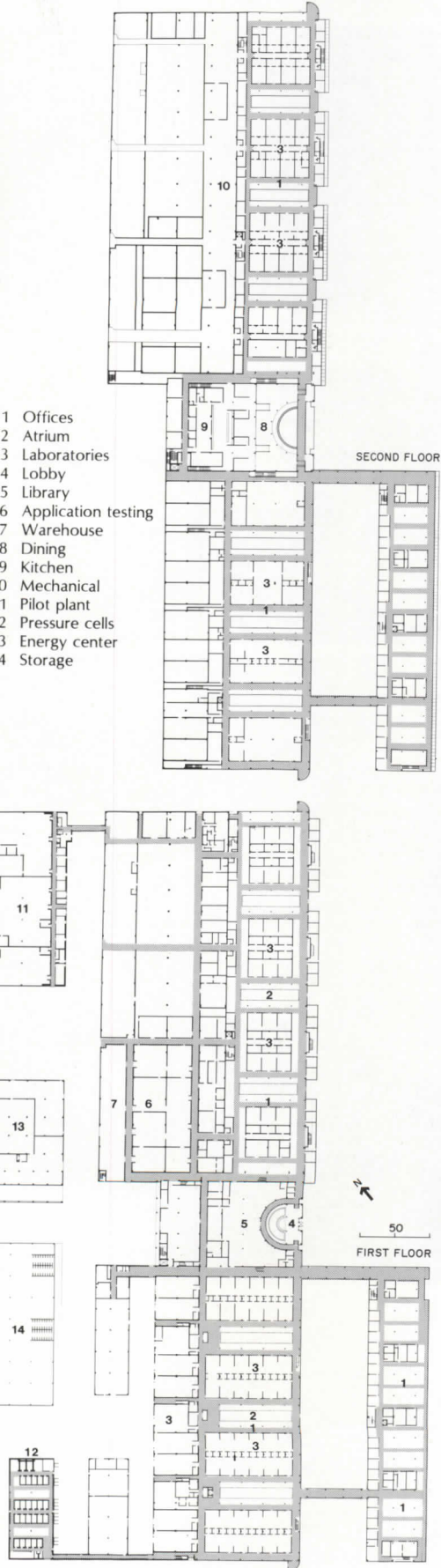
After research experiments with new materials have been carried out in the laboratories, the same processes can be recreated on a much larger scale in applications areas at the back of each wing. A variety of low- and high-bay spaces were built to permit *maximum flexibility* in installation design. Within the high-bay applications area behind the east wing, for example, commercial-size extruders, film rollers, blow molders, and other equipment enable ARCO to demonstrate the adaptability of its polymers to customers.

Rear pilot plants, which can turn out as much as 300 gallons of petrochemical material in a single continuous process, are a useful

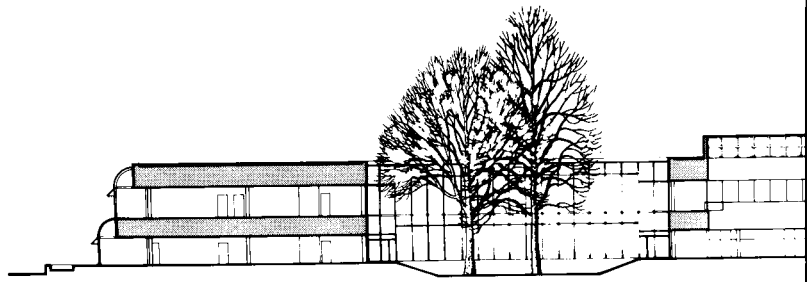




Laboratories are deployed to either side of skylighted atria, behind ranges of open-plan office workstations. Each atrium derives its particular identity from a unique tile floor design by Herbert Bayer (two of these patterns are shown below and opposite). Gray fabric-covered office partitions flank atria and outer corridors (opposite above) are low enough to permit combined use of natural illumination and ambient task lighting. Clear

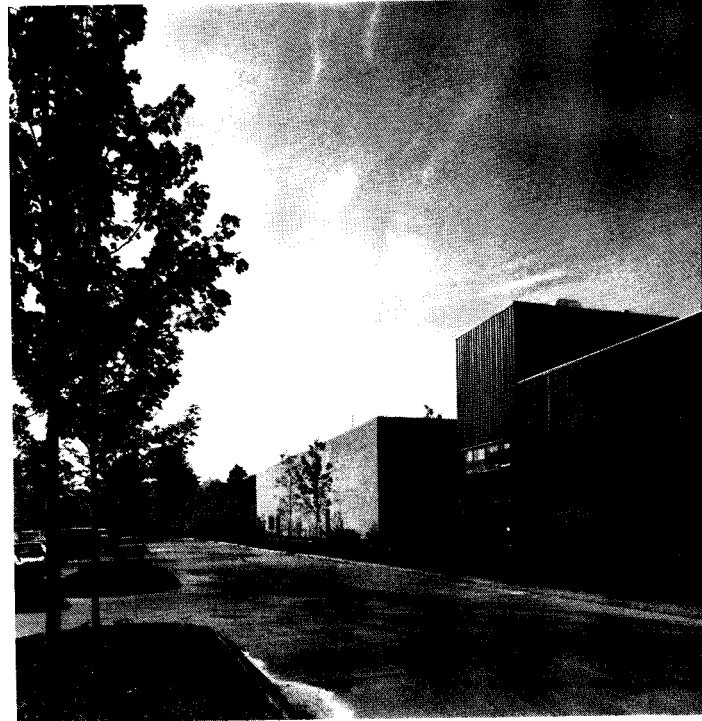


glazed panels behind workstations allow daylight to penetrate into laboratories, many of which also have outside windows. Experiments are conducted in glass-fronted fume hoods (photo above left), and atmospheric pressure and air quality are monitored constantly by computerized systems. Fume-hood dimensions determined a 10-foot module for all laboratory layouts.

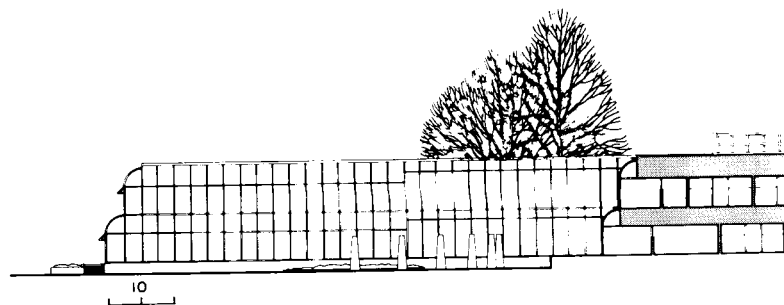


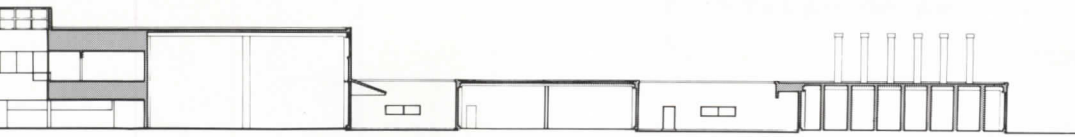
proving ground for the construction of actual industrial facilities. The entire area is outfitted with vented roofs and pressure-release walls, hinged to blow out in case of an explosion. A high-pressure laboratory stands behind the west wing at a distance calculated to absorb the maximum shock wave that could be produced under experimental conditions. Inside this lab are 22 containment cells with 14-inch-thick reinforced concrete walls, where chemical reactions can be analyzed at high pressures. The walls are designed to confine explosions equivalent to the force of one-quarter pound of TNT. Two larger cells, with 18-inch walls interlaced with extra-heavy-gauge reinforcing rods, are capable of containing the blast of 10 pounds of TNT. All controls are mounted outside the cell walls and shielded by steel spall plates. Should an explosion occur, it would be drawn upward through roof-top stacks.

The scope of the program tackled by Davis, Brody and Llewelyn-Davies is encapsulated most dramatically in the contrast between the heavy-duty concrete testing bunkers at the back of the west wing and the elegant steel and glass pavilion at its front, a two-story office building occupied by management as well as researchers, support staff, and ARCO's Engineering and Environmental Group, who design commercial plants to manufacture the products developed at The Meadows. There are no laboratories in the office block, and instead of facing into a skylighted atrium its inner rooms and stairways overlook an open courtyard. This is a perfect International Style cortile, enclosed on the other three sides by the south wall of the west laboratory wing and a pair of fully glazed corridors, through which one can see the parkland beyond. Like the walls of a giant terrarium, the glass and steel structure frames a stand of fine old trees. It is the modernist counterpart to a classical walled garden: nature *in vitro*. It is not a place for picnic lunches or a quick smoke, but rather an object for contemplation, a spectacle created by the fortuitous play of sunlight and seasonal color, within a manmade context where every variable has been defined meticulously. With utmost economy of means, the architects have constructed an image of discovery that is as relevant to art as it is to science. —*Douglas Brenner*



ARCO CHEMICAL COMPANY RESEARCH AND ENGINEERING CENTER, Newtown Square, Pennsylvania. Owner: *Atlantic Richfield Company*. Architects: *Davis, Brody & Associates; Llewelyn-Davies Associates, joint venture—Samuel M. Brody, Jaquelin T. Robertson, Alan Schwartzman, partners; Theodore Schultz, Paul Buckhurst, Norman Dorf, Robert Gray, associates*. Art and design consultant for Atlantic Richfield: *Herbert Bayer*. Interior designers: *Kenneth Parker Associates*. Engineers: *Wiesenfeld & Leon; Robert Rosenwasser (structural); Cosentini Associates; Syska & Hennessy (mechanical/electrical); Day & Zimmerman (civil)*. Consultants: *Hanna/Olin (landscape); David A. Mintz (lighting); Ostergaard Associates (acoustic); Romano/Gatland (kitchen); Ammann & Whitney (special containment cells)*. General Contractors: *Turner Construction Company*.





Stone cottages inherited from the Ellis School stand within sight of the new complex (opposite). Elsewhere on the campus, ARCO has restored the 18th-century home of the painter Benjamin West. While respecting the beauty of this historic tract, Davis Brody and Llewelyn-Davies have made no allusions to stylistic elements of older structures nearby. If there is any formal reference here, it is to the post-war International Style—a remi-

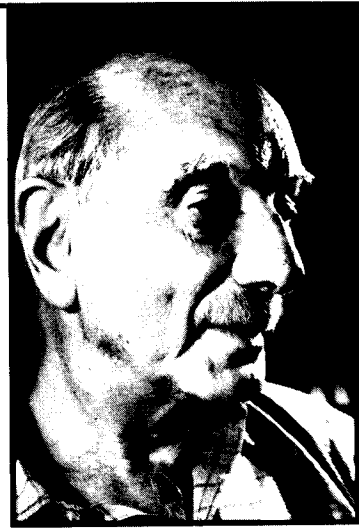


niscence that is most pronounced in a courtyard behind the office block (above). Curtain walls give way to ground-face block and ribbed metal panels in more utilitarian areas (opposite below). The exhaust stacks of high-pressure test cells appear at right in the section above; high-bay application areas and pilot plants are shown in the corresponding segment of the lower drawing.

LEWIS MUMFORD:

The Making of an Architecture Critic

By Martin Filler



Sketches from Life, the long-awaited autobiography of Lewis Mumford, published this month by The Dial Press, traces the development of America's greatest architecture critic from his boyhood in turn-of-the-century New York through his emergence as a major literary figure some 40 years later. But what set of circumstances aided Mumford's trailblazing work on American architecture? How did he establish himself as an authoritative voice for more humane design and planning? Why did he become one of the few authentic moral spokesmen of our time? Here, a young critic examines Mumford's own account of his life and career, and finds some important lessons from which aspiring architecture writers today might learn.

To get right to the point: *Sketches from Life: The Autobiography of Lewis Mumford, The Early Years* is a great book. The term "long-awaited" is not chosen lightly to describe this extraordinary publishing event: Mumford began to write his autobiography in 1956 at the age of 61, and worked on it at intermittent stretches over the ensuing 25 years. As time passed and Mumford set the manuscript aside to take up other projects, there were those who began to suspect that he was not particularly interested—or perhaps did not even want—to have this book brought out during his lifetime. But happily it has been published at last, and its author—now 86 and still writing—can enjoy seeing the result of his long effort compared, as it deserves, to the finest examples of autobiography which this country has ever produced. *Sketches from Life* can be ranked with the autobiographies of Benjamin Franklin, Henry Adams, Lincoln Steffens, and Frank Lloyd Wright: that is to say, among the rare, self-told life stories that are of surpassing literary attainment above and beyond their factual content.

Not that this should come as a surprise, for Mumford's 27 previous books and almost 1,000 articles have amply confirmed him as a

writer of importance over the past 50 years. Yet Mumford has not been generally recognized as one of the great prose stylists of this century, which he is. That evaluation is borne out from the very first page of this splendid work, the kind of autobiography that people seem virtually incapable of writing anymore. It is revealing but not self-dramatizing, frank but not prurient, nostalgic but not sentimental, and thoroughly—one hesitates to use the word—inspirational.

Sketches from Life is a rich narrative that will be read by many different people in a number of different ways. Some will see it as a confessional exercise in the Augustinian mode, in which the author grapples with the central life-questions of his parentage, his sexuality, and his vocational ambitions. Others will feel that the most memorable portrait in *Sketches from Life* is that of Mumford's remarkable wife of 60 years, Sophia, who emerges as one of the most sympathetic women to be depicted in recent literature. Still others will read this book for its historical interest. It is a first-person document of New York at the end of the Gilded Age, here seen with affection but no illusion. Later, it gives a new reading of a fabled chapter in American letters—the generation of writers who came to prominence during the 1920s, many of whom were Mumford's friends and colleagues: among them Van Wyck Brooks and Thorstein Veblen, though not, predictably, the likes of Zelda and Scott Fitzgerald.

For the readers of this magazine (which has published Lewis Mumford's architectural essays for more than half a century) there will be yet another absorbing aspect to this book: its recapitulation of the author's rise as an architecture critic. All through his career Mumford has assiduously (and somewhat unsuccessfully) resisted the limited definition as an architecture critic solely, even when that designation has been preceded by glowing superlatives. He has preferred to see himself, with justification, as a generalist. The fact remains, however, that no matter how important and wide-ranging Mumford's other contributions are, his writing on architecture has had few equals.

Significantly, the story of how Mumford found his best-known *métier* is not given as a continuous account in *Sketches from Life*.

Most of the way through, the architectural sub-theme is sighted in brief, distant glimpses and then disappears, occasionally coming into view again and again vanishing, only to become fully visible very close to the end of the book. The cumulative effect is very much like that of approaching New York City on the New Jersey Turnpike. Mumford himself is aware of this surprising (and unconsciously intentional?) lapse as he writes of his amazement when:

"I discover[ed] I had composed some sixteen or eighteen chapters with hardly more than a passing reference to one of the most constant and significant phases of my experience—my response to architecture. . . ."

Nonetheless, careful reading between the chapters of *Sketches from Life* will yield a fascinating and highly instructive personal view of Mumford's architectural career.

Lewis Mumford's childhood would not at first seem to have provided many incentives toward his eventual professional direction. His mother, Elvina Conradina Baron, (who ran a boarding house on what is now the site of Lincoln Center), did not hang pictures of great architectural landmarks around his crib, as Frank Lloyd Wright's mother did to stimulate her son's interest in the profession she had chosen for him. Nor did the future critic's mother share the deep interest in progressive early childhood education held by that future architect's mother. As Mumford makes abundantly clear, his immediate family did not have intellectual inclinations.

But there were decisive influences of other kinds. His grandfather, Charles Graessel, unknowingly awakened a lasting awareness of cities in the boy by taking little Lewis along on his leisurely daily walks around New York. This was the city now preserved in *King's Views of New York*, the great turn-of-the-century photographic guidebooks that captured Manhattan just as Mumford first came to know it: at that fleeting moment when the last pungent traces of what Walt Whitman and Herman Melville had known of New York could still be sensed. No wonder Mumford was able, years later, to interpret "The Golden Day" of 19th-century American literature so vividly to the subsequent century of Americans.

If his closest relatives were more inter-

Martin Filler is editor of *House & Garden*, and writes criticism on architecture and design for a number of publications. From 1974 to 1977 he was Editor of *Architectural Record Books*, which published *Architecture as a Home for Man*, a collection of Lewis Mumford's essays for *ARCHITECTURAL RECORD*, in honor of his 80th birthday in 1975.

"My daily walks with my grandfather . . . left an ineffaceable impression. . . . Since I have spent no small part of my life wandering about cities, studying cities, working in cities, stirred by all their activities, this original envelopment by the city constitutes an important clue to my life."

ested in card-playing and horse-racing than in books and ideas, Mumford's family in Philadelphia provided quite another example:

"From Aunt Elvina and Uncle James [Scheicher] I got a glimpse of the aristocratic principle: a life of the mind, with high standards of achievement in every department, exacting much of others but even more of themselves, with a sense of social responsibility on every occasion, with an utter contempt for any merely fashionable criteria of either conduct or taste."

That could serve as a veritable summary of Mumford's own moral makeup. From an early age he was adept at learning the important values of life as he came across them, as is shown in another reminiscence of his childhood. Mumford's primary education in New York's public school system was for the most part unimaginative, but he still remembers the day when his sixth grade teacher bravely stood up to the martinet principal of his grammar school, some 75 years ago:

"That lesson in civic courage, in unshakable firmness in the face of superior power, was not provided in the curriculum, but it has lasted longer than anything else I was taught."

Fortunately, the academic quality of Mumford's high school and college education was considerably higher. He was greatly stimulated by several of his teachers at Stuyvesant High School, one of the legendary institutions in the history of public education in America. Despite that school's strong scientific and technical orientation, Mumford's senior yearbook photo bore the ironic caption, "Mumford will *not* be an engineer." Yet in retrospect one can surmise the influence that specific emphasis at Stuyvesant had on the thinking of the man who was later to write singularly brilliant critiques on the role of the machine in society.

After graduation, the combination of his crazy career plans and his lack of enough money to enroll full-time in a private university led Mumford to seek a job during the day and to attend New York's tuition-free City College at night. The Evening Session's excellent faculty, the lack of compulsory courses, and the atmosphere of seriousness among the mature students (many of whom were already well-established in their daytime



Lewis Mumford and his grandfather Charles Graessel (1902).

Mumford Christmas dinner (1899). Dining room of Mumford's mother's boarding house on West 65th Street, on site of what is now Lincoln Center. Mumford is in the foreground, mother behind him.



Mumford self portrait at age 24 (1920).

"Eliel Saarinen's new railroad station of Helsingfors first introduced me to modern architecture, before I had even heard of Louis Sullivan or Frank Lloyd Wright."

careers) were perfect for Mumford's emergent temperament.

Mumford's difficulties after he transferred to the City College Day Session two years later were symptomatic of his growing need for intellectual independence. He was becoming much more interested in his budding career as a writer than in his required work as a student. One heady success emboldened Mumford tremendously. He entered a competition held by the now-defunct magazine *Metropolitan* for a response to an article by George Bernard Shaw: Though the First Prize was won by Lincoln Steffens, the editors were so impressed with the 18-year-old Mumford's essay that his was the only other one published. (He was paid \$87.50 which he thought "a fortune.") Soon Mumford found himself called to the college dean's office, where:

"... I learned that I was supposed, like anyone else, to keep up my attendance and do regular academic work, whether I had literary aspirations or not. Spurred as I was by my own inner life, and doubtless inflamed by pride, this seemed to me tick-tock all over again: the shades of the prison house were closing in once more. But I was no longer passive, no longer docile, no longer concerned with being—academically at least—the first in my class: in fact, I was in revolt against all conventions and conformities."

Mumford's flagging City College career was interrupted by a tubercular episode in 1915. His convalescence—giving him further opportunity for reading and reflection—strengthened his solitary approach to learning. After his recovery he resumed his formal studies at New York University, Columbia, and again at City College, but in the end took no degree from any college, despite the surfeit of course credits that would have allowed him to do so.

Underlying Mumford's whole retelling of the story of his education is his obvious pride in the validity of his unconventional approach to gaining knowledge. Mumford's chapter on his college years is tellingly entitled "Manahatta, My University," and his use of Walt Whitman's eponymous name for New York (taken from the Indian tribe which first settled the island) is a clue to Mumford's Whitmanesque view of education as necessarily inde-

pendent and as a much broader set of experiences than merely attending classes.

Before he left Academe for good, though, Mumford had one more flirtation with formal education. This time, the dean of the Columbia University School of Journalism, Talcott Williams, counseled Mumford not to use his small inheritance toward paying for a journalism degree in that recently-established program:

"'Instead, if I were you [Williams said] I'd hang onto that four thousand dollars as long as I could. It's your margin of freedom: while you have it, you need never be driven to do work that goes against your conscience or offers you no inner reward; it will protect you from drudgery and give you the time you need to get started on your proper work. . . .'"

Mumford had first become aware of modern architecture (in the form of Eliel Saarinen's newly completed Helsinki Railway Station of 1905-14) while working on a college term paper on Scandinavia, but it was in a later academic setting of quite another sort that his interest in architecture really began to take root. America's entry into World War I in 1917 encouraged Mumford to enlist in the Navy to avoid conscription into the Army. He was eventually stationed in Cambridge, Massachusetts, to attend the U.S. Navy Radio School, and his classes were held in a requisitioned building on the Harvard campus: H.H. Richardson's Austin Hall. The impression that building made on Mumford was strong and immediate, but, as he recalls:

"... even before I had identified the building with Richardson, I loved the shingled Stoughton House on Brattle Street."

Clearly, he had an intuitive feel for the work of the then-neglected Richardson, whom Mumford later helped restore to the front ranks of American architectural history in *Sticks and Stones* and *The Brown Decades*. In Cambridge Mumford lived in a boarding house where one of his fellow lodgers was William Blake Bigelow, a retired architect who had been the Bigelow of McKim, Mead & Bigelow until he left the firm in 1878 (whereupon it became McKim, Mead & White). The old architect and the young writer struck up a valuable friendship:

"From him I got, almost by osmosis, a fuller

initiation into the ideas and architecture of the period; all the more because he had kept bound copies of *The Century* and Scribner's Magazine, to which Mrs. Schuyler van Rensselaer, the first biographer of Richardson, had contributed. Bigelow helpfully put these periodicals at my disposal and further vivified them by his own recollections . . . Bigelow opened a fresh path for me, in a way that no American book or university course on architecture then in existence could have done."

After Mumford was mustered out of the Navy in 1919, he landed a job as an associate editor at *The Dial*, one of the most distinguished periodicals during that exceptionally rich epoch in American literary journalism. He stayed there only seven months, but that was long enough for him to make one of his most important career steps, for it was at *The Dial* that he met the editor's secretary, Sophia Wittenberg, who two years later was to become Mumford's wife and amanuensis.

In 1919 Mumford also met Charles Harris Whitaker, the influential editor of the *Journal of the American Institute of Architects*, and through him was eventually drawn into the circle of reform-minded architects and planners for whose writings the *JIA* was then a leading outlet. Mumford's first important published piece on architecture appeared in 1921 in yet another magazine, *The New Republic*, then edited by Herbert Croly, a former editor at *ARCHITECTURAL RECORD*. Entitled "Machinery and the Modern Style," Mumford's seminal essay predated by two years the publication of Le Corbusier's *Vers une architecture*, in which the purity and beauty of industrial designs were raised to almost mythic reverence.

Mumford wrote a half dozen more pieces on architecture over the next two years, and on the basis of those articles the director of The New School for Social Research, Alvin Johnson, asked Mumford in 1923 to give a course on contemporary architecture. Mumford agreed, but after his six months' preparation, only six auditors came to the first class, and the course was then dropped. Mumford, undaunted, thereupon transformed his undelivered lectures into a series of articles for the *Freeman*, which then in turn became the chapters of *Sticks and Stones*, Mumford's first book on architecture,

"The Navy's main contribution to my education was to open my mind to a neglected period of American architecture . . . the period that came to a sudden flowering in the work of Henry Hobson Richardson and his successors in the Chicago School."

published in 1924.

Sticks and Stones established Mumford, almost overnight, as a leading figure in American architectural criticism. His new stature was indeed merited by the sheer originality and quality of the work itself, but was further abetted, as Mumford himself readily admits: ". . . because outside of a limited academic area . . . there were then no serious competitors, since the most competent of our architectural historians and critics, Montgomery Schuyler, had died [in 1914]."

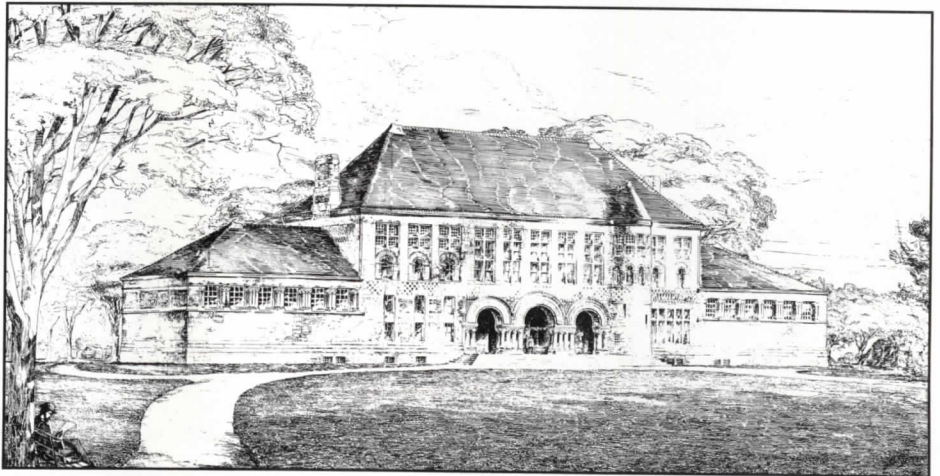
Mumford's very first book, *The Story of Utopias*, had been brought out two years before *Sticks and Stones*, and the ease with which he entered the then-idyllic world of book publishing must be counted as another of the most fortunate circumstances surrounding his career. The years between 1914 and 1929 were indeed, as Mumford puts it, "the Golden Age for coming American writers," when a vision of what books at their best could be was shared and made real by publishers, editors, and authors working with a rare unanimity of purpose.

All in all, his publishers' faith in him has been very well rewarded, for Mumford's books have enjoyed spectacularly long lives, enriching their publishers through years—in many cases decades—on their backlists. Astonishingly, no fewer than 23 of his 28 books are still in print, some after six decades, no doubt a record among living writers of non-fiction.

During the last half of the '20s Mumford contributed over 50 pieces on architecture, design, and city planning to publications as diverse as *The American Mercury*, *Commonweal*, *Harper's*, *The Survey Graphic*, the Dutch avant-garde architecture journal, *Wendingen*, and the German avant-garde periodical, *Die Form*.

Mumford was further fortunate in the forbearance of his young wife, who, far from prodding him into the pursuit of money, was quite content with what their friend Van Wyck Brooks described as their "ascetic household."

By 1927 Mumford had given up the idea of working as a full-time staff member for any publication, and from that point on concentrated solely on his own writing. During that year, according to Mumford:

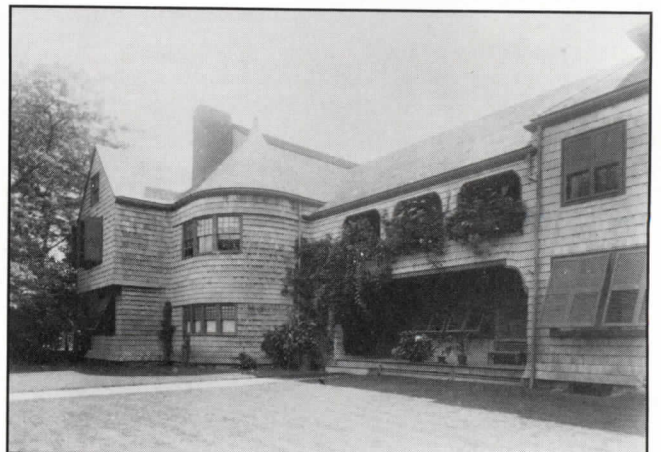


Austin Hall,
Harvard University (1880-84)
Henry Hobson Richardson.
Reproduction courtesy
Harvard Law School
Art Collection.



Helsinki Railway Station
by Eliel Saarinen (1907-14).
Diane Welebit photo.

Stoughton House,
Cambridge, Massachusetts by
Henry Hobson Richardson.
Photo courtesy
the Boston Athenaeum.



"I discover I had composed some sixteen or eighteen chapters with hardly more than a passing reference to one of the most constant and significant phases of my experience—my response to architecture. . . ."

" . . . I had turned down the following invitations: to become a Community Editor of Paul Kellogg's weekly, *The Survey*; to write a book on Frank Lloyd Wright; to write a book of the Rockefeller Foundation and similar respectable outlets for idle money; to edit a book of selections from American history; to become an editor of *The American Architect*; to become *American Correspondent* to *The Studio*; to become an editorial writer under Walter Lippmann on *The World*; to become part-time Art Advisor to the *Du Pont de Nemours Corporation*. . . .

"The last offer . . . occasioned a flutter of debate in our household; for Sophia was a little piqued over the fact that I refused even to confer with the agency and find out what the scope of the work and the salary would be. I told her I simply didn't want to be tempted. Such a job, with such a well-established corporation, might offer an income triple our present one, and once it came as a definite offer, might be hard to resist. What was worse . . . our standard of expenditure would go up; and once it did, my chances of coming through as a writer would be gone. I never said No with a better conscience. . . ."

But the onset of the Great Depression and Mumford's initiation of the major project of his career—the *Renewal of Life* tetralogy, which he began in the early '30s—called for a more dependable source of income than the catch-as-catch-can existence he had been used to for some time. (The birth of a son in 1925 and a daughter 10 years later gave further impetus to the need for greater financial security.)

The dream-perfect answer to this problem came in 1931 from the legendary editor of *The New Yorker*, Harold Ross, who asked Mumford to take over the magazine's architecture column. (Mumford did not originate *The New Yorker's* architecture coverage; his predecessors from 1926-1931 were George S. Chappell, who signed his pieces as "T-Square," and Gretta Palmer, who signed her pieces as Duplex; a third critic, Doree Smedley, reviewed new buildings in 1926-27.)

The rest, as they say, is history. "The Sky Line," as the column was named, occasioned Mumford's most copious outpouring of architectural criticism. Of more practical importance, his association with *The New Yorker*

was to become Mumford's fiscal mainstay during what was his most prolific decade, in which he also wrote two of his most important books, *Technics and Civilization* (published in 1934) and *The Culture of Cities* (published in 1938).

From his first *New Yorker* article on June 20, 1931 ("Frozen Music or Solidified Static? Reflections on Radio City") until his last "Sky Line" piece on December 7, 1963 ("Not Yet Too Late") Mumford wrote 158 architectural essays for that magazine. Yet what is not so widely remembered is that from 1932 to 1937 Mumford also doubled as *The New Yorker's* art critic, and during that five-year stint actually produced more art reviews (109 in all) than "Sky Line" pieces during the same period. Thus, from 1931 until the beginning of a five-year hiatus brought on by America's entry into World War II, Mumford wrote a total of 187 articles on art and architecture for *The New Yorker*, a magazine known to have paid its contributors very well, especially so for those lean Depression years.

After 1936, Mumford and his family moved permanently to the small Dutchess County, New York, town of Amenia, where they had bought an 1830s Greek Revival farmhouse in 1930 for the now astonishing price of \$2,500. He generally went to New York City only two days a week—visiting art galleries, viewing buildings, handing in and checking his copy at *The New Yorker*—with the other five days of each week devoted to his writing at home. He was therefore not a familiar presence at that magazine's West 43rd Street offices, yet there are few figures from those great days under Ross who remain more memorably associated with *The New Yorker* than Lewis Mumford.

On assuming his post at *The New Yorker*, Mumford might understandably have adopted a cautious approach to his criticism, given the acrimonious circumstances of his forerunner's departure. Yet he chose instead to leap right into the fray with his sharp critique of Rockefeller Center, then the subject of a great deal of flack-inspired ballyhoo to help stimulate its rental during a stagnant phase in the Depression real-estate market. Yet much to Mumford's credit—and proof of his essential fair-mindedness—is his later, revised appraisal, quite positive in compari-

son to his first piece, written after the complex was finally completed in 1940 ("Rockefeller Center Revisited"). Conversely, Mumford felt no compunction about changing his critical response in the opposite direction when he felt it was called for. Although Mumford was full of praise for the humane and beautifully designed early works of Robert Moses, Mumford later became one of his most outspoken critics once Moses's work took its eventual turn to physical bleakness and spiritual ossification.

In a self-written biographical blurb, Mumford once described his work on architecture as "mainly a social and esthetic interpretation." The order in which he placed those two adjectives tells all, for Mumford has always put human imperatives ahead of formal considerations in his architecture criticism. In Mumford's view, architecture succeeds only if it succeeds for people, if it enhances their environment, their communities, and their individual sense of self. This is not to say that he has had no interest in the visual aspects of buildings. Far from it: he has often displayed great perspicacity in extrapolating the meaning of architecture from its physical appearance. Furthermore, his highly-developed descriptive abilities have allowed him to translate those visual perceptions into vivid words even without the aid of photographs or drawings. "The Sky Line," it should be remembered, did not have illustrations, making Mumford's extraordinary rapport with his lay audience all the more remarkable. Clearly, he has been able to transmit the same human element he has sought in architecture through his writing as well.

Not surprisingly, it has always been impossible for Mumford to distance himself from the associative aspects of architecture, and that has always affected his interpretive analyses. Take, for example, his evaluation (in *The South In Architecture*) of Thomas Jefferson's design for the University of Virginia. Mumford praised the lateral pavilions and terraces that surround The Lawn as antecedents of the *Seilenbau* ("line building") configuration characteristic of German Early Modern housing. But he felt the composition was ruined by the domed Library, freely copied from the Pantheon in Rome. Although his reasoning was based partly on the dramatic

"I never . . . could see more than a few months ahead for my income: my sole security consisted in my willingness to remain insecure . . . I was to have lean days, certainly, for many years afterward; but never any doubts as to the career I had chosen, and never any uncertainty as to the final outcome . . ."

shift in scale between the monumental Library and the considerably smaller pavilions, Mumford had another objection as well. He noted that "Jefferson and his contemporaries saw this classic past through a glass which purified it of its corruptions and miseries . . . they admired the Pantheon without restraint, but if they remembered the vicious barbarism of the circus . . . they were more interested in the shapes of the stones than in the revolting sights those stones had witnessed. . . ."

Especially interesting now, in light of the currently fashionable attacks against modern architecture, is Mumford's conviction that Early Modernism was indeed in concert with the humane and life-affirming values he has always championed. His extensive inspection of modern housing in Europe during the early 1930s only reinforced that belief (he organized the housing section of the historic International Style exhibition at New York's Museum of Modern Art in 1932). But Mumford had no ideological stake in Modernism as a doctrine, and when inferior and bastardized adaptations of it began to be built in this country after World War II, he railed against their dehumanizing effects as strongly as he had earlier attacked the false historicizing pastiches of the pre-Modern period.

People are the thing, human betterment the goal, and the rest must be evaluated accordingly: that has been Mumford's consistent theme. His unswerving point of reference echoes the similar precepts of his great intellectual Master, the Scottish biologist and planning theorist Sir Patrick Geddes (who is one of the three major figures in Mumford's autobiography). Geddes once wrote, with a tart pithiness that prefigures Mumford's critical style, that "the one and only building which can be constructed from measurements and financial estimate alone, independently of living use, is a coffin." Mumford has always been no less outspoken in advocating that same conception of architecture.

Judging work without fear or favor has sometimes been seen as a potentially self-defeating stance for an architecture critic to take. Compared to the critics of other art forms, the architecture critic often depends on the cooperation of the artist to a degree not necessarily required by those who evaluate other fields of creative endeavor. For



John Sloan. *The City from Greenwich Village* (1922).
Oil on canvas. Collection of the National Gallery of Art, Washington, D.C. Gift of Helen Farr Sloan.

J.
Clarence, a fellow New Yorker,
in the hope that the growth
of our architecture may
not mark the end of our
evolution!

Lewis

Oct 1924

Inscription from *Sticks and Stones*:
From copy Mumford gave to
Clarence Stein.
Inscription reads:
"To Clarence, a fellow New Yorker,
in the hope that the growth
of our architecture may not
mark the end of our civilization!
/Lewis/October 1924."

"As I reached the middle of the Brooklyn Bridge . . . the world, at that moment, opened before me, challenging me, beckoning me, demanding something of me that it would take more than a lifetime to give, by its own vivid promise to a higher pitch. In that sudden revelation of power and beauty all the confusions of adolescence dropped from me. . . ."

example, if a theater critic is banned from a preview by a producer (as David Merrick has done), the writer can still buy his own ticket and see the show at some later time. If an art critic is on bad terms with a painter for a previous negative review and thus is not invited to a private preview, he can still see the exhibition on his own once it is opened to the public. But the architecture critic in many cases must have the assistance of the architect—especially when a building is privately owned—in order to inspect the artifact and to gather more specific technical information of the sort not obtainable through mere observation.

Although Mumford has been well-acquainted with many of the leading architects of the 20th century, he has made a point of maintaining his independence from them, no matter how much more information he might have been able to glean from them first-hand through closer personal contact. Mumford discusses the dangerous allure that an important architect can exert on a critic in his riveting retelling of his paradoxical friendship—if that is the term—with Frank Lloyd Wright, the most complete picture in *Sketches from Life* of his dealings with an architect.

In 1927, two years after Mumford's appreciative (though he terms it "pathetically meager and tentative") article on Wright appeared in *Wendingen*, the 32-year-old critic received a summons from the 60-year-old architect to one of Wright's famous lunches at New York's Plaza Hotel. Mumford, himself never a slouch when it came to self-confidence, found that:

"One could not be in the presence of Wright for even half an hour without feeling the inner confidence bred by his genius. Certainly it was no flattering appreciation of his work by me that had led him to seek me out. Nor had I approached him in turn by being a worshipful disciple. . . . Perhaps that explains why we never became intimate. . . . This was not for lack of good will on Wright's part—or on mine. In the early thirties he actually invited me to take up residence in Taliesin to help him run the school there. . . . But Wright could not understand my unwillingness to abandon my vocation as a writer to have the honor of serving his genius. . . ."

To be sure, there was a strong element of competitiveness between these two formidable egos, of which Mumford seems to be quite aware:

"[Wright had] an innate desire to dominate and subdue those around him. So after our early meetings, my relationship to him became one of wary mutual respect . . . I sensed that if our friendly relations became too close, I would surrender my right as a critic to pass an unfavorable judgment on any of his sacred beliefs or achievements."

A serious breach developed between Wright and Mumford over the former's isolationist and the latter's interventionist positions as America drew closer to involvement in the Second World War, but that rift was eventually healed. A far more personal and permanent break was caused in 1953 by Wright's response to Mumford's two-part "Sky Line" series ("A Phoenix Too Infrequent") evaluating the architect's career on the occasion of the major Wright retrospective "Sixty Years of Living Architecture," held in New York in a temporary structure on the site of what is now the Guggenheim Museum.

The first installment of the essay was generally complimentary, and included Mumford's extraordinary (and well-deserved) encomium of Wright as "one of the most creative architectural geniuses of all time." The second piece, however, was considerably more critical. In it, Mumford—who has always been at his incisive best when writing on Wright—perceptively noted FLLW's increasing inclination to "coddle his idiosyncracies," and saw in the architect's "obsessive reiterativeness . . . a tendency to replace the engineering principle of least effort with the baroque principle of the greatest show. . . ." Needless to say, this didn't sit at all well with the Master. In a scorching letter he shot off to Mumford, Wright denounced him as an "ignoramus" and a "mere scribbler."

"When I answered him promptly [Mumford writes], I told him that I respected his greatness too much to dilute it by sweetening my critical appreciation with undiluted praise . . . I was about to sign it in my usual fashion, but a sudden impish impulse prompted me to sign it instead in the style of Frank Lloyd Wright himself: 'With all respect and admiration, as from one Master to another. . . .'"

Mumford's contacts with other architects generally followed the same practical belief that it was best for all concerned if a certain distance between critic and subject were maintained. One exception, of course, was his professional connection with the architects and planners who were co-members with him in the Regional Planning Association of America, from 1923 to 1933, and in the Housing Study Guild, which Mumford, Albert Mayer and Henry Wright set up after the RPAA disbanded in 1933. It is true that Mumford wrote favorably on the work of Henry Wright and Clarence Stein, the principal architect/planners in the RPAA, and later on the work of Albert Mayer. But Mumford always discussed the work of his colleagues with a very clearly expressed sense of social advocacy, and not merely to promote the work of friends. (For that matter, there was a pronounced undercurrent of factionalism in the RPAA, and tensions frequently ran high as only they can among those very close to one another.) In any case, even the architects who were nearest to Mumford in philosophical outlook could never be guaranteed rubber-stamp approval by this obstinately independent thinker, and a close reading of his work will reveal more than one instance in which he saw fit to criticize a friend.

Mumford's eventual move to Amenia, New York—where he has lived now for 45 years—made it considerably easier for him to absent himself from possibly contaminating contacts with the architectural establishment, but he did not become a rusticated recluse, as has sometimes been claimed. Actually, Mumford's frequent visiting professorships at various universities—Dartmouth, Alabama College, Harvard, North Carolina State, Stanford, Berkeley, the University of Pennsylvania and M.I.T. among them—have afforded him a much broader contact with various currents of American architectural thought and practice than would have been the case if his sights had been set solely on the New York architectural scene. As with most of the other major decisions in his life, his choice of a home far from the proverbial madding crowd was determined by the priority he has always given his career.

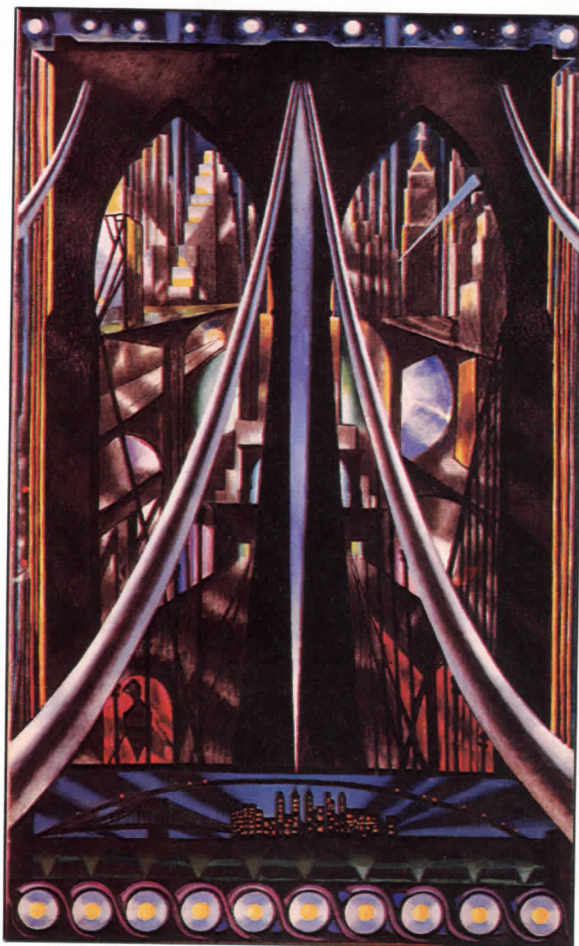
As the 1930s wore on, Mumford's integral view of civilization as an inseparable

"Van Wyck Brooks much later recalled in *The Days of the Phoenix* his earliest impressions of us: 'I always felt as if they had just stepped out of Utopia and were looking for some of their countrymen, astray on this planet, who were also waiting to get back home again.'"

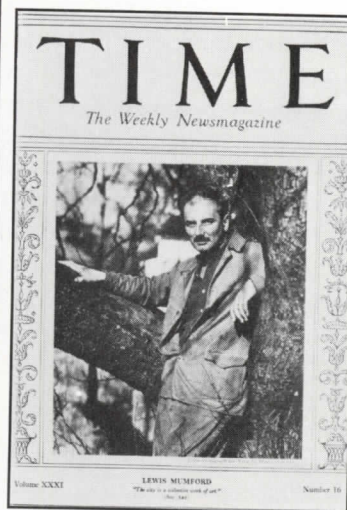
skain of interwoven concerns—pervasively expressed in his books of that decade—led him to the conclusion that the totalitarian threat posed by Fascism was beyond the possibility of compromise or appeasement. Early on he became one of the leading public figures who urged America's involvement in the struggle against Hitler. Mumford's growing recognition as a social philosopher lent extra credence to his warning voice, as might not have been the case if he had been known solely as an architecture critic.

Although *Sketches from Life* ends in 1940 (its author has no plans for a sequel), the basic pattern for the rest of his public life by then had been determined. In his subsequent denunciations of the evils of the post-war years—the terror tactics of the infamous Senator McCarthy, the disastrous War on Vietnam, and the omnipresent threat of nuclear annihilation—Mumford has continued in the same vein of tireless and comprehensive concern that characterized his early years. And just as Mumford's stature as a world citizen has been enhanced by his panoramic understanding of the forces that motivate human events, so has his importance as an architecture critic been magnified by his insistence that he is more, much more, than that. Mumford has never been the kind of architectural historian who identifies styles but does not explicate meaning. Neither has he been the kind of architecture critic who analyzes forms but does not see buildings in their largest social context. Mumford has never shrunk from his essentially Ruskinian moral attitude that art and architecture are there to teach us—not abstract theories, but home-truths about ourselves and our human condition.

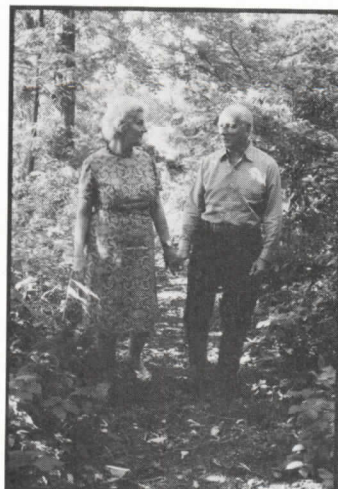
His most valuable asset in maintaining his unique place in so many diverse disciplines—American literature, philosophy, and culture in its widest sense, as well as architecture—has been his unifying overview of them all, which in turn has enriched each one of them individually. Beneath that, though, is the basic principle that has guided his work in every field: He is incorruptable, from outside influences as much as from his own lesser instincts, which he has shown remarkable fortitude in fending off. The story of that winning battle makes *Sketches from Life* a fitting capstone to an epochal career.



Joseph Stella.
*The Brooklyn Bridge:
Variation on an
Old Theme (1939).*
Oil on canvas.
Collection of Whitney Museum
of American Art.



April 18, 1938 Time cover
of Lewis Mumford.
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from Time.



Lewis and Sophia Mumford (1971).
Photograph © 1982
by Jill Kremenetz

SHOPPING CENTERS

In conversations with architects about what one calls the "banes and blessings" of shopping center design, two images recur: predictably, the theater and, oddly for a building type so widely perceived as profoundly anti-urban, the city.

Or perhaps not so oddly. The agora, the market, the square—places where people gather for exchange of goods and money, news and gossip—embody the very idea of city. And in this country shifting patterns of marketing have accompanied (if they have not paced) the shifting tides of human settlement that have blurred once clear lines between town and country, rendering cities as Standard Metropolitan Statistical Areas.

Shopping centers, in the original sense of planned retail districts outside central business areas, first emerged as early as the 1920s, accompanying the first wave of commuters to push outward to the city fringe. But it was not until after World War II that the ripple of outmigration became a flood of suburbanization which bore in its wake a comparable surge of suburban retail development. By the 1950s downtown retailers in increasing numbers had begun to follow their customers to outlying bedroom communities—first singly and tentatively, then more confidently in pairs and clusters as the realization took hold that the cumulative attraction generated by neighboring competitors in the central city could be sustained through the outward move. With the advent of the regional shopping center (defined as a retail development "anchored" by two or more major department stores), the lively mix of shops and stores and eateries that had occurred serendipitously downtown became calculated. In effect, the regional center selectively isolated the retail elements of the city core and transplanted them to the countryside, leaving behind other components of the urban environment—offices, hotels, banks, public buildings—and often leaving behind as well a seriously weakened downtown shopping district.

Spurred by plentiful land, cheap energy, an expanding economy, and a growing population, shopping center development followed an upward curve from the mid-'50s, when fewer than 1,000 such projects had been built, through the '70s. In 1980, according to the International Council of Shopping Centers (ICSC), a record 1,650 new centers opened, bringing the nationwide total of community, regional, and specialty centers to more than 20,000.

The picture of course has changed in the 25 years during which shopping centers grew from birth to maturity. Prime development sites are costlier and harder to find, and markets, especially those around heavily populated metropolitan areas, are approaching saturation. Energy is no longer cheap. The population is still growing, but

at a much slower rate. And as for the economy . . .

The outlook for the '80s depends on who is doing the looking. The January 1982 issue of *Shopping Centers Today*, a monthly tabloid published by ICSC, carries the jump head "Developers see '82 outlook as fair to grim." In the same month *Shopping Center World* featured a report on "a bullish review of center industry growth potential" by ICSC executive vice president Albert Sussman, who predicted, among other things, the opening during the '80s of almost one billion square feet of gross leasing area.

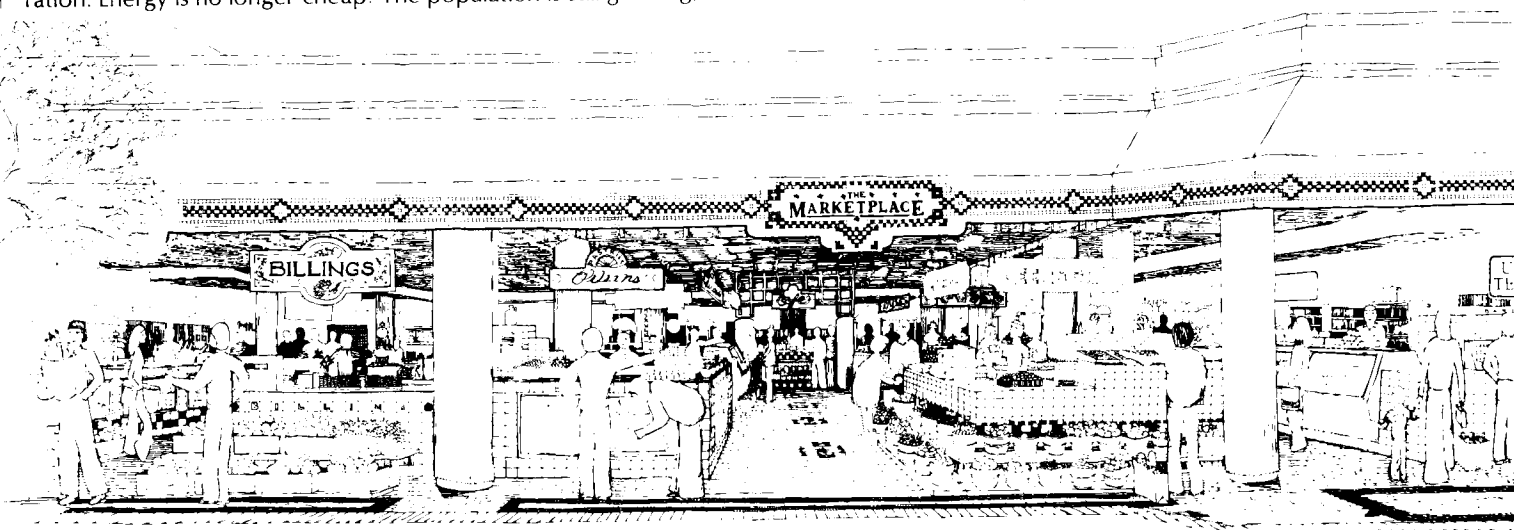
Less open to debate is the proposition that, whatever the pace of shopping center development over the next decade, its direction will reflect—as before—shifting demographic tides, changing patterns of community life, and even emergent social values.

Industry soothsayers are in substantial agreement that retail expansion on the scale that came to be thought of as normal during the last 20 years will occur only in the favored Sunbelt states of the South, Southeast, and West where in-migration is bringing about a surge in population and in purchasing power. Elsewhere, developers are looking farther out—and farther in—than the suburbs that once were almost synonymous with shopping centers.

In part the outward move will be a leapfrogging of existing metro areas and their suburbs to new communities within a travel distance of 30 to 60 minutes by car, a move predicated (problematically at the moment) on the resumption of large-scale housing development. More immediately promising as retail sites are the so-called "middle markets"—communities with resident populations of 10,000 to 50,000 and total trade area populations approaching 250,000. Such sites, however, imply centers somewhat smaller than the behemoths—some with more than 2 million square feet—that began to emerge in the late '70s, reinforcing a general trend toward downsizing centers in the face of rising construction and energy costs and more space-efficient retailing methods.

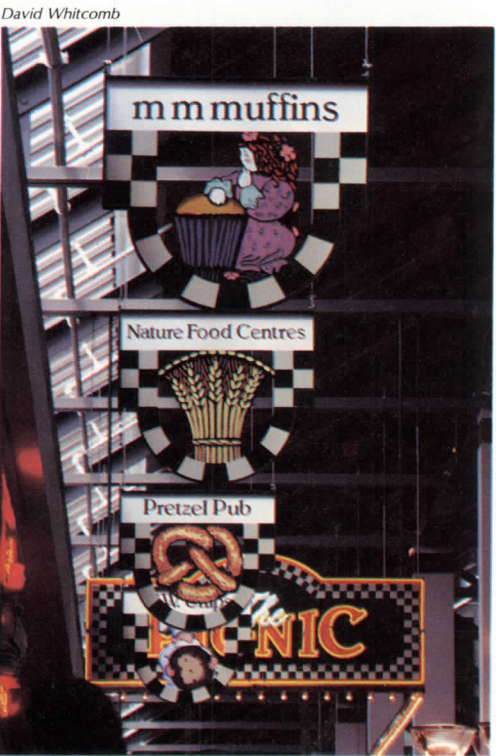
The inward trend in shopping center development also has two components, the most important by far being the expansion and renovation of existing centers. The reasons are not hard to find: high costs for land and construction, the scarcity of commercially zoned sites in areas with high population density, the impact of environmental and other governmental regulations on new development—all add up to a persuasive argument for upgrading and adding to established centers rather than striking out anew. In addition, many first and second generation centers are being forced to rehabilitate so as to compete with younger and more glamorous newcomers.

The second component of inward-looking development is a





Dick Busher



Above: An exaggerated picture window lends ceremony to the entry at Bellevue Square. . . . Left: Architect-designed graphics unify shops in the food cluster at White Marsh Mall. . . . Far left: Stalls and kiosks create an open food market at Stratford Square. . . . Below: Free-standing lighting fixtures "furnish" a court at Chicago Ridge Mall.

Philip Turner



more literal one: infill, usually with rather small and specialized retail facilities, of well-located urban and close-suburban parcels that were bypassed in earlier waves of development. A closely related phenomenon is the conversion to retail use of older (preferably picturesque) buildings—lofts, warehouses, breweries—that are structurally sound and suitably placed. Much attention has been focused over the last ten years on the potential role of retail development as a catalyst for the "urban renaissance" that was to revitalize city downtowns by restoring to them that healthy mix of people and uses which was vitiated when the shops and stores (and the people) fled to the suburbs. The dream of the urban omnicenter has materialized, though not in large numbers, and some have been spectacularly successful. Some, however, have not. The problems of land assembly and financing are so formidable as to be virtually insoluble without public sector support. Sales volume can be astonishingly high; but because of high land and operating costs profit margins can be astonishingly low.

Ironically the greatest opportunities for mixed-use development lie not in downtown central business districts but in outlying areas. Having removed its retail components from the central city, developers are now beginning to surround their shopping centers—by retrofit on existing underbuilt sites or by new planned development—with offices, hotels, commercial buildings, recreational and educational facilities, and with increasing frequency housing as well. In short with all the elements of a city. At the same time the competition among retail developers has so intensified as to demand much greater design sophistication in order to meet the rising expectations of retail tenants—and shoppers.

As a result, shopping centers, once a despised stepchild among design professionals, are attracting serious architects who render them as serious buildings. Designers so attracted acknowledge the difficulties and constraints surrounding shopping center development—more complex, says one, than any other building save hospitals. But they point too to the challenges, frequently in terms analogous to urban design. There is, for example, the problem of providing human scale in a building that not atypically may contain more than 30 acres under roof. And there are questions of circulation, of skillfully blending built and "natural" elements, of creating a framework strong enough to impose order on varied and changing human activities while maintaining a sense of spontaneity and excitement. Above all, there is the opportunity afforded by few other building types of creating significant public gathering places.

—Margaret F. Gaskie

Stratford Square, Bloomington, Illinois: Shopping as entertainment

Robert Stahman photos except as noted



With its sculpted, glass-enclosed elevator rising from a placid pool, the central court at the juncture of the offset malls offers a low-key preview of the dramatic Festival Court beyond. Below: Mall entrances give a clear signal of access without competing against store entries.



"We drove west from O'Hare for about 30 minutes and stopped," recalls RTKL principal George Pillorgé of the first visit to the Stratford Square site. "There was a yellow horizon, a blue sky, a little tree about a mile away, a couple of fences . . ."

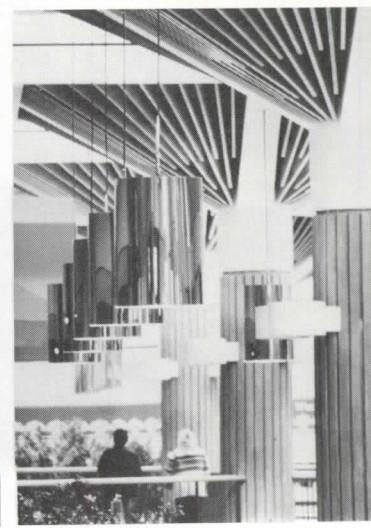
No longer. At its opening (only 25 months after the start of design) the center formed the heart of an already nascent planned community whose 837 acres will encompass about 4,000 residences as well as offices, schools, and parks. The center is sized accordingly: 1.4 million square feet under roof, four major department stores with expansion room for two more, a two-level mall accommodating 190 tenants.

In plan Stratford Square follows the typical dumbbell configuration, with a mall anchored by department stores at either end and others ranged along the axis. Here, however, the mall is offset at its midsection, the knuckle forming a triangular court (left) where a glass-fronted elevator rises like an outside sculpture from a pool enlivened by natural marsh grasses, trees, and seasonal plantings. The court serves too as a lobby opening to the center's great hall, a soaring 330,000-square-foot "center within the center."

From the elevator court pairs of great columns march in stately processional to the second-level entry some 425 feet away. Fluted except for a smooth band marking the change of floor levels and capped by exaggerated square capitals surfaced with red oak slats, these pillars resemble nothing so much as an alley of giant palms reaching to the intricate skylight overhead.

The cadence of columns and girders creates a strong axial relationship that serves as counterweight to the flow of activities within the court, which concentrates food and entertainment facilities in a hub that can remain open after normal mall hours.

The dominant feature of the Festival Court is an 18-foot-high, 70-foot-long waterfall that splashes and cascades over and around several concrete terraces and slanted slabs, flowing through 13 separate pools. Be-

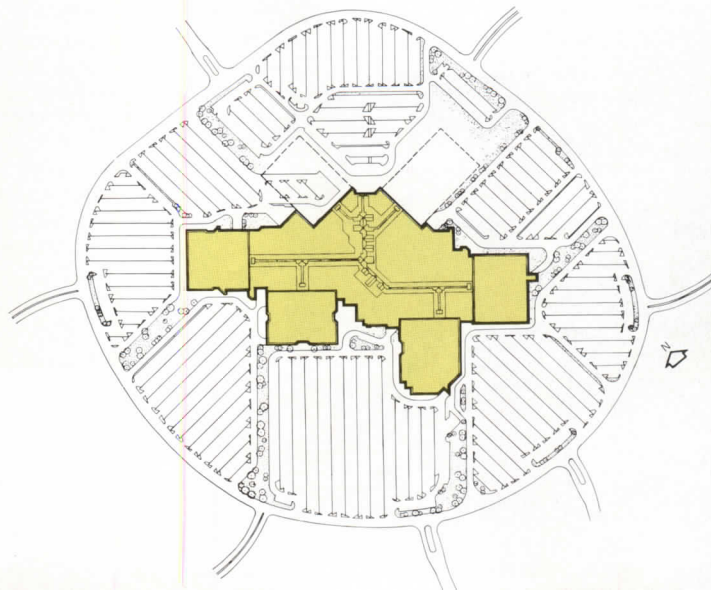


David Whitcomb



David Whitcomb

Because strong structural elements establish a coherent order within the Festival Court, other features can be lively and playful without seeming busy. Columns with exaggerated "palm frond" capitals are an appropriate foil for the water play of falls and fountains.



David Whitcomb



In addition to the multiple fast-food shops which share common "outdoor" seating in the Plaza Cafe, and other specialty restaurants bordering Festival Court, the mall boasts a four-theater cinema (left) that wittily spoofs the old-time mid-West Victorian movie house.

David Whitcomb

hind the largest fall is a glass-fronted restaurant from which diners can view the mall through a curtain of falling water. The court also houses ten upper-level specialty restaurants whose facades are unified by a common awning. On the lower level, nine fast-food facilities share a seating area in which tables are sheltered by colorful umbrellas that double as lighting fixtures, lending a candle-like glow to the nighttime scene. Opposite this food cluster, through a grove of trees, is an open market of stalls and small shops purveying wine, cheese, pastry, and other edibles.

The structural order established within the central court is carried through to the typical malls, which continue the march of massive precast concrete girders tied together by a continuous skylight at the roof ridge. The red oak slats that were used in the court to shape the column capitals reappear in the malls as warm-toned and richly textured ceiling panels. The material is also picked up in the handrails and in the red oak surrounds that frame individual storefronts. (To strengthen the "picture frame" effect, the architects' criteria for storefronts encouraged tenants to maximize the use of glass as a basic design element.)

STRATFORD SQUARE MALL, Bloomington, Illinois. Owner: *Urban Investment and Development Co.* Architects/engineers: *RTKL Associates Inc.*—George J. Pillorgé, principal-in-charge; Thomas C. Gruber and Thomas L. Clark, project architects; Donald D. Potter Jr., project manager; John Vogelpohl, technical coordinator; Robert J. Kolker, principal-in-charge structural engineering; Jyotin J. Choksey, project structural engineer; Robert R. Manfredi, principal-in-charge mechanical and electrical engineering; Timothy D. Baker, project mechanical engineer; Leo A. Ratterman and George Bisignani, project electrical engineers; Ann Dudrow and Phil Engelke, signage and graphic design; Jay Graham, interior landscape architectural design. Consultants: Jerry Lider (interior landscaping); Franz Lipp Weiler (exterior landscaping); Lyle Yerges (acoustics); Bonvini and Condos (lighting); Jo Schneider (artwork). General contractor: *Inland Construction Co.*



A typical mall departs from the usual "key-hole" section in that upper-level balconies slightly overhang the street—though not enough to block sightlines. Storefronts are unified by the repetition of red oak "picture frame" surrounds and brightened by extensive use of glass.

White Marsh Mall, White Marsh, Maryland: Downtown out of town

David Whitcomb



The straight sweep of the mall at White Marsh is relieved by cross bridges and landscaped department store courts that are also points of vertical circulation. Below: The principal mall entry leading to the food cluster quickly recalls the interior structure.



The opening of White Marsh Mall in northeastern Baltimore County introduced an instant Main Street and retailing focus to a suburban sprawl of housing developments, manufacturing plants, and scattered farms that wraps around the city of Baltimore. The county comprises 610 square miles of wooded rolling countryside but has no incorporated towns. Retail development has been largely confined to strip convenience centers scattered along the major roads leading to the city.

To bring order to the anarchy of unguided growth, Baltimore County officials some years ago adopted a comprehensive master plan that limits new development in the county to designated town centers. Subsequently, The Rouse Company commissioned RTKL Associates to investigate the feasibility of developing a town center for a 1,500-acre planned community. RTKL was later asked to design the shopping mall that serves as the core of a town center that will eventually include offices, hotels, and recreational facilities, all ringed by residential clusters.

In the twelve years that elapsed between the early investigations and the completion of White Marsh Mall, the center grew from an original proposal calling for 250,000 square feet of gross leasing area and two major department stores to a 370,000-square-foot center with five major tenants and 180 shops.

In designing the shopping center RTKL looked first to Baltimore's old waterfront sheds and wharf buildings, which also inspired the city's highly successful downtown market, Harborplace (RECORD, October 1980). The plain-Jane shedlike structure of exposed steel trusses and corrugated metal decking is expressed forthrightly, even to bolted rather than welded connections, but the over-all effect is curiously elegant—"slicker," says principal Francis T. Taliaferro, than was actually intended.

The lacy roof frame seems to float above a continuous ridge of skylights that stretch the length of the mall and wrap around the intermediate courts fronting major stores, creating an open airy setting in which foun-

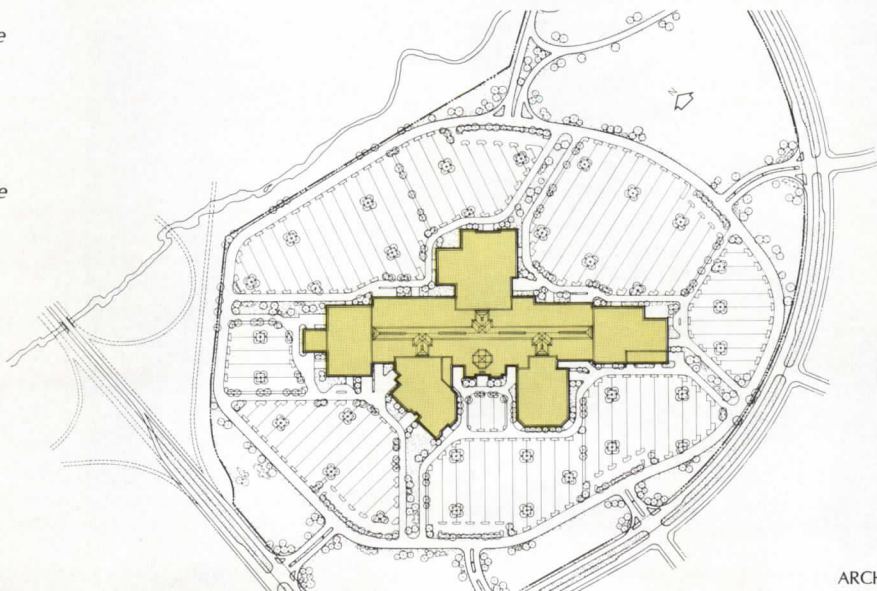


David Whitcomb



Major mid-mall open spaces are
 escalator courts that flow
 into department store courts,
 both enlivened by planting
 and fountains. The lacy roof
 structure, continuous skylight,
 and unifying neutral band above
 the storefronts contribute a
 feeling of openness and order.

Robert Stahman photos except as noted



David Whitcomb

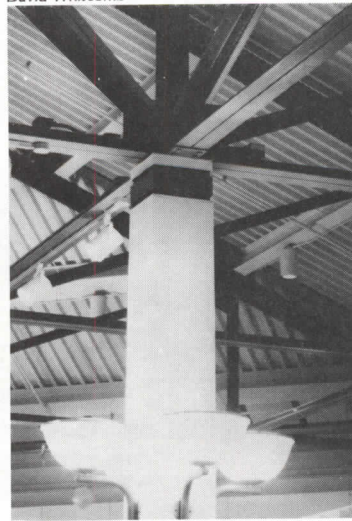


In the elevator court adjoining the food cluster natural elements—plantings and water—play against the industrial filigree of the glazed elevator cage. Careful detailing (below right) is exemplified by bolted truss connections, implied column capitals, special lighting.

David Whitcomb



David Whitcomb



tains and greenery appear to be natural adjuncts. The skylights also contribute enough natural light to support the indoor plantings without permitting excessive heat gain. (Vulnerable exposures employ reflective glass.)

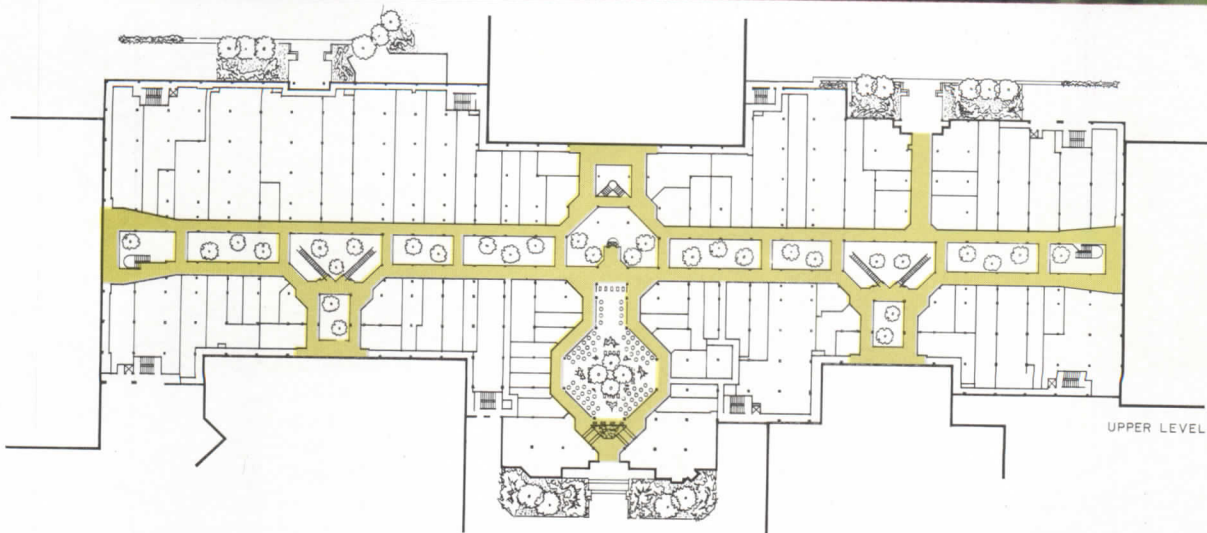
The mall itself is deliberately planned to reinforce the "Main Street" image. Open to both levels of shops throughout its length, the "street" runs die-straight between the anchor stores at either end—a departure from the more common practice of offsetting or angling malls to avoid a tunnel effect.

Here the 900-foot sweep of the mall is broken instead by "city" elements along its path. At 60-foot intervals pedestrian bridges span the upper level of the mall, creating a pattern similar to cross streets. Cast in the role of small parks and plazas are intimate courts, brightened by fountains and gardens, which mark the nodes of vertical circulation as well as entry to major stores.

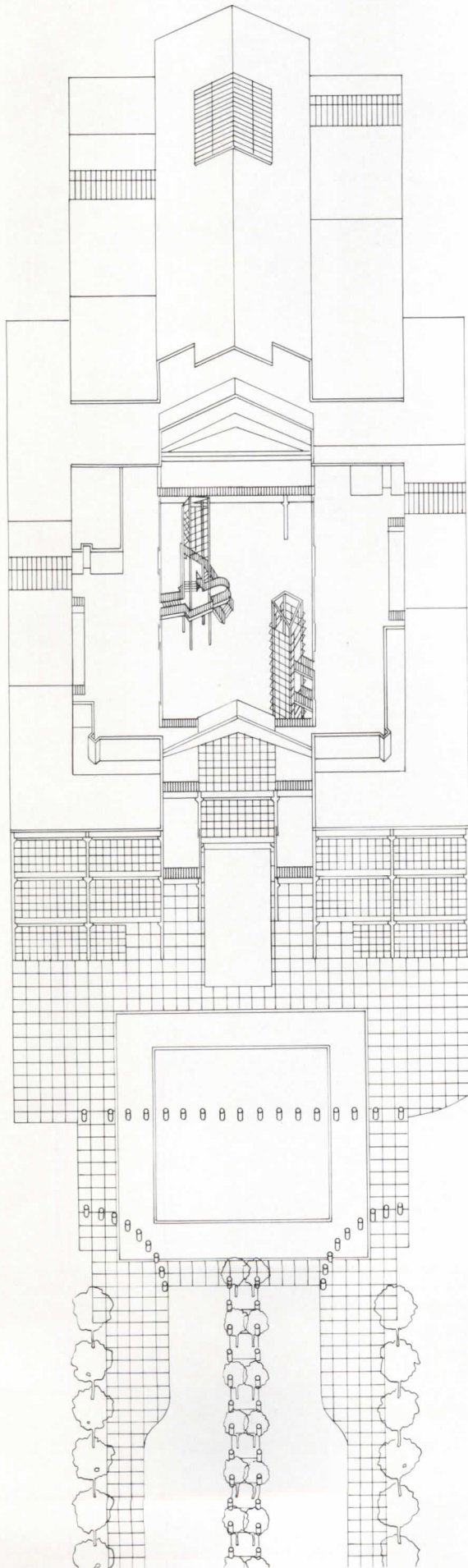
The town square is a generous octagonal space opposite the central elevator court, where a glass-enclosed iron-caged elevator picked out with glitter lights rises from a large fountain. Surrounding the second-level "square" are 22 clustered food-related shops that share common seating in a landscaped area roofed by a pyramidal skylight.

The illusion of streetscape is further enhanced by the deployment through the mall of city furniture: tall trees, brick paving, park benches, decorative street lamps—even a town clock as an obvious rendezvous.

WHITE MARSH MALL, White Marsh, Maryland. Owner: *The Rouse Company*. Architects/engineers: *RTKL Associates Inc.*—Francis T. Taliaferro and Gary A. Bowden, principals-in-charge; Paul F. Jacob III, project architect; Charles E. Millenburg, project manager; Robert J. Kolker, principal-in-charge structural engineering; Hope H. Furrer, project structural engineer; Robert R. Manfredi, principal-in-charge electrical engineering; George Bisignani, project electrical engineer; Phil Engelke, signage and graphic design. Consultants: *Broyles & Broyles* (mechanical), *Crozier Associates* (landscape); *Bonvini & Condos* (lighting). Contractor: *Henry C. Beck*.



Bellevue Square, Bellevue, Washington: An instant town center



Ronald Altoon, Charles Kober Associates' principal for design, aptly characterizes Bellevue Square as "emerging urban retrofit"—responsive less to its present setting than to its place in a much richer future context.

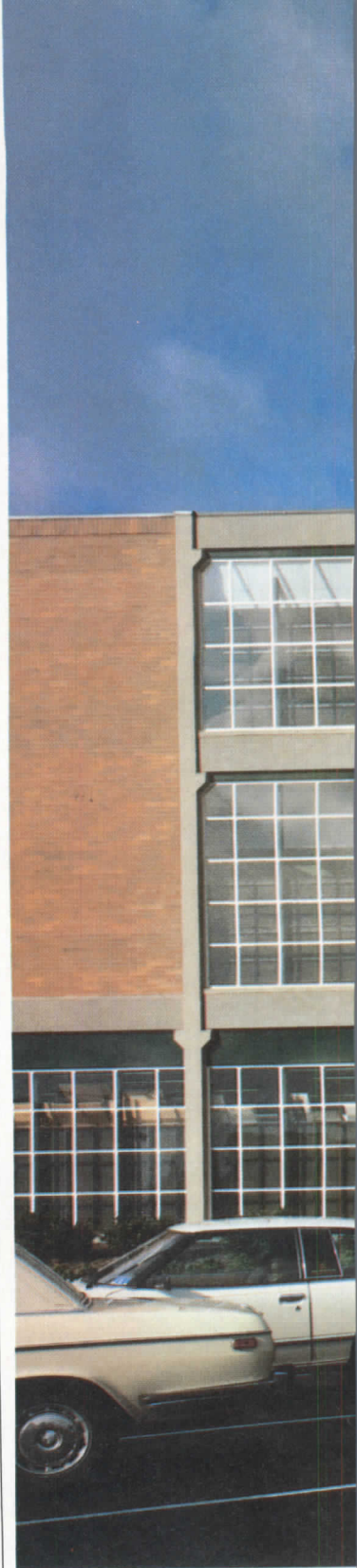
Bellevue, a community located across Lake Washington from Seattle, is trying, consciously and with some success, to shed its suburban satellite image. Recently constructed civic and office buildings already sketch an embryo urban core, and development is continuing apace.

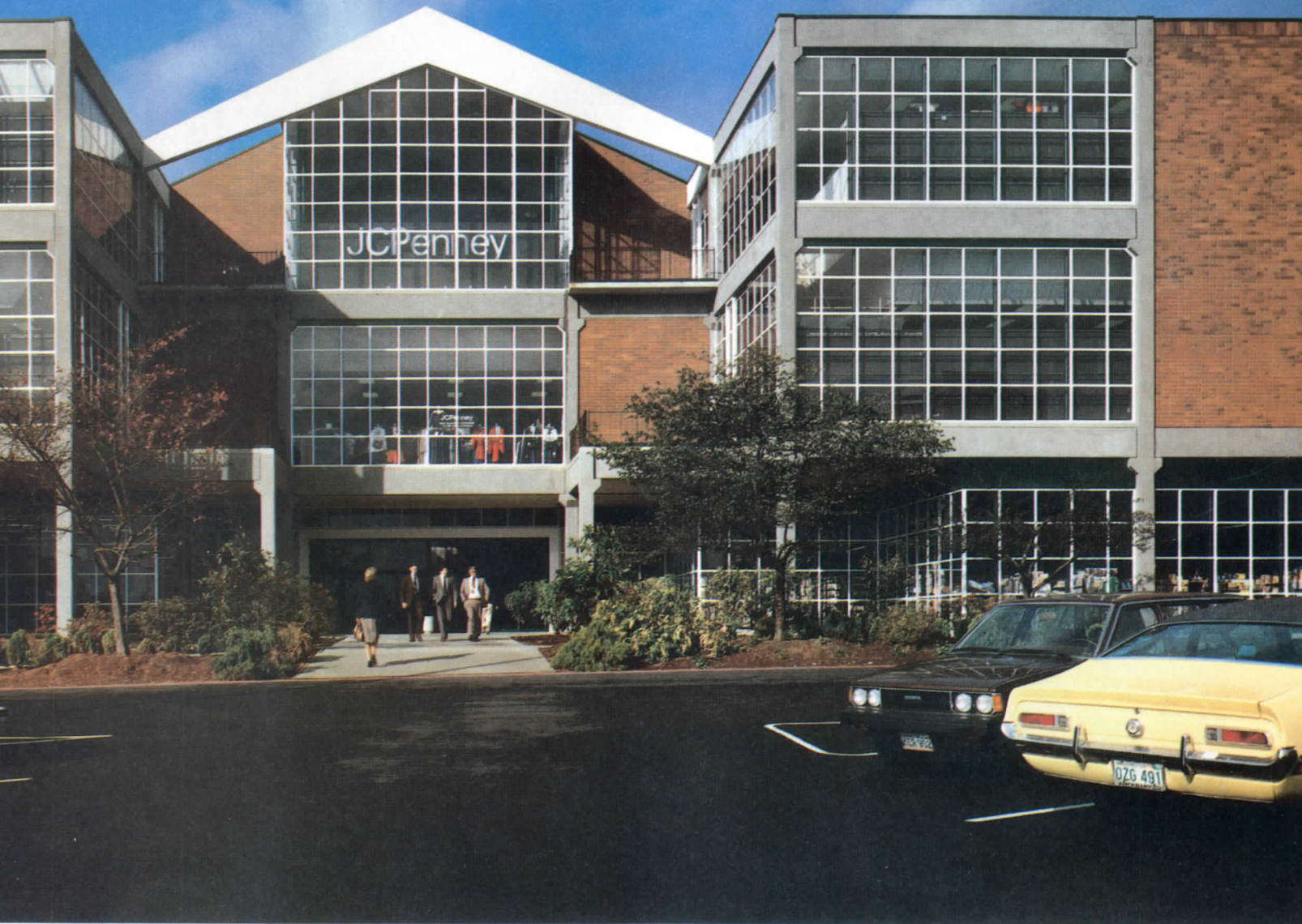
Bellevue Square, which replaces a rambling "town and country" collection of shopping buildings, affirms the importance of the site as terminus of an emerging civic axis pinned at the other end by city hall, and as home of the local art museum and host to the museum's annual art festival. Both factors were instrumental in the decision to grace Bellevue Square with that rarity among shopping centers, a prominent and engaging entry facade.

For the most part, the center was planned as a conventional two-level structure incorporating two existing department stores and adding two additional major stores at either end of the mall.

Its dominant feature, however, is an almost ceremonial three-story court that marks the principal entry. Fronting it, a highly articulated facade opens giant windows to the space within, offering glimpses of the contained activities. The elaborated entry also enunciates the transition between the enclosed "town square" and the formal square planned for the exterior forecourt, and brings to a full stop the progression along Bellevue's major thoroughfare.

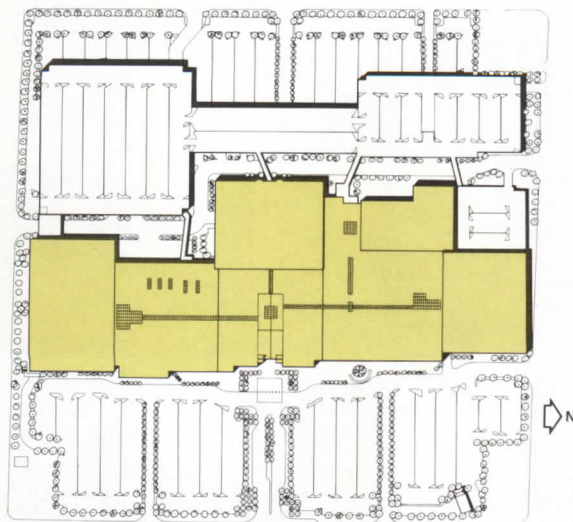
The 65-foot-high central court thus introduced is intended to serve as a threatening-weather haven for the art festival as well as a nexus for the center as a whole. Now occupied by a department store pending completion of its permanent quarters, the surrounding spaces will be enlivened by first-level shops and second-level restaurants. The third level will house the art museum and offices for the center manager. The square itself





Dick Busher photos

Bellevue Square acknowledges the importance of its site as a focal point in a rapidly developing city center by emphasizing and opening its entry facade to form a literal as well as symbolic link between the complementary public spaces provided by a landscaped exterior forecourt (not yet completed) and the vibrant three-story court within. In the branching two-level malls (left) a cleanly detailed and frankly expressed structure combines with projecting "greenhouse" storefronts to produce the disciplined variety of a classic arcade.

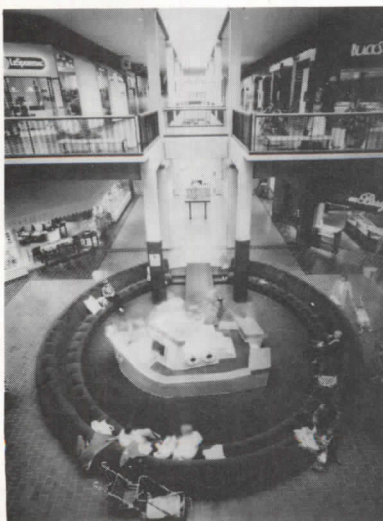




is punctuated by an elevator and an eccentric stair surmounted by a clock tower. Both elevator and tower sport only-partially glazed grids that set up a fool-the-eye play of transparent and reflective planes. And both were conceived as whimsies, in deliberate contrast with the spare discipline of the building itself.

In an effort to restore architectural qualities to a building type often approached as merely stage set, CKA has employed at Bellevue Square a straightforward but understated industrial idiom. Exposed precast concrete columns and beams (unheard-of in a shopping center) are reinforced by other elements that repeat themselves in predictable and orderly fashion, establishing a rhythm intended to recall the classic Old-World shopping arcade. Overhead, the gabled steel-framed roof is capped by skylights that extend the length of the mall. The ceiling is clad in drywall which is "peeled away" as fireproofing and lighting requirements permit, revealing the roof deck and skylights.

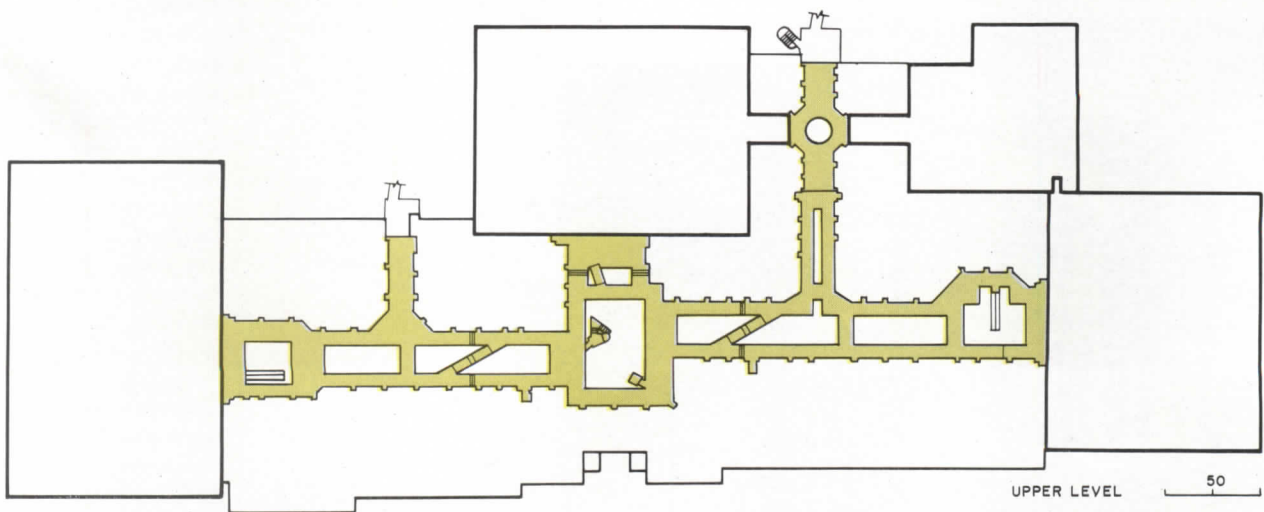
Throughout the mall, interiors are crisp and formal, a fresh but unassertive backdrop for the gleam of storefronts, the color of signage and displays, the cheerful bustle of crowds of shoppers. The architects' criteria for the design of individual shops called for three-dimensional "Georgetown-style" display fronts through which the shops seem to spill out onto the "sidewalk." Rendered in varying materials and forms, and housing a variety of wares, the greenhouse fronts lend tenants identity and individuality while reinforcing the common theme of a promenade.



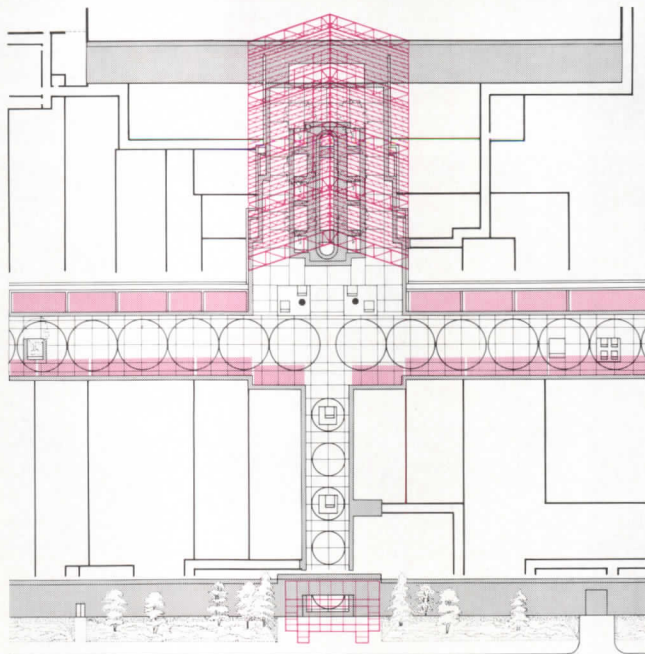
Within the ordered space of the central court the glass-enclosed elevator and the nearby clock and stair tower lend a welcome touch of whimsy. The upholstered "pool" in the children's play area of a secondary court refers to the importance of Lake Washington in Bellevue's community life: "My daddy has a sailboat."



BELLEVUE SQUARE, Bellevue, Washington. Owner: *Bellevue Square Managers, Inc.* Architects: *Charles Kober Associates—Alan D. Sclater, principal-in-charge; Ronald A. Altoon, principal for design; Donald E. Carlson, senior project designer; Alex Kimball, designer; Jay E. Reeves, project architect.* Engineers: *Robert Englekirk (structural); Hargis Engineers (electrical); MacDonald-Miller (mechanical).* Consultants: *Ralph Swarens (lighting); Lawrence Moline (interior landscaping).* General contractor: *Baugh Construction Co.*



Chicago Ridge Mall, Chicago Ridge, Illinois: Objects in an exhibition



The potential monotony of a one-level mall is avoided at Chicago Ridge by generous ceiling heights, dramatic transitions from mall to expansive gabled "rooms" fronting major tenants, and the clear distinction in scale between the enclosing structure and the objects (stores) enclosed.

Unlike Bellevue Square, with its gracious bows to an emerging downtown and a standing community tradition, Chicago Ridge Mall (also designed by CKA) is "a suburban shopping center pure and simple," says Ronald Altoon.

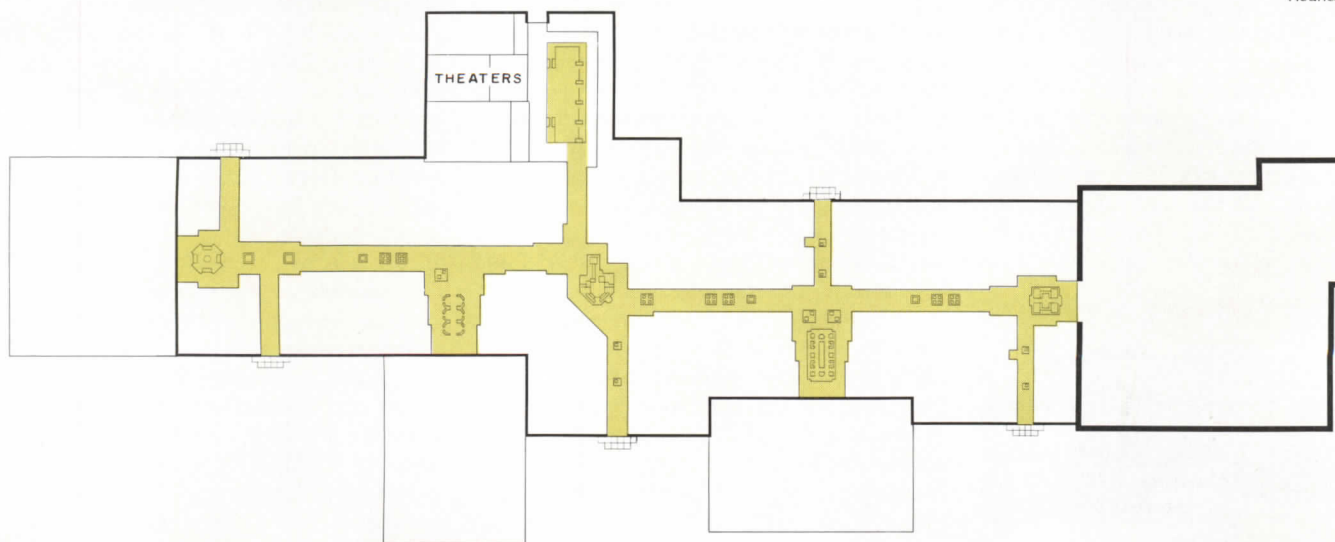
Located on an ample but featureless site south of Chicago, the center consists of a one-level mall anchored by four department stores plus a three-theater cinema. Because the surround offered no clues suggestive of an architectural response, the grand trading halls of Chicago and, more broadly, the region's strong history of constructivist architecture became the point of departure for the design.

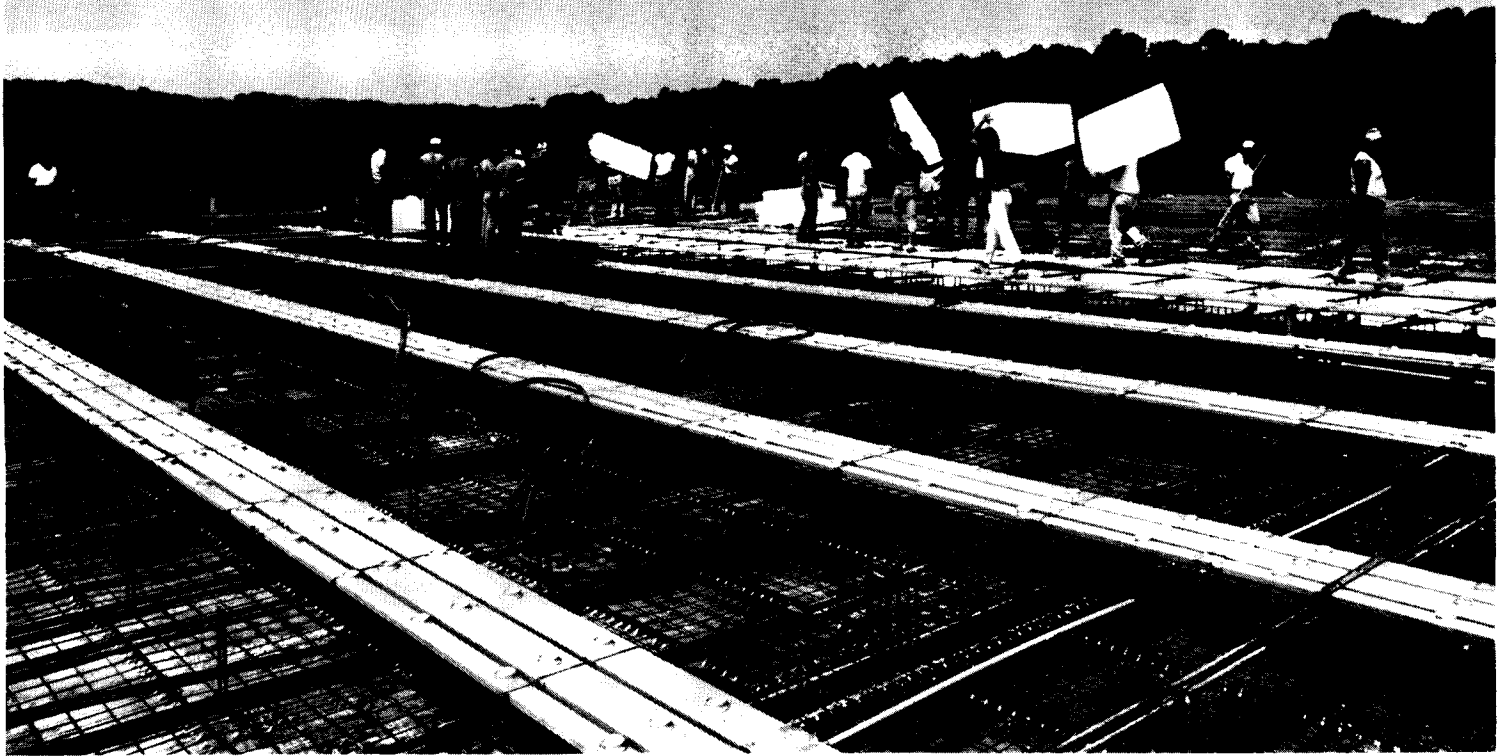
As at Bellevue, the motif is industrial, with emphasis on the exposed steel structure of the ceiling: joists in the mall areas and trusses in transitional courts between mall and major stores. Here, however, there is a play on scale. The large industrial enclosure is executed on a grand scale. (Because Chicago codes do not require fireproofing in spaces higher than 25 feet, no portion of the ceiling is lower and many areas soar to twice that height.) But the building contains within its permanent envelope an ordered but flexible exhibition at human scale—ranks of shops (again with greenhouse fronts), trees, seating, street furniture. Skylit garden courts serve as distinctive anterooms introducing major tenants.

CHICAGO RIDGE MALL, Chicago Ridge, Illinois. Owner: Ken Tucker Associates. Architects: Charles Kober Associates—Paul K. Curran, principal-in-charge; Ronald A. Altoon, principal for design; George C. Spacek, senior project designer; Margaret Schwartz and Gregory Jenkins, designers; Roy Stanger, project architect. Engineers: Technological Engineers, Inc. (coordinating); Advance Heating and Air Conditioning Corp. (plumbing); Midwesca-Adams Engineers, Inc. (hvac); Premier Electrical Construction Co. (electrical); Tylk & Wright Associates (structural). Consultants: Schirmer Engineering Co. (fire protection); Joseph Schudt & Associates (sitework); Frana Lipp-Marvin Wehler Associates (landscape); Barton-Aschman Associates (traffic). General contractor: Pepper Construction Co.



Hedrich-Blessing photos





ECONOMICAL POST-TENSIONING SYSTEM, DONE WITH AN EXPERT HAND, FREES INSURANCE OFFICES OF COLUMNS

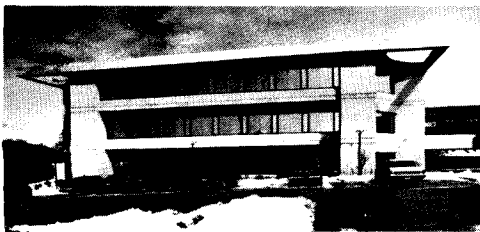
Rational structure is a welcome partner of functional architectural design—a point that engineer Dr. August E. Komendant made frequently in his collaboration with the late Louis Kahn. The point is made once again in this modest but innovative building for Selected Risks Insurance Company of Branchville, New Jersey—designed by youngish architect W. Richard Wilson Jr. of The Architecture Partnership with Dr. Komendant as his structural

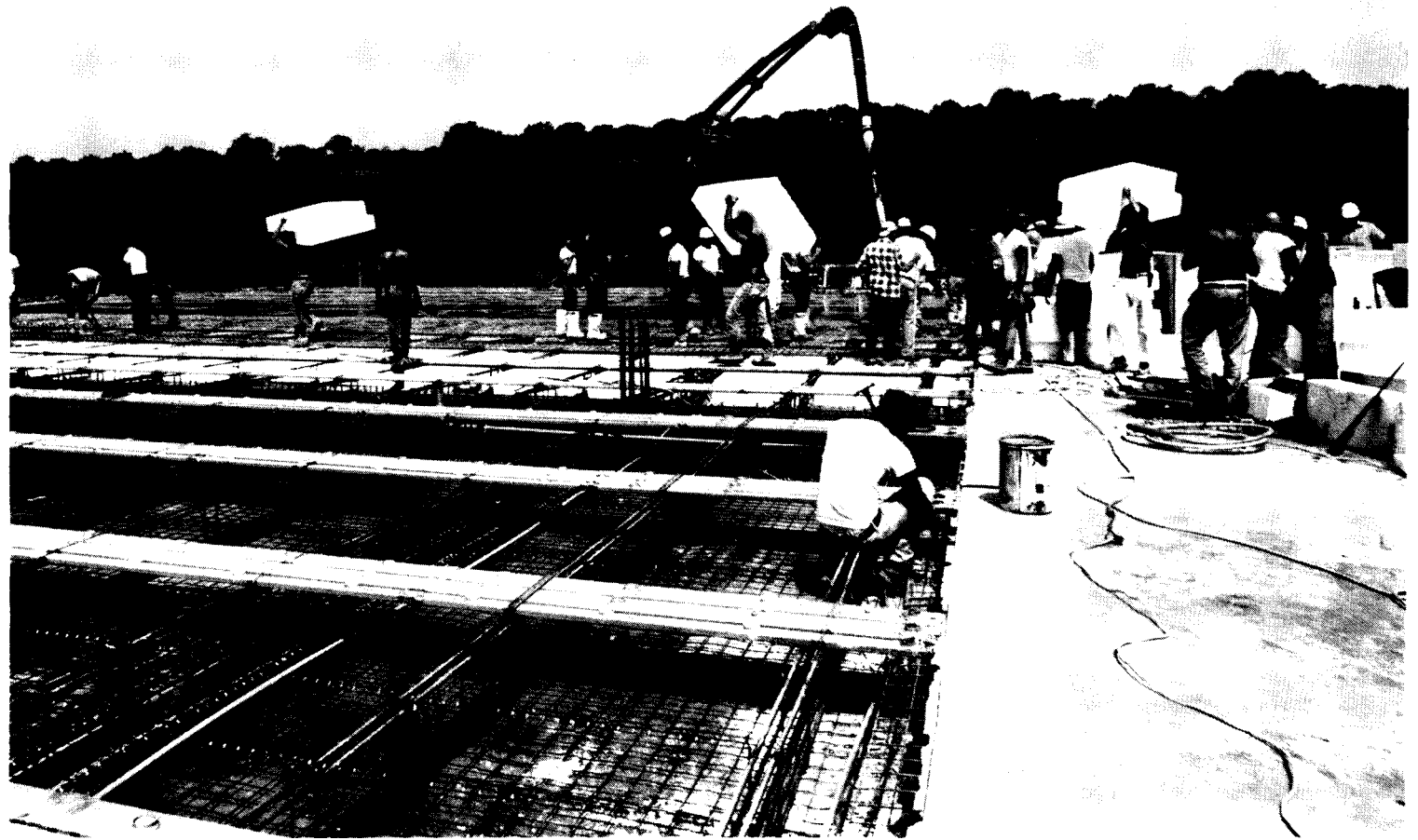
engineer. For the rolling-hill site in the northwest corner of the state, the client wanted open-plan floors for flexible arrangements of systems office furniture. They also wanted the floors divisible into smaller conference rooms and private offices. The client gave architect and structural engineer a free hand in the design of the building—as long as the building had an elegant feeling about it and was economical. (The building cost \$5.7 million, and the structure, \$2 million.)

For the 140- by 190-ft, three-floor building with 80,000 sq ft of space, Dr. Komendant designed a post-tensioned concrete structure that has only four columns in the center of the main office area, and 12 columns at the border between office space and circulation area. Pairs of girders that bisect the plan in both directions form a cross-

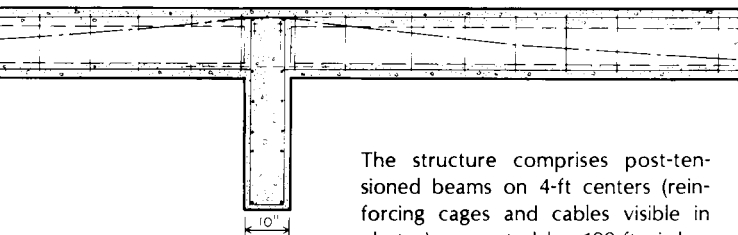
shaped spine; these girders provide a natural nesting place for supply and return air ducts. A dropped ceiling at the perimeter conceals ducts and water-loop heat pumps. Air handlers for the office quadrants are on the roof and feed down shafts next to the triangular staircase. Electrical raceways in the top of the slab provide for power, telephone and video display terminal wiring. Mechanical/electrical design was by Emil M. Spina, Inc.

Success of the building, states Komendant, lies not only in the productive collaboration between architect and engineer, but in the quality workmanship of the contractor, Olsen and Lawson, Inc., who had to place concrete in forms carrying complex geometries of reinforcement and post-tensioning cables, as well as electrical conduits and vacuum piping for the central cleaning system.



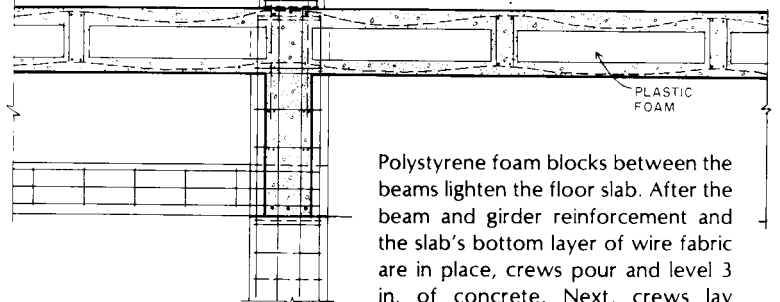


(A-A) SECTION THROUGH GIRDER AND SLAB

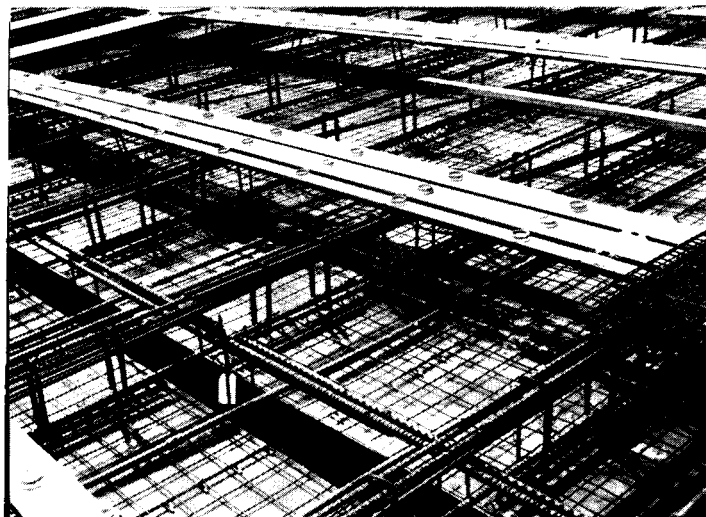


The structure comprises post-tensioned beams on 4-ft centers (reinforcing cages and cables visible in photos) supported by 100-ft girders (top reinforcing steel and slot for forming lower portion of a girder are shown in the photo directly below).

(B-B) SECTION THROUGH BEAMS AT CENTER OF SPINE

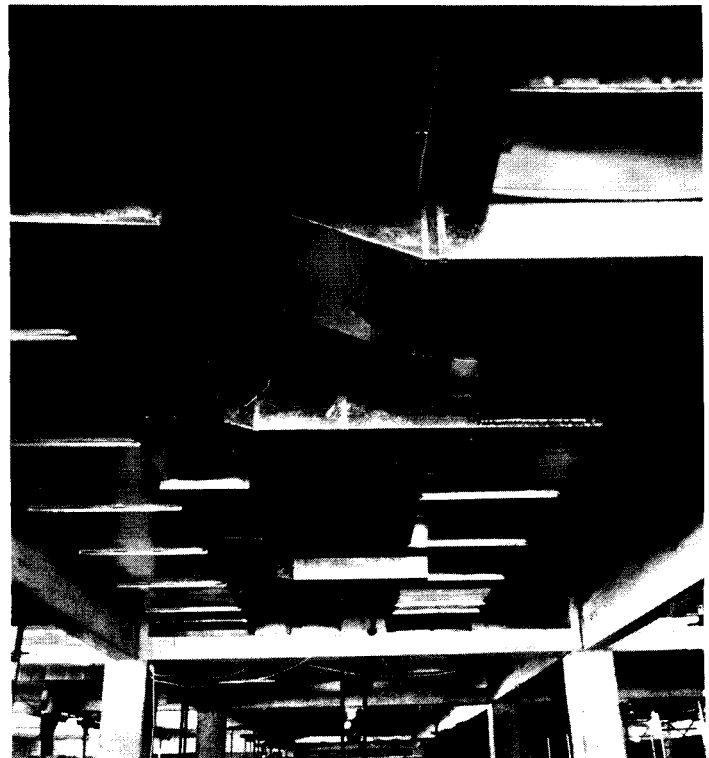


Polystyrene foam blocks between the beams lighten the floor slab. After the beam and girder reinforcement and the slab's bottom layer of wire fabric are in place, crews pour and level 3 in. of concrete. Next, crews lay blocks and pour remaining concrete.

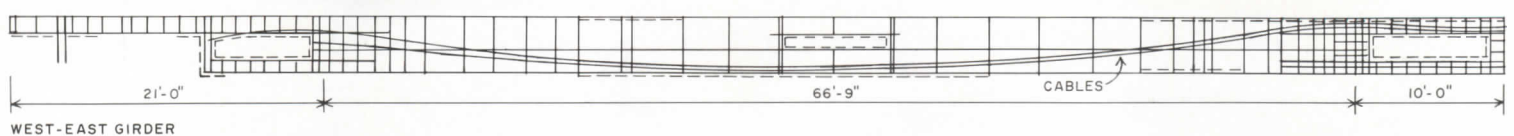
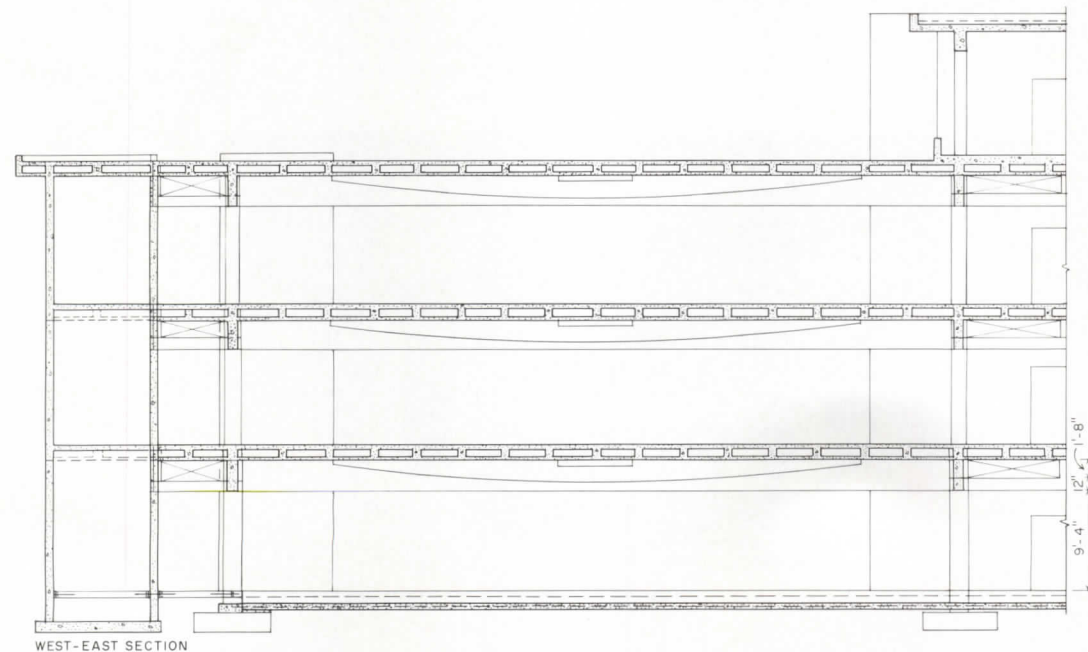
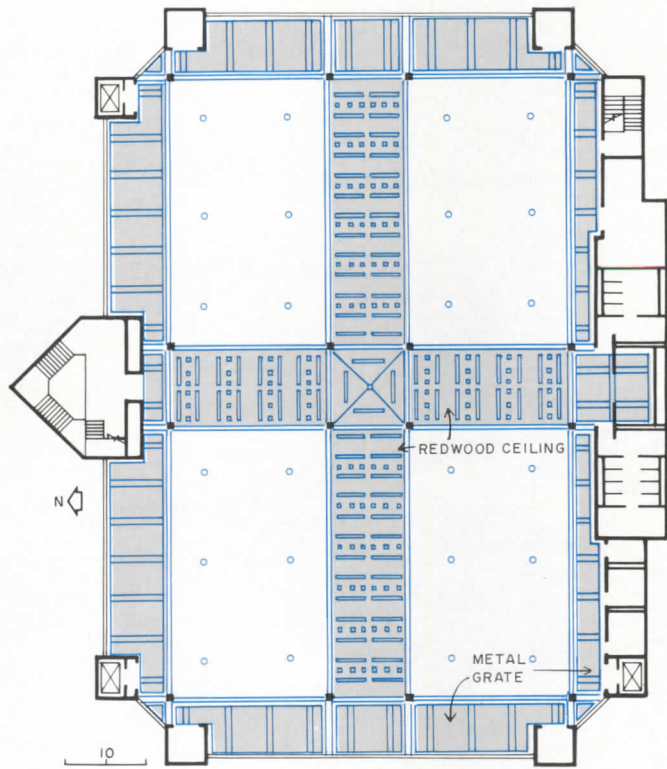
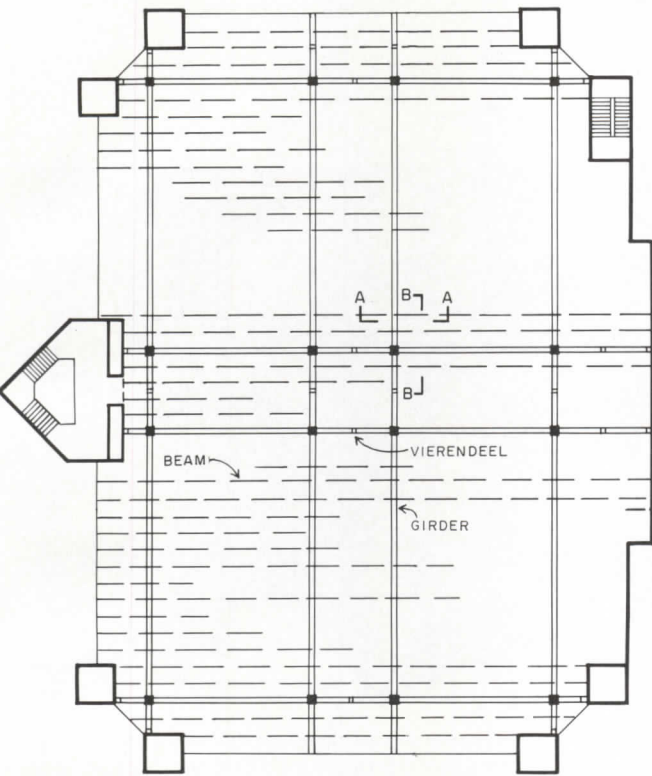




Perimeter girders plus the four pairs of girders that create a cross-shaped spine for the building outline four quadrants, 40 by 67 ft in area, that have 12-ft ceilings. The ambient and task lighting both are provided by indirect low-pressure sodium fixtures atop free-standing units and atop some furniture. Top photo looks northeast at the intersection of spine and perimeter area dropped ceiling.

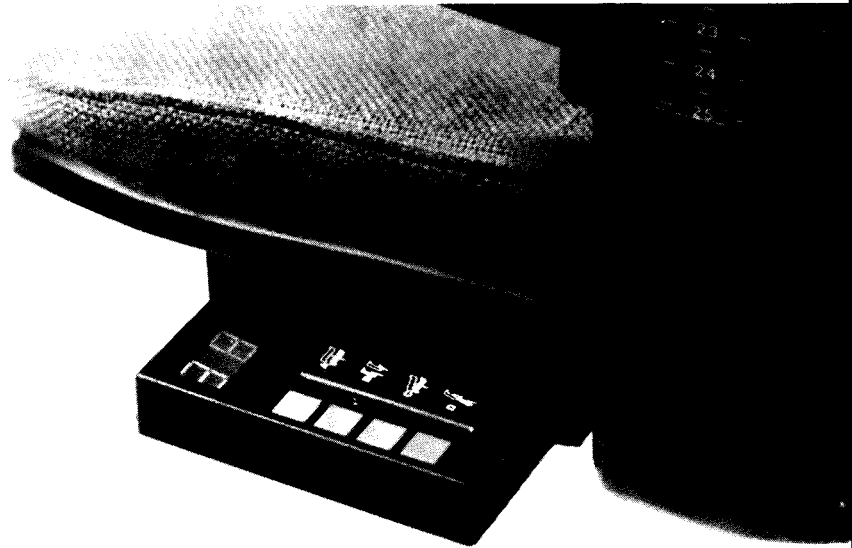


East facade of the building shows the architectural concrete finish which leaves form-tie holes exposed and has drapery of the prestressing cables expressed by a depressed surface on the face of the girders. Anchor plates for the cables of spine girders perpendicular to those shown also are left exposed. Ducts traverse the space provided by the spine and pass through Vierendeel sections.



The structural plan shows the post-tensioned beams (dashed lines) in the north-south direction and supporting girders in the west-east direction. Vierendeel sections within the girders at the center of the cross-shaped spine, and at locations where girders cross circulation space at the perimeter, allow ducts to pass through the girders (see structural plan and photo, right, across page). Spandrel girders are supported by square concrete shafts at the corners of the building. Three of the shafts house elevators, and the remaining five serve for vending-machine and storage space. The dropped ceiling of the spine is redwood strips interspersed with recessed lighting fixtures and square air diffusers. The dropped ceiling of the perimeter circulation area is metal strips interspersed with lights.

Adjustable office chair with digital controls



Developed by Jacob Jensen and Vibeke Leschly, the Labofa Labomatic Digital Chair L8105 is fully adjustable by programming a control located on the seat. Each individual using the chair can adjust it for personal comfort by setting seat height, back rest height, forward and back movement, seat angle, and arm rest height and width.

The seat height can be raised or lowered from 39- to 57-cm from the ground; the back rest/seat depth can be changed from 38- to 43-cm; the back's vertical adjustment can be changed from 16- to 26-cm; and the seat angle can be adjusted from 10 to -4 degs. In addition, a "4D" movement mechanism (acti-

vated when the user sits in the chair) automatically causes non-hinged back section of the seat to move continuously through an angle of 4 deg. The five-star base minimizes tipping. The chair is offered in a variety of configurations and fabrics. ■ Functional Office Furniture, San Rafael, Calif.

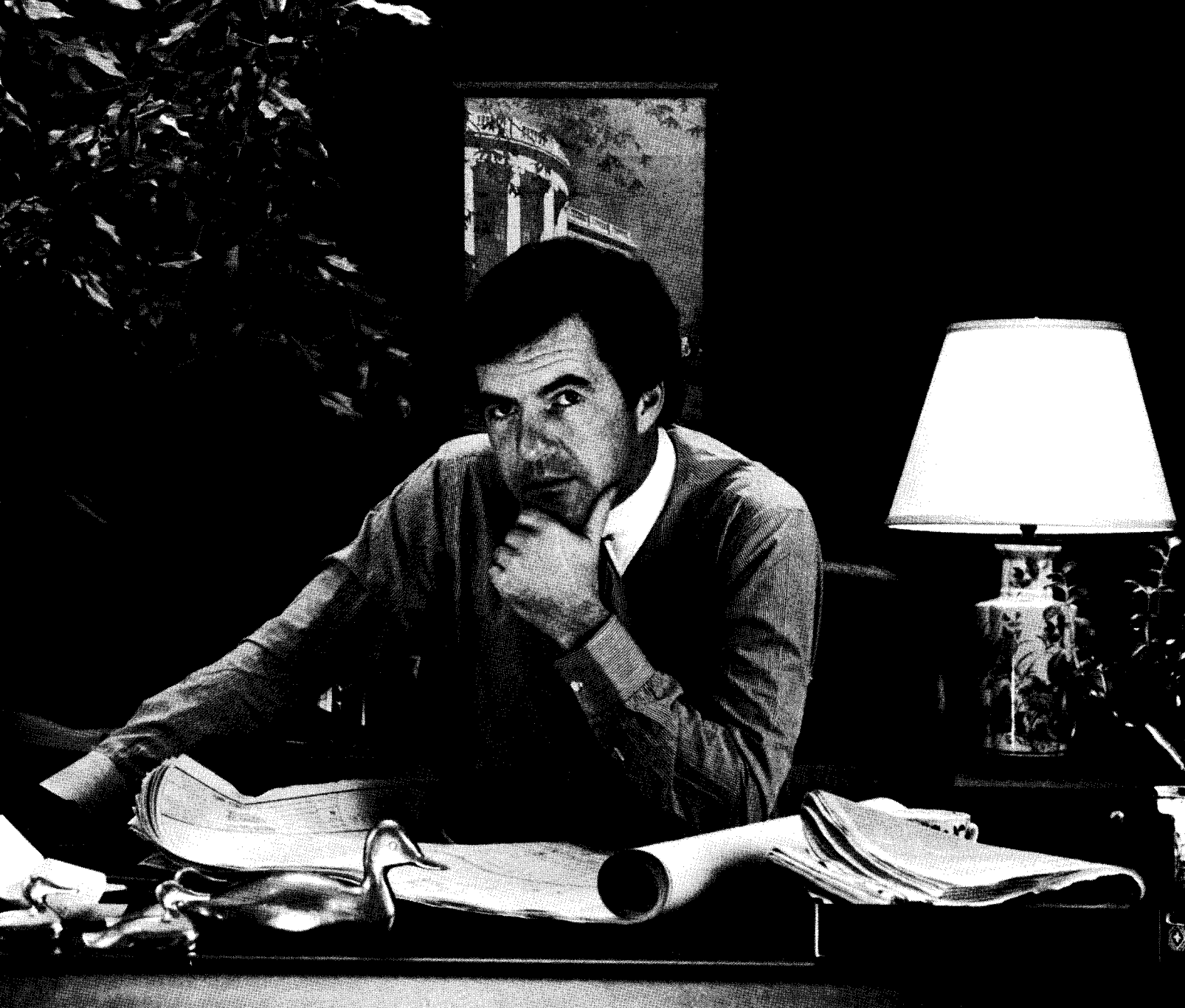
circle 300 on inquiry card

Adjustable wood office chair

The Martin Stoll Collection/H offers a handsome wood office chair, with seat and back of solid beechwood, and steel parts varnished brown or black. The back rest can be fixed by pressing a lever under the seat, and the height of the back rest is adjusted by pressing a button on top of the frame behind the back rest. The seat height can be altered by means of a gas-filled cylinder or mechanical control (depending on model design). Eight models are offered, with and without casters. ■ Harter Corp., Sturgis, Mich.

circle 301 on inquiry card
more products on page 153





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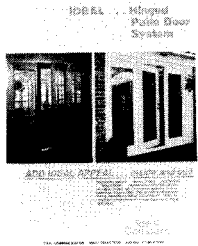
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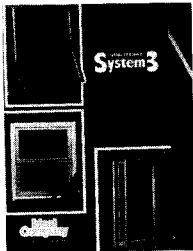
GLAZING / A six-page, pocket-sized booklet from G.E. provides recommendations on how to glaze with Lexan sheet products. Claimed to be 250 times more impact resistant than glass and 30 times greater than acrylic, these products are warranted against breakage for three years. Information on installation and maintenance is included. ■ General Electric Co., Pittsfield, Mass.

circle 400 on inquiry card



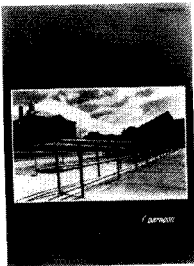
DOORS / Five color brochures illustrate doors and sidelights in a variety of styles. Shown are entrance doors, interior doors and patio doors with dimensions and specifications. Insulated patio doors are featured with details on insulation and hardware. ■ Ideal Woodwork, Waco, Texas.

circle 401 on inquiry card



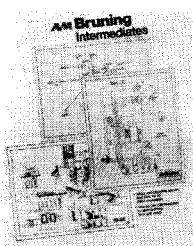
WINDOWS / A 12-page brochure describes components of "System 3" windows from Ideal. This line includes casement, awning, double-hung and picture windows. Sizes and sections of each are detailed; information on the glazing, lock, hinges and opening mechanism is also included. ■ Ideal Co., Waco, Texas.

circle 402 on inquiry card



RAILINGS / A booklet on standard rail assemblies of stainless steel for architectural use both indoors and outdoors describes modules of any length or configuration. Manufactured by Perma Rail, a division of KDI Paragon, Inc., these modules are shipped ready for on-site joining. ■ KDI Paragon, Inc., Pleasantville, N. Y.

circle 403 on inquiry card



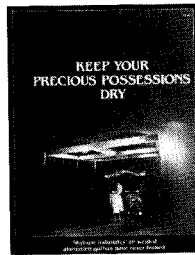
DIAZO INTERMEDIATES / A six-page color brochure tells how to save drafting time and reproduction costs through the use of reproducible intermediates. The techniques of masking, composites, and scissors drafting are illustrated. Included is a list of sepia and blackline paper and film materials for use with diazo engineering copiers. ■ AM Bruning, Itasca, Ill.

circle 404 on inquiry card



BARRIER-FREE DOORS / Methods to meet the demands for barrier-free environments and cost-effective implementation are described in this 16-page, four-color brochure. Featured are an explanation of the benefits of pneumatic door controls, a typical application chart, and suggested specifications. ■ Reading-Dorma Closer Corp., Reamstown, Pa.

circle 405 on inquiry card



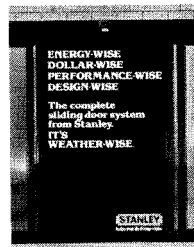
SKYLIGHTS / This four-page brochure describes dome- and pyramid-shaped skylights as well as a "Low Silhouette" series, all claimed to be leak-proof. Standard sizes and shapes are listed. Also included are sections to illustrate suggested installations. ■ Skylight Industries, Inc., Independence, Mo.

circle 406 on inquiry card



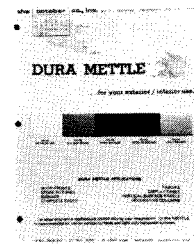
EXTERIOR INSULATION / A 16-page color brochure describes a product called "R-Wall," the use of which is claimed to result in greater thermal efficiency. Included in the brochure are insulation information, color and texture charts, as well as installation details and specifications. ■ ISPO USA, Inc., Mansfield, Mass.

circle 407 on inquiry card



AUTOMATIC DOORS / A 12-page color brochure on automatic sliding doors highlights such energy-saving features as pile insulation, adjustable sweeps and a switch which allows for either full or reduced opening widths. Options include remote monitoring and a scanner which opens the doors automatically upon sensing movement. ■ The Stanley Works, Farmington, Conn.

circle 408 on inquiry card



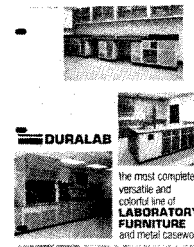
ANODIZED ALUMINUM / A laminating material designed for exterior and interior applications is described in this brochure. Called "Dura-Mettle," this material is available in six colors and comes in full-size sheets with widths of 24- and 48-in. and lengths of 96- and 120-in. It is also available in strips from 1/2-in. to 6-in. ■ The October Company, Inc., Easthampton, Mass.

circle 409 on inquiry card



WINDOWS / A four-color 1982 pricing catalog includes data on awning, casement and double-hung windows as well as patio doors. Featured are architectural renderings and specifications in addition to this company's line of window grills and miscellaneous accessories. ■ Windsor Wood Windows, Inc., West Des Moines, Iowa.

circle 410 on inquiry card



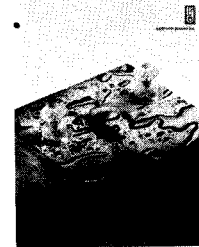
LABORATORY FURNITURE / A 20-page catalog gives dimensions and details of the entire Duralab line. Fume hoods are emphasized with illustrations of dimensions and mechanical diagrams of bench and walk-in models. Also featured is laboratory hardware such as sinks, faucets and valves. ■ Duralab Equipment Corp., Brooklyn, N. Y.

circle 411 on inquiry card



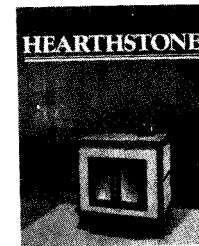
WINDOWS / A 16-page, four-color brochure describes custom-made windows available with double- or triple-glazing. Twelve steps of installing these windows are illustrated from initial measuring to final caulking. According to the manufacturer their double weatherstripped models register infiltration measurements up to ten times better than the standard. ■ Marvin Windows, Warroad, Minn.

circle 412 on inquiry card



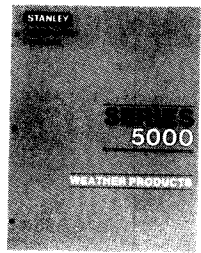
BATHROOMS / A 24-page four-color catalog details several lines of fixtures and their matching accessories. Included are specialty items such as Roman tub spouts and backplates and knobs in a variety of designs. Also included are descriptions of the full and the limited warranties. ■ Bathroom Jewels, Inc., Los Angeles.

circle 413 on inquiry card



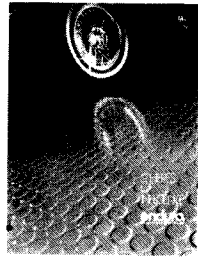
SOAPSTONE STOVES / A four-page book describes the mechanics and advantages of woodburning stoves made of soapstone. These stoves are claimed to retain heat longer than any other substance suitable for stove construction. Operating instructions, specifications and a description of a five-year warranty are included. ■ The Hearthstone Corp., Morrisville, Vt.

circle 414 on inquiry card



WEATHERPROOFING / A packet of brochures on Series 5000 products includes information on seals, door sweeps and thresholds. Each brochure contains dimensions and diagrams of applications. Also included are test results of each product and ordering information. ■ The Stanley Works, New Britain, Conn.

circle 415 on inquiry card



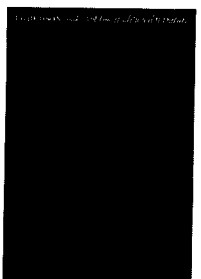
RUBBER TILES / A four-page color brochure describes a studded floor tile for residential and contract use. Tiles are available in two styles (one with higher studs than the other) and in eight colors. Included is information on installation and maintenance as well as data on resistance to acids, solvents, oils and petrochemicals. ■ American Bilrite, Inc., Chelsea, Mass.

circle 420 on inquiry card



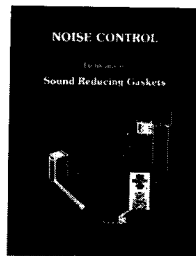
FURNITURE / Five color brochures from Olivetti describe their series of office furniture from stackable chairs to walnut desks to upholstered partitioning panels. Model office configurations are photographed to give an idea of the possibilities for coordinating a variety of elements. Also shown are fabric samples in available colors. ■ Olivetti Synthesis, Milan, Italy.

circle 425 on inquiry card



FURNITURE / Chippendale tables, English game tables and Wellington chests are among the 18th-century reproductions photographed and described in this catalog. The materials used are mahogany and English Yew woods. Information includes dimensions and catalog numbers for ordering. ■ E.G. Hudson Ltd., Sussex, England.

circle 416 on inquiry card



NOISE CONTROL / A 16-page booklet covers the elements of sound transmission. Frequencies and decibels are diagrammed and sound transmission loss (STL) and class (STC) are discussed. Emphasis is placed on the effectiveness of sound reducing gaskets in controlling noise. Three gasket systems are diagrammed in detail. ■ Zero Weather Stripping Co., Inc., Bronx, New York.

circle 421 on inquiry card



APPLIANCES / An eight-page color brochure features major household appliances. Covering ovens, ranges, refrigerators, washers and dryers, the publication includes photographs and product features, as well as warranty, service and distribution information. ■ White-Westinghouse Appliance Co., Pittsburgh, Penn.

circle 426 on inquiry card



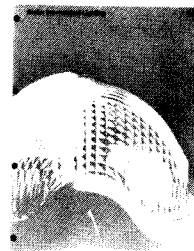
WINDOWS / A packet of literature describes their CARDA line of windows. Included are specification data; head, jamb and sill sections, and installation instructions. Double-glazed windows are claimed to provide not only thermal insulation, but insulation from "airborne sounds." ■ A.O. Stilwell Co., Inc., Buffalo, New York.

circle 417 on inquiry card



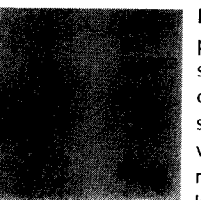
PANELS / A 12-page color booklet provides photographs and drawings of SMC's aluminum and steel siding and roofing panels. Wind load tables are included on each model as well as specifications and dimensions. Information on brake metal flashings and structural framing systems is included. ■ Span Metals Corp., Dallas, Texas.

circle 422 on inquiry card



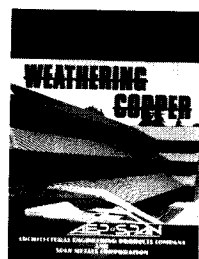
LIGHTING / A ten-page brochure from Atelier International introduces two new models called "Splügen Brau" and "Teli." These fixtures are photographed, diagrammed and described as are the rest of the collection. Specifications and prices are included. ■ Atelier International, Ltd., Plainview, New York.

circle 427 on inquiry card



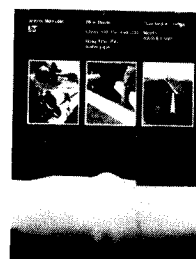
LOADING DOCKS / A ten-page brochure describes dock structures, dimensions and accessories. Included is a special section on space planning which presents diagrams of roadway and yard approaches. In addition, a separate page gives specifications for pit-installed, free-standing and edge-of-dock levelers. ■ Blue Giant Equipment Corp., Buffalo, New York.

circle 418 on inquiry card



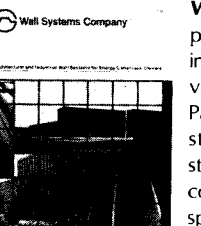
COPPER ROOFS / A four-page, four-color brochure describes the applications of a coating which, after weathering, assumes the appearance of sheet copper roofing. For use on metal substrate roofing, this product is made from copper particles suspended in a water-base acrylic resin. ■ AEP/SPAN, Dallas, Texas.

circle 423 on inquiry card



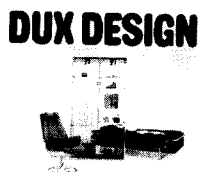
PIPES / A six-page color brochure describes the advantages of a lightweight pipe for use in water distribution systems and firelines. Details on pressure classifications, laying lengths and corrosion resistance are provided with tables on pipe dimension and flow characteristics. ■ Johns-Manville, Denver, Colo.

circle 428 on inquiry card



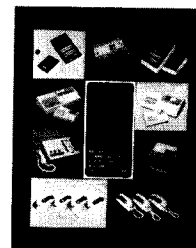
WALL SYSTEMS / An eight-page color brochure describes insulated panel systems for a variety of building applications. Panels are made of galvanized steel, aluminum, aluminized steel or weathering steel. They come in eight standard colors; special colors are available on request. ■ Wall Systems Co., Newton, Mass.

circle 419 on inquiry card



SWEDISH DESIGNS / A 100-page book of color photographs and descriptions from Dux covers not only this Scandinavian supplier but other products distributed through the company. Claiming quality as their common denominator, products from glass to beds are showcased in model interiors. ■ Dux, Lodi, New Jersey.

circle 424 on inquiry card



INTERCOMS / A two-color catalog details the complete Bogen line of intercoms. Included is a guide which shows possible system combinations. Also described are the operation of each model, accessories, and features such as hands-free reply, call announcement by light and/or tone, and weather-proof speakers. ■ Bogen, a div. of Lear Siegler, Inc., Paramus, New Jersey.

circle 429 on inquiry card

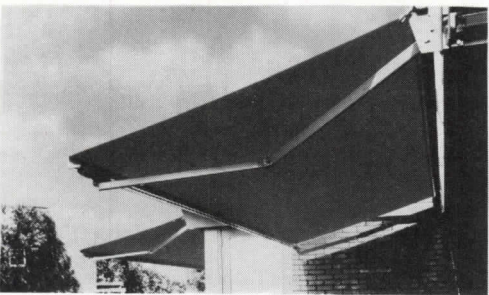


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METERING FAUCET / The "S-4122" metering lavatory faucet from Speakman features a new body design, with complete external adjustment capability. The time setting may be changed without shutting off the water supply. A similar model, with a four and 13/16-in. spout, will also be available. ■ Speakman Co., Wilmington, Del.

circle 302 on inquiry card

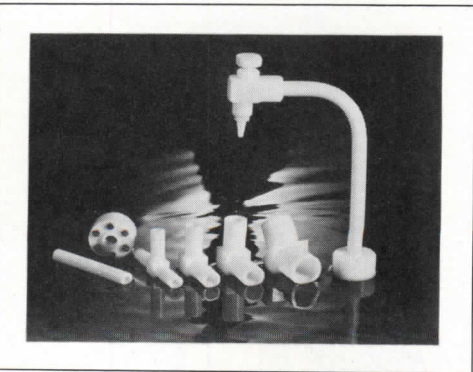


EXTERNAL SUN CONTROL / Totally retractable and self-storing, external shading systems reduce solar heat gain up to 84 per cent while creating a softly lit, cooler interior. Shown here is the "4200" roll-up awning, with lateral arms that can be extended up to about 10 ft. This permits maximum headroom and horizontal projection over patio, terrace or sidewalk. Durable, made-to-measure acrylic awnings are available in solids and stripes. Operation may be either manual or electric. ■ Levolor Lorentzen, Inc., Lyndhurst, N.J.

circle 303 on inquiry card

TAPE MEASURE / Marketed for construction professionals, Stanley's "34-420" 100-ft long fiberglass tape will stand up to abrasion, solvents and working conditions where steel tapes are not ideal. Pliable and easy to rewind on a large reel with a long crank, the blade resists stretching and is said to be more accurate than a cloth tape. It comes with 1/8-in. graduations in black and red foot markings contrasting on a white blade. ■ Stanley Tools, New Britain, Conn.

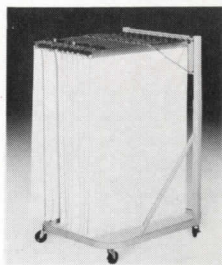
circle 304 on inquiry card



PIPING ULTRAPURE WATER / Made of homopolymer UHMW polyethylene with no added modifiers to leach into aggressive ultrapure water, *Purpipe* piping and faucets can carry Type 1 water throughout hospital, university, and industrial research laboratories without fear of contamination. Unbreakable *Purpipe* is said to cost less than tin lined, stainless steel, glass or *Teflon* piping, and will not produce toxic gases in fire. ■ Hydro Ultrapure Water Systems, Durham, N.C.

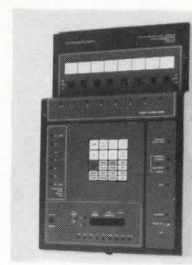
circle 305 on inquiry card

DOCUMENT FILE / Safco's "Vertical Filing System," a new product in their graphic arts storage line, is said to offer efficient, easily adaptable filing for sheet materials such as plans, maps, charts and large documents. Hanging clamps hold sheets individually or in bulk without punching, stapling or otherwise damaging them. There are pivot and drop/lift wall rack units, as well as the mobile stand shown here. All are constructed of heavy gauge welded steel with a Tropic Sand baked-on enamel finish. ■ Safco Products Co., New Hope, Minn.



circle 306 on inquiry card

LOAD PROGRAMMER / The "Basic 8A" load programmer can reduce the energy consumption of eight load groups through simple scheduling of on, off, and duty cycle events. Operating a keypad, a user may program each load with a unique schedule for each day of the week or holiday. The unit's 365-day clock provides advance programming of a year's holidays and daylight savings time dates. ■ Pacific Technology, Inc., Renton, Wash.



circle 307 on inquiry card

more products on page 155

Who says a binder, bracket and rolling stand make a graphic storage system?



We don't.

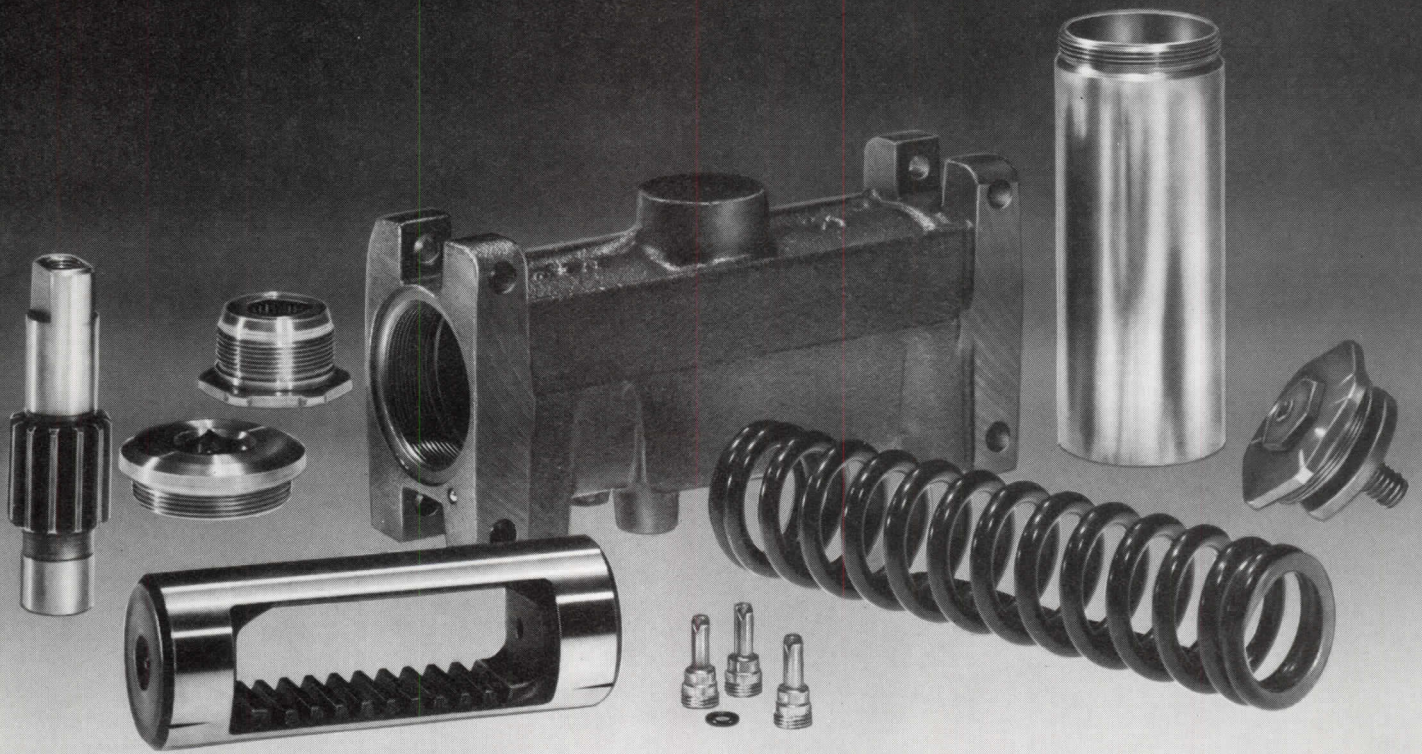
Plan Hold has a multitude of solutions... systems for bulk, single sheet and roll filing that are as diverse as your graphic storage problems. Check out our line! Write for a free catalog today. Or, call us to see a Plan Hold Graphic Storage Expert.



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80% of a door closer's working parts are inside the cylinder, out of sight. It's time you see what you pay for.

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Your LCN representative will provide you with a close-up look at the outside and inside of LCN door closers. Circle the Reader Service number or write LCN to arrange for a demonstration.

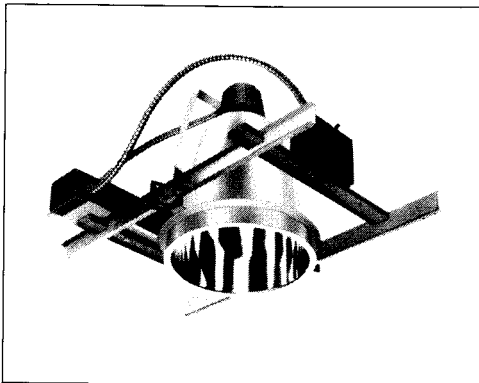
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LCN Canada, Mississauga, Ontario L5G 4L5 416/278-6128



It's time you see what you pay for

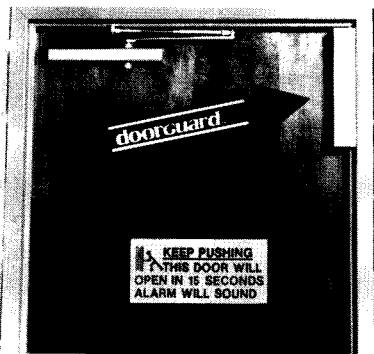
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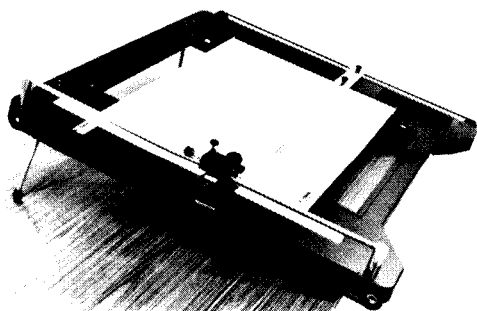
RECESSED DOWNLIGHTS / For offices and commercial applications, the HID "Pointline" series of recessed open reflector downlights and wallwashers includes seven energy-efficient fixture types that provide high light output over a wide angle with low glare. Heat from the light source has been reduced in two ways: a porcelain lamp socket in a die-cast heat sink dissipates heat, and an integral ballast isolated from the fixture reduces noise and heat build-up. ■ Keene Corp., Wilmington, Mass.

circle 308 on inquiry card



TIME DELAY SAFETY LOCK / Electrically-operated "doorGuard" locks control egress and ingress on emergency exit doors, delaying exit through the protected door for 15 seconds, or the timing delay prescribed by the local jurisdiction. An alarm sounds from activation until the "doorGuard" single door system is relocked; multi-door installations provide for an additional alarm at a central Sentry Station Console. The "doorGuard" releases instantly when central fire or smoke alarms are triggered. The device operates within the provisions of the 1981 NFPA Life Safety Code-101, for "Special Locking Arrangements." ■ Reliable Security Systems, Cockeysville, Md.

circle 309 on inquiry card



ROTATING ART BOARD / Intended as an aid in pasteup, layout, forms design and other artwork, the "Rotobord Planner" features a new adjustable spacing mechanism for its horizontal rule, and a drawing surface capable of accurate 90-deg rotations. The desktop, portable unit has an 18- by 24-in. surface that can be backlit with the optional "A4+" lighting unit. List price: \$600. ■ Zi-Tech Div., Aikenwood Corp., Palo Alto, Calif.

circle 310 on inquiry card

more products on page 157

Remember when driving was fun?



The MG-TD Replica
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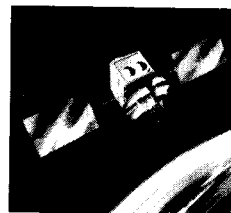
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HOW TO MEET Code Requirements FOR Elevator Separation

THE CODES SAY

UNIFORM BUILDING CODE — Section 1807(h)1. Except for the main entrance level, all elevators on all floors shall open into elevator lobbies which are separated from the remainder of the building as is required for corridor construction in Section 3304(g) and (h).

BASIC BUILDING CODE — Section 629.8 Third sentence. "Except for the main entrance level, all elevators shall open into a lobby (which may serve additional elevators) separated from the remainder of the building by one hour fire-resistance rated construction."

STANDARD BUILDING CODE — Section 506.6 (α)1 Second paragraph. "Except for the main entrance level, all elevators on all floors shall open into elevator lobbies which are separated from the remainder of the building as required for exit access corridor construction in Chapter 7".

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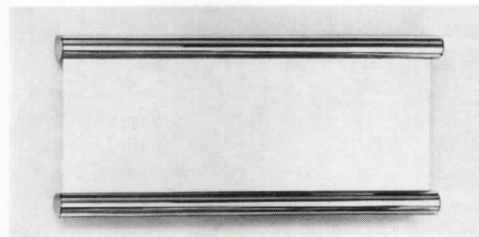
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SILICONE SOLAR HOSE / Available in standard diameters to fit most collector headers, silicone solar hose permits easy collector-to-collector connections while eliminating alignment problems. The internally ribbed hose creates a permanent expansion joint, and prevents leaks caused by thermal expansion/contraction fatigue. Hose withstands temperatures to 500 F, and when clamped, pressures to 500 psi. ■ Chase-Walton Elastomers, Inc., Hudson, Mass.



circle 311 on inquiry card



WALL MIRRORS / Offered in rectangular shapes up to 50-in. wide, Paul Mayen's glass mirrors are invisibly reinforced, and held in place top and bottom with 3-in.-diameter tubular frames. The back of top frame is slotted for easy hanging. ■ Architectural Supplements Inc., New York City.

circle 312 on inquiry card

FIRE ALARM BOX / Housed in a Lexan case, model "532" is a new non-coded, dual action manual pull station that is also operable with a phenolic break rod. The alarm latches mechanically and can be reset with a (supplied) hex wrench. It also contains an SPST switch rates at three amps, 125-Volts. Box is bright red with white lettering. ■ Ademco, Syosset, N.Y.



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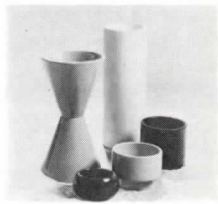
ROUND TOP WINDOW / A full line of round top windows is available, constructed of Ponderosa pine in standard or custom jamb sizes. The laminated frame will accept a stain and varnish or paint finish. Glazing options include 1/2- or 1-in. insulated glass or triple-glazing. An optional starburst or similar design is offered in true divided



lite layouts, or a similar effect can be created with grids or non-removable spokes. Direct glazing or glazing in 3/4- or 5/4-in. sash or 5/4-in. storm sash are available. ■ Marvin Windows, Warroad, Minn.

circle 314 on inquiry card

CERAMIC PLANTERS / Large-scale planters from Architectural Pottery are now offered in five new high-gloss glaze colors: aqua, burgundy, salmon, desert sand and forest green. Another product line, Stoneware planters, is offered in popular earth tones. ■ Architectural Pottery, Manhattan Beach, Calif.

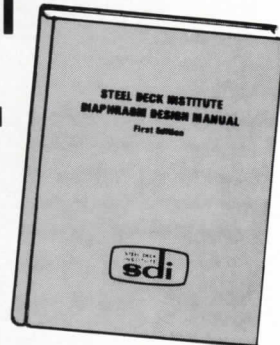


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more products on page 159

Announcing the publication of the Steel Deck Institute

Diaphragm Design Manual



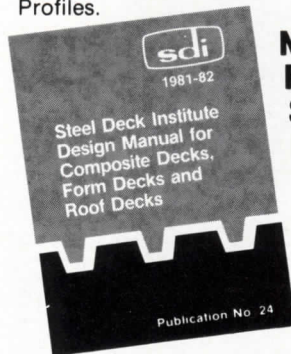
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Solar Architecture



Lord & Burnham
just revolutionized
the greenhouse

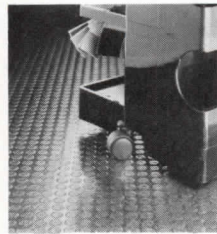
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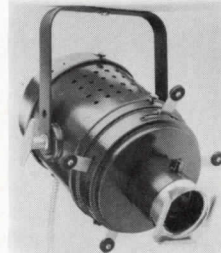
RAISED DISK FLOORING



Said to be this maker's most durable commercial floor, "Crosswalk" sheet vinyl flooring has raised disks textured with mineral aggregate to provide slip retardance even when wet. The .100-in.-gauge flooring is recommended for such heavy traffic areas as lobbies, airports, ramps and commercial kitchens. "Crosswalk" meets Federal fire hazard regulations, and has a safe load limit of 125 lb per sq in. The contrast between textured, raised disk and smooth background provides a shaded, two-tone effect. Flooring is available in five colors: black onyx, chestnut, mouse, terra cotta, and gray sand. ■ Armstrong World Industries, Inc., Lancaster, Pa.

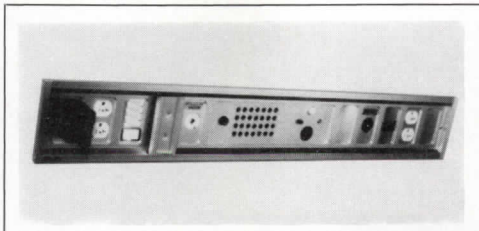
circle 316 on inquiry card

FRAMING PROJECTOR



A low maintenance, high output HID unit, the "Casino Light" has primary application for atriums, museums, gaming tables and other specialty lighting. It offers the optical qualities of a theatrical framing projector, with the advantages of an energy efficient 250-Watt HID lamp. The controlled hard edged beam varies from 11-64 deg, and from 20,000- to 130,000-candlepower, depending on lens selected. Fixture weight is 30 lb; ballast weight is 20 lb. ■ ARC Sales, Inc., Salem, Mass.

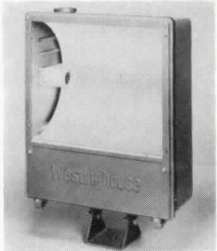
circle 317 on inquiry card



An economy model intended for low-cost placement of services in newly constructed general patient rooms, the *Electro-Pak* horizontal strip console consolidates medical gas, electrical, communication and other services in a single prefabricated assembly. Its modular design permits custom planning for a specific project: a single console, for example, will accommodate from two to 21 separate services. ■ Electro/Systems, Edina, Minn.

circle 318 on inquiry card

RECTANGULAR FLOODLIGHT



From Westinghouse, the "HRF400" floodlight offers a horizontally-mounted lamp with optional reflectors for applications that demand cut-off and/or shallow beam control. The fixture uses either hps or mercury lamps up to 400-Watts, and is UL-listed for wet locations. Features include a heavy-duty cast aluminum housing and door, and an impact-resistant lens sealed into the door to exclude contaminants. ■ Westinghouse Electric Corp., Pittsburgh, Pa.

circle 319 on inquiry card

more products on page 161

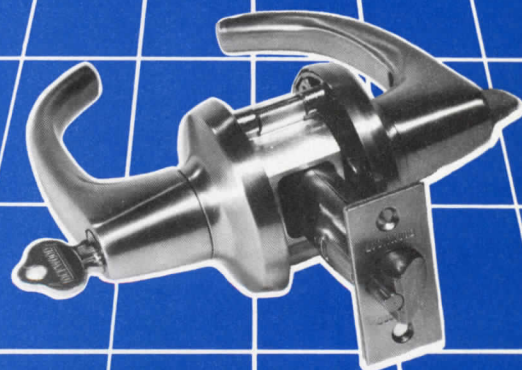
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EGRESSER™

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The new NFPA Life Safety Code demands a new generation of exit signs. The Egresser from Crouse-Hinds utilizes high technology state-of-the-art design that enables it to meet and exceed NFPA Life Safety Code 101 (1981) requirements while saving energy.

NFPA Code Conformance

Most signs on the market today cannot meet the new code criteria. The Egresser, while operating in its AC mode, is actually 1.9 times brighter than NFPA standards. More importantly, Egresser is 7.7 times brighter than required at the start of the emergency DC mode. Egresser just doesn't quit. After 90 minutes of emergency battery powered operation, Egresser is still 6.1 times brighter than code requirements.

Think About It

While most conventional signs become dimmer in the critical emergency power mode, Egresser becomes brighter. Think about it for a minute. Egresser will provide more light to identify the exit when visibility is limited by smoke. In a fire-related emergency, that required fast egress from the building, what sign would you want over the fire exit?

Energy Savings

Most conventional signs consume approximately 40 watts of AC power. The Egresser uses only 5 watts. Based on a KWH rate of \$.08, each Egresser can save over \$24 a year in energy costs.

Take a look at a typical 2-story, 36,000 sq. foot office building that has 24 signs. With conventional signs the annual operating costs would be \$672. That same building utilizing Egressers would cost the owners \$84.09 to operate the exit signs 24 hours a day annually. Egresser offers \$587.91 in savings for the owners of that 36,000 sq. foot building.

Compact Design

Along with its outstanding performance, Egresser offers a non-obtrusive design. Only 5/8" wide from the bottom to the top of the sign face, for both single and double faced models, Egresser looks as good as it performs.

Egresser . . . It's the best way out. For your free descriptive brochure, write Crouse-Hinds Company, Lighting Products Division, P.O. Box 4999, Syracuse, New York 13221



CROUSE-HINDS

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EXIT

READ
ALL
ABOUT
IT.

AGAIN
AND
AGAIN
AND
AGAIN.

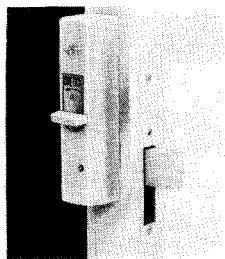
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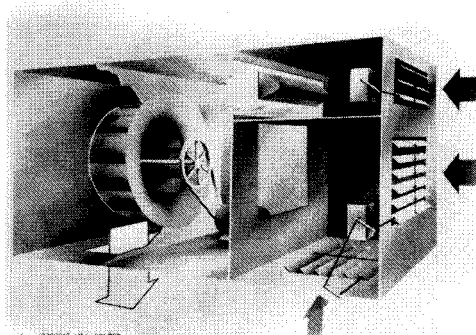
ELECTRIC DEADLOCK / The "Series 7700" electric actuator is installed



on the interior of a narrow stile commercial door in place of a standard mortise key cylinder or thumbturn, and operates any Adams Rite M.S. deadlock by 24-Volt DC current. Options include normal key operation

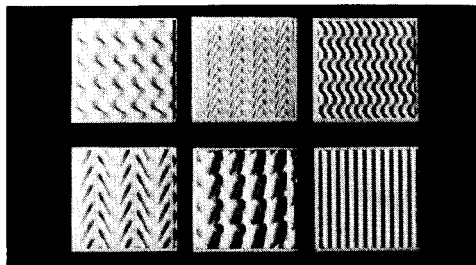
from the opposite side, and a mechanical thumbturn (shown), which allows egress in case of power failure. An LED in the face of the unit signals locked or unlocked status by glowing red or green. ■ Adams Rite Mfg. Co., City of Industry, Calif.

circle 320 on inquiry card



INDUSTRIAL HEATER / Said to be an improvement on direct fired heaters, the "Rapid 3000" claims a 20-40 per cent energy savings over conventional heating systems by combining a new type of air mixing system with a back fan and variable-flame-length burner. Using all-outside-air for burner combustion, the unit produces clean, low-temperature heated air. ■ Rapid Engineering Inc., Grand Rapids, Mich.

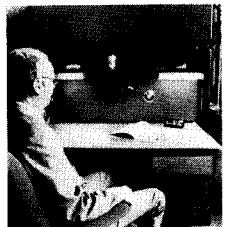
circle 321 on inquiry card



SCULPTURED CEILING TILE / Rigid, lightweight "Sculp-Tile" has a low thermal conductivity, which remains effective over a broad temperature and humidity range. It will not be ruined by brown water spot leakage. Tiles come in a white reflective color, and may be painted with latex paint; they will not rot or decay, and are easily cleaned with soap and water. ■ Pak-Lite Inc., Doraville, Ga.

circle 322 on inquiry card

TASK LIGHTING / An addition to the *Indalux* line



of low wattage, glare-free luminaries for maximum seeability, compact and portable "Task Twins" are said to be ideal for use under cabinets and shelving, on walls and partitions, or freestanding on tables or desks. Lights come with either 15- or 25-Watt V-shaped fluorescent lamps, and are especially efficient in reducing veiling reflections. Freestanding models have a 7½- by 5-in. base, and are 16½-in. high. ■ J.H. Spaulding, Cincinnati, Ohio.

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your seat and back. Even the tubular steel frame is designed curve for curve. Plus, the thick sintered synthetic coating that protects our seating from the ravages of time and weather acts as a protective layer for you as well.

So, the next time you specify outdoor furniture, choose Kroin. The seating with a softness that's hard to believe.

Circle 3 on inquiry card

At first glance it's hard to imagine that steel and wire outdoor furniture could be anything other than uncomfortable.

In fact, unless that seating is from the Kroin Series of Park and Garden Furniture, your first impression would be accurate.

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