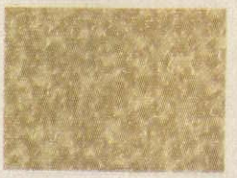
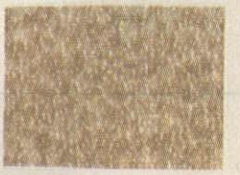
Progressive Architecture

October 1973 A Reinhold publication

Parkitecture

A floor that's practical, quiet, and comfortable can also be beautiful. Quiet Zone™ proves it.





What's so practical about Quiet Zone?

A heavy-duty wear layer of Vinyl Corlon® stands up to heavy-duty traffic. We've even reinforced it with a tough layer of glass-fiber-reinforced vinyl to resist impact damage. And virtually non-porous vinyl has excellent stain resistance. Spills wipe right up. That's what's so practical about Quiet Zone.

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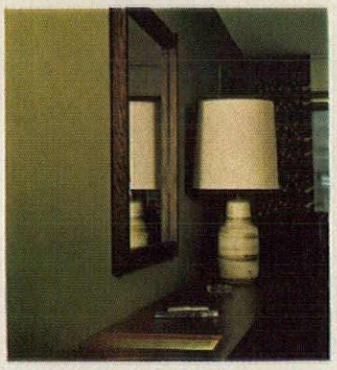

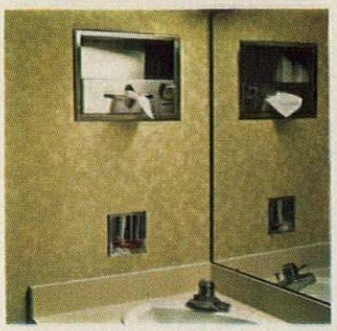

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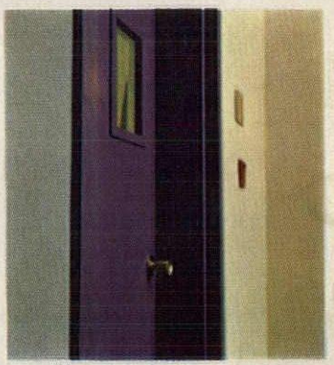

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ABP ABC

October 1973

Progressive Architecture

Parkitecture

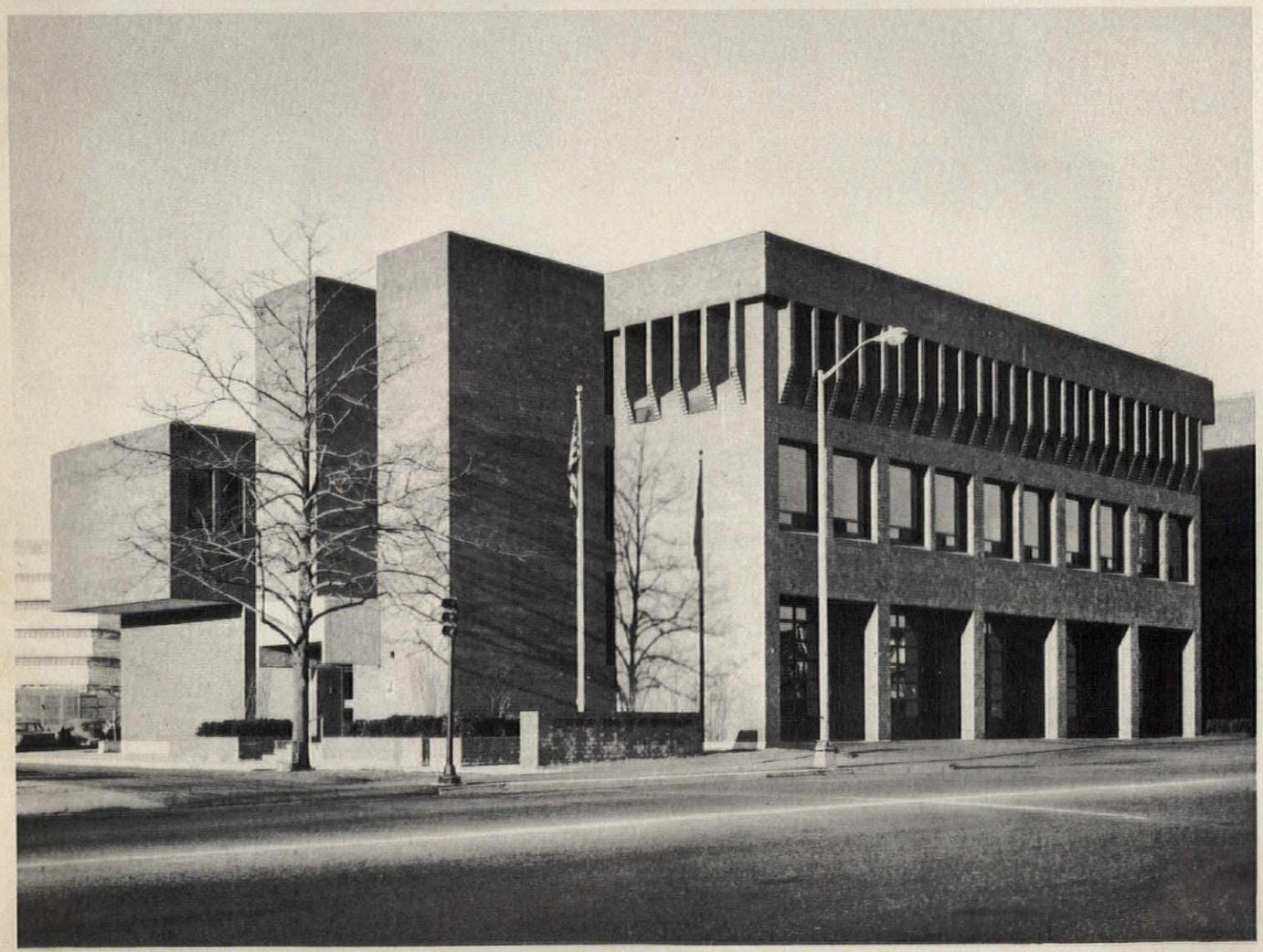
Cover: Community pop art mosaics cover a bench sculpted by Pedro Silva at Grant's Tomb Plaza, New York (p. 100); David Morton photo.

AN OFFICE PARK NEAR DENVER

GREENWOOD PLAZA, Englewood, Colo.—This is one of three main buildings of similar design that set the esthetic level of this campus-like office park. The 134-acre site also includes four other buildings completed three more under construction for a diversity of tenants. Dover Elevators are used exclusively. DEVELOPER: The John Madden Company, Denver. ARCHITECTS: Kirkham-Michael & Associates, Omaha. Elevators and dumbwaiters installed by Dover Elevator Company, Denver.

A FIRE HEADQUARTERS IN STAMFORD

CENTRAL FIRE HEADQUARTERS, Stamford, Conn.—The feeling of stability appropriate to an essential public service is strongly stated in the design of this building. Serving as a combination headquarters and fire station, it is an exciting architectural addition to downtown Stamford. Administrative offices are served by an economical Dover pre-engineered elevator. OWNER: City of Stamford. ARCHITECTS: Weinreich & Masciarelli, Stamford. GENERAL CONTRACTOR: A. F. Conte & Co., Inc. Dover Elevator installed by Eastern Elevator Co., New Haven, Conn.



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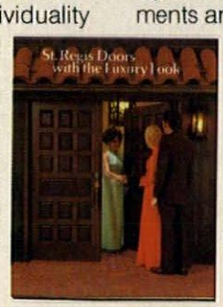

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ST REGIS

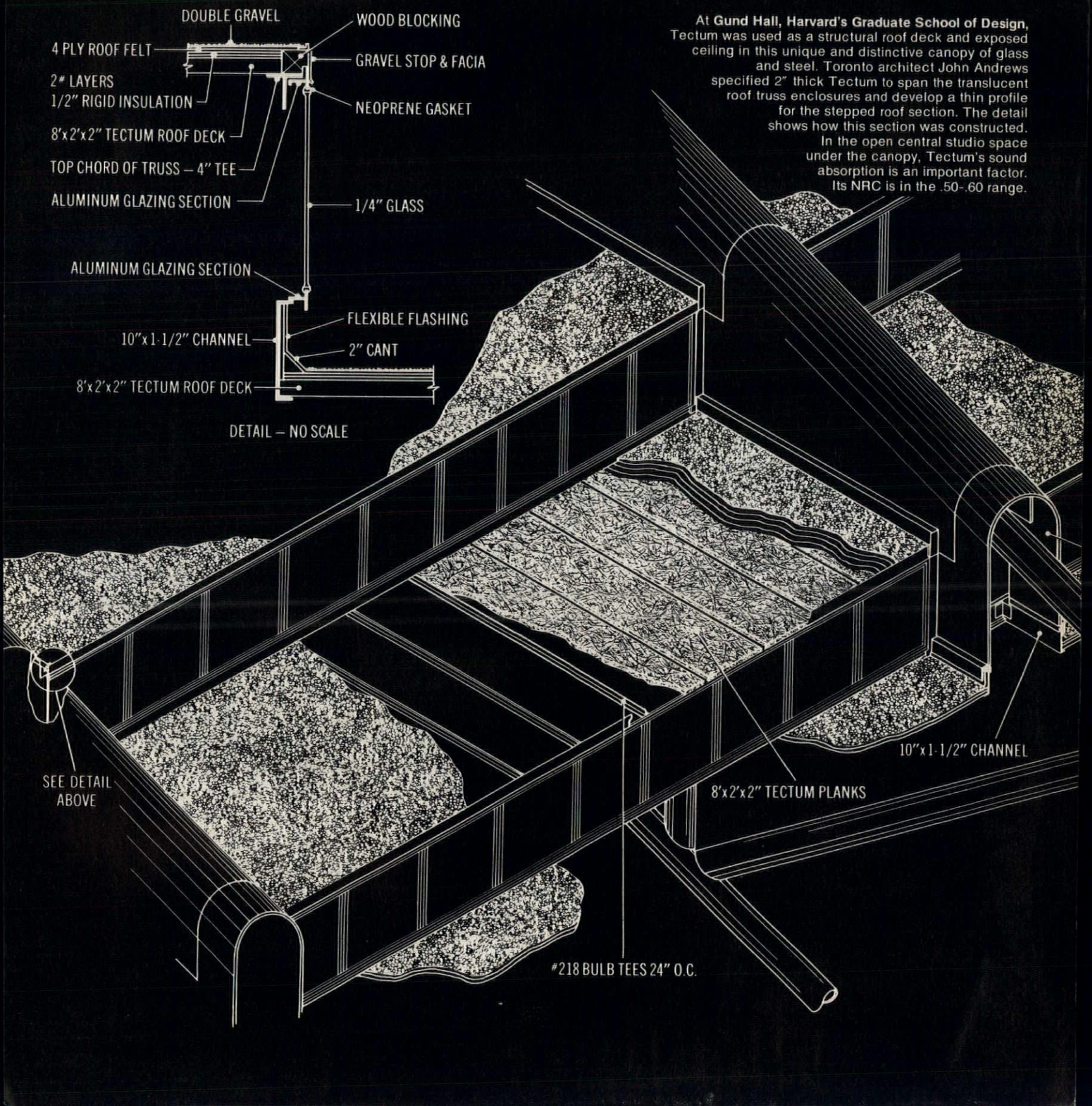
People in P/A

Whitley-Whitley, Inc. (p. 88)
Before forming their own office of architecture and planning in 1963, the Whitley's—William, Joyce and James (l to r, bottom, in office photo right)—practiced in other offices. After graduating from Kent State University and studying at Leicester University in England, James worked as designer for Keith Haag Associates in Cleveland. A few years after William finished at Kent, he served in Africa as Chief Designer for the Cleveland firm of Dalton & Dalton Associates, where he designed 16 schools for the Sudanese government. Joyce took master's degrees from the University of Chicago (city and regional planning) and from Western Reserve University (sociology), and also studied at IIT. She was previously Chief Planning Advisor for HUD's Model Cities Administration, and now serves on the visiting committee at Harvard's Graduate School of Design, and on the president's commission for Howard University's School of Architecture and Planning.

Gassner Nathan Browne, Inc. (p. 64)
Gassner Nathan Browne Architects and Planners, Inc. was founded by Francis Gassner in 1958 and Thomas Nathan joined the firm that same year. Robert L. Browne become a principal in 1960 and since then, James M. Evans and Claude Braganza have also become principals. The staff has grown to 24 and includes expertise in graphics, planning and urban design. Three GNB submissions have been selected for either awards or citations in past P/A Design Awards programs—just a few of many honors. While many projects have been in the educational field, the firm has also handled many commercial, residential and religious projects.

The partner in charge of the Reelfoot Air Park is Francis Gassner, FAIA, who received his B.Arch. from Carnegie Institute of Technology in 1952. He is past chairman of the AIA Committee on Aesthetics, and a member of both the national AIA Jury on Institute Honors and the national AIA Committee on Arts and Architecture for Recreation.

Tectum: decorative, insulating,

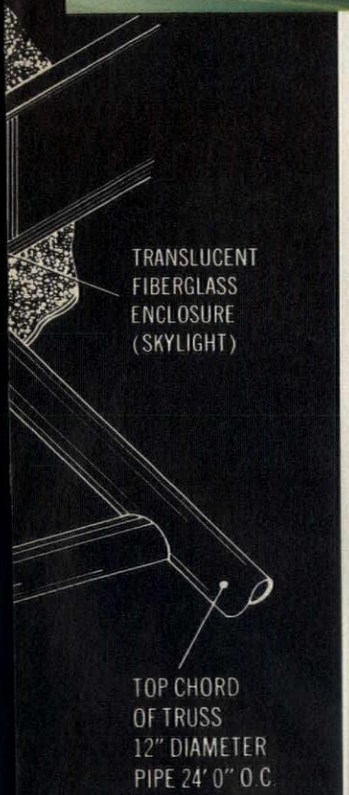


At **Gund Hall, Harvard's Graduate School of Design,** Tectum was used as a structural roof deck and exposed ceiling in this unique and distinctive canopy of glass and steel. Toronto architect John Andrews specified 2" thick Tectum to span the translucent roof truss enclosures and develop a thin profile for the stepped roof section. The detail shows how this section was constructed. In the open central studio space under the canopy, Tectum's sound absorption is an important factor. Its NRC is in the .50-.60 range.

structural, acoustical, non-combustible.

Gund Hall Graduate School of Design, Harvard University, Cambridge, Mass.
Architects: John Andrews, Edward R. Baldwin and John Simpson, Toronto.
Structural Engineers: Le Messurier Associates, Boston.
Tectum Contractor: Bay State Structural Specialties, Boston.

Texture is the thing about Tectum, but not the only thing.



There's no end to the ways you can be constructive with Tectum Roof Deck. Look at the way it was used in Gund Hall, shown at left. As a structural material, Tectum gives the roof a thin, efficient section, and demonstrates impressive insulating values as well. In the two-inch thickness, resistance to heat transmission is 3.50. With its Noise Reduction Coefficient in the .50-.60 range, it soaks up sound. And with its rugged finish, Tectum looks good exposed.

The reason Tectum is so constructive is because of the way it's put together. An exclusive inorganic binder bonds long wood fibers into a compact sheet under heat and pressure. Like wood, it's easy to cut, shape and install. Unlike wood, it's rated noncombustible and Tectum has been given an uplift rating of Class 90.

Long Span Tectum Roof Deck

Tectum is also available in Long Span Tectum. This adaptation allows even greater areas of the exposed Tectum surface to remain unbroken by purlins. Tongue and groove edge of Long Span Tectum is designed for galvanized 16-gauge steel channels. These channels permit spans of up to 6′ for 3″, 5′ for 2½″, and 4′ for 2″ thick Long Span Tectum.

Like other Tectum Roof Deck, Long Span Tectum has factory-applied asphalt felt membrane, and is applicable to flat or pitched roofs with steel, wood or concrete framing.

So, for a good-looking way to cut roofing costs, why not cut down on the number of materials you use? With Tectum, or Long Span Tectum.

For more information, write Gold Bond Building Products, Division of National Gypsum Company, Dept. PA-103T, Buffalo, New York 14225.

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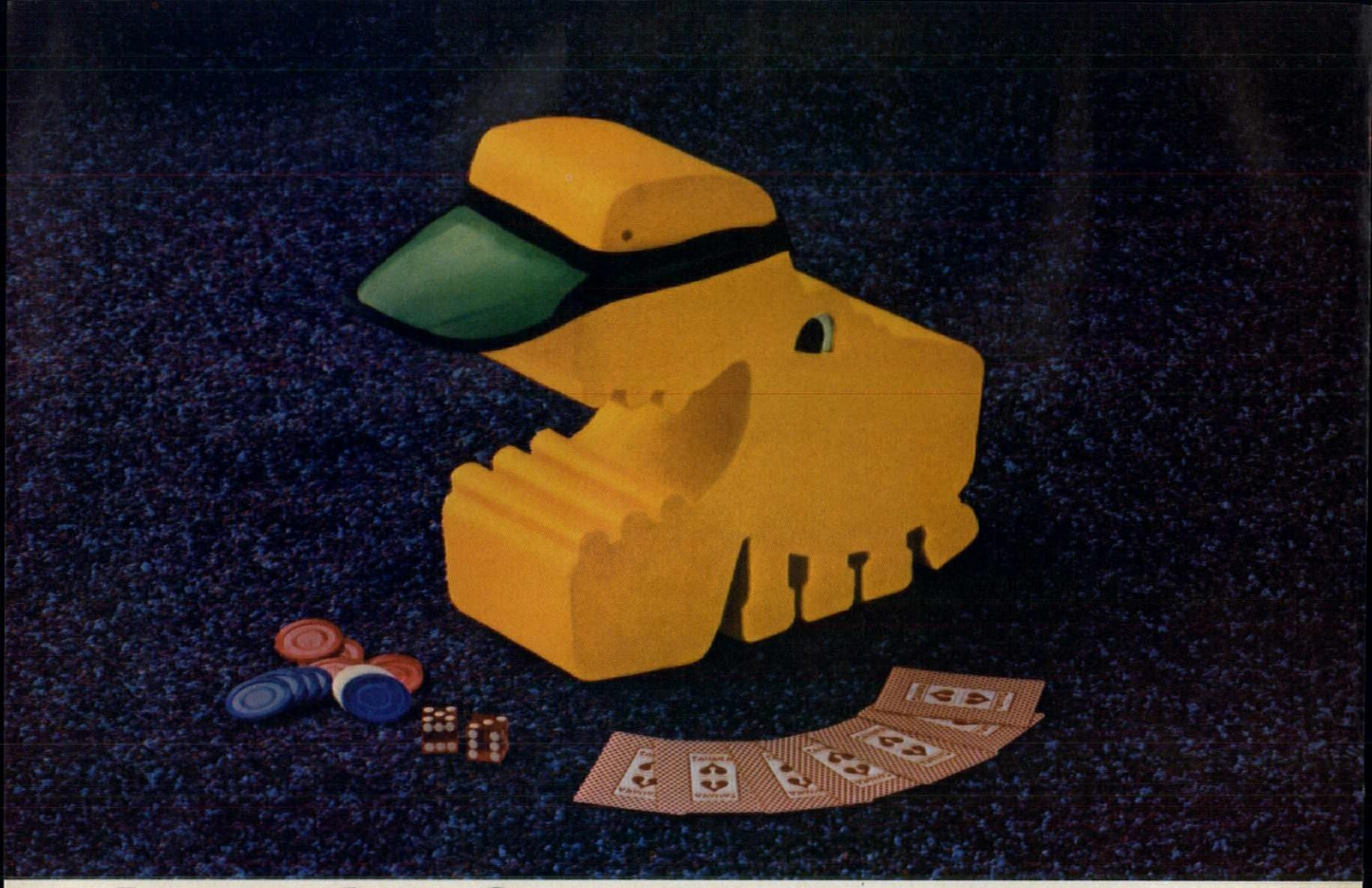

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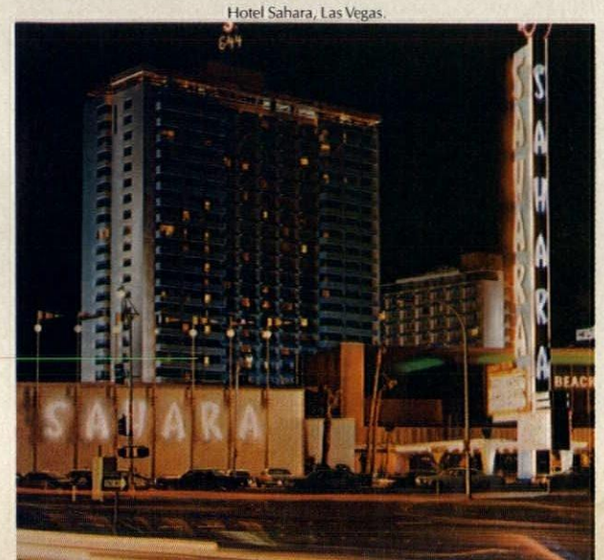


Views

On Aspen

Your editorial on the Aspen Performance was excellent and certainly to the point. Shelia de Bretteville's summation of designers as problem solvers as well as artists capsulizes neatly the current dichotomy in architecture.

Norman De Haan, AIA, FAID
Chicago

The P/A Building Cost File

The editors have received several requests for tear sheets of the P/A Building Cost File series to be mailed to individuals as they appear. While a limited number of tear sheets is available after publication of any issue, we cannot maintain a mailing list.

Plans are being made, however, to offer a physical file, complete with reprints of all the cost articles and the analyses, after the third in the series is published next February. Further announcements will appear in the December and January issues.

Reviewing a review

Your August issue contained a most unfortunate review of Robert C. Twombly's recent book *Frank Lloyd Wright, An Interpretive Biography.* I do not know Mr. Twombly but I am familiar with his subject and was surprised that your review should so disparage and misrepresent this book, the first comprehensive and scholarly biography to appear. The book offers a critical history based mainly on primary source material, listed and annotated in an impressive and useful bibliography.

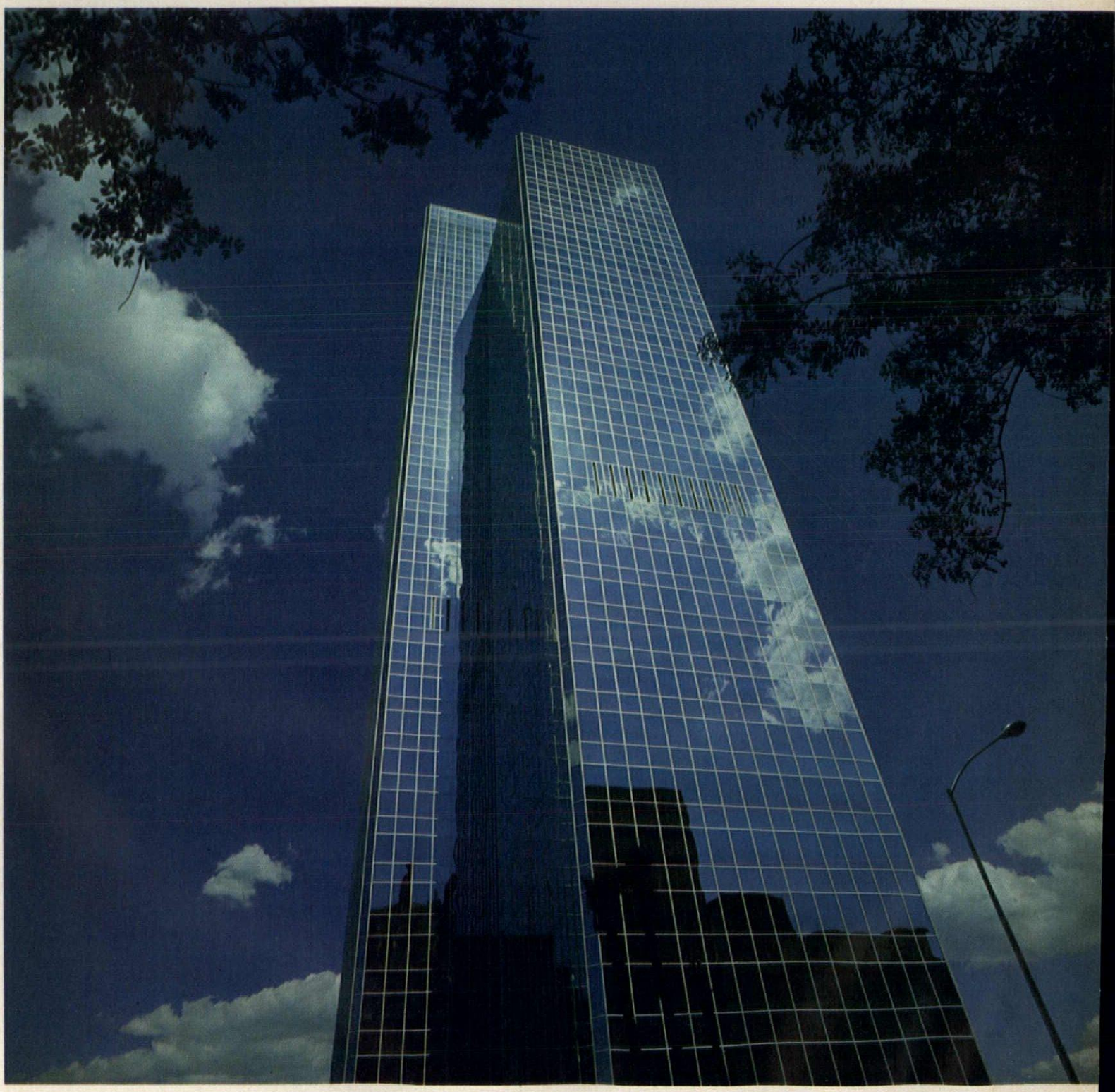
This is all pretty much shrugged off by Professor Leonard K. Eaton in his review. The book, he says, will "further confuse" and "further befog." There seems little point in taking issue with Professor Eaton in a line by line sort of way inasmuch as this letter will appear months after the review and as the problem is really the reviewer's curious disaffection with the book. Still it should be noted that Eaton is sometimes quite wrong—for instance, much is made of Twombly's supposed ignorance of the welded steel girders in the Robie House though this detail is mentioned in the book—and that Eaton is unfairly cynical when he insinuates variously that the book is sychophantic, sensational and popularist, none of which it is! Further, it is obviously absurd to suggest as Eaton does at length that Twombly is unaware of existing scholarship on Wright.

The point is that the author, a professional historian, chose to give his own reading of the primary source material, much of which he has unearthed and brought together for the first time and therefore he refers sparingly to other writers (though he does credit certain material to Eaton's own book on Wright).

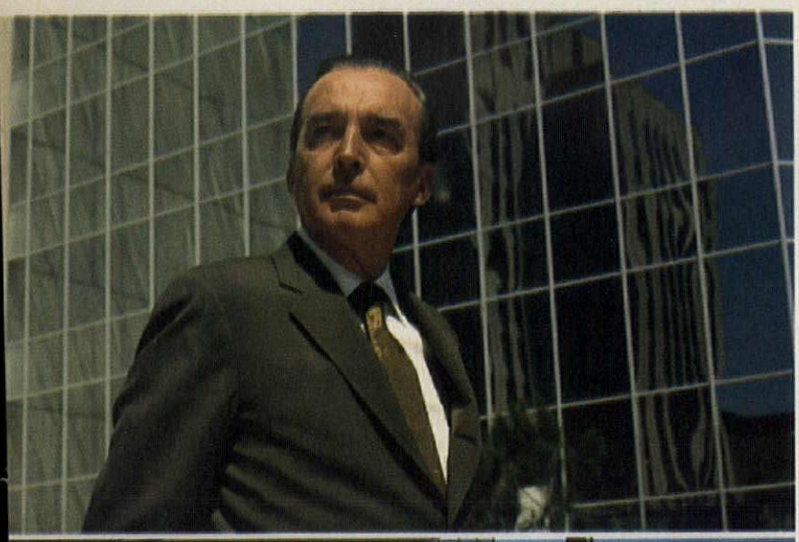
In conclusion, your jaundiced reviewer offers the extraordinary judgment that this "is not the kind of book on Frank Lloyd Wright we need." Rather I should say that this is not the kind of review *anyone* needs. It tells very little about the book or the subject, serving only to raise the irrelevant question as to why another Wright critic should seek to put a good book down.

David Roessler
Croton-on-Hudson, N.Y.

"THE REAL BEAUTY LIES IN THE REDUCTION



OF VARI-TRAN®
OF COOLING COSTS."



NEAL HOUGHTON, PROPERTY PLANNING AND DEVELOPMENT MANAGER, VALLEY NATIONAL BANK, PHOENIX, ARIZONA.

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If your next building could use this kind of beauty and energy-saving practicability, we'd be glad to help. For more information on Thermopane insulating units with Vari-Tran coated glass, write for our brochure, "Reach for a Rainbow," Dept. P-1073, Libbey-Owens-Ford Company, 811 Madison Avenue, Toledo, Ohio 43695.

Owner: The Valley National Bank Building, Inc. • Project Consultants and Leasing Agents: Cushman and Wakefield, Los Angeles. • Architects and Engineers: Welton Becket and Associates. • Contractor: Henry C. Beck Co., Phoenix. • Curtainwall Contractor: Cupples Products Div., H. H. Robertson Company, St. Louis, Mo. • Glazing Contractor: Gateway Glass Div., H. H. Robertson Company, St. Louis, Mo.

LOF

In senior citizens housing

Conventional, steel-framed high-rise apartment "beats" HUD guidelines by $100,000.

Owner: Manchester Housing Authority; architect: Isaak, Moyer, Walsh & Dudley; structural engineer: Albert Goldberg & Associates, Inc.; fabricator: Lyons Iron Works, Inc.; erector: Concrete Erectors, Inc.; general contractor: Davison Construction Company, Inc.

Generally speaking, Pariseau Apartments in Manchester, New Hampshire, is a plain, ordinary apartment building. The high-rise residential home provides low-rent housing for the elderly. Its construction was federally funded under The Housing and Urban Development program.

What makes the structure distinctive is the fact that it was built within the budget. None of the construction principals could think of another HUD structure in their area with a similar budget record. They lauded the fact that the building was constructed using conventional contracting methods as opposed to the more common "turnkey" method.

$100,000 within HUD guidelines

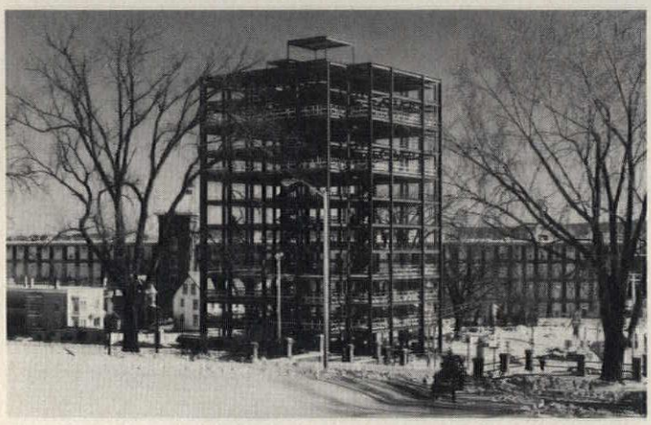
Said the architect, "all the others were 'turnkey' projects. This was one of the first HUD high-rise projects to be handled by a conventional contracting method that comes well within the budget. We estimate that we stayed within the HUD guidelines by more than $100,000. We accepted a challenge" he said, "and decided on the most economical, practical design."

The Housing Authority home for the elderly is part of a larger $3.5-million development known as the Flatiron Urban Renewal Project located on 21.6 acres in Manchester. Pariseau Apartments occupies 1.7 acres in the project. The structure incorporates 100 apartments surrounding a central core flanked by two stairways. There are 58 efficiency (studio-type) apartments in the building, 41 one-bedroom apartments, and 1 two-bedroom unit.

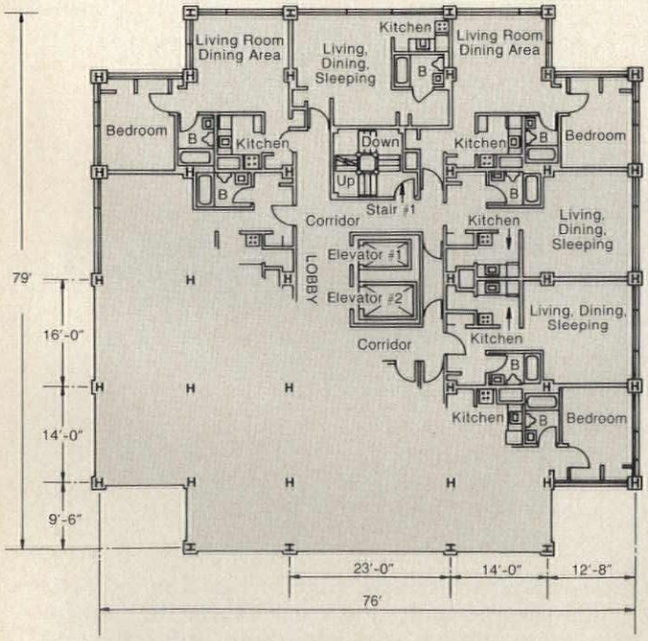
The 11-story structure measures 76 by 79 ft. Floor to floor heights are as follows: ground floor—12 ft; floors 2 through 11—9 ft, 8 in.; floor to ceiling height is typically 8 ft. The structure encompasses 61,548 sq ft. Overall costs are $2 million, but the basic construction costs are $1,787,800, about $29.00 per sq ft.

Explains housing director Paul Lamie, "HUD allowed prototype costs, and we came within the limitations. These limitations varied per unit. This is a good basic building with no frills."

Steel framework required approximately 310 tons of structural steel—all Bethlehem, and all ASTM A36. A single crane erected the framework operating from one side of the building. Typical columns in the framing system are W16 members ranging from 96 to 31 plf. Three- and 4-story columns were used. The long columns helped speed the overall project. Their use meant that lower floors could be turned over faster to the other building trades.



On a typical floor, girders are W14 sections; tie beams and spandrels are W12 and W14 members. An additional 75 tons of open web steel joists and some 60,000 sq ft of permanent steel forms are included in the building. The 28 gage steel centering, 9/16-in. deep, is used to support the 2-1/2-in. reinforced concrete floor slab. Design live loads are 40 psf for the floors and roof; dead loads are 60 psf.



The structure incorporates 100 apartments surrounding a central core flanked by two stairways. There are 58 efficiency (studio-type) apartments in the building, 41 one-bedroom apartments, and 1 two-bedroom unit.

Conventional contracting favored over "turnkey"

The apartment building is designed as a rigid frame in both directions and primarily incorporates end-plate moment connections. No vertical bracing is used in the framework. In the opinion of the fabricator, "It's an economical structure—easy to fabricate and erect, with few alignment problems. With the use of end-plate, high-strength (ASTM A325) field-bolted connections, we gained economies over welded column connections.

"In a project like this everyone knows exactly what the costs are," he added. "We can compare 'apples and apples' as opposed to the 'turnkey' type of project where it's conceivable that some costly items may be present which are not essential."

The steel framework required approximately 310 tons of structural steel—all Bethlehem, and all ASTM A36. An additional 75 tons of open web steel joists and some 60,000 sq ft of permanent forms are included in the building. During construction, 28 gage steel centering, 9/16-in. deep, was used as a permanent form for the 2½ in. reinforced concrete floor slab.

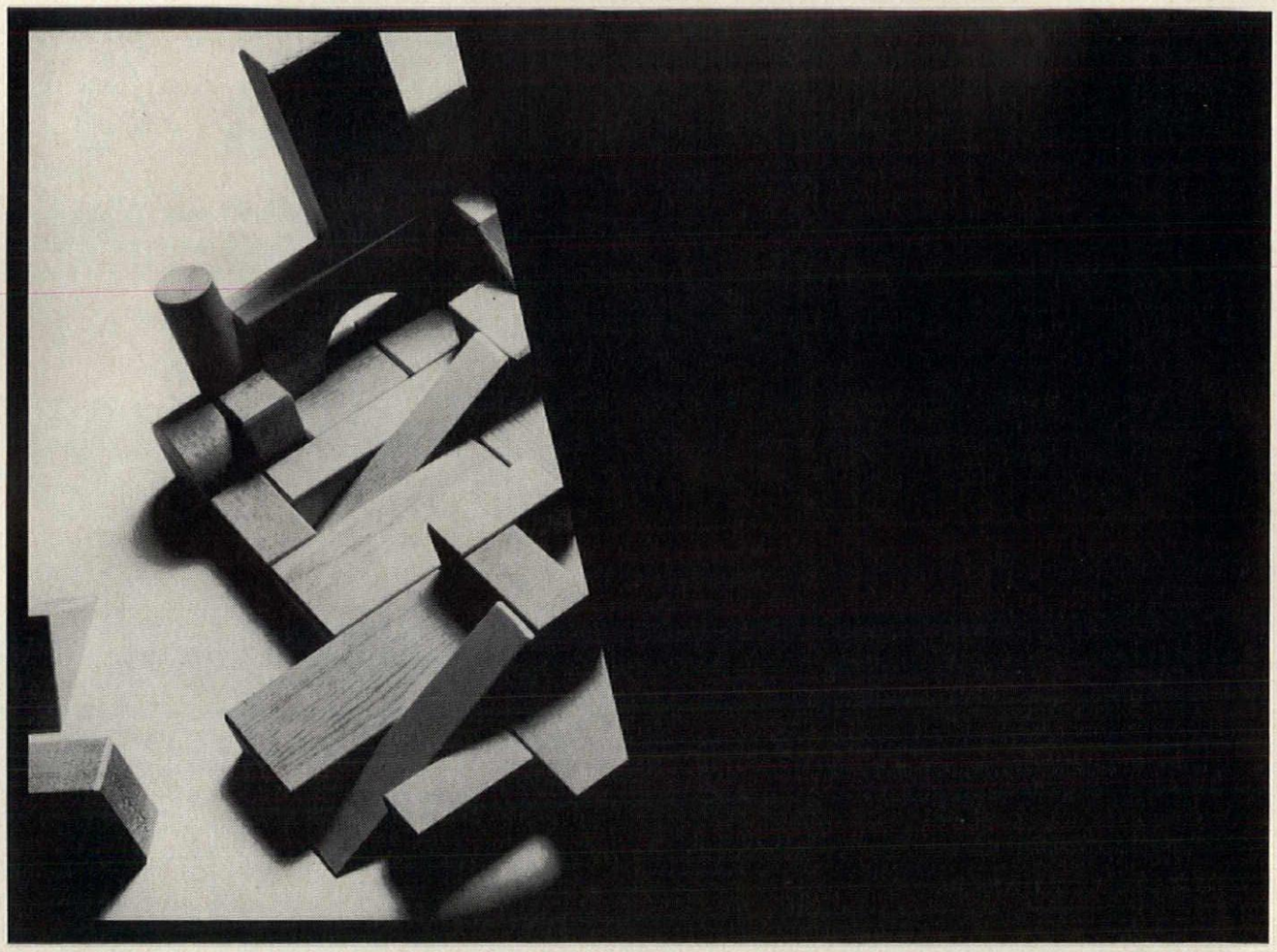
Although the framing system looks relatively simple, it required a good deal of analysis to evaluate theoretical seismic and wind forces, especially in relation to the end connections of the framework and subsequent transmittal of forces to tied spread footings. "The construction site is near the Laurentian Fault," commented the structural engineer, "so the structure is designed for Zone 2 Siesmic conditions. The foundation required ties so we used spread footings tied together with reinforced concrete tie beams."

Benefits of steel framing praised

The housing director noted that about 80 per cent of his elderly tenants live on social security payments. Rents for public housing are limited to 25 per cent of individuals' incomes. "And that isn't much," commented Lamie. "Lack of funding is a critical problem. In projects like ours, steel framing benefits can provide a meaningful contribution to economy. The time factor is important. Because steel frames go up faster than alternate framing systems, a housing authority can look forward to earlier occupancy."

The Manchester Housing Authority operates 1,396 units including 916 for the elderly and 480 for family and general occupancy. Perhaps steel framing can provide economies for your next construction project. Call your local Bethlehem sales engineer, or write: Bethlehem Steel Corporation, Bethlehem, Pa 18016.

Bethlehem BETHLEHEM STEEL



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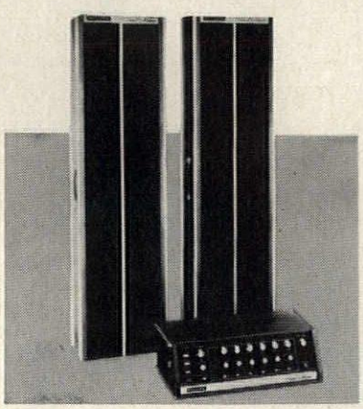
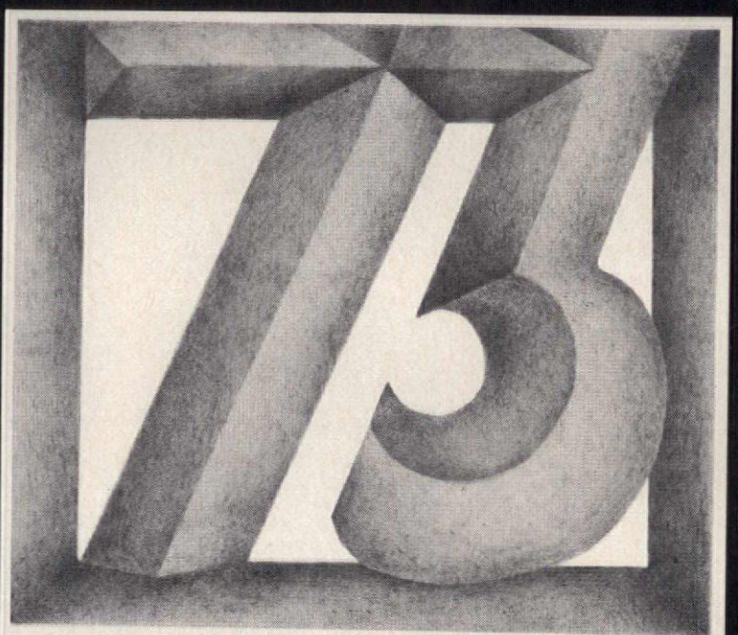


There are four excellent reasons that architects specify the *Shure Vocal Master* sound system. The first is sound quality: the Vocal Master is the first sound system especially tailored to project the voice with authority and clarity. Reason two is adaptability to environment: the system is completely portable; therefore it can do the work of several systems — in any size area from a small conference room to the outdoor Greek Theater in Los Angeles. Three is economy: it costs only a fraction of the built-in systems it easily outperforms. Four is its utter reliability.

Write Shure Brothers Inc.,
222 Hartrey Ave., Evanston, Ill. 60204.

SHURE



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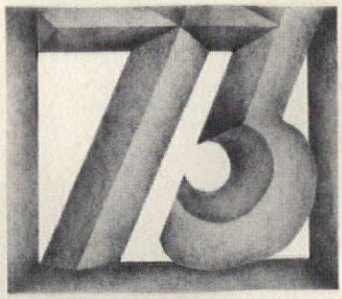
Red Cedar Shingle & Handsplit Shake Bureau



AWARD WINNING ENTRIES AND COMMENTS BY THE JURY.

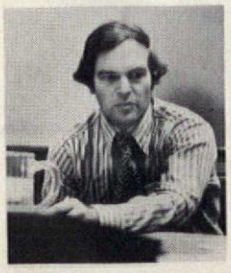
The eminent jurists selected by the Board of Directors of the American Institute of Architects for the 1973 Red Cedar Shingle & Handsplit Shake Bureau/A.I.A. Architectural Awards Program have selected the winners from some 250 entries submitted by architects from the United States and Canada.

The five, First Award and 16 Merit Award winners have been selected to honor design excellence and significant functional or aesthetic uses of red cedar shingles or shakes.

Awards in five categories—Residential Multi-Family, Vacation Homes, Residential Single Family, Commercial/Institutional and Interior Design—were presented at the Bureau's Annual Meeting. No awards were given in the categories of Remodeling/Restoration, Special Design and Industrial Housing.

Circle No. 364, on Reader Service Card

JURY.

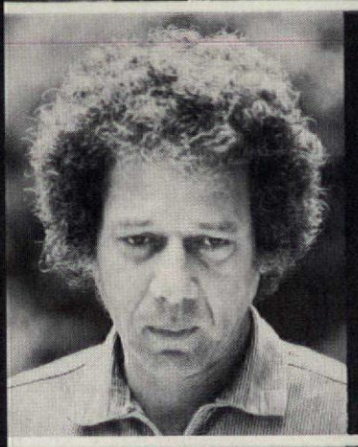


Clovis Heimsath, A.I.A., Houston, Texas
A specialist in creating environments for special conditions, his award-winning work includes the unique recreational facilities for the Manned Spacecraft Center, a Connecticut country club and a planned unit development in Louisiana. Mr. Heimsath is a member of the National A.I.A. Housing Committee and holds degrees from Yale University, Yale School of Architecture and attended the University of Rome as a Fullbright Scholar.

Richard Foster, A.I.A., Greenwich, Connecticut
Richard Foster brought a broad spectrum of architectural design concepts to the 1973 jury. The New York State Theatre at Lincoln Center, the Biology Tower at Yale University, the State Pavilion at the New York World's Fair and other such diverse projects as the Montauk Golf and Racquet Club and several buildings for New York University. He is a graduate of Carnegie Institute of Technology and Pratt Institute.

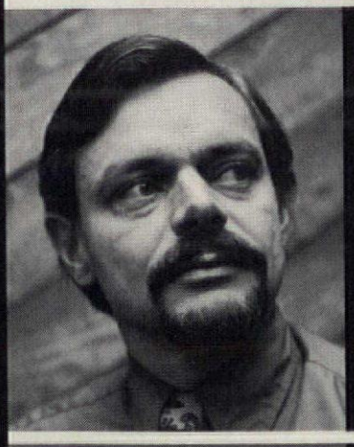
Saul Zaik, F.A.I.A., Portland, Oregon
Efficient houses in the woods, at the coast and in the mountains have become Saul Zaik's trademark in distinctive Northwest design. And his designs in the residential field have been strongly marked by their use of wood. Mr. Zaik received his academic training at the University of Oregon Architecture School and he is a member of the College of Fellows of the American Institute of Architects.

RESIDENTIAL MULTI-FAMILY, FIRST AWARD
John Hackler and Company
One Commercial National Bank Building
Peoria, Illinois 61604
Pierson Hills, Peoria
Comments: Excellent human scale—The village quality relates well for site and people users—Variety of form and intermixing of one and two stories exemplary.

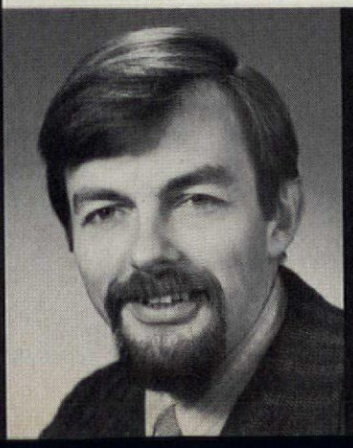


RESIDENTIAL MULTI-FAMILY, FIRST AWARD
Leonard Veitzer, AIA
3625 Fifth Avenue
San Diego, California 92103
Collwood Townhouse Apartments, San Diego
Comments: Precise planning creating an intricate variety of elegant outdoor public and private living spaces—Units are well planned in terms of access locations and relationships to achieve interest and variety.

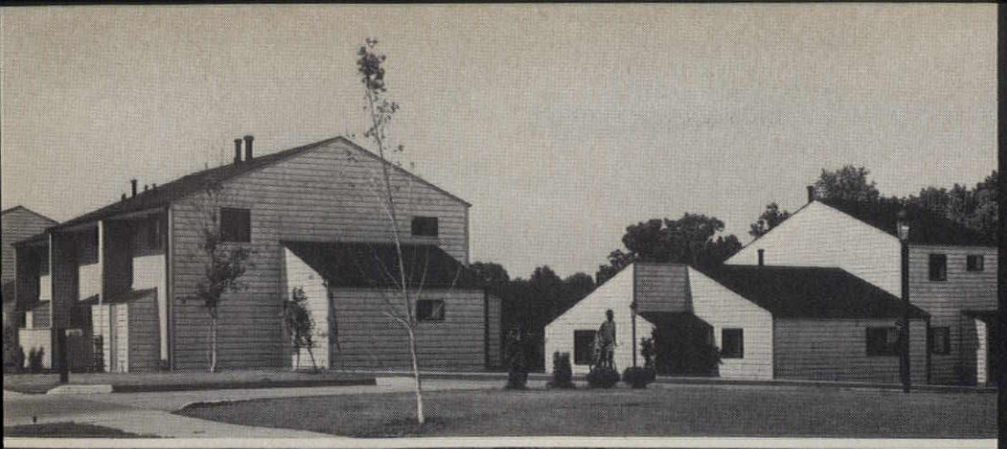
VACATION HOMES, FIRST AWARD
Walz and MacLeod, Architects
50 Green Street
San Francisco, California 94111
Willard S. Johnston Residence, Seascape—Muir Beach
Comments: Sensitive application of shingle detailing—Restraining respect for magnificent site—Interior spaces relaxed and innovative.

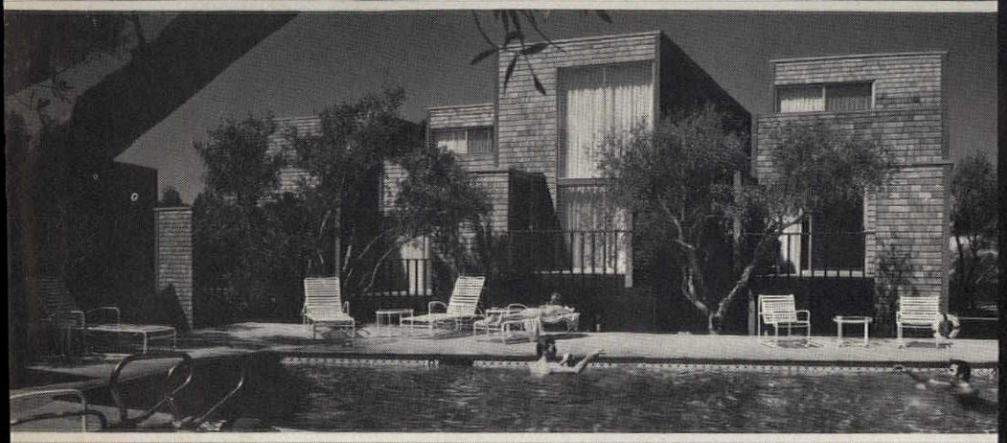


VACATION HOMES, FIRST AWARD
Roland/Miller Associates
666 Seventh Street
Santa Rosa, California 95404
Clarence Hall House, The Sea Ranch
Comments: Meticulous care in detailing and execution. Jury noted excellent craftsmanship displayed and compliments to builder—Reflects study of exterior spatial qualities which result in a strong unified composition.



RESIDENTIAL SINGLE-FAMILY, FIRST AWARD
Gary L. Michael AIA,
Architects & Planners
430 S.W. Morrison Street
Portland, Oregon 97204
Jan Zach Residence & Studio, Elmira, Oregon
Comments: Innovative, strong, sculptural statement—Details consistent with straightforward techniques.





MERIT AWARD WINNING ENTRIES.

RESIDENTIAL MULTI-FAMILY

Bissell/August Associates
359 San Miguel Drive
Newport Beach, California 92660
Sixty-01, Redmond, Washington

Bulkley, Sazevich and Associates
1154 Clement Street
San Francisco, California 94118
Friendship Village, San Francisco

William Kessler and Associates, Inc.
18000 Mack Avenue
Grosse Pointe, Michigan 48224
Wayne Public Housing, Wayne, Michigan

VACATION HOMES

Rodney Wright
4643 North Clark Street
Chicago, Illinois 60640
Hawkweed Farm, Osseo, Wisconsin

Venturi and Raugh
(with the assistance of **Terry Vaughn,**
Project Architect Christopher Holland)
333 South 16th Street
Philadelphia, Pennsylvania 19102
Trubek and Wislocki Houses, Nantucket Island

RESIDENTIAL SINGLE-FAMILY

Alfredo De Vido
4 West 58th Street
New York, New York 10019
Michel House, Southold, New York

Bahri & Associates
1015 Park Street
Peekskill, New York 10566
Y.S. Bahri Residence, Putnam Valley, N.Y.

Bull/Field/Volkmann/Stockwell AIA
350 Pacific Avenue
San Francisco, California 94111
Residence

COMMERCIAL/INSTITUTIONAL

Calvin/Gorasht Architects
303 East Pine Street
Seattle, Washington 98122
Lake Wilderness Park, Maple Valley

Boyle Engineering Corporation
John P. Barbarino AIA, Project Architect
412 South Lyon Street
Santa Ana, California 92702
San Diego Zoo Skyfari Cable Lift, San Diego

Peter Hemingway Architect
11810 Kingsway Avenue
Edmonton, Alberta, Canada
Central Pentecostal Tabernacle, Edmonton

Aotani & Oka Architects, Inc.
225 Queen Street
Suite 400
Honolulu, Hawaii 96813
Inter-Island Terminal, Ke-ahole, Kailua

Robinson and Mills
45 Ecker Street
San Francisco, California 94105
Borel's Restaurant, San Mateo

Russell Gibson von Dohlen
80 South Main Street
West Hartford, Connecticut 06107
Church of St. Peter Claver, West Hartford

Anderson Notter Associates, Inc.
10 Thacher Street
Boston, Massachusetts 02113
Brocton Art Center-Fuller Memorial, Brocton

INTERIOR

Oda/McCarty, Architects
P.O. Box 5, Hilo, Hawaii 96720
Harrell McCarty Residence, Hilo

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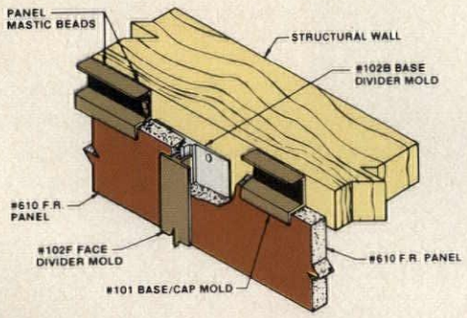
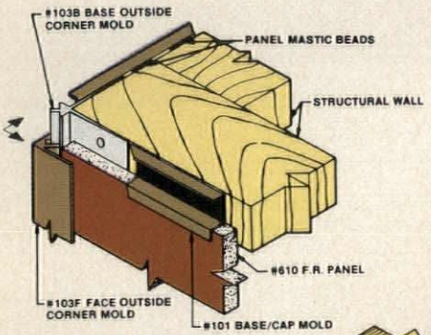
Wilsonwall System 610 Installation Detail

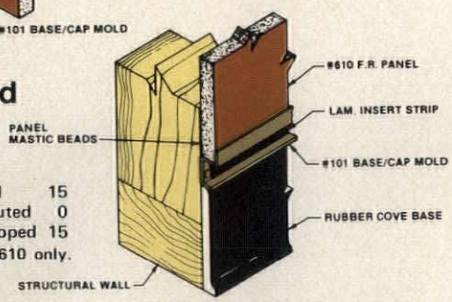
Divider Mold



Outside Corner Mold



Base/Cap Mold



UL

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Smoke Developed 15
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Wilsonwall System 610 Specifications

Panels:

thickness: 7/16"

surfacing: 1/32" Wilson Art fire retardant laminate, Velvet finish, all Wilson Art woodgrains, solids.

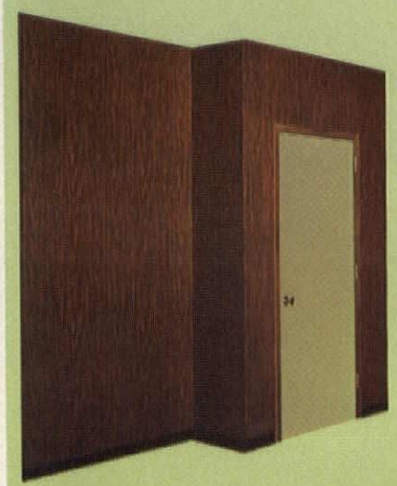
core: 3/8" mineral composition

sizes: 47½" x 96" and 47½" x 120" (other sizes quoted on request)

moldings: extruded aluminum (hidden base moldings, mill finish; face moldings, acrylic coated standard in Lt. Bronze, Dk. Bronze, Brown and Black)

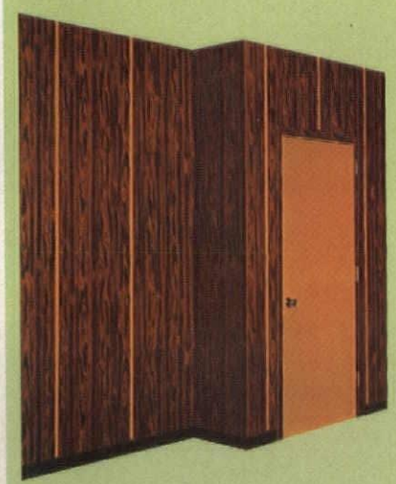
System 310

Smooth fitting V-Groove joints give the appearance of a continuous wall . . . utilizing a hidden extruded aluminum system.



System 210

Featuring a standard V-Groove joint system . . . allows continuity of woodgrain where desired.



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Covered Bridge Condominium, Lake Worth, Florida.
Architect: John Stetson & Associates

Mansards

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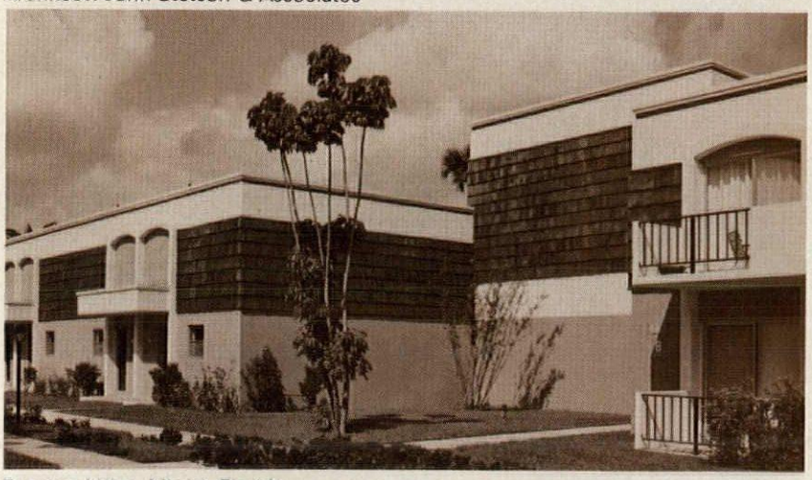

Fairview Villas, Miami, Florida
Architects: Tripp and Scrip, A.I.A.

Sidewalls

Distinctive sidewalls of Shakertown shakes emphasize the building's details while carrying out the overall aesthetics. The shakes are electronically bonded into multi-ply panels, assuring weathertight protection in all types of climates for years of lasting beauty.

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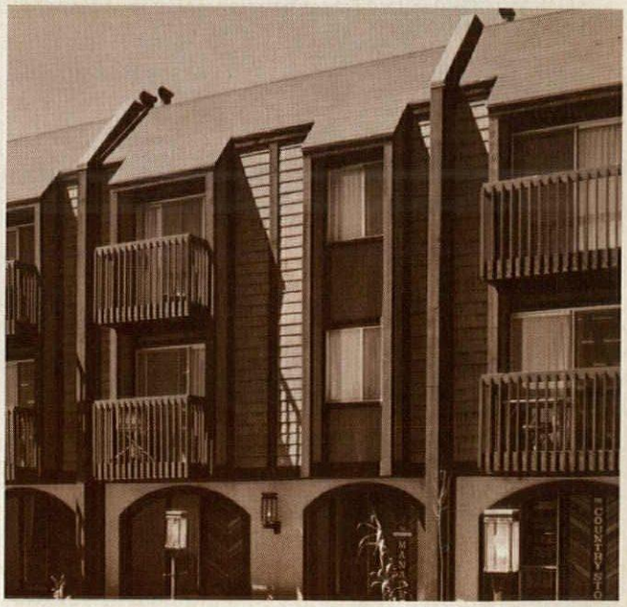

The Meadows, Odgen, Utah.
Architect: Ronald Molen, AIA

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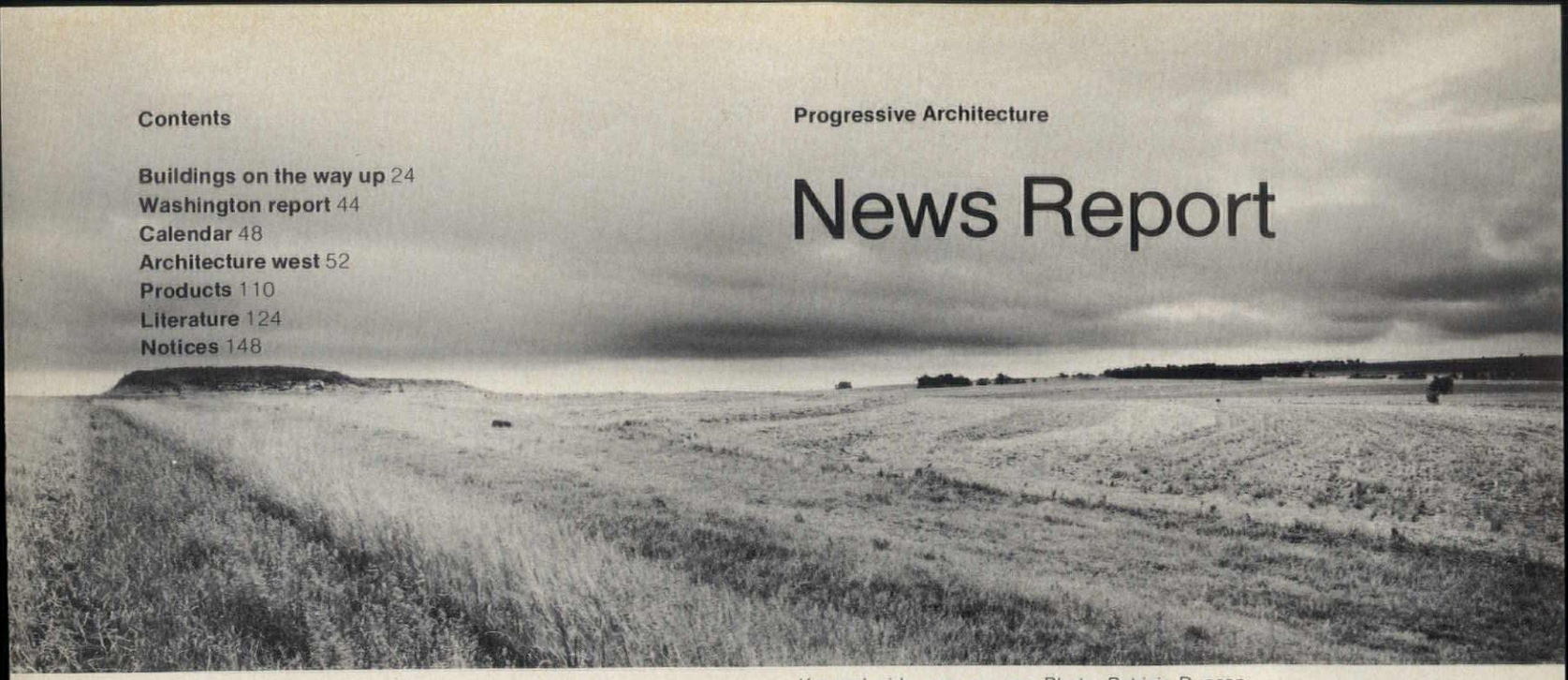
News Report



Kansas' wide open spaces. Photo: Patricia Duncan

A park for the prairie?

There is not much left of the great prairies that once covered the central part of North America—most people still feel as their pioneering grandfathers did, that the prairie is there to be grazed, plowed, subdued and used. The best of what is left of the tallgrass prairie, on the eastern slopes of the Flint Hills in Kansas, is even now threatened by over-grazing and possible development.

Saving the tallgrass prairie (tall is the right word: some of the native grasses stand 6 to 12 ft high) is the aim of legislative and lobbying efforts, all backed by a group known as Save the Tallgrass Prairie, Inc. Their goal is nothing less than preserving 30,000 to 60,000 acres through legislation in Congress that would set up a national park.

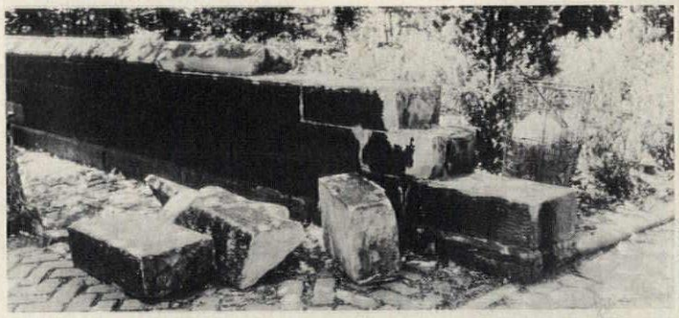
The National Park Service has, during its hundred years, preserved samples of many of the nation's natural environments, but so far has done nothing about the tallgrass prairies, says STP. There is a chance, however, that the Kansas area will be given close consideration this year, even as NPS goes ahead with the thought of stabilizing the National Park System instead of adding to it. The Tallgrass Prairie Park has been under discussion for decades, and the classic squabble between environmentalists and ranchers, with politicians on both sides, is heating up again.

Rehabilitation of Central Park planned

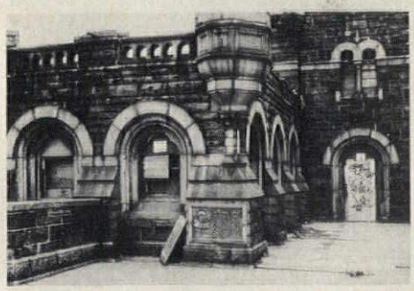
It has been a hundred years since New York's Central Park was substantially completed, and in that century the city that surrounds the park and the people that use it have changed. So has the park itself: a century of use and misuse has taken its toll, through normal weathering and deterioration, lack of maintenance, vandalism and general downtown pollution. A survey of the condition of the park, made by the city's Parks, Recreation and Cultural Affairs Administration, shows that buildings, bridges and arches are in sad shape, monuments defaced, trees and grass withered and dying, and lakes and streams shrinking and foul.

The answer, as PRCA see it, is rehabilitation, and this month PRCA goes before the city's planning commission and budget people to establish a line in the city's capital budget

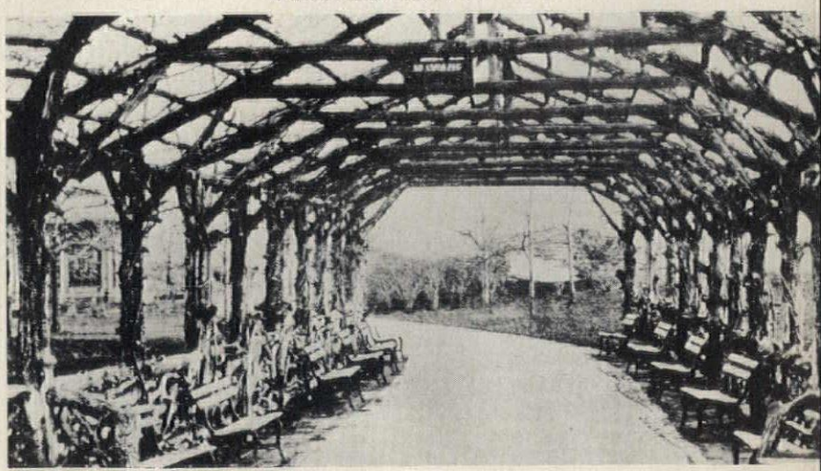
[continued on page 26]



Crumbling Central Park wall . . .



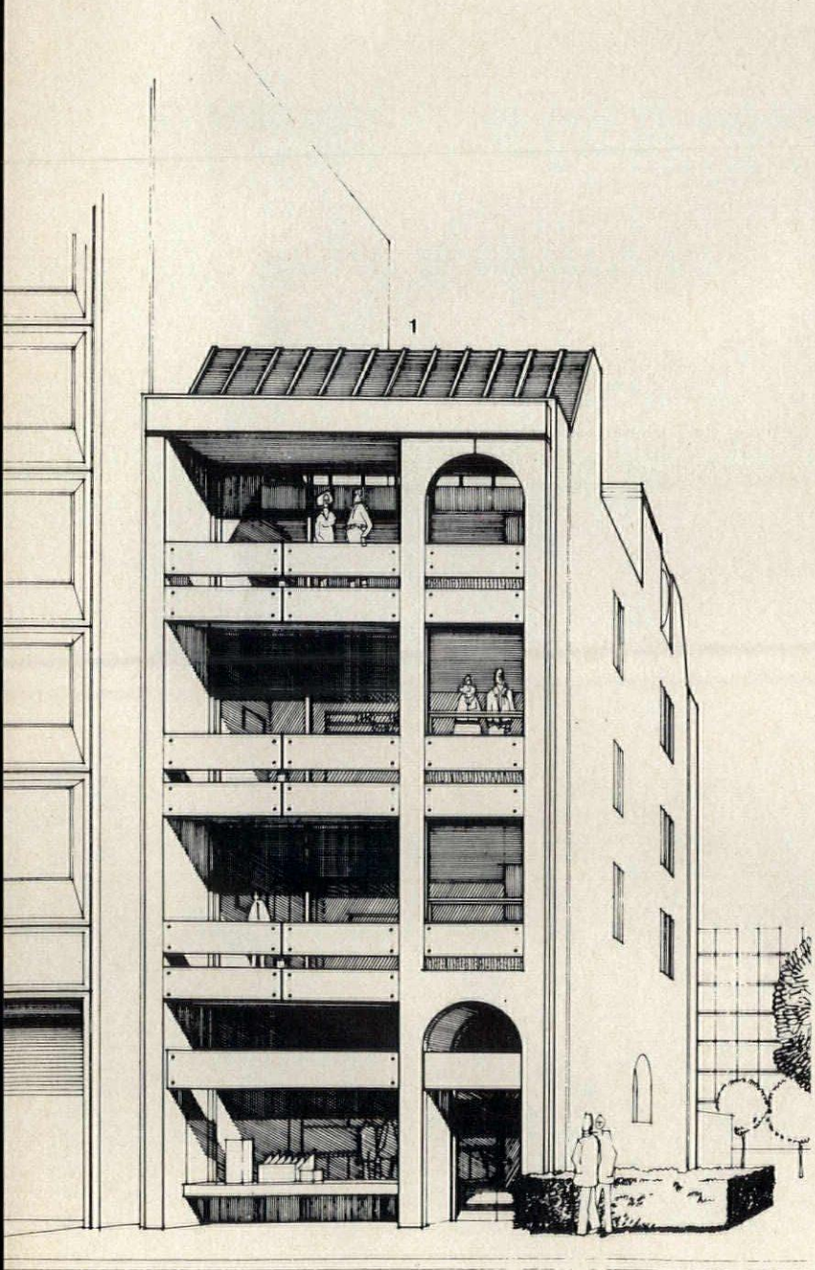
defaced Belvedere . . .



and yesterday's arbor, all to be rehabilitated

Buildings on the way up

2



1

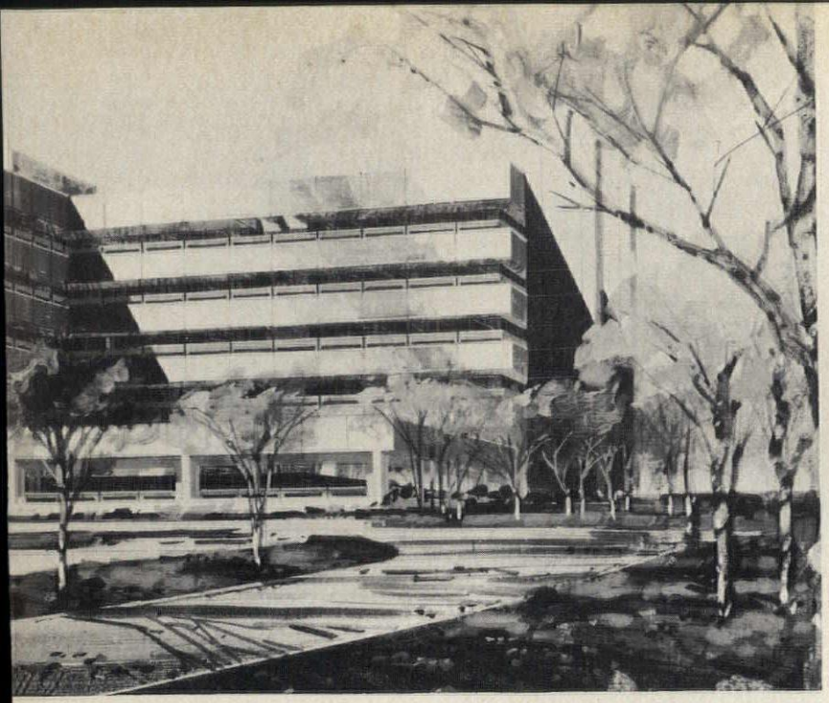
1 Limestone panels bolted on with stainless steel bolts will mark small building for Washington, D.C. engraving firm. Only 25′ x 100′ in plan and four stories above grade, building will have a metal roof with a large skylight above fourth floor conference room. Printing facilities will be in two levels below grade. Wilkes & Faulkner are architects. Engineers are James Madison Cutts Associates (s) and Lee-Thorp Consulting Engineers (m). Completion is set for spring 1974.

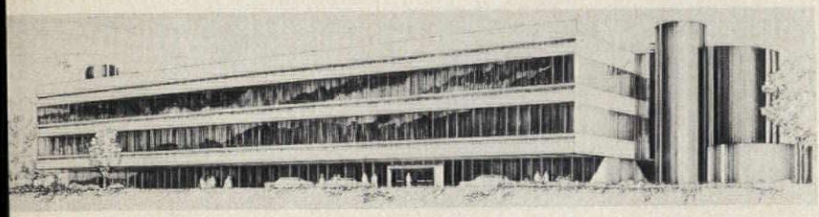
2 Fast-tracked to finish in mid-1976, 820-bed Veterans Administration Hospital in Los Angeles will replace Wadsworth Hospital, recently demolished because of severe earthquake damage. Outpatient facilities (on ground floor) will handle 250,000 patients a year; six upper levels will include a 300-bed psychiatric hospital, 10 surgeries and 21 diagnostic X-ray rooms. A fully automated materials handling system will serve all parts of hospital, and provisions are made for four days of operation independent from water, sewage and electrical services. The 900,000-sq-ft cruciform building will have column-free floors. Two-way steel trusses support floors, form interstitial floors which allow flexibility; trusses span 80 ft between supports. Trusses in each hospital wing are supported by four seismic towers, with a pair of columns at midpoints between the towers. Charles Luckman Associates are architects; Erkel, Greenfield & Associates are structural engineers and R.J.M. Associates are electrical and mechanical engineers. Cost of building is put at $67 million; total project will run $93 million.

3 Sleek is the word for regional headquarters designed by Gruen Associates for Zurich-American Insurance Companies in Mt. Laurel, N.J. Building will be sheathed in white-enameled aluminum panels and gray glass; instead of the usual mechanical penthouse, equipment and stair wells will be enclosed in glass towers at either end of the building. The 21-acre site overlooks the New Jersey Turnpike and I–295, and the two upper floors of the side of the building facing the highways will extend 18 ft beyond the entrance level. About 200 people will work in the $3 million, 46,000-sq-ft building.

4 Topped out in Tokyo: corporate headquarters for J. Walter Thompson (Japan) Co., Ltd. Steel framed structure, 12-stories high, provides 120,000 sq ft of space. Six of the floors will be occupied by JWT and will include television, film and video tape facilities and an assortment of rear- and multi-projection screens and speaker systems. PAE International, subsidiary of Pacific Architects and Engineers, Inc. were design and construction consultants for $4 million project.

5 Concrete base supports bronze glass tower planned for downtown White Plains, N.Y. Two levels of below-grade space, 70 ft at the lowest level, would house AT&T Long Lines equipment; they would be independent of other parts of the building. The 16-story tower would offer 350,000 sq ft of office space and 50,000 sq ft of retail space; $28 million project would provide parking for 700 cars. Base is buff colored concrete with brick infill panels. The office of Stanley L. Horowitz is architect.





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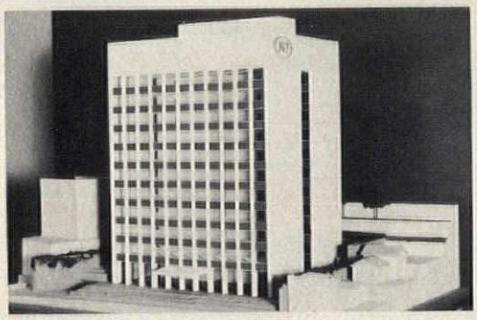

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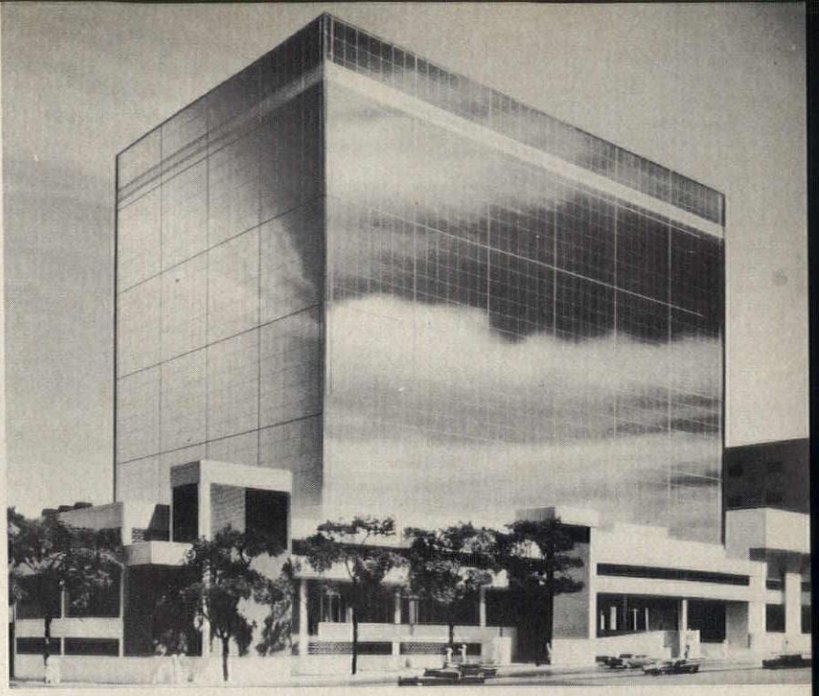

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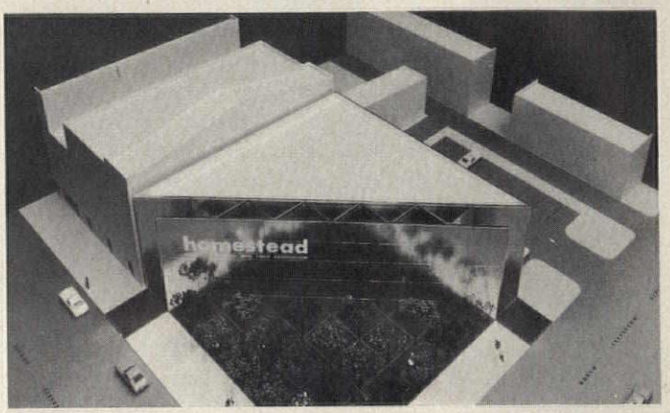

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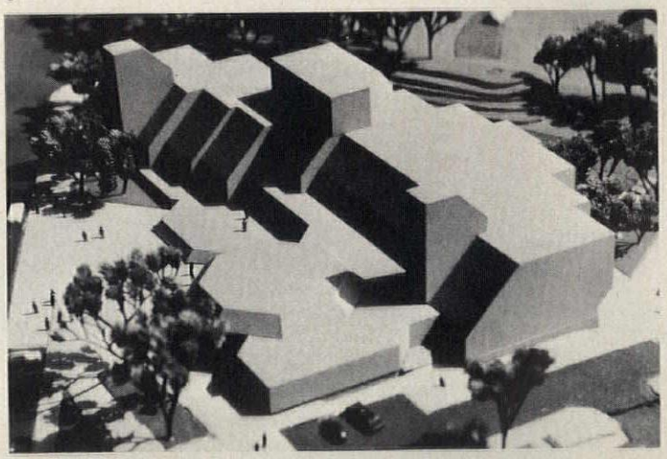

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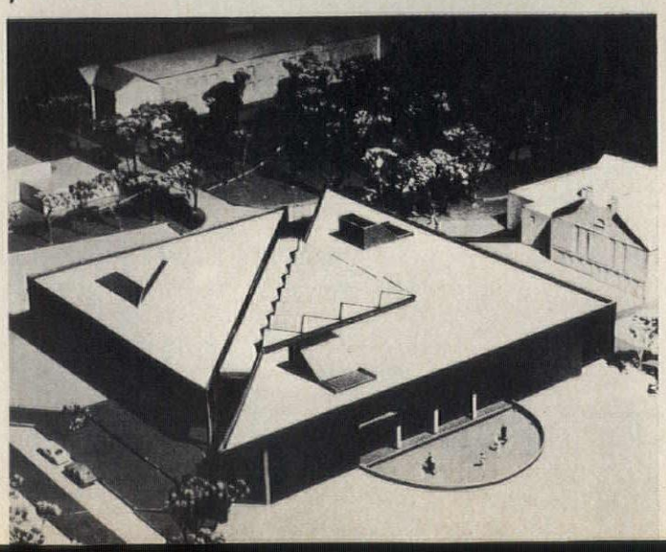

8

6 Triangular plan of Homestead Federal Savings and Loan Association building will offer a reflective stainless steel facade at the hypotenuse of a triangular plaza in downtown Dayton, Ohio. Behind the stainless steel wall is a glass arcade covering entrances. Steel framed structure has only one column visible in the banking area. Architects are Richard Levin Associates Inc.; R.S. Fling & Partners are structural engineers.

7 County office building for Howard County, Md. will sit on hill overlooking Ellicott City. Designed by Cochran, Stephenson & Donkervoet, it will have reinforced concrete frame with precast floor units and masonry exterior walls. Cost of four-story, 90,000-sq-ft building is put at $4.3 million; included is a 400-seat hearing room (the octagonal roof). Structural engineers are Carroll Engineering, Inc. and Henry Adams, Inc. are consulting engineers.

8 Student union for Trenton State College, Trenton, N.J. is located at crossroads of campus; wide interior street, running along main campus circulation route, passes through center of building, with student union activities housed in two-story triangular elements on either side. Larger element includes lounges, snack bar, game rooms and kitchen on first floor, activity and meeting rooms on second; smaller element houses college store and administrative area. Skylights bring daylight into two-story central spaces in each part of building. Cast in place concrete structure is expressed throughout interior; exterior walls, and some interior walls, are of brick with anodized aluminum door and window frames. Associated architects are Caudill, Rowlett & Scott and Collins Uhl Hoisington Anderson.

News report continued from page 23

for reconstruction and maintenance of the park. The whole job, figures PRCA, would take 10 or 12 years and about $100 million; for the first of the five phases they envision, they estimate $1 million in design contracts and $16 million in construction. If the money is included in the 1974–75 budget, design money would be available July 1974, and construction could start in 1975.

According to PRCA architect Adrienne Bresnan, all of the park's problems are represented in that first phase, which calls for total rehabilitation of the southern end, along with other high priority projects in other parts of the park. The subsequent four phases would concentrate on other areas.

The restoration proposal is based on the premise that the park is damaged functionally as well as aesthetically. Thus, in each zone, the first order of business would be to sort out and correct drainage, land stabilization and erosion problems. Buildings, bridges, arches and other structures would be restored and repaired (also to be repaired is the perimeter wall, an original feature of the park), and lawns, gardens, shrubs and trees will be put in good shape again.

The aim is not to return the park to the way it was at some time in the past; instead, PRCA is focusing on rehabilitation as it now exists for its present uses. Included in their plans, however, is a good bit of historical restoration, carefully documented, and some new construction where necessary. The overriding concern is that the park, if it is to survive, must continue to serve the people.

Can a parking lot help the ecology?

What may be the country's first ecological parking lot—a term that sounds like a real contradiction—has been installed at the University of Delaware. Using a special type of asphalt developed by the Franklin Institute in Philadelphia, landscape architect Edward R. Bachtle has provided the Newark campus with a parking lot whose porous surface allows rainwater to penetrate to the ground below.

The special asphalt really differs in only one important respect: the customary fine aggregates are replaced by coarser ones. Beneath the paving is a stone base reservoir which holds the water temporarily before returning it to the water table. This eliminates drainage pipes, ends runoff and erosion and, by the way, reduces skidding.

Southern California AIA calls for government reforms

Taking the sort of initiative that the national AIA hoped would grow from its efforts to promote a national growth policy, the Southern California Chapter AIA has come up with some decidedly nonarchitectural recommendations for Los Angeles County. This summer the chapter released a position paper calling for an area-wide governmental body for the Los Angeles metropolitan area and for reform of the existing election process.

The specifics of the recommendations: First, the creation of a Los Angeles Metropolitan Association of Governments (LAMAG), which would coincide geographically with Los Angeles County and include the city of Los Angeles and all presently incorporated cities. LAMAG would have the power and duty to

[continued on page 30]

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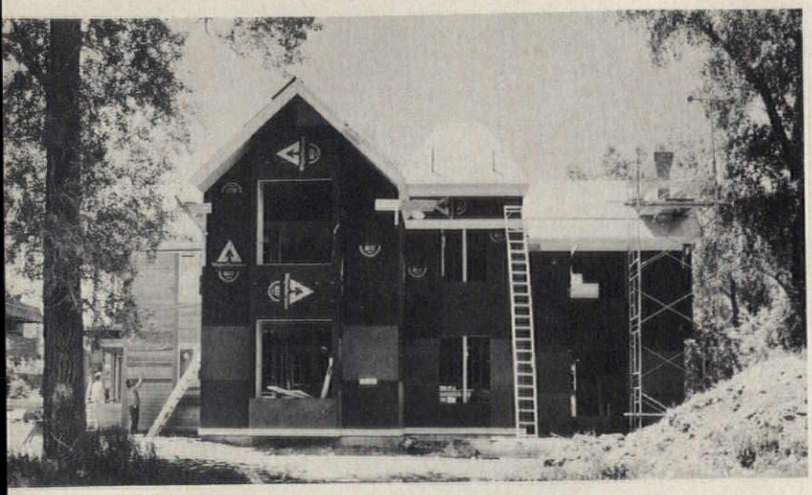
GENERAL ELECTRIC

News report continued from page 26



Victoriana going up

prepare a land use plan, determine settlement patterns, draw up a transportation plan, coordinate sewage, flood and pollution control programs, and determine locations for low and moderate income housing. The proposed election reforms would limit campaign spending and contributions, provide equal exposure for candidates and assure enforcement of campaign spending and contribution laws.

Once its land use plan were drawn up, LAMAG could use the power of eminent domain to acquire vacant or semi-vacant land to encourage renewal and limit land speculation; LAMAG would also provide increased open space and park lands through land acquisition. Once the land is acquired, LAMAG would further encourage and guide future development by installing utilities and public facilities in accord with its long range land use plan.

Victorian charm without the usual bother

On the way to and from meetings, attendants at this year's Aspen Design Conference (Aug. issue p. 49) were treated to a unique sight: a Victorian house under construction. We've all gotten used to counterfeit Colonial and make-believe hacienda, but the first copies must have been disconcerting. Now we'll probably learn to live with very Late Victorian.

After the initial shock, the house in Aspen raised a gnawing doubt: Are all those other Victorian confections in Aspen—under their mauve-and-shrimp paint jobs—the real pre-McKinley thing? According to the Floradora Construction Company, which is putting up the house, the others are all legit; this is indeed a first, at least for Aspen. (If you know of others, please write.) There *is* a recent apartment house in Aspen with a touch of Victorian, but this is the first new house in town to be Victorian in layout, appearance, and detail. Designed by architect Larry Windes, it has up-to-date insulating sheathing and gypsum board interior walls, but it will have real fish-scale shingles on its gables, plus stair rails, stained-glass windows, and mantelpieces salvaged from 19th-Century houses. The front porch will have turned posts of the period and there will be corbeled chimneys of old brick. And it all comes without paint to strip or plaster to patch.

New downtown proposed for Newark

It's hard to think of a U.S. city more blighted than Newark, N.J., but if Louis C. Ripa has anything to say about it, things are going to change. Ripa is the man behind a $2.5 billion scheme to redevelop downtown Newark: as chairman of the

[continued on page 38]

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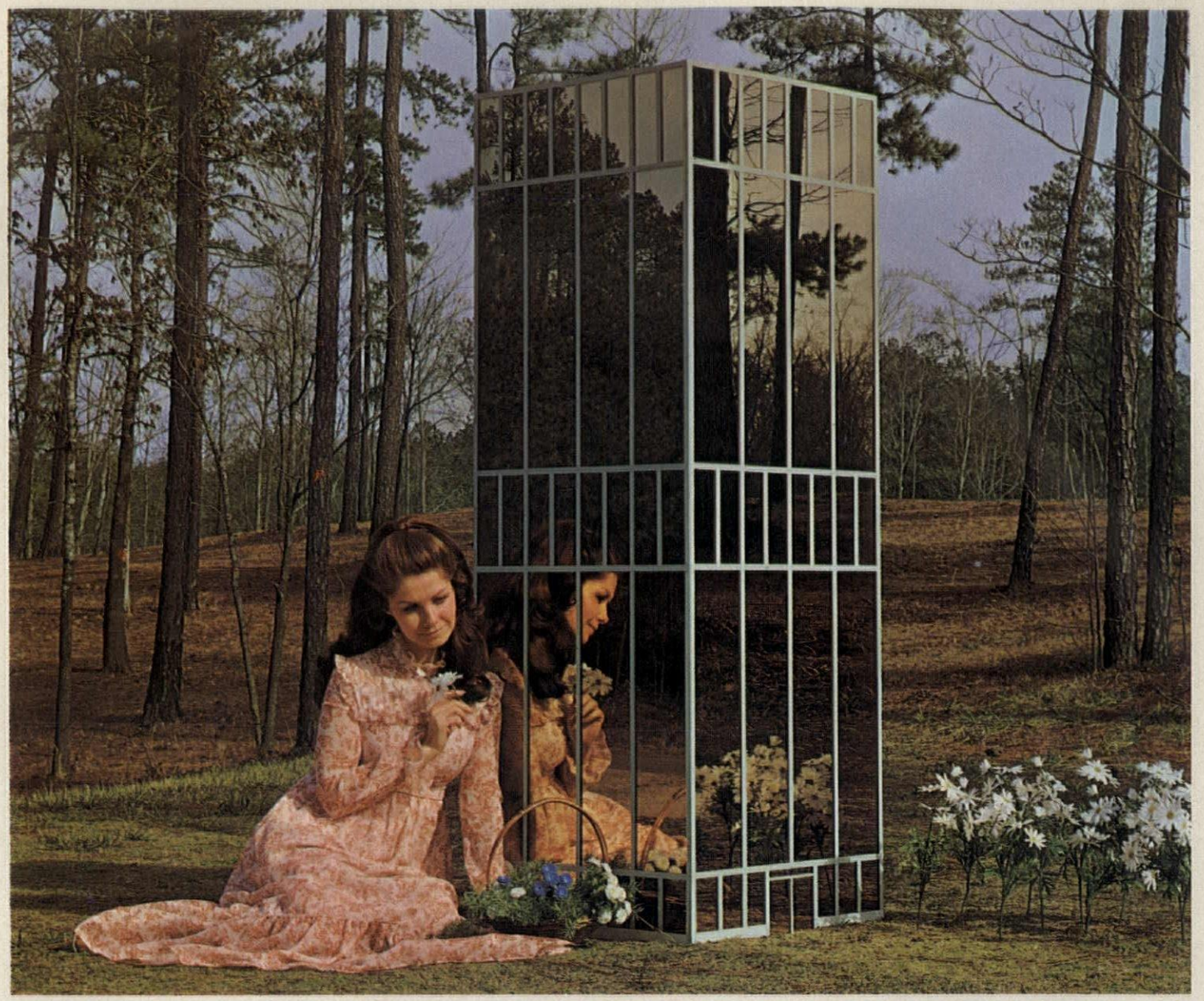

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News report continued from page 30

board and president of Porter & Ripa Associates, an engineering, planning and architecture firm, he is the author of the scheme; as chairman of the board of the proposed development corporation, it will be his job to make it go.

The plan is fairly simple in concept. By using air rights above downtown Newark, the planners figure to avoid the hassles of condemnation and demolition; the multi-level development, including offices, hotels, schools, sports and cultural centers, housing and a host of commercial spaces, would be built on a platform above the ground level. Beneath the development would be three levels of parking. No vehicles would be allowed on the main level, where people would travel by foot, or by a personal rapid transit system.

But if the plan is simple in concept, it is sure to be complex in execution. To get things rolling, a development corporation is being formed of major business executives in the city. Seed money for the proposal will come from the corporations they represent, and the development group, to be known as Gateway 2000 Corporation will oversee the design and construction of the development over the next 20 or so years.

More developers named for Battery Park City

New York's Battery Park City moved another step closer to completion with the naming of the developers for the first 5800 housing units and accompanying commercial development. The developers are a joint venture made up of the principals of the Lefrak Organization, Inc. and Fisher Brothers. In exchange for the Letter of Intent and a deposit of $250,000, Samuel J. Lefrak and Lester Fisher were handed a list of more than 10,000 names—all people who have requested information about apartments in Battery Park City.

The Lefrak-Fisher joint venture will be able to start work 30 days after approval of special zoning and changes in the master plan for the development by the City Planning Commission. Along with the housing units and the 750,000-sq-ft shopping center, the first two neighborhoods will also include 100,000 sq ft of convenience shopping, a hotel and educational, recreational and cultural facilities.

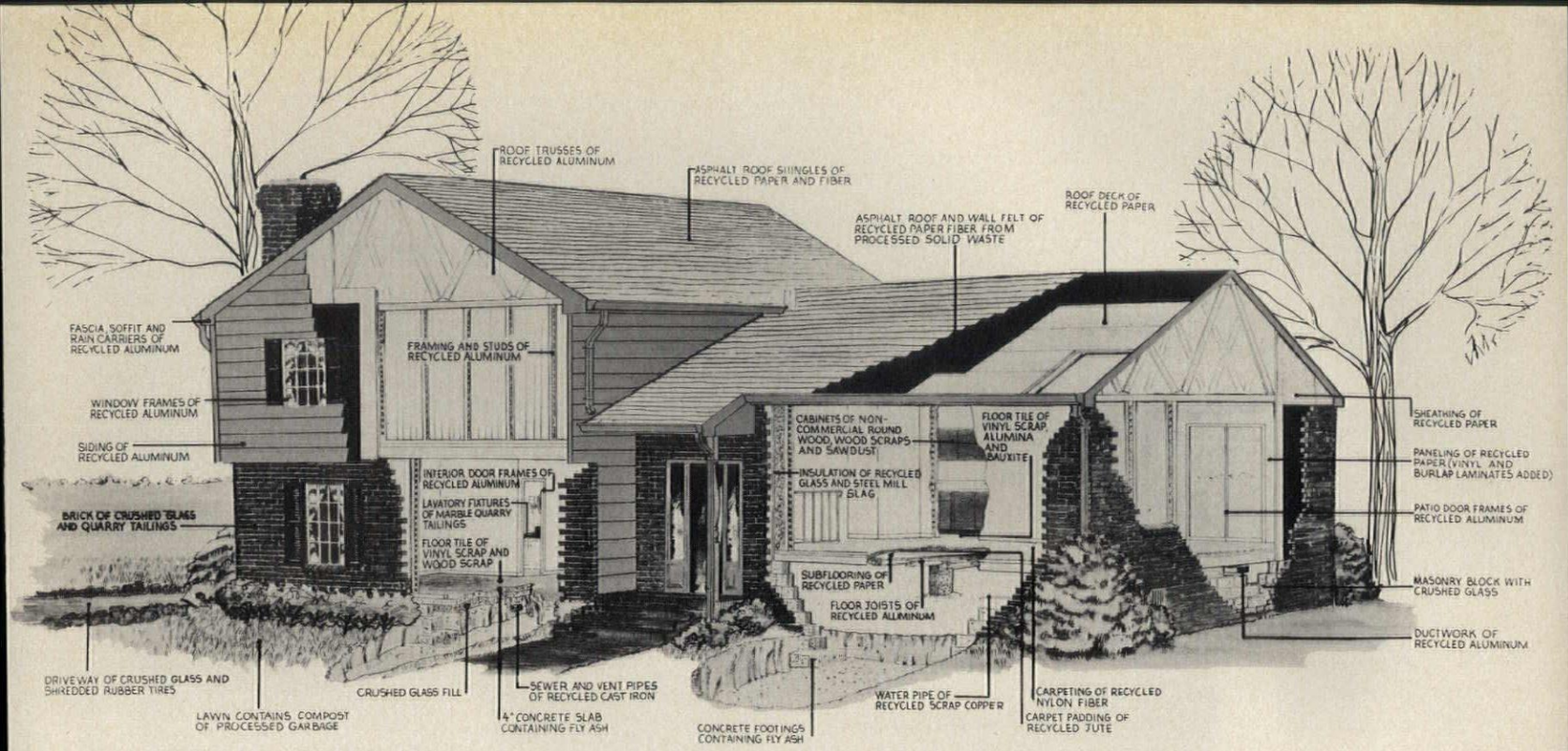
Battery Park City, a mile-long site made up of 100 acres of landfill, is perhaps the country's largest urban development. Sponsored by the Battery Park City Authority, which was set up in 1968, the project will include up to five million sq ft of office space and 14,100 residential units done.

Luigi Moretti, Watergate architect, dies

Italian architect Luigi Moretti, who along with Corning, Moore, Elmore & Fisher designed the Watergate complex (the structures, not the frame of mind) in Washington, died recently at the age of 66. Among his other noteworthy projects: the 1960 Olympic Village in Rome and the Montreal Stock Exchange Tower.

New house built from used materials

It looks, on the surface, like the typical American suburban home—four bedrooms, three levels, family room with fireplace, garage, two and a half baths—but underneath, there is a significant difference. Almost all of the materials used in its



construction were developed from recycled refuse.

The project was coordinated by Reynolds Metals Co. and it involved about 30 other companies who provided products and technical help. The products used in the house—the raw materials include aluminum soft drink cans, glass bottles, old newspapers, fly ash, processed garbage and worn out auto tires—are either available to builders now or technically practical for future use, according to Reynolds.

The house is on public display for a few weeks and then it will be sold, just like any other speculatively built suburban house. The $60,750 price is comparable to other houses in the Richmond, Va. suburb, according to Realty Industries, Inc., the builder of the house.

[continued on page 42]

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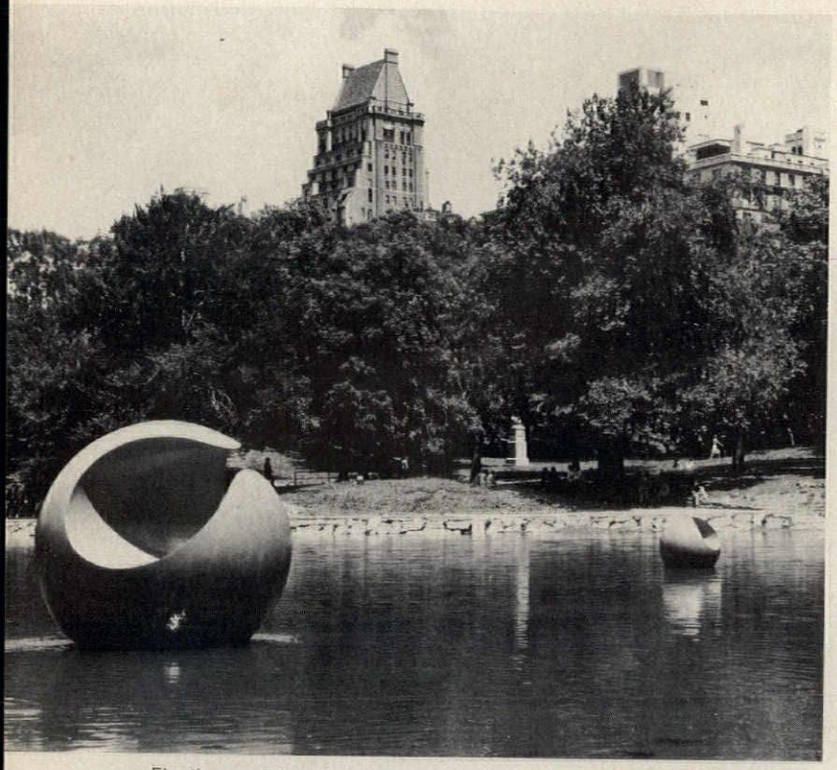
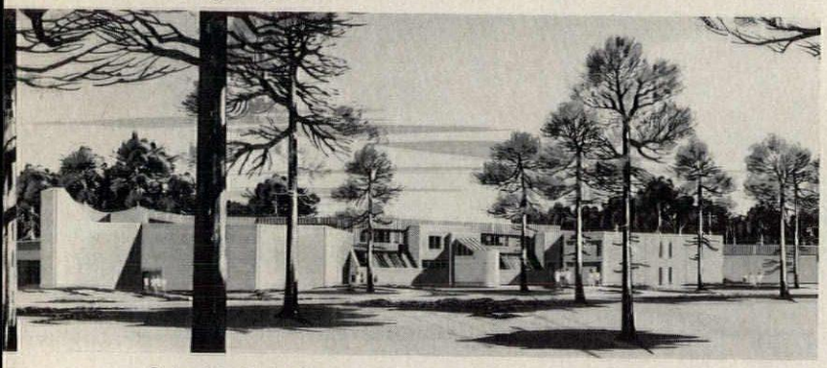
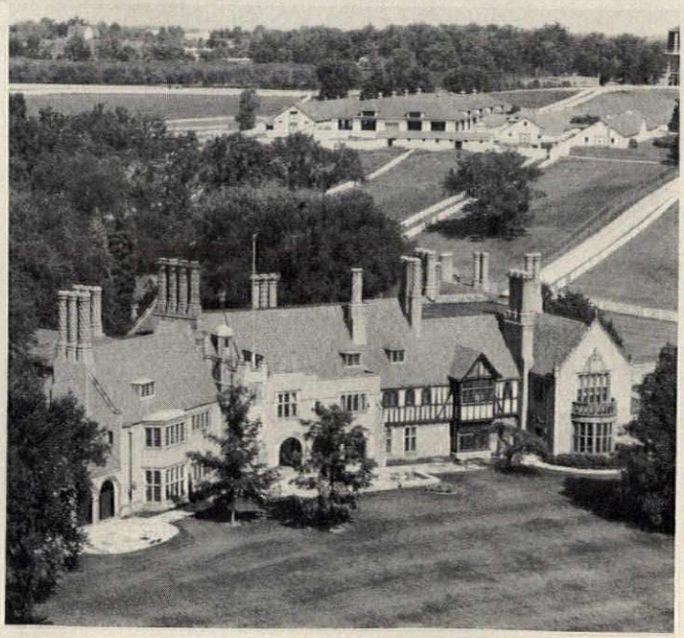


Floating sculpture



School in triplicate
Meadowbrook Hall



Central Park host to floating sculpture

Floating in the Central Park pond, just off Manhattan's busy Central Park South, are two most unducklike objects. They are the parts of a sculpture by French sculptor Marta Pan.

The sculpture consists of two spherical elements, made of red-orange polyester, each with a cylindrical section removed. The larger of the two parts is 7 ft in diameter, twice the size of the smaller one. Each piece is anchored to the bottom of the pond, so that although they have some freedom to float about, their relationship to each other is more or less fixed. Assisting in the installation of the sculpture, which has been loaned to New York City for six months, was art consultant Annie Damaz.

Three sites, three schools, one design

When the town of Framingham, Mass. decided to put its sixth, seventh and eighth grade students into three new middle schools, it presented architects Drummey Rosane Anderson, Inc. with an interesting question. Three schools were needed, three sites preselected. Would it be possible, the building committee asked, to save the community some money by designing in triplicate?

The answer was yes. The result was a package of three schools, differing only slightly, that reduced the total architects' fees (one school was designed at the regular fee, the other two were covered by a site adjustment fee) and total cost (they were bid as a package, reducing material costs).

Each school accommodates 750 students in two clusters of 375. Each cluster has academic and science classrooms, a special education room, teachers' area and guidance facilities; both clusters share the school's media center. Special areas outside the clusters are set aside for art, music, drama, shop, home economics and physical education.

Classroom clusters are stacked one above the other, with the media center on an intermediate level, along with the main cafeteria. A smaller cafeteria/activity room is on each cluster level, linked to the main cafeteria.

The buildings are based on a 28′ x 28′ grid, with a steel frame and a composite concrete floor. Exteriors will be masonry and vertical wood siding. Cost for each school was a bit over $3 million ($3,057,634 for 112,600 sq ft; $3,032,133 for 112,600 sq ft; and 3,089,535 for 115,600 sq ft).

Structural engineers were Theodore/Waver Associates, Inc., Mechanical engineers were Stressenger & Adams, and electrical engineers were Bratiotis & MacConnell, Inc.

Architects return to 45-year-old job for renovations

In the 40 or more years since it was built, Meadowbrook Hall in Rochester, Mich. has had its ups and downs. Designed in 1927–28 by Smith Hinchman & Grylls Associates, the 100-room mansion was finished during the depression; the owners, Mr. and Mrs. Alfred G. Wilson, lived there for 40 years (for a while it was a working farm) and it was eventually willed to Oakland University.

The architects are back on the job, this time for four renovation projects. Kitchens are being modernized, offices are being made out of what has been a flower room, the front circle driveway is being paved, and a four-stall garage is being turned into a meeting and dining room.

The project has some strong memories for the firm, although there is no one around who worked on it. Original

[continued on page 44]

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UNITED STATES GYPSUM

BUILDING AMERICA

News report continued from page 42

plans are still in the SH&G files, and some of the original equipment installers have been located. When the mansion was being designed and built, SH&G's William E. Kapp spent a year in Europe selecting rooms and details to reproduce. As a result, almost every piece of hardware in the place was individually designed, and the mansion abounds in intriguing details: a frieze, for example, in Mr. Wilson's office, depicting his life in the logging business, and a stair leading from that office up to a bedroom and down to a billiard room, in which the hand rail is cut into the stone walls.

Washington report

Money games

Design professionals are more than a little concerned over the national effects of continuing investigations of political "pay offs" in nearby Maryland. So worried, in fact, that a number of meetings have been held in Washington among representatives of major professional societies to determine what action might be taken, either jointly or singly, to counter the effects of charges that have been loosely reported in newspapers and other media.

The point is that the charges reflect directly on the very point of professionalism that the societies have fostered for so long and against such odds. The result could very well be the loss of the huge advantage gained with passage last year of the "Brooks Bill" which specifically exempted professionals from bidding requirements on federal contracts; and on the dozens of "Little Brooks Bills" now being readied in many state legislatures (including Maryland).

In fact, the whole unsavory situation could very well have a bearing on congressional action on the four or more bills now before Congress which would have the effect of nullifying the "Brooks Bill" by making price a major consideration in award of contracts. For instance, the recent award of a design contract (to an engineering firm) that could amount to several million dollars' worth of fees for design of a road-transit complex around Baltimore was immediately characterized in both the Washington and Maryland press as "the sort of thing" that can happen—with special emphasis on the point that the contract was awarded after negotiation, not bidding.

The whole action started with an almost routine investigation by the U.S. District Attorney's office, of award of contracts for engineering work in Baltimore County (which surrounds the city of Baltimore—Maryland's largest). That investigation apparently very quickly extended to state officials at Annapolis, and even reached into the federal government. Grand jury investigations, as has become routine of late, immediately made headlines, via "informed sources," even before any actual charges were filed or indictments handed down. Immediately implicated in this way were several major consulting firms, both civil engineers and architect-engineers, and that started the whole ball rolling.

Just what action the major societies can or should take in attempting to redress the blow to the reputation of their professions is uncertain. It could possibly take the form of a joint statement by society presidents; investigatory procedures within the societies themselves and possible disciplinary action if any violations of ethical codes can be proved; some sort of public relations effort.

American Institute of Architects, for one, has been beforehand in this matter: A special AIA task force on "Political Contributions" has been at work for some months, and expected to make a detailed report to the organization's Board of Directors at its meeting in mid-September (at Sugarbush, Vt.). But the spectacle of the heads of several respected A-E firms, some of them former state officials (and one also a former federal official), openly commenting that political payoff of some sort is a normal business practice is going to be hard to erase from the public mind.

This major ethical problem for professionals was only one of several construction-oriented sidelights that surfaced during the hot month that Congress took for its summer vacation. Another is the growing awareness of a scheme called SASMI (for "Stabilization Agreement of the Sheet Metal Industry") which is actually the first appearance of a "guaranteed annual wage" for construction workers.

In thumbnail, SASMI would guarantee workmen full pay (at local scales plus fringes) each year for up to 1800 hours per year—even if they were unemployed and worked only a comparatively few hours in that year. The wages would be paid out of a fund, entirely contributed by employers at the rate of 3 percent of wages and fringes, hourly, for each worker. Workmen would qualify for the benefits by working 1200 hours in any consecutive 12 months, or 2000 hours in any consecutive two-year period during which employer contributions were made. Among other things, there's also provision of travel allowances of up to $500, to encourage workers to move to other areas where certified labor shortages exist. In return, unions offer a number of changes in work rules designed to increase productivity.

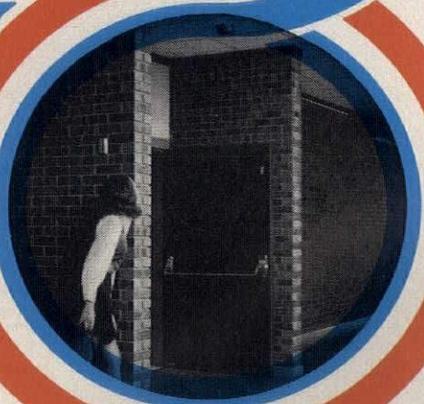
Employer groups in the sheet-metal trades have opposed the union-sponsored idea vigorously. Nevertheless, some 15 of 53 agreements concluded by mid-summer included SASMI provisions. And near the end of August, the Construction Industry Stabilization Committee approved a 33¢ (first year) pay agreement (at Elmira, N.Y.) which included SASMI provisions in its terms. Employers argue that guaranteed wages will encourage malingering, and enormously increase costs of construction.

Another program that will add costs to construction was announced by the big (9500-member, 17,000 affiliates) Associated General Contractors: An employer-paid (and employer-managed) health and medical plan for perhaps one million construction workers. The plan, to be financed by employer contributions of between 11¢ and 22.5¢ an hour depending on level of coverage desired, will provide hospitalization, medical and out-patient care for workers and their dependents. Key feature is that the coverage is "portable": coverage is based on number of hours worked for a covered employer, through an "hour bank" account in each employee's name. It would follow the workman to another covered employer, and would cover him for lengthy periods, even if unemployed or working for a noncovered employer. Salaried workers, including professionals working for contractors, can also be covered; the fund will be managed by an all-employer board of trustees, a paid administrator, to be headquartered in Atlanta. Participation is to be voluntary, not a subject for labor-management negotiations. [E.E. Halmos]

[continued on page 48]

J. O. Johnson High School, Huntsville, Ala. Architect: Millberger, Rutland & Associates. Associated Architects: Jones and Herrin. Hardware Dealer: Hardware Services, Inc.

cheer leader



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News report continued from page 44

Calendar

Oct. 8–12. American Concrete Institute convention, Ottawa, Ontario, Canada.

Oct. 10. Deadline for entries to interior architecture design awards program sponsored by the Houston Chapter AIA.

Oct. 10–14. Annual meeting of the National Trust for Historic Preservation, Western Reserve Historical Center, Cleveland.

Oct. 13–21. San Francisco International Design Show, the Showplace.

Oct. 14–17. Fifty-fifth annual convention of the American Gas Association, San Francisco.

Oct. 15–17. National noise control engineering conference, Shoreham Hotel, Washington, D.C.

Oct. 15–18. Fifty-second annual meeting of the Producers' Council, Inc., Carrousel Inn, Cincinnati.

Oct. 20–Nov. 11. The Design Necessity Exhibit, Crown Center Redevelopment Corp., Kansas City, Mo.

Oct. 21–25. Fifty-sixth annual conference of the American Institute of Planners, "Planning and the New Federalism," Regency Hyatt House, Atlanta.

Oct. 21–26. Sixteenth annual meeting of the Association of Engineering Geologists "Geology, Seismicity-Environmental Impact," Sheraton Universal Hotel, North Hollywood, Calif.

Oct. 22–23. Lighting conference for design constructors, General Electric's Lighting Institute, Nela Park, Cleveland.

Oct. 23–25. Interface 73 sponsored by the Industrial Designers Society of America, San Diego, Calif.

Oct. 27–Nov. 24. Exhibit of the Italian Art and Landscape Foundation Inc., Fogg Museum, Cambridge, Mass.

Oct. 28–30. New York State Association of Architects Inc./AIA school building exhibit for the convention of the New York State School Boards Association, Inc., Syracuse, N.Y.

Oct. 29–Nov. 1. American Society of Civil Engineers annual and national environmental engineering meeting and exposition, Americana Hotel, New York City.

Nov. 1. Annual construction conference sponsored by the Cleveland Engineering Society, Cleveland Engineering and Scientific Center.

Nov. 1. Hirons Prize competition opens for design of hypothetical Neighborhood Health Care Center. Program, sponsored by National Institute of Architectural Education and Hospitals and Health Committee of New York Chapter AIA, is open to persons in architectural field under 35 years of age not enrolled in full-time architectural academic program.

Nov. 1–2. Thirteenth annual Construction Contracts and Specifications Institute presented by the University of Wisconsin-Extension and Region 7 of the Construction Specifications Institute, Madison campus.

Nov. 5–8. National hotel and motel educational exposition, New York Coliseum, New York City.

Nov. 5–9. National plastics exposition and conference sponsored by the Society of the Plastics Industry, Inc., McCormick Place, Chicago.

Nov. 6–8. National Interior Design Show, Automotive Building, Exhibition Park, Toronto.

Nov. 6–8. Conference on designing to survive disaster sponsored by IIT Research Institute, Chicago.

Nov. 14–24. Thirty-fifth International Building and Construction Exhibition (Interbuild), London, England.

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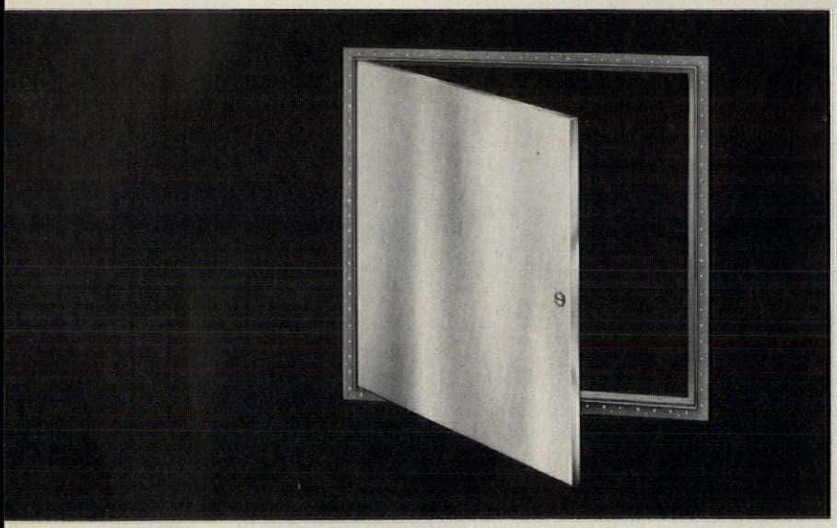

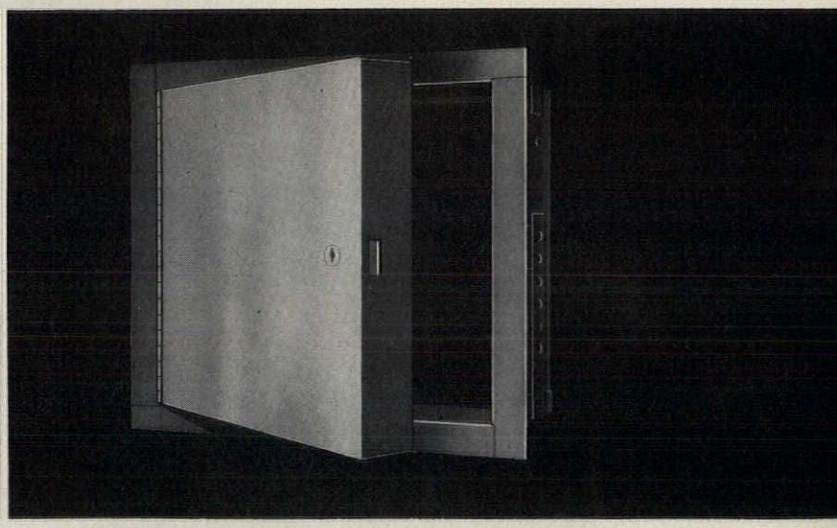

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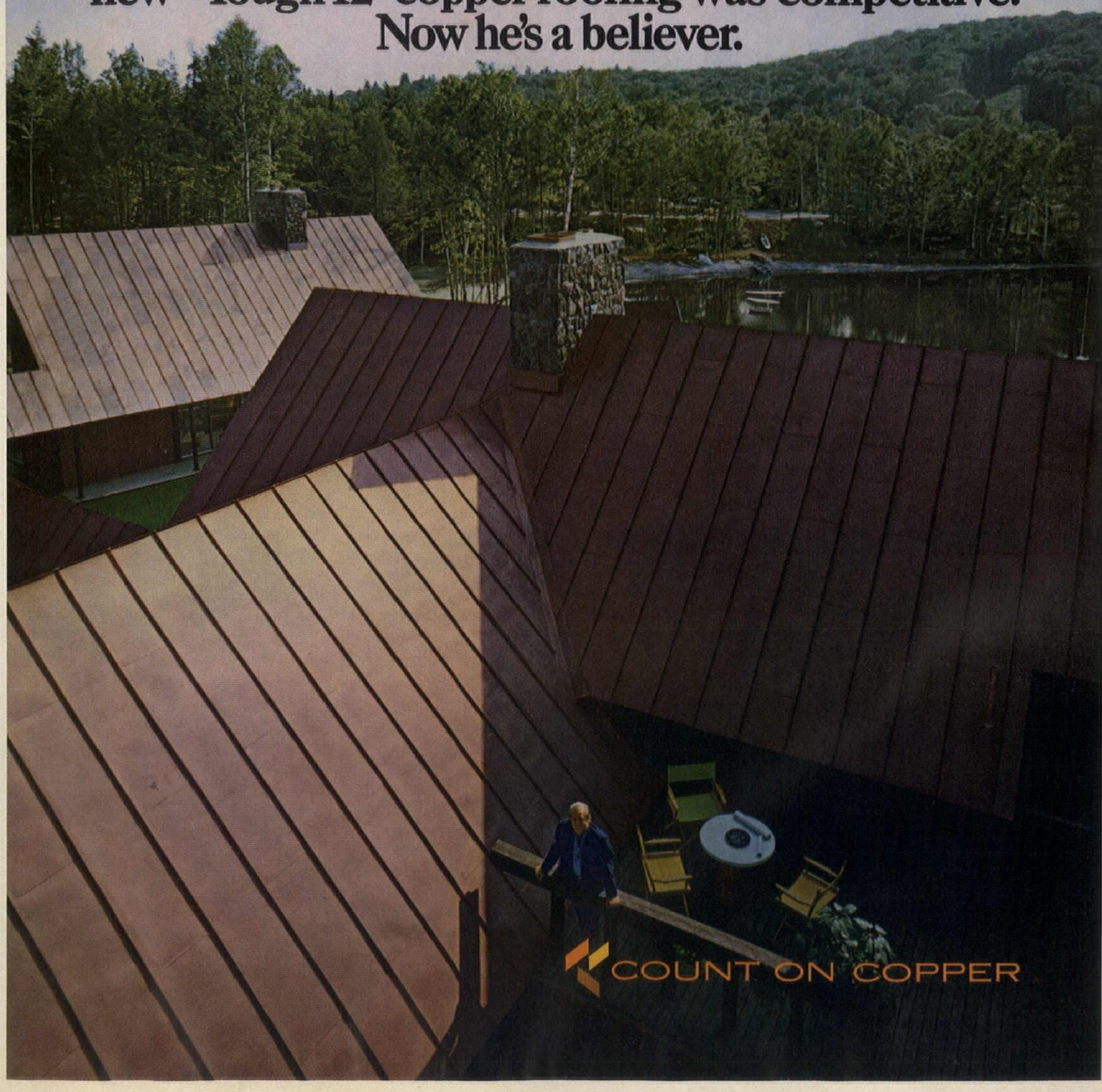

Architecture west

Watt Hall, USC

"I have long felt that a dean shouldn't stay in office too long. Both dean and school deserve a change," said Sam T. Hurst in resigning as dean of the School of Architecture and Fine Arts at USC. He has held the office for 11 years, following four years as dean at Auburn University; after a year's leave he will return to USC as professor of architecture.

The seat of deans and chairmen has become increasingly uncomfortable in the 60s and 70s, perhaps because of the growing incompatibility between the roles of architect and administrator. Architects seem to feel a moral duty to share their views with the young, which makes them at home in teaching. But there is little spiritual reward in being a moneyraiser. Deans and chairmen are usually hired because they have strong faiths in their views on everything from how and what students should be taught to what constitutes good city, campus and architectural planning. But once in office they are accountable to regents, trustees and other governing bodies for the new policies they implement. Then they have to defend the curriculum to the local architectural establishment which may oppose change.

Change is what Hurst brought to USC. From the beginning he opened the school door to community problems. One was right outside the windows, the ring of deteriorating neighborhoods with high crime rates around the campus; the school participated in the urban renewal studies of the area. Hurst was active in the Regional Planning Association, and in the mid-60s he and his faculty played a strong role in the Environmental Goals study for L.A., in which goals set up by professionals became the basis for participatory planning by neighborhood groups. He brought together friends and patrons of architecture in the Architectural Guild to form a pipeline between town and gown; one result was the raising of numerous scholarships for students. He joined the city of Pasadena to acquire the Gamble house, which has led to the most successful use of a gem of domestic architecture; he initiated the scheme for a volunteer docent system which has kept the house open for tours and as a guest house for important university visitors.

"The most daring thing he did was to bring Konrad Wachsmann to the school," said A. Quincy Jones, for 15 years a fifth-year design critic. In 1964 Wachsmann set up the Building Institute, a graduate program concentrating on the industrial process. Another USC luminary is Ralph Knowles whose Owens Valley study is a pioneering effort to provide tools by which designers can match building shapes to their ecological site.

"When Sam came," said Edgardo Contini, "the school was oriented to the task, neither responsive to nor recognizing the winds of change. Change is always resisted and not always appreciated. He aggressively sought to make the school a more relevant instrument in the curriculum and more aware of community issues."

Hurst leaned noticably on the views instilled at Harvard where he took a master's degree in 1949. "Sam was against the star system," said Jones. "His goal was to teach students to think. He knew that to teach architecture you teach participation, and what the student absorbs is the result of participation. The impact he has had will not be felt for many years."

Jones acknowledges that an architect makes a big investment when taking on a graduate who lacks skills, especially in a profession which is underpaid and often has cause for worry about how an office can be kept open. But his years on the National Architectural Accrediting Board has turned Jones into an eclectic as far as schools go, and he says that a graduate who can think and is articulate is as much an asset to an office as one who can detail a stair. "It is shortsighted to think only in terms of the week's production."

Hurst had delayed his resignation until completion of the new quarters for the school, on which he collaborated with Edward A. Killingsworth/Jules Brady & Associates. Watt Hall, the new facility, connects by walkways and balconies to the existing buildings, and the planning grows out of the circulation system. In solving the circulation the design team developed shared spaces around a central gallery which will serve for exhibitions, juries, conferences and parties. "Literally a mixing space through which all traffic moves and in which the work of one group must meet the work of others," Hurst says.

The plan is an elaboration of the existing scheme in which administration, library, auditorium and studios are ranged on four sides of a rectangular court. One of the traditions of the last decade has been the visiting speakers at noon in the court, much of its success due to the simplicity of an arrangement which allows a floating audience; no one is captive. The new building has preserved the spirit of the tradition.

Hurst mentions another tradition carried forward—that of natural concrete widely used in the area from 1915 through the 20s. Concrete is also the accepted vocabulary now for the new buildings on the south side of the campus, and blending with these are the natural, sandblasted or bushhammered surfaces of Watt Hall. "A tough building," Hurst calls it, "and highly organized and disciplined. The dominant aesthetic derives from the clear expression of the structural, spatial and environmental systems."

The building derives from the T-shirt culture and from Calvinism and ends up closer to Lou Kahn's ideal of a classroom under a tree than some of Kahn's. The Calvinism comes naturally enough to Hurst, an elder in the Presbyterian church; the building is as lenient as it is strict.

Killingsworth says, "The basic planning is Sam's more than ours, but it was a team in which everyone was involved. Sam's input at USC was the team project. He dropped the vocational point of view and put the architectural education on a firm intellectual base. He wanted a small school with a high intellectual level." [Esther McCoy]

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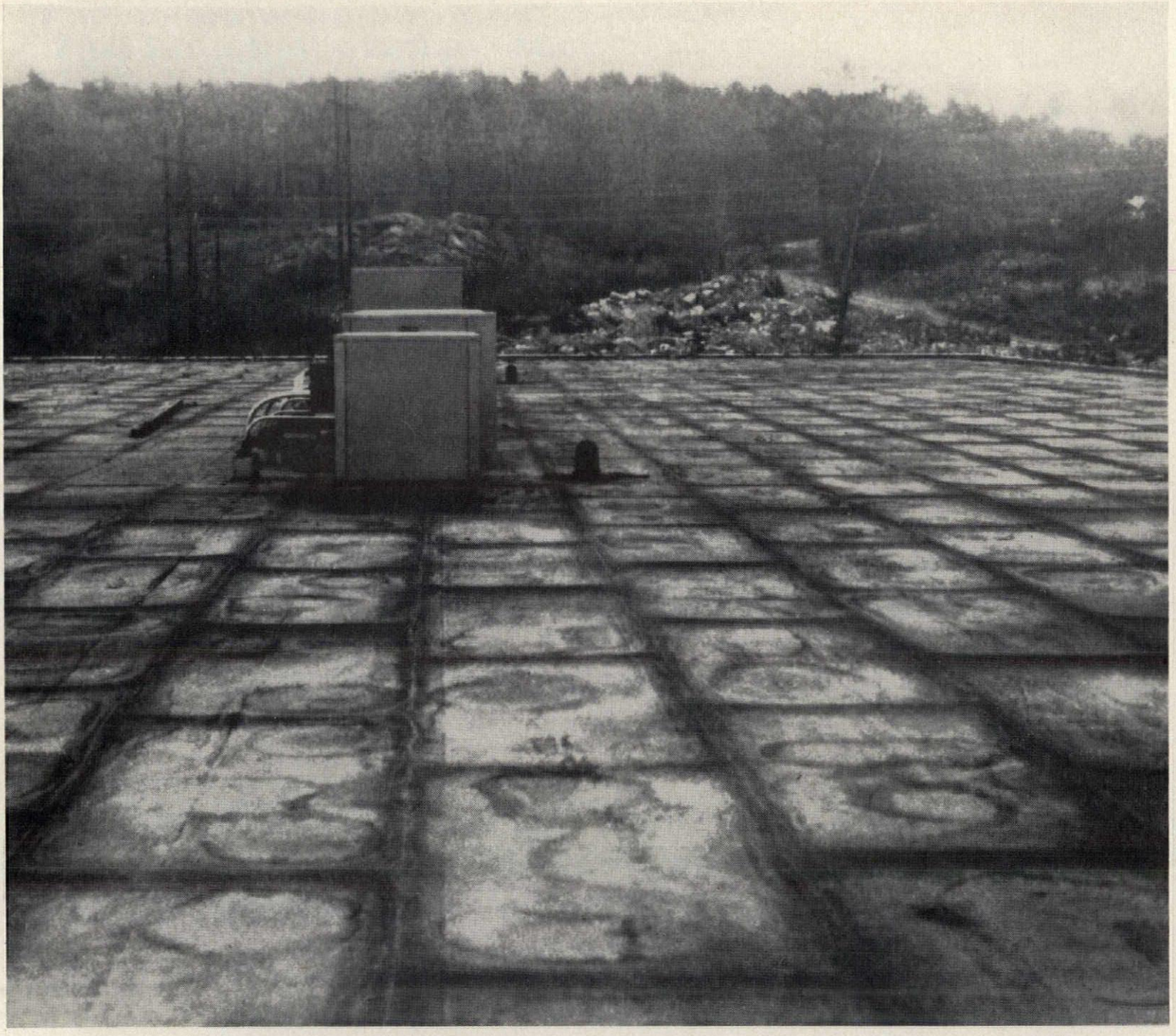

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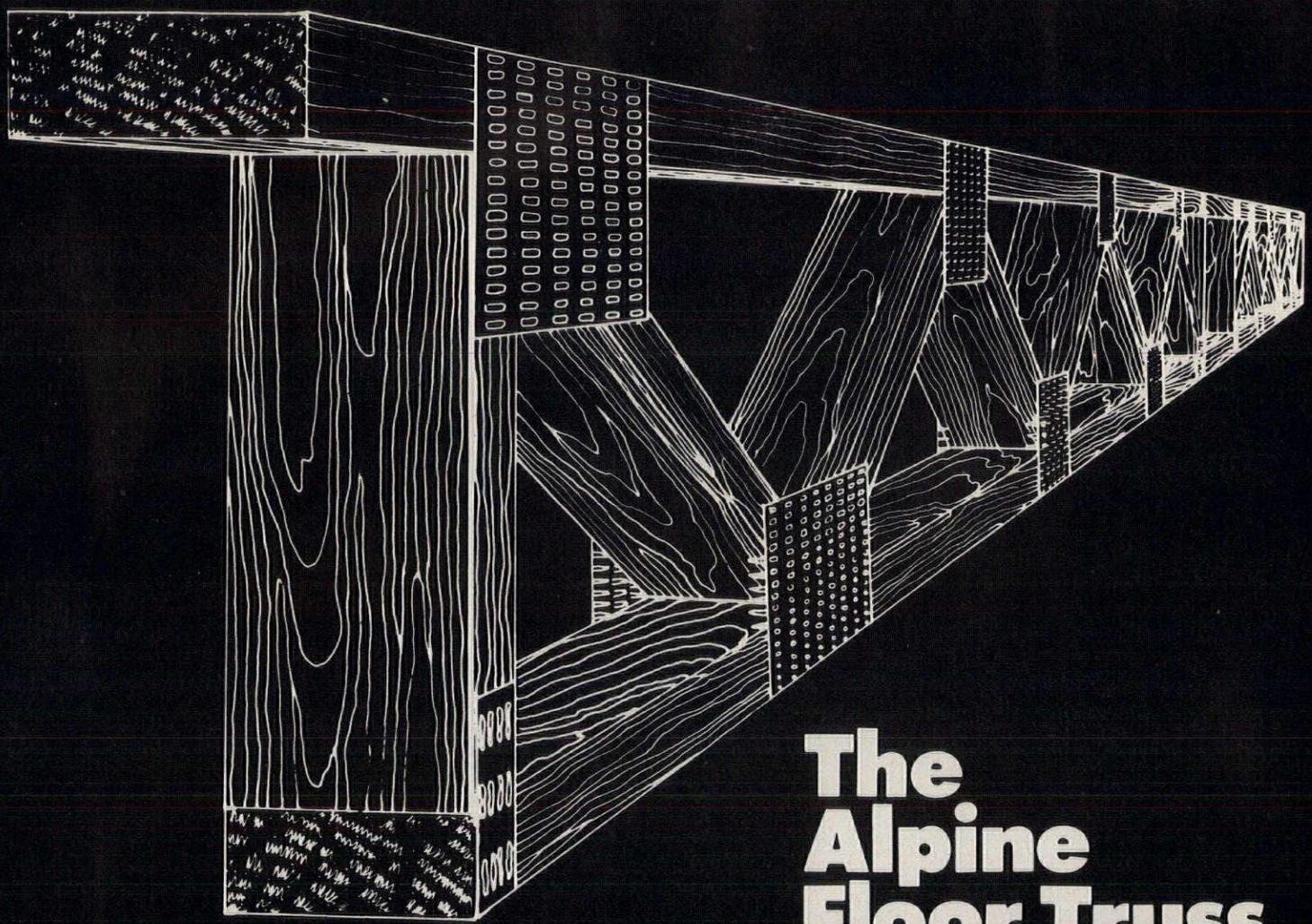

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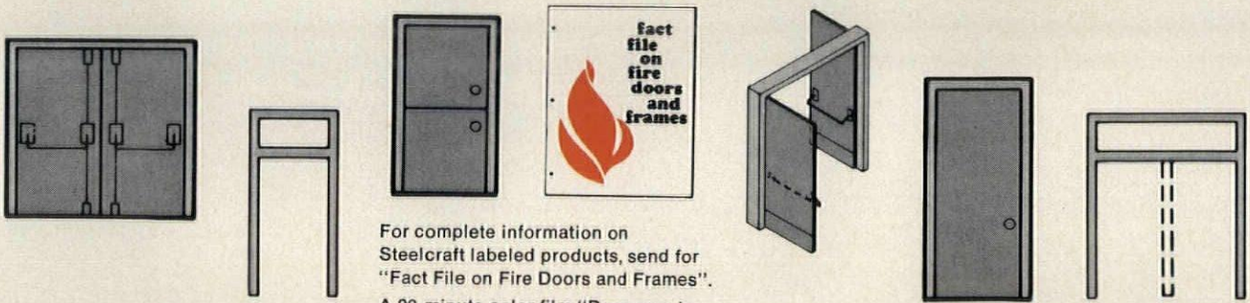

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All parks are people's parks

October 1973

Edge of the Long Meadow, Prospect Park, Brooklyn. Photo: J. Dixon.

Some years ago—in the heyday of community participation—I attended a meeting of my neighbors around Prospect Park, Brooklyn, with Tom Hoving, then head of the New York City Parks Dept. Now, as Director of the Metropolitan Museum, Hoving is expanding that institution into Central Park; then he was leading a campaign to bring cultural life to the parks in less eternal forms—concerts, plays, happenings and festivals.

Representing "the community" at this meeting were people with other axes to grind; most of them cared little for Hoving's programmed activities, which only attracted unruly people from other parts of town to "our" park. (Who is "the community" anyway in a case like this?) Most of them came out to stump for one of two contradictory policies:

1 Divide the whole park, insofar as possible, into softball diamonds, football fields and tennis courts, leveled and drained—preferably with concrete bleachers.

2 Preserve every contour and shrub of Olmsted and Vaux's masterwork against both encroachments and harsh use.

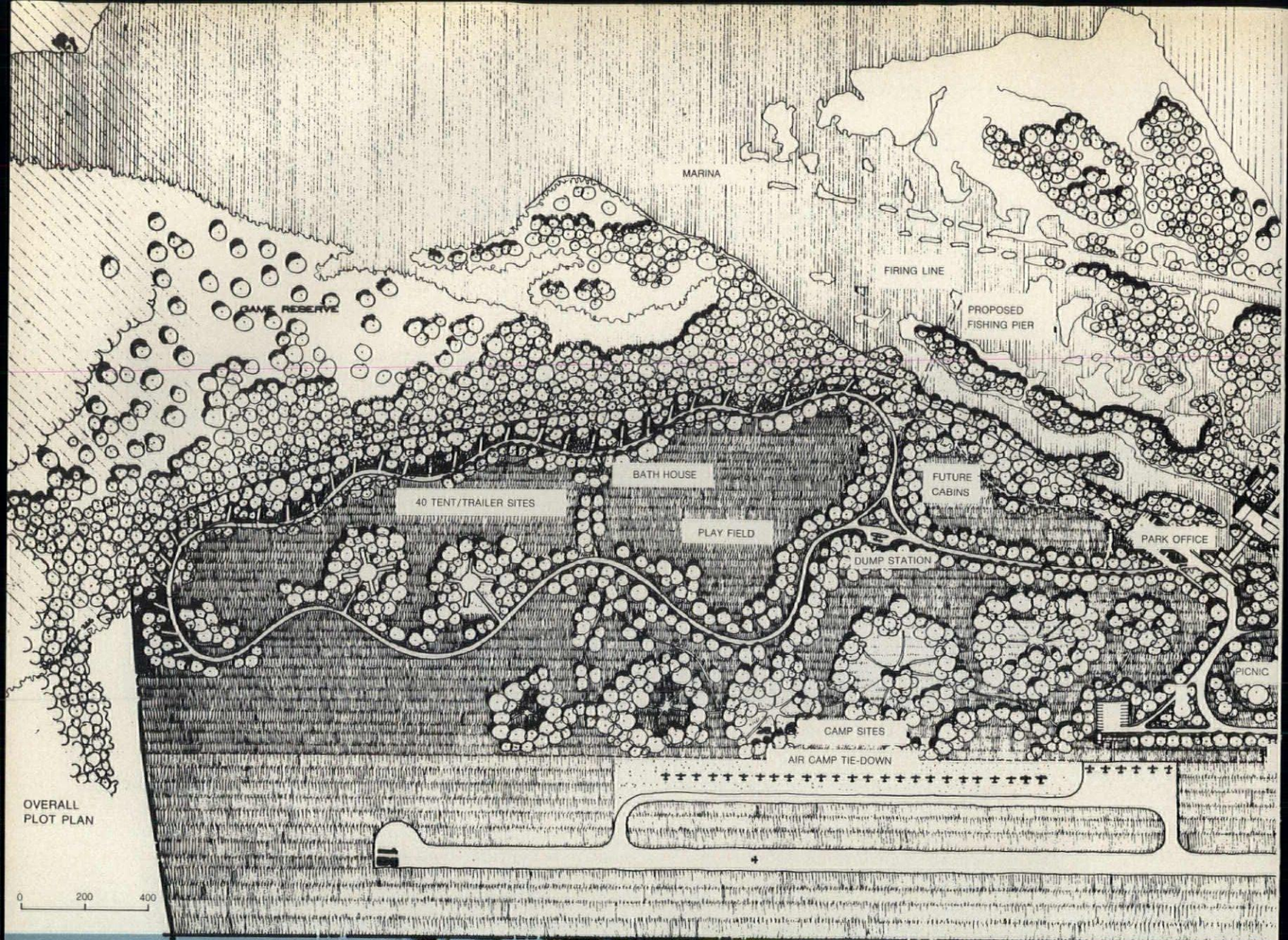
Hoving argued persuasively (I thought) that a park is neither an open-air gym nor a botanical garden. One of the glories of the Olmsted and Vaux design, he explained, was its adaptability to different uses at different times—to some uses they could never have foreseen. Their Long Meadow, for instance—a mile-long swath of undulating turf between wooded slopes—was a popular site for weekend softball games. Whole Puerto Rican families, from newborns to grandmothers, would picnic under the maples while their men moved out onto the meadow and back. For most onlookers, the green expanse was as exhilarating with players as it was empty. Yet one of the conservation-bent spokesmen for my neighborhood was convinced that the ballplayers would prefer the paved and fenced public school playgrounds (if only they realized they could use them weekends) to the muddy base paths that defaced our Meadow. The Parks Department's responsibility, Hoving maintained, was not to *preserve* grass, but to *replenish* it. Everybody went away mad.

No area of the designed environment is as susceptible to change as the park—both in physical form and in patterns of use. The forces of growth and decay work faster, or course, on landscape than on buildings; the eroding forces of use and abuse are especially hard to control, or even predict, in parks; there is probably no area where the maintenance efforts have greater potential for further destruction. And no other area of the designed environment is as susceptible to changes in *use*. Nobody *has* to use a park, or to use it according to labels on the plan; if the tot lot makes an ideal teen-age hangout, only police effort can enforce the designer's will.

As lifestyles change, so do the uses of park space. In the 1950s and 1960s for instance, there seemed to be a growing demand for active recreation space; new parks tended to be patchworks of playing fields, with picnic areas firmly anchored by cast-iron grilles. Old-fashioned sit-and-stroll parks that weren't updated were left largely to old ladies and drifters. Then, in the late 1960s the trend reversed: a new generation wanted to go out and just rap on the grass, to fly kites, or to engage in the kind of community festival that only a few ethnic holdouts had carried on before.

The message for architects or landscape architects, whether they are planning urban parks (which have a long, instructive history) or exurban parks (which have been subjects of conscious planning only in recent decades): park land cannot be carved up into single-use enclaves. For a design or planning professional there is a great temptation to plan and label everything, at the risk of seeming to render an incomplete service—of copping out. Of course the needs and activities of the public must be foreseen insofar as possible—in terms of probabilities only. Then plenty of leeway must be left for mankind and nature to do *their* thing.

John Morris Dixon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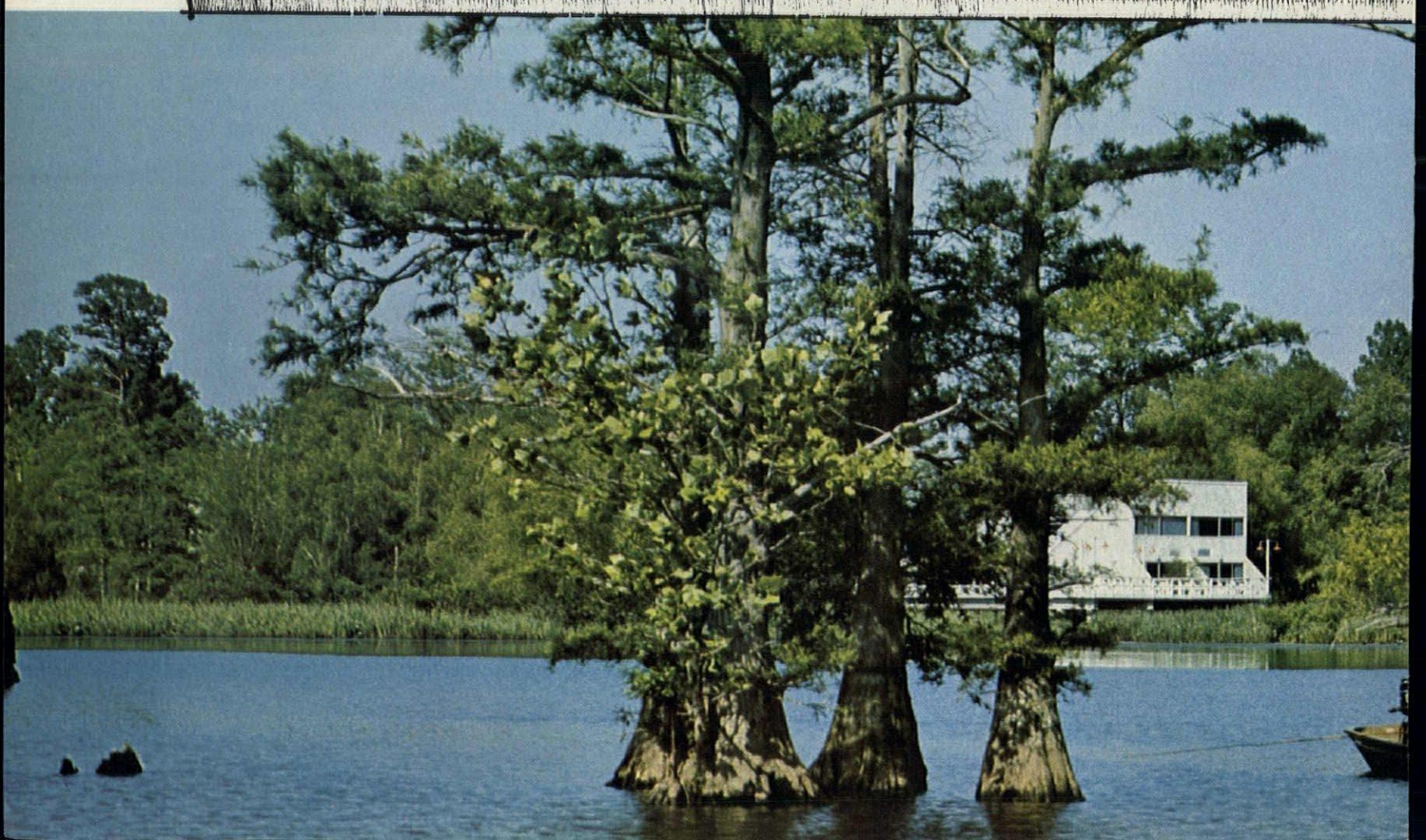
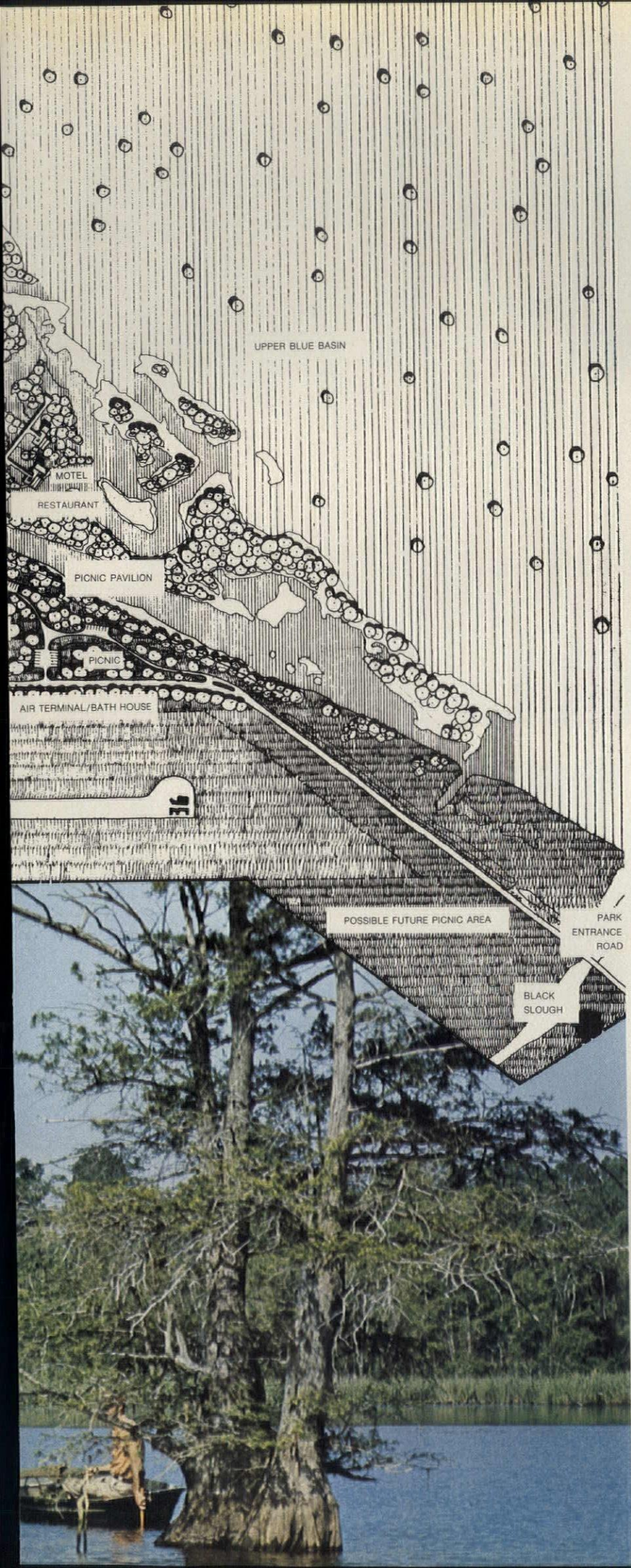




Reelfoot Air Park

Unroughing it

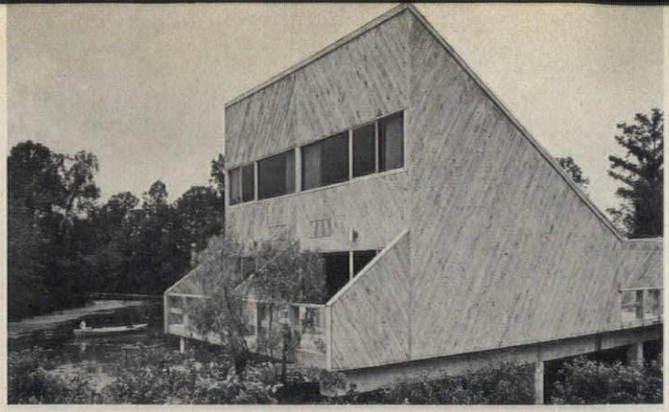
Tennessee's first air park draws its architectural directions from a desire to give more people access to a unique lake, its history and its natural resources

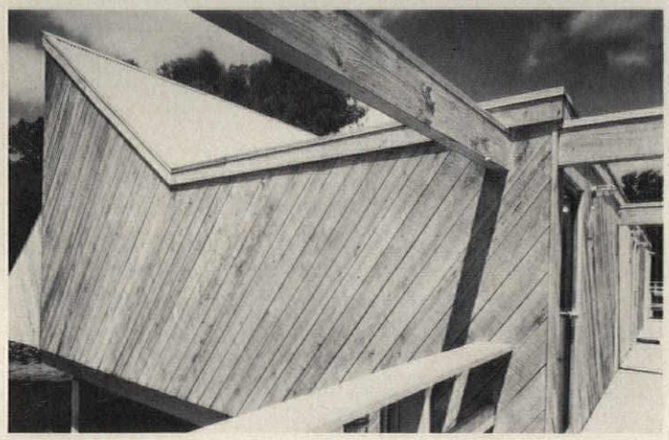
If it weren't for the Great Spirit, or so the Chickasaw legend goes, Reelfoot Lake wouldn't exist. He was angered at the forbidden marriage rites being performed for Chief Reelfoot and a Choctaw maiden, and stomped his foot. This act—or the New Madrid earthquake of 1811–1812, for nonbelievers—caused the Mississippi River to divert, forming the lake. Abandoned by the frightened Indians, the area became a natural for wildlife of all kinds, and commercial fishing and hunting followed. After a history of controversy over who owned what at, and in, the lake, the state of Tennessee took over Reelfoot.

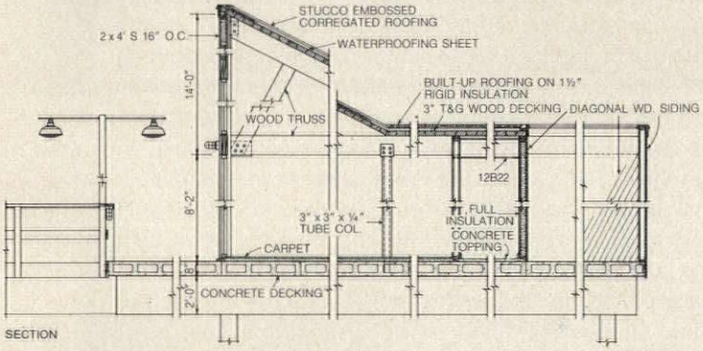
Still, when architects Gassner Nathan Browne of Memphis were asked to do a comprehensive planning study of Reelfoot in 1969, the area was far less than a tourist spot. In fact, it was more of a fishing camp; there were few amenities or accommodations. Visitors were limited (by conditions) to those hearty individuals who enjoy nothing more than building a fire to make coffee in a cold duck blind. Sightseers were unheard of—the park, in short, needed a boost. To make the most of a 3500-ft recreational airstrip built in the '60s, it was decided that a federally assisted air park would serve Reelfoot well. Since there were almost no lodging accommodations, however, those were a prerequisite specified by the government.

GNB's report further set forth a number of basic design parameters for the development of the state-owned land at Reelfoot: 1) Park lands whenever possible, should be in juxtaposition and continuous. Where physical separation is unavoidable, visual unity should be achieved through the use of scenic drives for linkage. 2) An overall park atmosphere should be developed through the use of graphic, landscape and architectural design to provide visual continuity. 3) The park must cater to present and projected needs rather than to past needs, providing a balanced recreational program appealing to a variety of publics—the urbanite, ruralite, family, hunter, fisherman, conventioneer, one-day or long-duration visitor. 4) The lake must be central in the emphasis of the state park, affording the visitor opportunities to view its beauty and diversity. This could be accomplished by fingering out into the lake with piers, walkways, motels, etc. and siting


REELFOOT LAKE
STATE PARK







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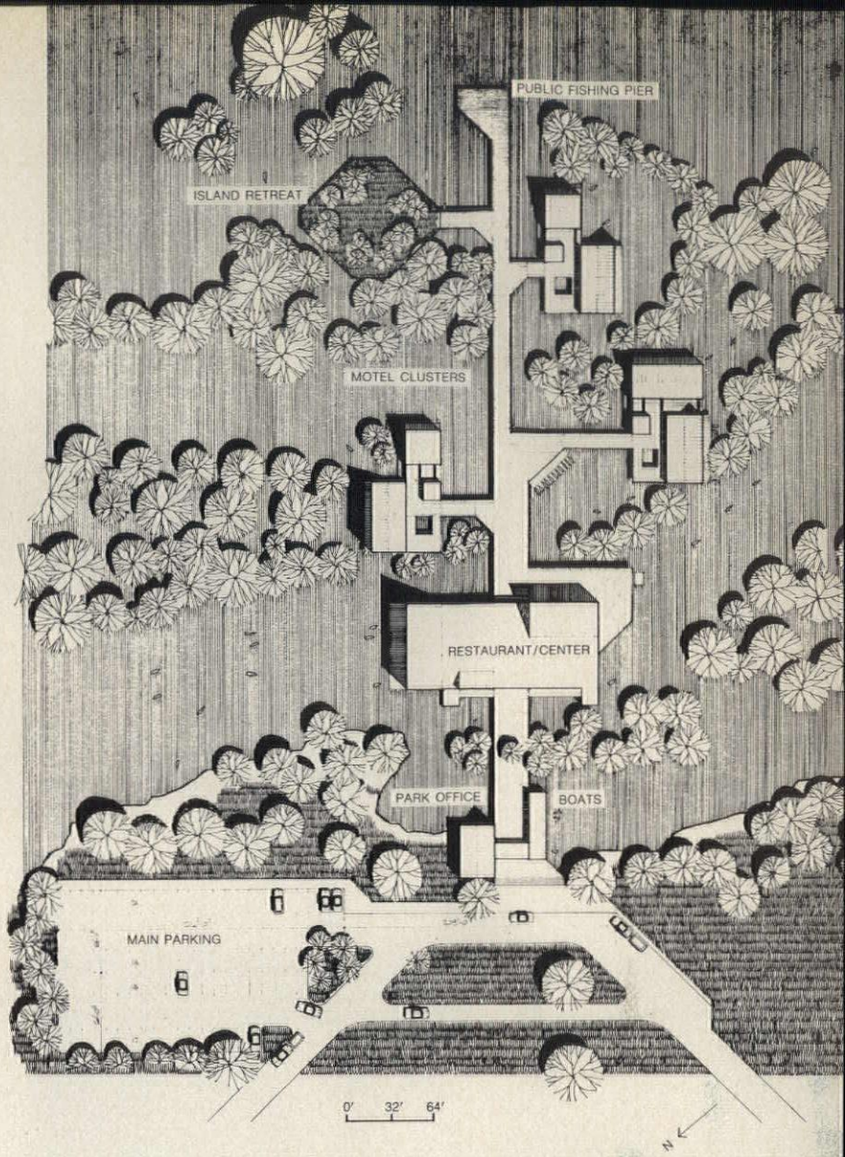
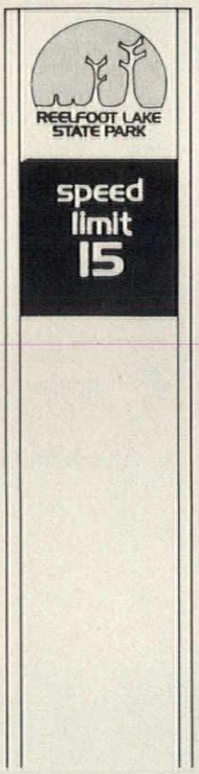


Guest units (opposite page, top) thrust out into swampy areas near the water, giving visitors lodging within arm's reach of natural surroundings. Fishing is as close as the balconies, or in available boats (opposite page, bottom). Units (top, left) and the restaurant (detail and below) are visually tied by common forms, graphics and textures, as well as walkways.

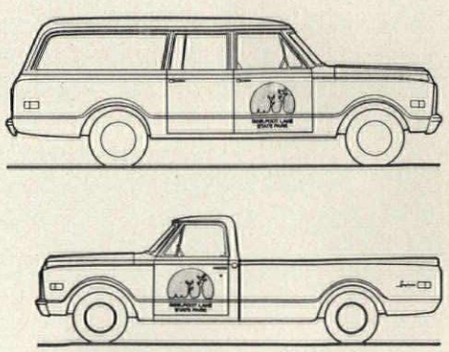


structures in such a way as to avoid forming a barrier between the lake and the park visitor.

In order to avoid overdevelopment or misuse of the lake region, the master plan calls for limiting development to only three areas, separated by wilderness. Scenic drives and trails would link the nodes. Through the years, plant life has advanced further into the lake, fed by debris from its own decay, and silting due to cleared farmland nearby has decreased the surface area of the lake. Once 40,000 acres or more, it now contains 18,000 acres normally, or 30,000 acres at flood elevation. Instead of the original depths of up to 40 ft, 18 ft is now maximum. There are no plans to clear much of the lake, however. Instead, selective dredging and clearing will be done, according to the park's superintendent. He notes that it will be easier to do additional clearing than to replace something taken out by mistake. Even the blanket of Duckweed covering the cove during part of the year has visual and practical appeal, especially to the ducks, who eat it.

The air park (north) end of the lake will continue to be for sportsmen. However, it now encourages even those less inclined to "rough it," through the new tourist center with its 20 guest cabins and restaurant. The south end will emphasize family and convention activities. On the east, there will be day-use recreation areas where boat tours will originate, along with archaeological centers at the Indian Mounds.

It is the completed tourist center that sets the pace, though. It is the prototype, clearly defining the reasons GNB did not take the easier route of lining the shore with units. By projecting the cabins out into the water, a sense of immediacy with the surroundings is achieved, yet access to the shore is not restricted to cabin guests only. The extra cost of building into the lake, everyone felt, was a fair price for the benefits. Because of the fire codes, the deck joining the units to each other and the shore had to be changed from wood to concrete. The architects admit that the deck should have been tinted to reduce glare, and wood would have been nice. But the overall feeling is more important; the dominant theme is that of bold, clear forms clad in diagonal cedar. The detailing is simple, strong and direct, and the straightforwardness of it all seems comfortable for, and respectful of, the unique site. The State of Tennessee and Gassner Nathan Browne have set admirably high standards for the state lands at Reelfoot. If the private landholders care as much, the Great Spirit should be pleased. [JM]

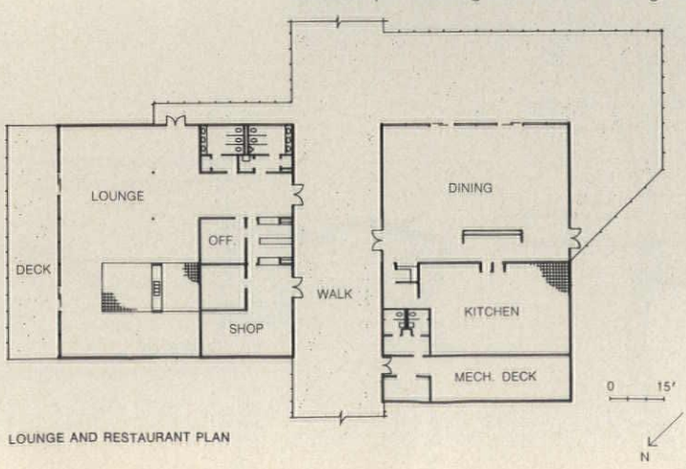


Several examples of GNB's comprehensive graphics program for Reelfoot Lake.

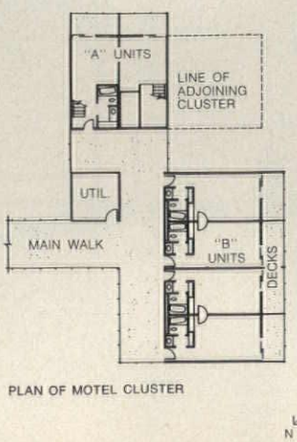
Data

Project: Reelfoot Lake State Park, Airpark Lodge, Tiptonville, Tenn.
Architect: Gassner/Nathan/Browne, Architects/Planners, Inc.
Program: following a master plan by the same firm, develop facilities to serve hunters and fishermen, in addition to recreational airstrip functions. Area to provide overnight lodging, food services, boat rentals and supplies and campsites and picnic areas. Located at the north end of Reelfoot Lake, this area is one of three different activity areas.
Site: swampy lake with undefined shorelines; buildings built out into the water, sited to take best advantage of existing cypress trees and other natural features.
Structural system: precast concrete piling and beams support precast concrete decking above water; standard wood frame construction used on buildings.
Mechanical system: electric heating with SCR control, aircooled direct expansion air conditioning; water and sanitary sewer lines, wrapped with electric cables and insulation to prevent freezing, are located under walkways and buildings.
Major materials: exterior, gray stained cypress shiplap on buildings and precast concrete deck and pier structure; interior, exposed fir decking, gypsum board walls, vinyl and carpet flooring on concrete deck.
Costs: including all motel units, restaurant, lounge, air terminal, picnic pavilion, ranger residence units, roadwork and site utilities: $1,522,390.
Consultants: structural, mechanical and civil, Pickering, Wooten, Smith & Weiss; graphics and interiors, Gassner/Nathan/Browne.
Photography: Otto Baitz.

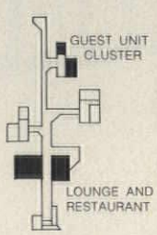
Interiors of guest units (top, left) and restaurant (above) carry out the same simple detailing as exterior, making the most of high pitched roofs.



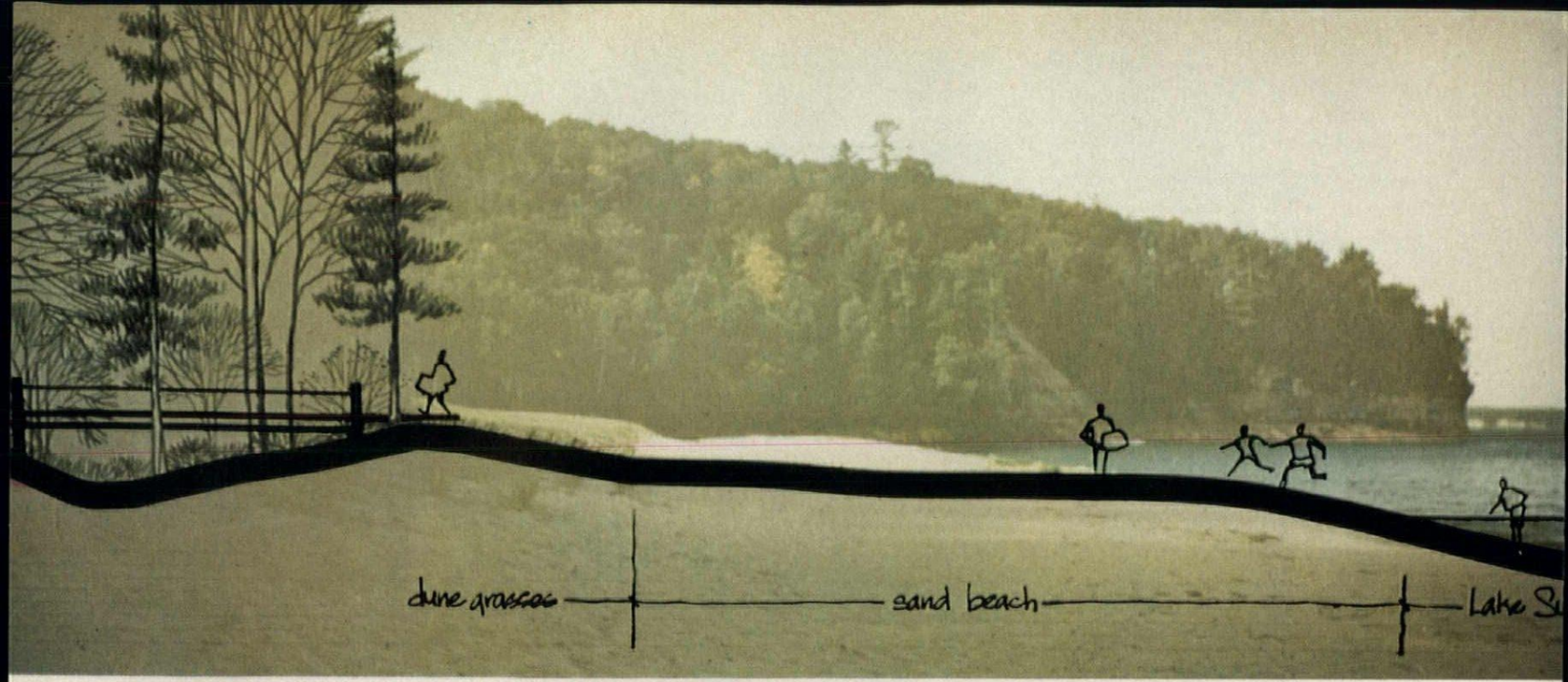
LOUNGE AND RESTAURANT PLAN

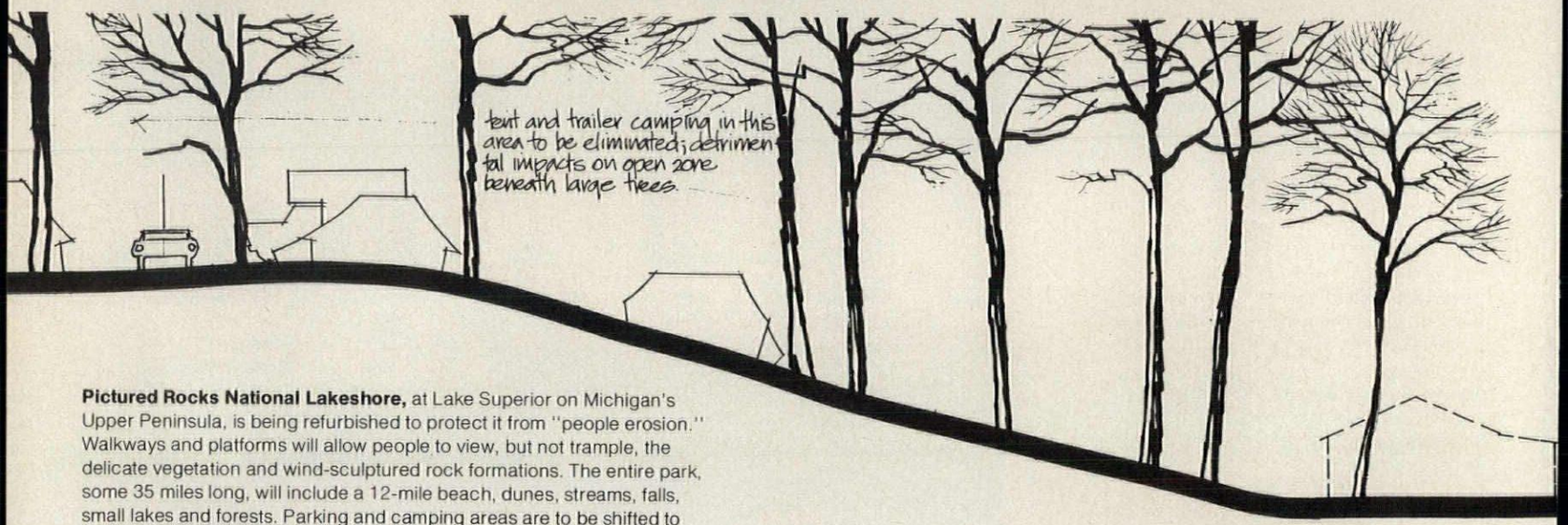


PLAN OF MOTEL CLUSTER

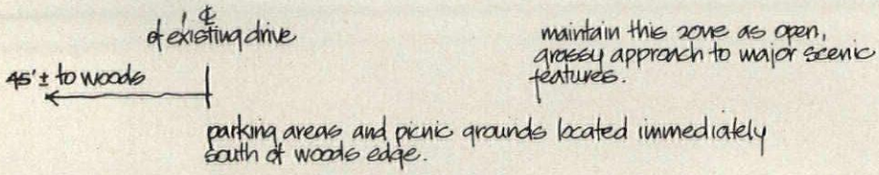


KEY PLAN

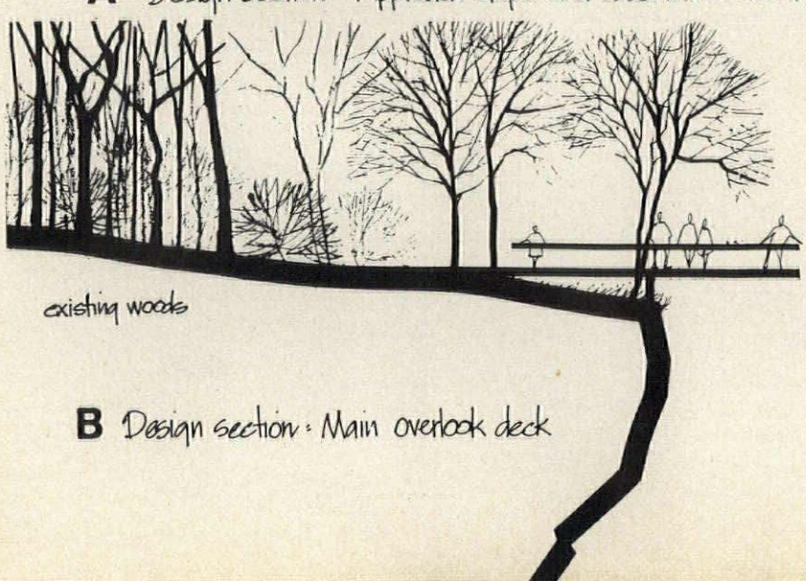




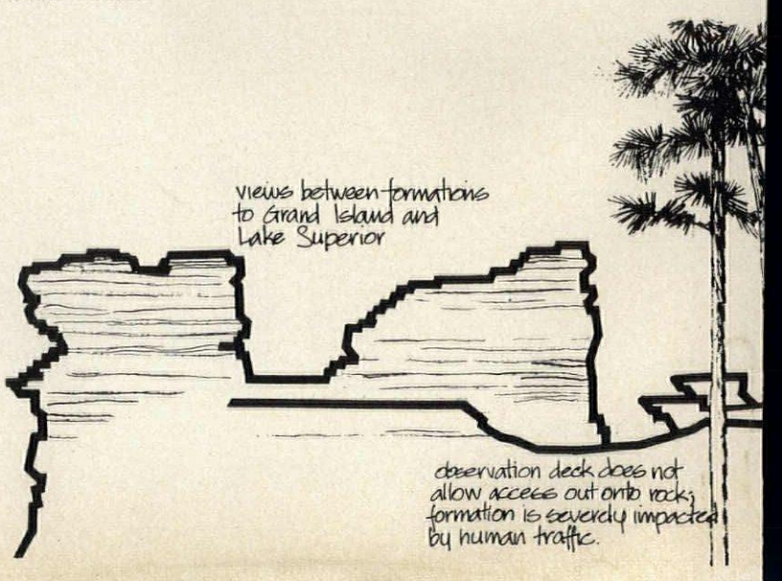
Pictured Rocks National Lakeshore, at Lake Superior on Michigan's Upper Peninsula, is being refurbished to protect it from "people erosion." Walkways and platforms will allow people to view, but not trample, the delicate vegetation and wind-sculptured rock formations. The entire park, some 35 miles long, will include a 12-mile beach, dunes, streams, falls, small lakes and forests. Parking and camping areas are to be shifted to the hardiest locations; sewage and water treatment plants will protect water purity. Johnson, Johnson & Roy are prime consultants for the park.



A Design section: Approach slope and observation deck, Miners Castle



B Design section: Main overlook deck

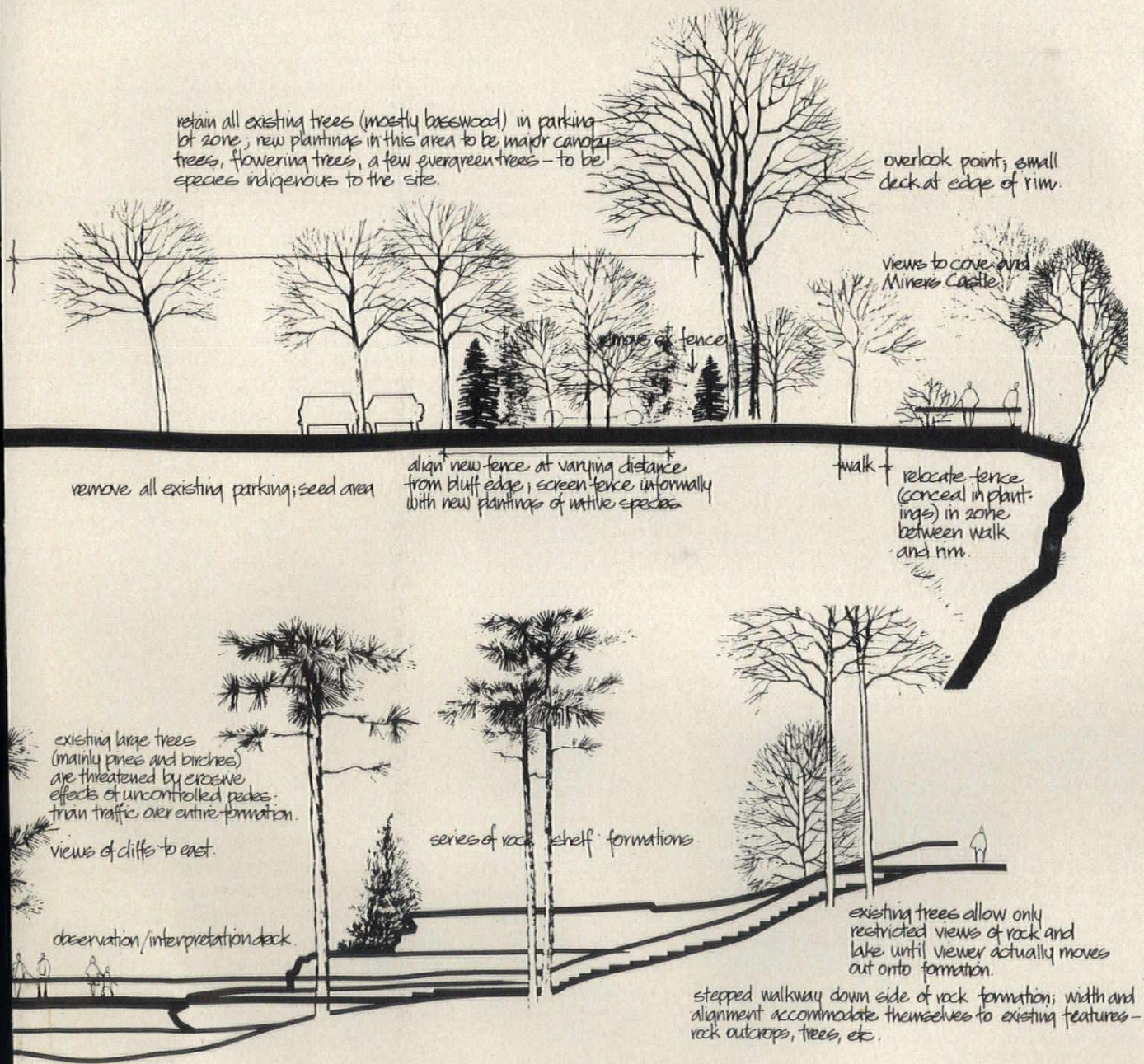


Designing the nation's backyard

P/A profiles the Denver Service Center, a little-known group of designers, planners, specialists and technicians responsible for the National Parks, which range from vast tracts to single plots, historical sites and structures

Once upon a time back in the olden days, as the stories go, there were some children in Morristown, N.J. with nothing better to do of an afternoon than go across the street to see "Mr. Washington's house." Somehow Mr. Washington's yard was off limits even on sunny days, but inside there was a friendly, gray-haired man who greeted us every time: "Glad to see you. Remember what your mothers said—you can stay as long as you keep your hands behind your backs."

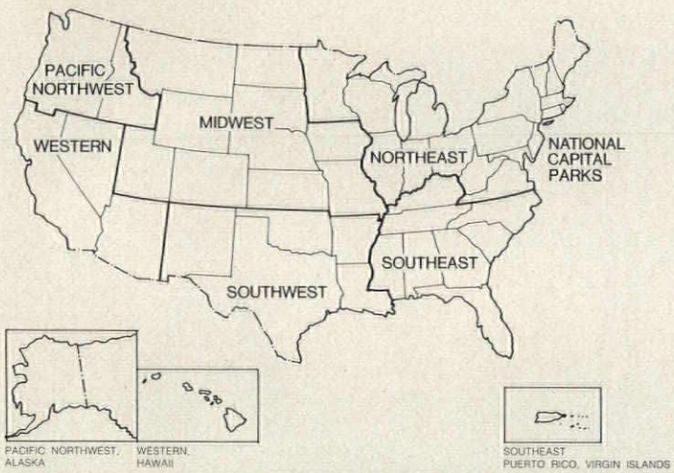
Today, children don't have to keep their hands behind their backs at the Ford Mansion or any of the other 300 or so historical sites and national parks maintained by the National Park Service. Long ago NPS built a museum—an interpretive center—behind the mansion, where Washington had spent



C Design section: Observation/interpretation deck on Miners Castle formation

the winter of 1779/80. Displays—from guns and swords to Mrs. Washington's clothes—were removed from the cluttered rooms and halls of the house to display cases in the museum. Dioramas and elaborate explanation boards replaced our friend's vivid descriptions of what we were seeing. The house, restored to its original condition, can now be viewed from roped-off traffic paths. It fulfills the National Park Service edict: retain the style of life; show the people what went on.

Not many of us really object to this pattern of serving the public. While there were few of us visiting the Ford Mansion, in those days, the site, along with all those maintained by the National Park Service, has now become available to millions who perceive that all NPS sites are actually America's back yard. The pattern continues: preserve what was there the way it was; provide a museum to show what was important; keep the people at slightly-more-than-arm's-length while getting



Directors of the National Park Service Regions act as "clients" for design teams from the Denver Service Center and private a/e consulting firms.

them as close as possible to the scene; provide interpretive services that explain everything (so Mom and Dad won't be embarrassed at learning along with the kids).

Today's families drive into a parking lot, stop at the comfort station (the term survives), tour an interpretive center, walk out along a path to observe what they are supposed to observe, receive "real insights and feelings" about what they are observing, return, with perhaps a lunch or picnic break and another comfort-station stop, to the parking lot. Depending on their consciousness level, they will have "done" yet another National Park or will have deeply experienced an exploration of history, man-made or natural. Or a family may opt for recreation—a swing through a mountain region, or a swim at a beach. The process is the same—drive in, follow certain paths, use certain facilities, enjoy America's backyard without destroying it.

If they do not know that they have been directed, manipulated, processed and exposed to a set program, their trip has been a success. If they never learn that their steps have been designed and programmed in advance, that is to the credit of the National Park Service—its administration in Washington and Regional Offices, its Interpretive Design Headquarters in Harpers Ferry, W. Va., and its Denver Service Center.

For the Denver Service Center, hidden away in loft space above a shopping plaza in the outskirts of Denver, is directly responsible for planning the National Parks and designing the facilities. Everything—from master planning to construction supervision of the latest toilet facility—comes out of this office. Some 360 people work there—architects, landscape architects, engineers, planners, historians, sociologists, as well as administrators and technicians skilled in everything from preparing technical reports to reproducing them on a fine array of photo, printing and duplicating machinery.

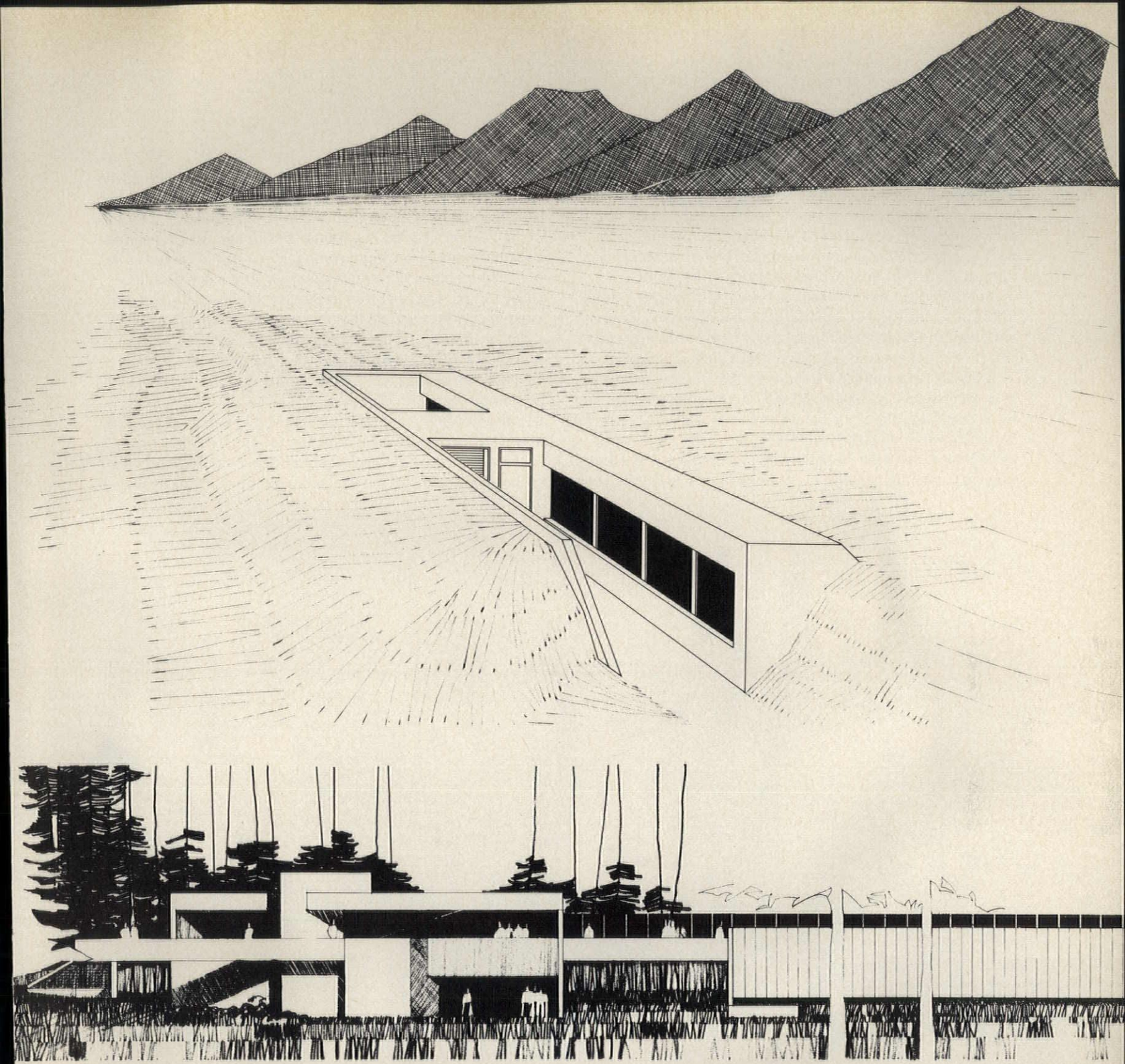
Although very much part of the bureaucracy, the Service Center is organized much the same as any large architectural firm. "Principals" are Glenn O. Hendrix, Director, who is a landscape architect and member of ASLA, and Donald F. Benson, Associate Director, a member of the AIA. "Associates" are team managers each responsible for a region of the National Park System. Regional directors are the actual "clients"; planning and design directives prepared by the team manager, when approved by the regional director, serve as agreements for professional services between client and the Service Center. There is also a team for historic preservation, which serves the entire system.

Although there are only about 300 parks, historic sites and recreation areas under NPS management, the work load is something else. (A great deal of this is due to a surge of Bi-Centennial work: "We're doing more for '76 than anybody else," says Benson.) During fiscal 1973 there were 2400 projects underway, with a Service Center budget of some $14 million. Because of staff limitations, in-house work is generally (but not always) limited to new-area studies, master planning, interpretive and exhibit planning, all historic preservation and supervision. The bulk of the actual design work is done by professional consultants—architects, engineers, landscape architects and other specialized firms.

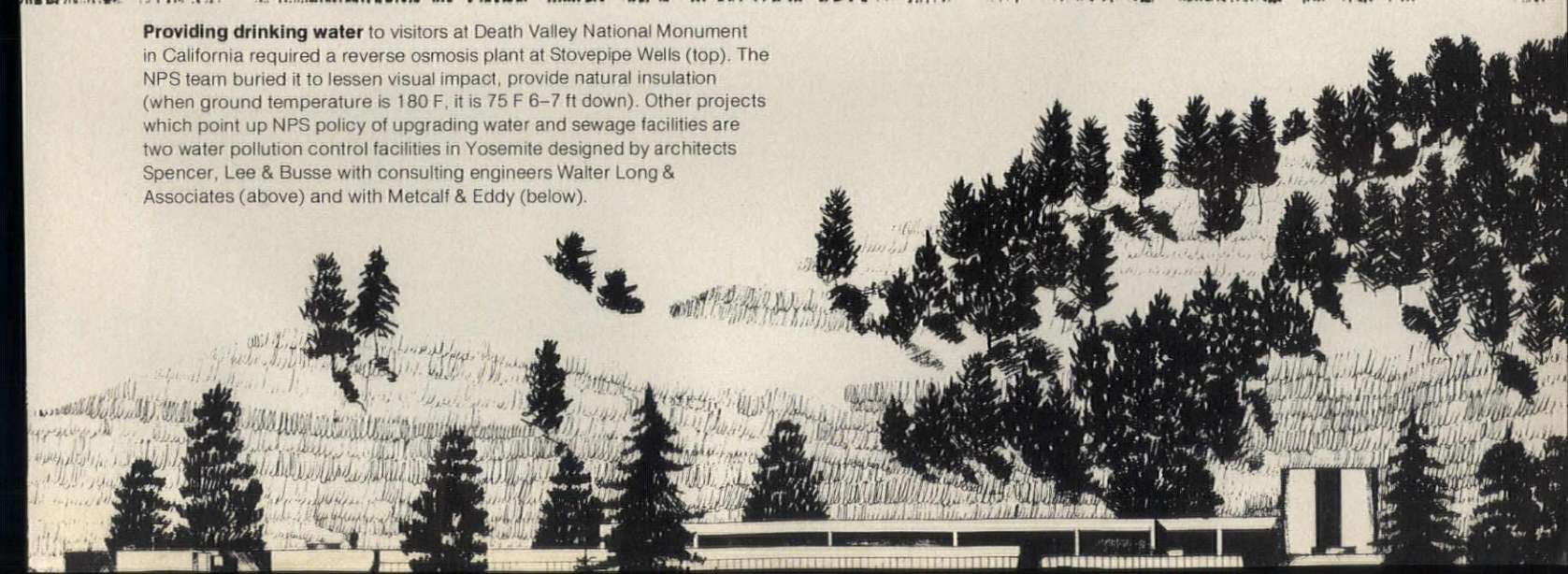
Often the Park Service contracts with a private firm to provide the full range of professional services for planning and developing one or more parks; this gives the park its own, ongoing a/e consultant, who in turn obtains his own consultants. Whether a contract is of this type or covers only a specific project, the contracting office of the Service Center reviews all specifications—whether prepared by the a/e firm or by its own professionals—for legal and administrative factors as well as the required Environmental Impact Statement. The contracting office also receives the bids and administers the contracts.

The Park Service as client

How does an architect, engineer or other professional obtain Park Service work? Simple, says Donald Benson: indicate an interest, demonstrate competency and, in some cases, be in the right place at the right time. While geography isn't everything, the Service Center likes to deal with local, or at least regional, professionals; reasons range from the altruistic (spread the work, get the local viewpoint) to practical (cut down travel costs). The Service Center is just now publishing a new brochure on its criteria for obtaining outside professional services. It describes the long-term consulting arrange-



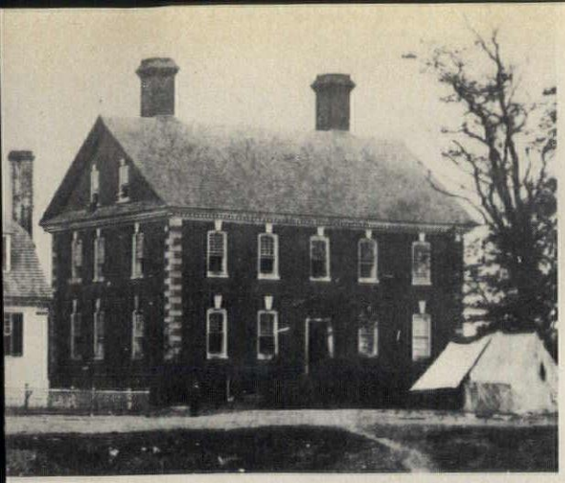
Providing drinking water to visitors at Death Valley National Monument in California required a reverse osmosis plant at Stovepipe Wells (top). The NPS team buried it to lessen visual impact, provide natural insulation (when ground temperature is 180 F, it is 75 F 6–7 ft down). Other projects which point up NPS policy of upgrading water and sewage facilities are two water pollution control facilities in Yosemite designed by architects Spencer, Lee & Busse with consulting engineers Walter Long & Associates (above) and with Metcalf & Eddy (below).



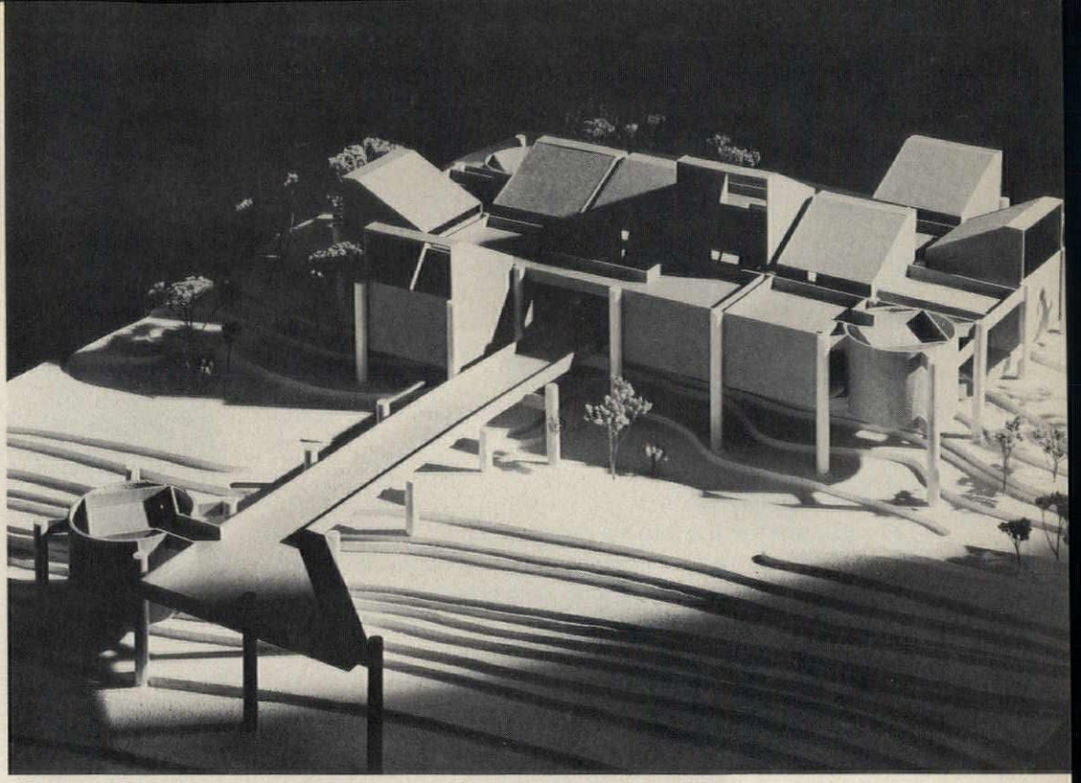
ment in detail and declares: "The evaluation and selection of a professional services consultant and his affiliates is not based on competitive bidding but on more subjective elements, including competence, excellence of design, sensitivity to environmental factors and staff attitudes. Most importantly, the firm must express a strong philosophical understanding of national park values and problems." Sensitivity embraces local or regional socioeconomics, culture, materials and craftsmanship, climate, local codes and construction practices and requirements of local authorities.

"Stability" is another NPS requirement: the firm must prove its organizational capability, sound internal management and fiscal practices, skills of employees and/or affiliates, and availability of principals to work directly on the project. Following the Brooks Bill "to the letter," as Benson puts it, the Service Center maintains a file of firms that have written in to express interest and submitted the Standard Form 251, advertises each project in the *Commerce Business Daily* (published in Chicago), and then evaluates interested firms with a formal committee procedure. The Center's selection board, headed by John Bright (a landscape architect) who also serves as its planning member, currently includes a landscape architect, Gerry Patten, engineer Robert Shelley, architect Donald Benson plus the appropriate regional team manager. The board members narrow the list of interested professionals to three, four or five, requests nonpriced proposals from them, then rate them individually on a chart where, for instance, "overall planning approach" might account for 28 percent of total points and "experience" 27 percent. Other weighting factors are apt to be organization, subcontracting and timely performance. As the board members work individually and their ratings are totaled for the final point count, this "takes selec-

Even in the wilderness, an urban problem calls for an urban solution. Heavy traffic around Yellowstone's Old Faithful Geyser prompted NPS designers to provide three triangular visitor centers and a vast paved courtyard for tourists viewing the eruptions. Signs inside the centers tell when. This area is only one of many being refurbished under Yellowstone's new master plan. Eventually, NPS hopes to bring in most people by bus from parking lots at major entrances to control the traffic.



The Nelson House, under restoration in Colonial National Historical Park, Yorktown, Va. is shown in a Matthew Brady photo taken when it served as a Civil War hospital. The house, built in 1711 by the grandfather of General Thomas Nelson, Virginia's second governor, had been restored by private owners in 1920 and has survived with original woodwork and paneling largely intact. NPS architects recommended removal of dormers, the "new" cellar doors and windows, and a brick back porch. Plans call for complete restoration of first and second floors, original paint colors, addition of temperature and humidity controls, electrical and plumbing services, fire detection and other security equipment.



Indiana Dunes National Lakeshore, between Gary and Michigan City on Lake Michigan, will include both public and private lands within its boundaries. Structure shown here is a beach facility designed to keep people off the dunes. Picnicking will be limited to inland sites. Primary purpose of the park is to preserve what remains of the beach, dunes, marshes and ecology of plants and animals in this industrial area.

The Frederick Douglass House in Washington, D.C., restored and opened to the public by NPS last year, will become the nucleus of the Frederick Douglass Center when a visitor center, promenade, black studies library and center for the arts are completed. Robert J. Nash is architect for the project, which involved Washington's black community as well as immediate neighbors. To preserve the character of the site, the new facilities will be dug into the hill, leaving the house as the principal landmark. Model photo shows portrait of Douglass, abolitionist speaker and writer, sandblasted on the concrete wall.

tion out of politics," says Benson. Price is negotiated after the first selection choice has been made; occasionally these negotiations are unsuccessful, so the negotiations are repeated with the second-high-point professional. While the process seems to work very well for the Service Center, some a/e's express dismay that they face "so much competition" even after successful past experience.

In-house capabilities

Professionals at the Service Center are backed up by a full array of bureaucratic support services and technicians, including computer specialists who assemble and coordinate program projections, financial data and engineering presentations. A professional library houses some 4550 books and study reports, while a liaison office is maintained in the Park Service Washington office to expedite certain efforts. (The national capital and urban planning team is also in the Washington office, as are several historians.)

The other important liaison is with the Harpers Ferry Center in West Virginia, which has full responsibility for design and production of interpretive media (films, exhibits, waysides, publications, etc.) that go into Park Service projects. The Service Center provides the space, the Harpers Ferry Center provides the objects viewed by the public.

Each team at the Denver Service Center is composed of professionals who provide a variety of expertise:

Planning ranges from comprehensive regional studies to highly specific site plans; the reports guide the management, use and development of parks and may be broad, conceptual master plans or definitive "action plans" which treat specific areas. The planners analyze each of the many proposals for additions to the park system that come from members of Congress, state officials, conservation and other organizations. They also cooperate in some regional planning and provide the expertise needed for special studies—sociologists, ecologists, economists and transportation experts. Every project is studied at the planning stage to produce the required environmental impact statement.

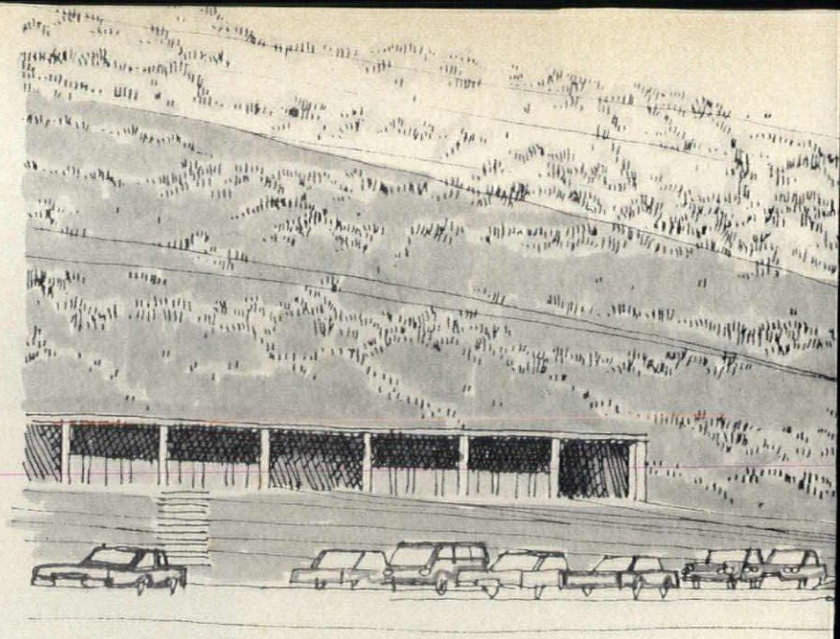
Design begins with a comprehensive design that establishes the overall character of the area and provides the first firm basis for cost estimates, construction drawings and specifications. Architectural design includes comfort stations, entrance stations, utility and maintenance structures, mountain shelters, employee residences, visitor centers and sewage facilities. While buildings should be "harmonious with the park environment," utilities must be as inconspicuous as possible. Currently, waste disposal systems are being upgraded, in some cases with tertiary systems. Power is generally obtained from local utility companies; roads must be planned with all federal, state and county agencies but the Park Service has the last word about roads within park boundaries.

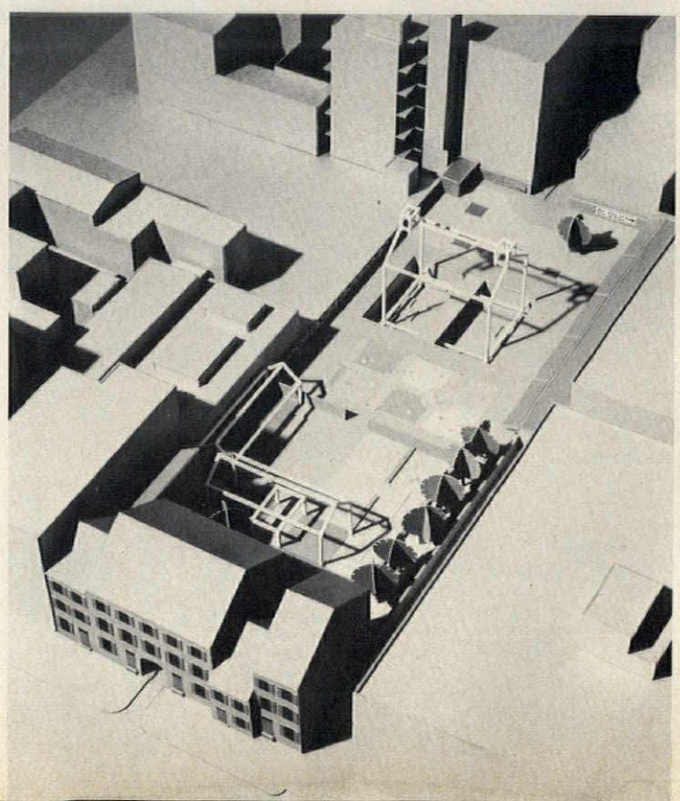
Construction supervision is done by field personnel, some of whom live in the parks and others who move with the construction work. They act as the contracting officer's representatives and administer the contracts from beginning to completion. Some of this supervision is handled by a/e firms.

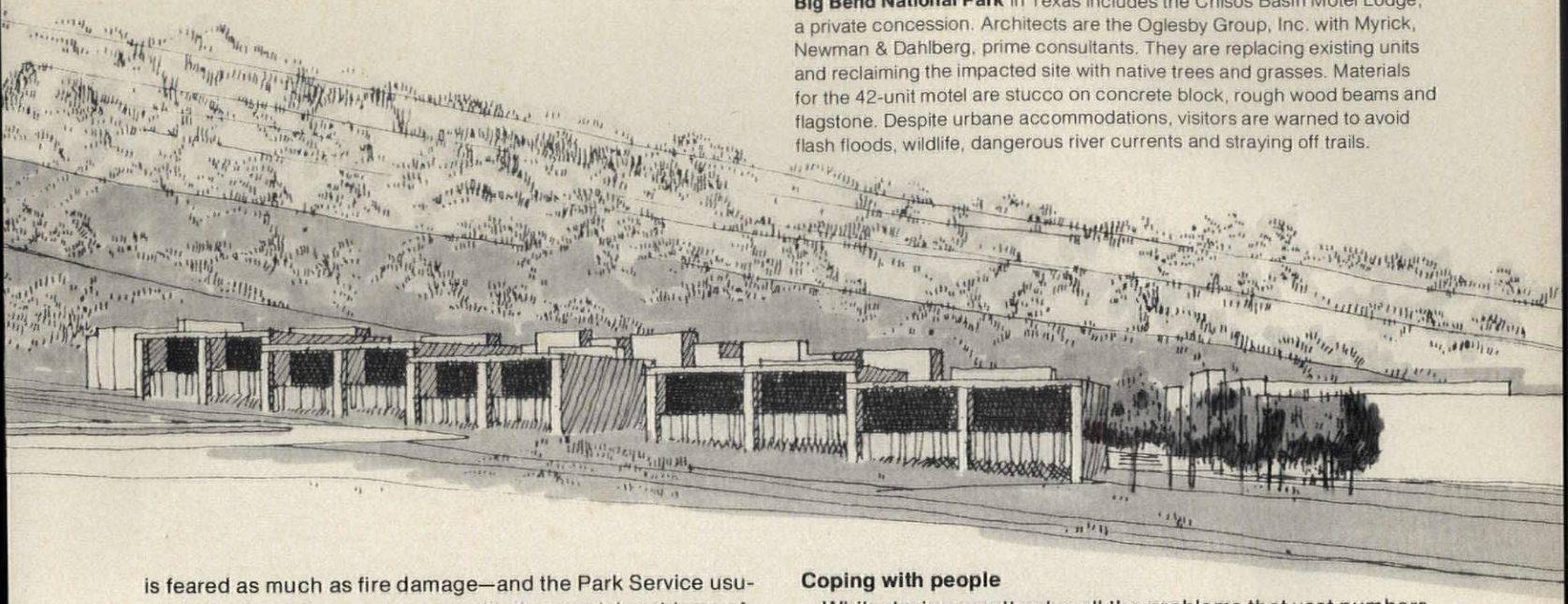
Historic preservation

Historic sites and buildings account for about two-thirds of all National Parks; in addition, there are historical or archeological aspects to almost all the others. While Congress has the power to decide what shall be preserved, Design Center teams usually determine how. Because most projects have a definite reason for being preserved—architecture, a significant person or event—choosing the date, or era, to be preserved and demonstrated is usually quite simple. Occasionally, though, a house or property will have several "dates" or even important additions. The general rule, explains Robert V. Simmonds, restoration architect, is "never take out any historical material—you've lost it forever then."

Research reports, documenting the property as it was and as it is, form the basis for restoration plan recommendations. Architects determine not only how much actual restoration or reconstruction is required (some properties are best shown as ruins) but how to meet fire and other safety regulations. Often floors must be shored up where there will be heavy visitor traffic, but this is not the major problem, Simmonds says. "Those early houses were overdesigned anyway." Early fire detection devices are preferred to sprinklers—water damage







Big Bend National Park in Texas includes the Chisos Basin Motel Lodge, a private concession. Architects are the Oglesby Group, Inc. with Myrick, Newman & Dahlberg, prime consultants. They are replacing existing units and reclaiming the impacted site with native trees and grasses. Materials for the 42-unit motel are stucco on concrete block, rough wood beams and flagstone. Despite urbane accommodations, visitors are warned to avoid flash floods, wildlife, dangerous river currents and straying off trails.

is feared as much as fire damage—and the Park Service usually trains local firemen to cope with the special problems of these structures.

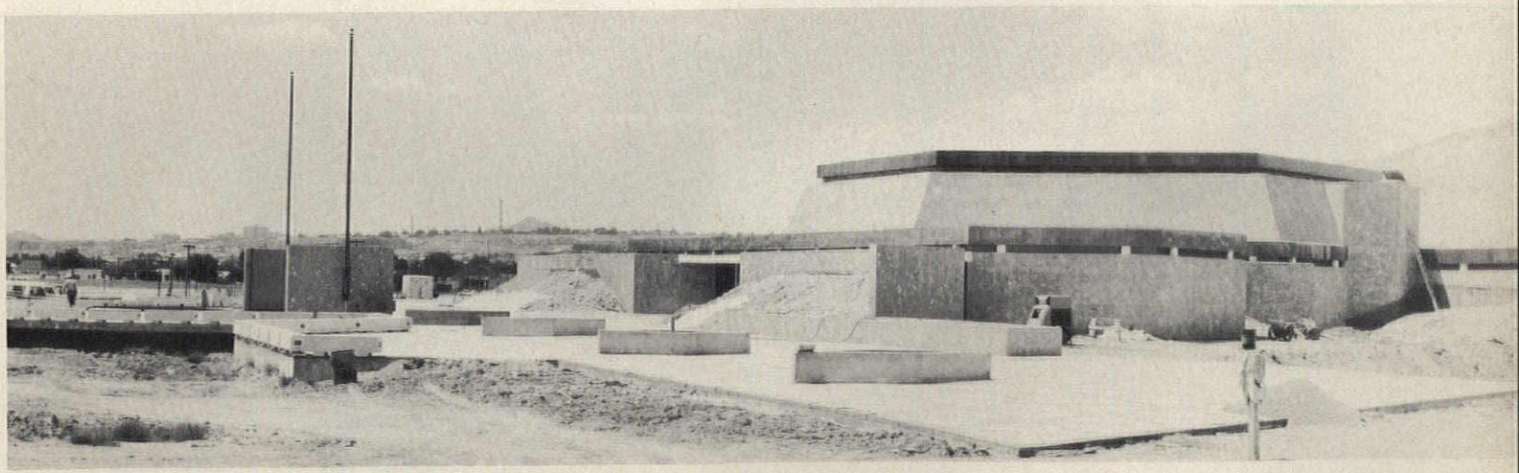
Repairing termite damage is a major problem, while installing or upgrading heating and lighting is done by almost any Rube Goldberg device that works. Radiant panels and special cable with insulated wiring eliminate the need for ducts and conduit. Original lighting fixtures are used if possible, and the Service sometimes stockpiles old fixtures to be used as substitutes.

Construction drawings and specifications are usually contracted out to private firms, as is some field work in archeology (often to schools and universities). Site work, especially in populated areas, draws a great deal of public attention, and service center teams try to maintain a balance between being let alone enough to get their work done and letting the people help. "There's always somebody around with an old photo album, a family legend or something that came out of the house or one just like it," Simmonds concludes.

Coping with people

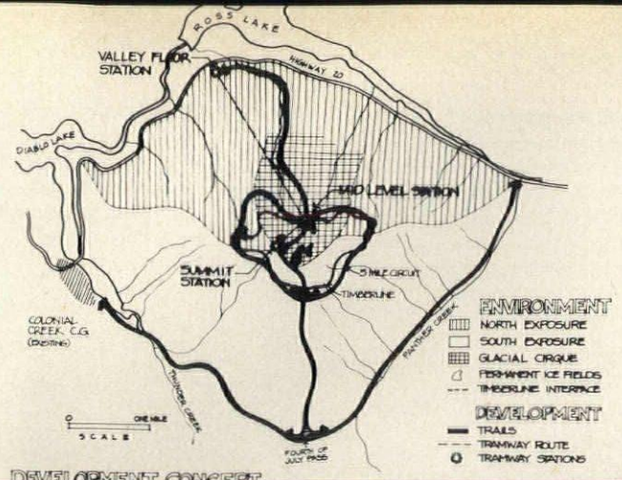
While design won't solve all the problems that vast numbers of people bring into the National Parks, (some rangers complain that they do more police work than park work), it will help stop "people erosion." Even when they would never commit an act of vandalism, people can ruin a valley, a shoreline or a mountain just by walking or driving on it. Many early parks were planned with no defenses against such erosion—it didn't seem necessary at the time—but are now being redesigned to meet the problem. In Yellowstone, for example, the Old Faithful area has been rebuilt with a large plaza and three exhibition theaters and other facilities to accommodate the crowds.

Keeping cars out of the parks is a major design effort. Both Mesa Verde and Yosemite will soon have internal transport systems (buses at first) so that cars are stopped at the entrance. At Yosemite, Eckbo, Dean, Austin & Williams are redesigning the main entrance parking lot/reception area into a fairly urban-style mall, lined with shops and restaurants but providing paved areas for gatherings and "happenings."

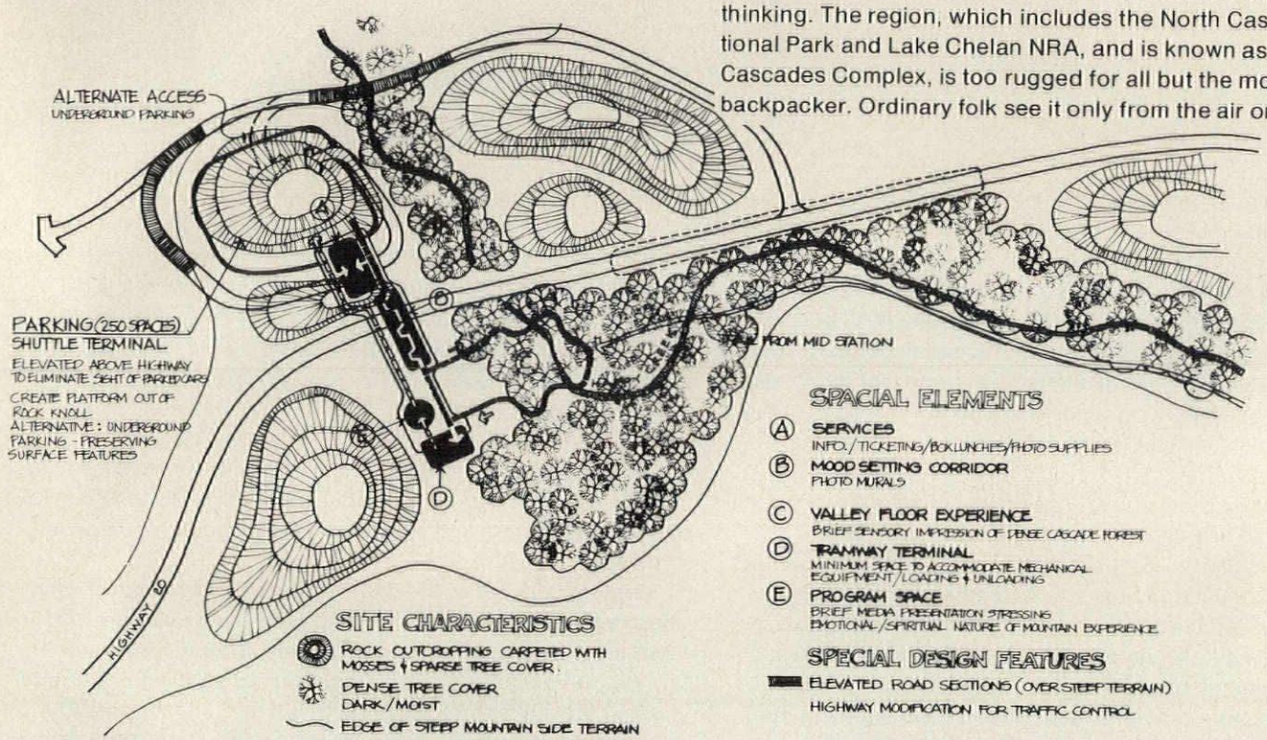


Visitor center at Chamizal National Memorial, El Paso, Tex. is a museum for Mexican-American cultural exchange that includes facilities for graphic and performing arts. Designed by architects Carrol, Daeuble, DuSand & Rand, the structure is concrete, rock and local copper to express the "unity of the two cultures." Amphitheater adds flexibility to bi-cultural programs. George C. Izenour Associates are theatrical consultants. Photo: J.T. Mullady.

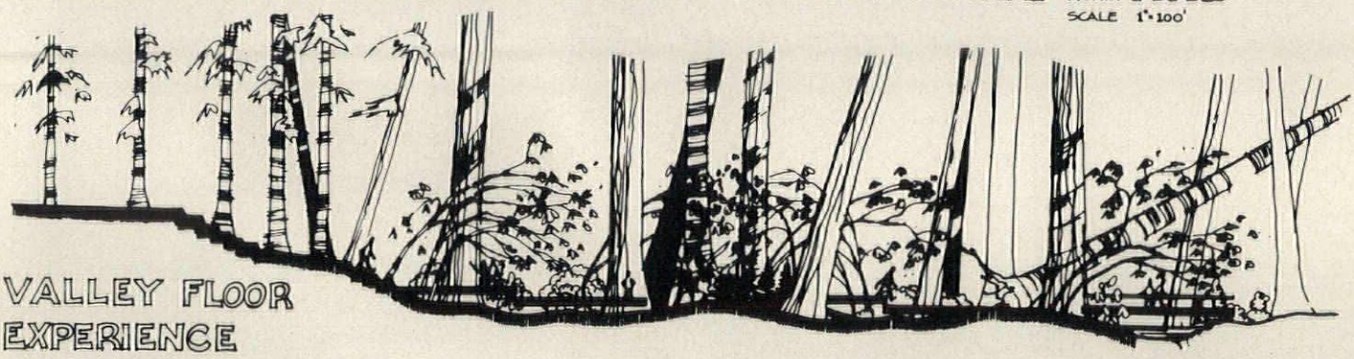
Breakthrough solution by Venturi & Rauch will show Benjamin Franklin's house as a "ghost" representation by white tubular pipe. Because the house and outbuildings were destroyed in 1834, there is no way to reconstruct them honestly. Archeological studies of the foundations, however, will be viewed from transparent openings in the plaza; museum and interpretive facilities will be underground. Site, adjacent to Philadelphia's Independence Mall, will be completed for the 1976 festivities.



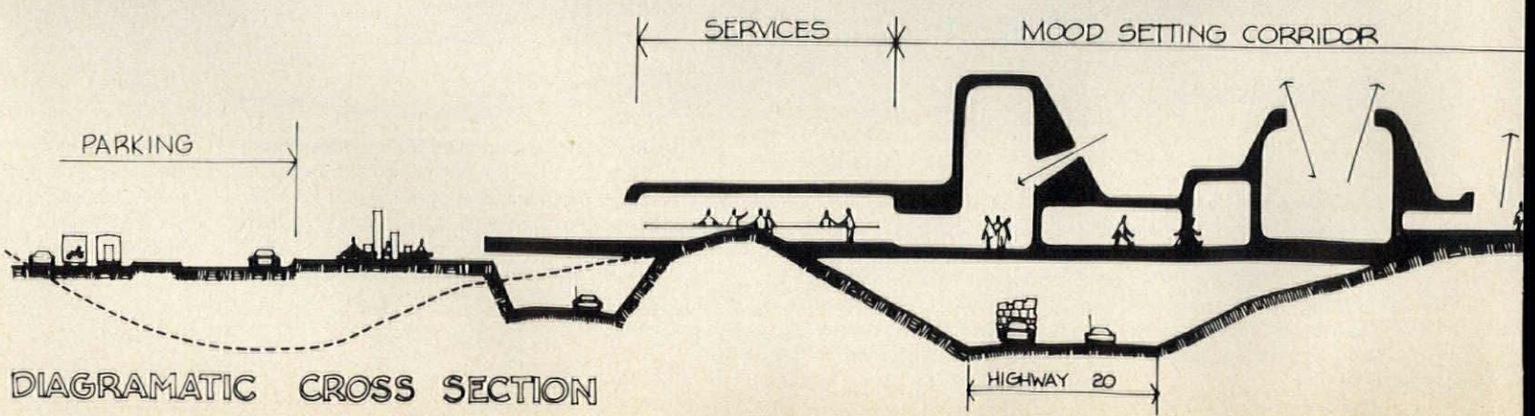
DEVELOPMENT CONCEPT
RUBY MOUNTAIN NORTH CASCADES



DEVELOPMENT CONCEPT **VALLEY FLOOR** RUBY MT. TRAMWAY NORTH CASCADES
SCALE 1"=100'



VALLEY FLOOR EXPERIENCE



DIAGRAMATIC CROSS SECTION

Designing the nation's backyard

Parking is being relocated at many other sites, both for crowd control and ecological reasons, and tramways seem to be a favorite solution for getting people up and down mountains. The solution to one special problem is easier said than done: provide ramps so that there will be no "architectural barriers" to people in wheelchairs.

Experiencing the North Cascades

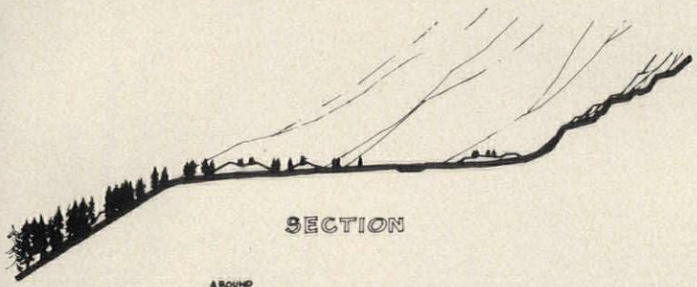
While there is no "typical" national park, plans for the Ross Lake National Recreation Area sum up much of current NPS thinking. The region, which includes the North Cascades National Park and Lake Chelan NRA, and is known as the North Cascades Complex, is too rugged for all but the most intrepid backpacker. Ordinary folk see it only from the air or the road.

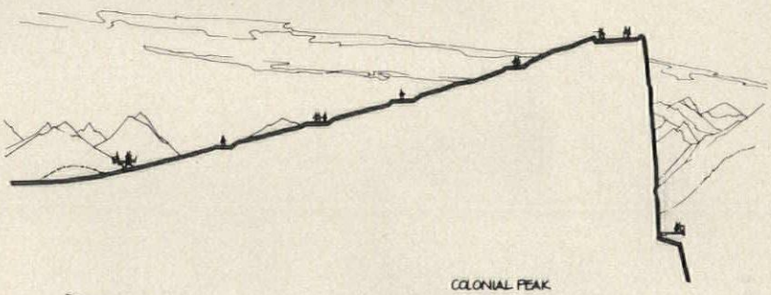
NPS proposes, in a burst of passionate prose, to "provide a tantalizing insight into the world of the mountaineer, leading hopefully to an appreciation of the value in preservation of areas such as this for the sake of pure sensory enjoyment of its wildness." Choosing Ruby Mountain as the place where people should get out of their cars and "become immersed in the experience," NPS will break this experience into three parts: the damp forested valley floor, timberline, and the "awesome simplicity of a mountain summit."

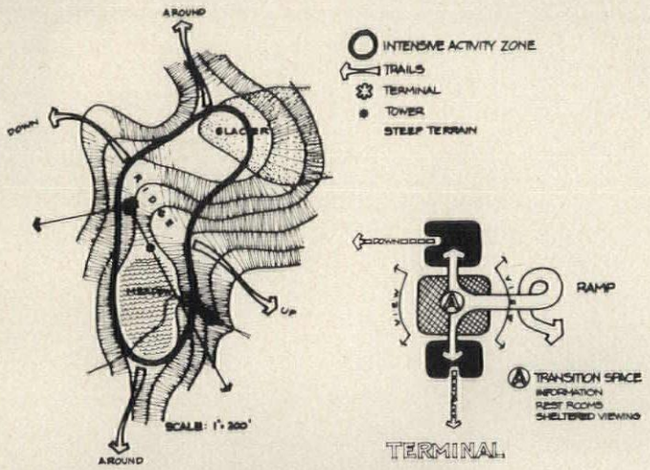
The main entrance road will also serve Ross Dam, which remains the private property of the City of Seattle's Department of Lighting. The area's visitor center incorporates a pedestrian bridge leading from the parking area, located across the main highway. Tourist services and an interpretive show and display are in this linear structure; a raised platform trail from it permits a walk through the dense forest yet protects the valley floor. A tramway will take some 250 people per hour to the next level, where forest meets meadow. Trails, elevated walks and platforms will again protect the fragile surface while allowing people to move about more or less freely. From here, a second tramway rises to just below the summit, where a trail with viewing platforms will encircle the mountain. The hardy may climb the summit itself, a rock outcropping, while the loners can get away from the crowds onto another trail along a ridge. The view for all: hundreds of ice-clad peaks.

An unmanned radio repeater station must be located on Ruby Mountain; for the least interference with the view, its antenna will rise 25 ft from the actual summit. The mountain, in effect, is treated as a viewing platform rather than an object to be viewed.

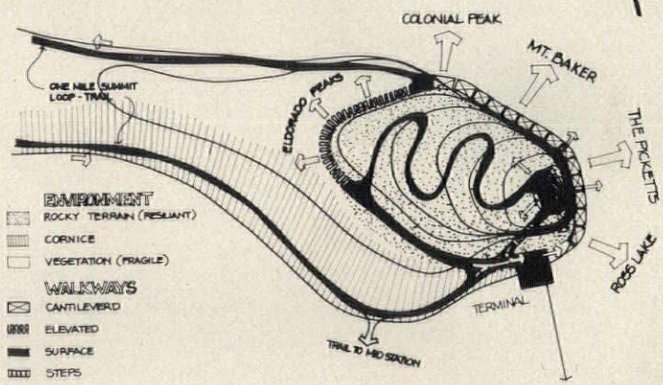
By such logic, NPS designers open up America to vast numbers of people, educate them, offer the creature comforts, provide rare experiences, and control them for their own safety as well as the protection of the ecosystems.[RR]



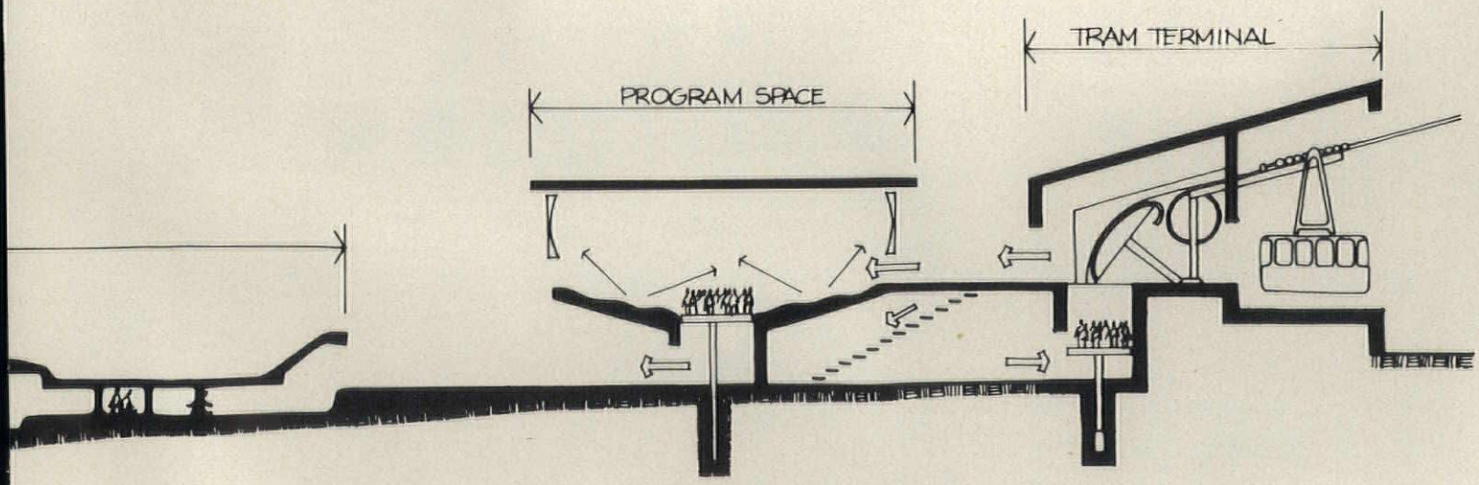




MID LEVEL AREA



DEVELOPMENT CONCEPT SUMMIT RUBY MT. NORTH CASCADES
SCALE 1"=40'

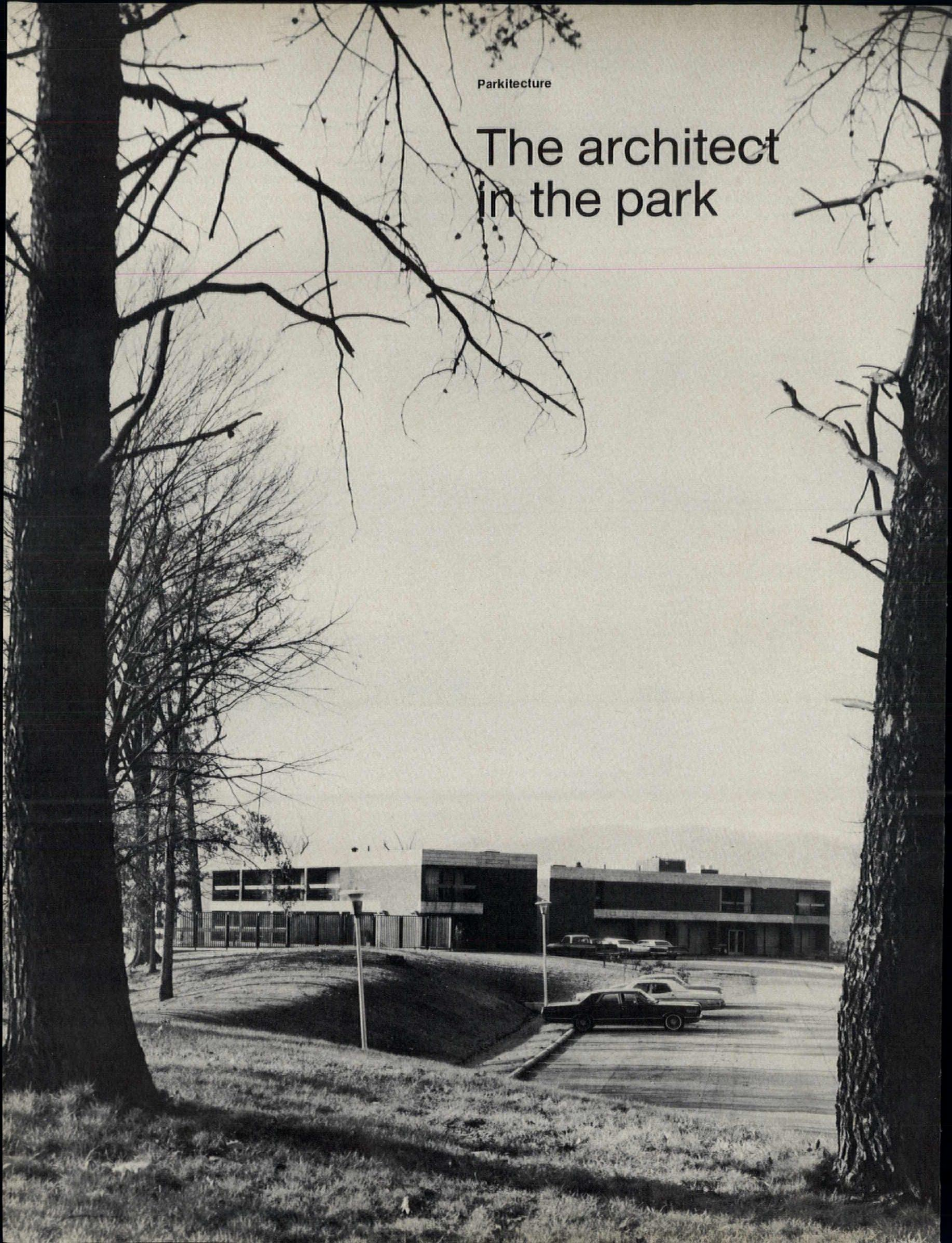


PEDESTRIAN TRANSITION

LOWER TERMINAL RUBY MT. TRAMWAY

Parkitecture

The architect in the park

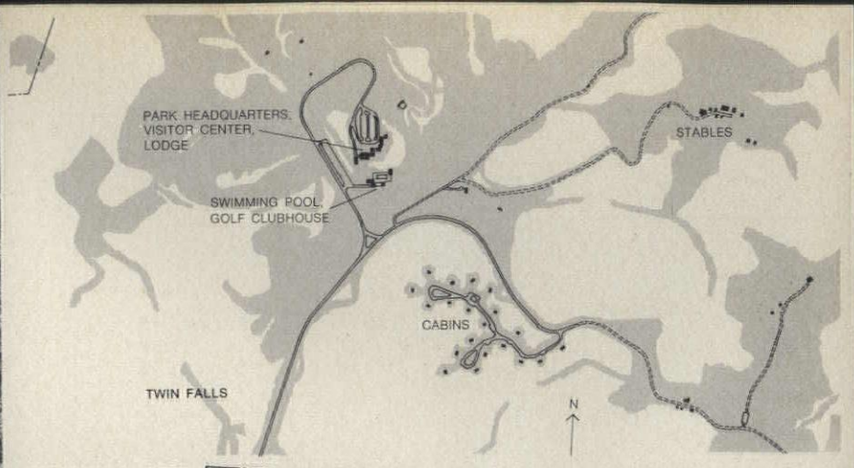


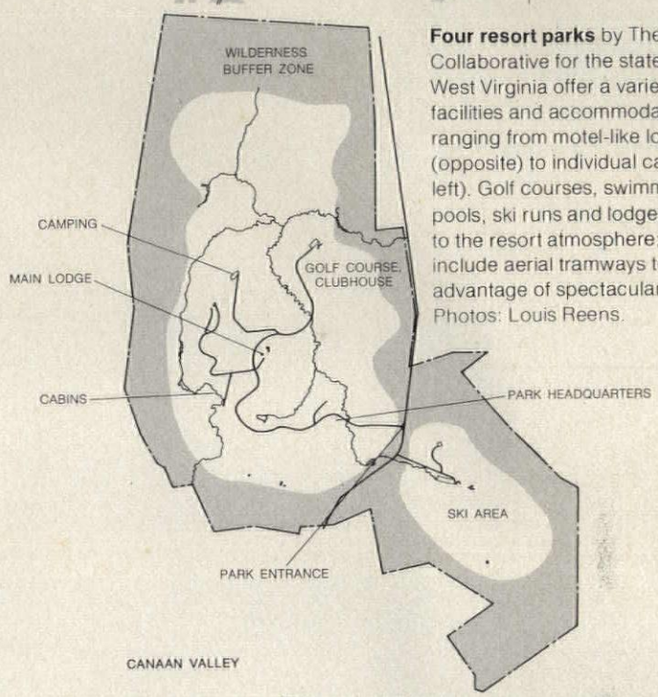
The hills are alive—with the sounds of people. The rush of campers, hikers and picnickers to the country's parks and open spaces brings growing demands for park facilities and increased planning and design opportunities for architects

In a way, Frederick Law Olmsted owed his start, if not his eminence, as a landscape designer to English architect Calvert Vaux who, in 1857, suggested that the two of them enter the competition for the design of New York's Central Park. Olmsted was then serving as superintendent of the park, after an assortment of earlier ventures, and he first declined Vaux's invitation, fearing that the entry might offend his boss Egbert Viele, chief engineer of the park. Viele, who felt that his own entry was sure to win, said he couldn't care less about what Olmsted did. Olmsted then said yes to Vaux, and the rest is familiar history.

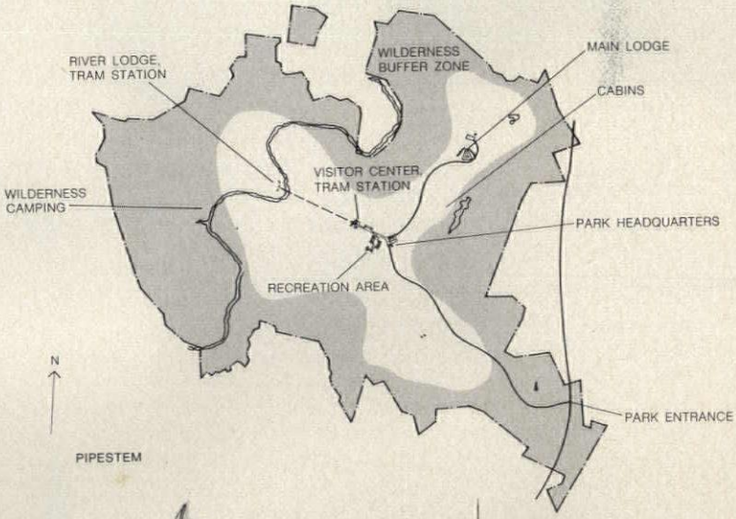
Vaux remained an important part of that history. Not too many years after the Central Park competition, Vaux persuaded Olmsted, for whom landscape design was still a sideline, to return from California to resume their work on Central Park and to collaborate on Prospect Park in Brooklyn. In fact, Vaux played an important early role in the work on Prospect Park: he recommended selling part of the land set aside for the park in order to buy other land that would make the site more promising, and he drew the first sketch plan for the park, later refined as its basic plan.

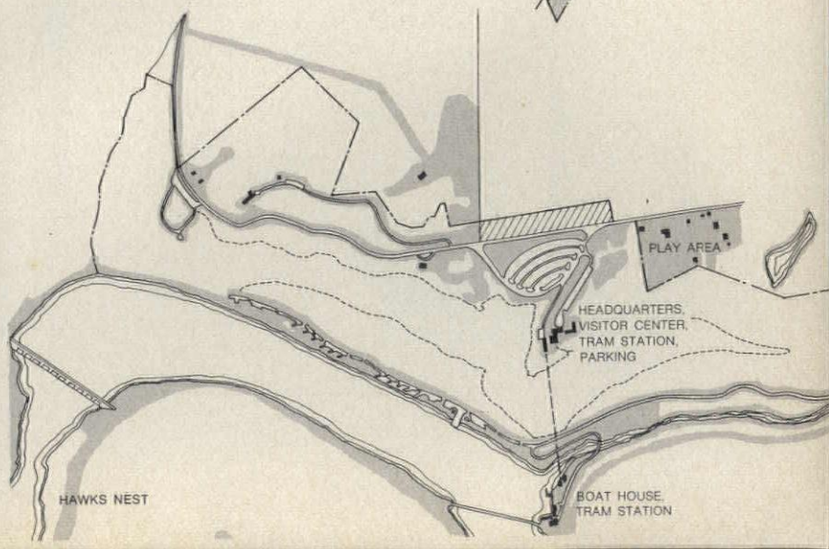
The point here is not that there is, or should be, an architect behind every landscape architect. Nothing of the kind. It is simply that the architect has a useful role to play in the planning and designing of parks, one that he has only recently begun to enlarge beyond the design of buildings.

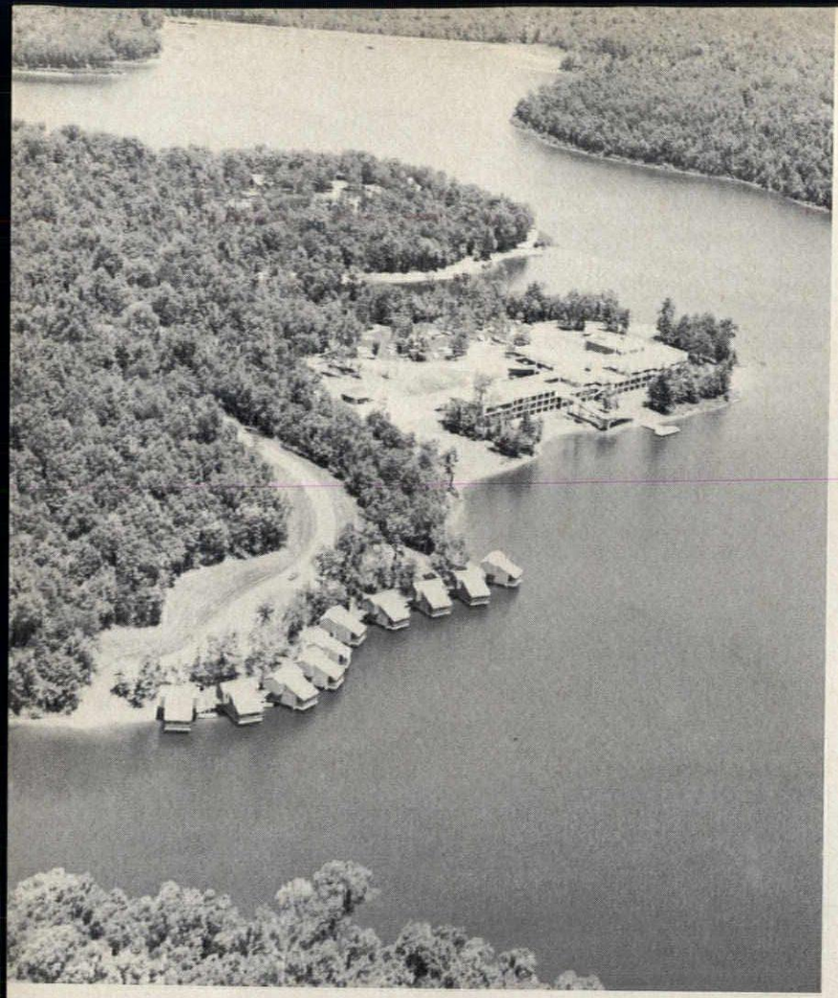




Four resort parks by The Architects Collaborative for the state of West Virginia offer a variety of facilities and accommodations, ranging from motel-like lodges (opposite) to individual cabins (top left). Golf courses, swimming pools, ski runs and lodges all add to the resort atmosphere; two parks include aerial tramways to take advantage of spectacular scenery. Photos: Louis Reens.





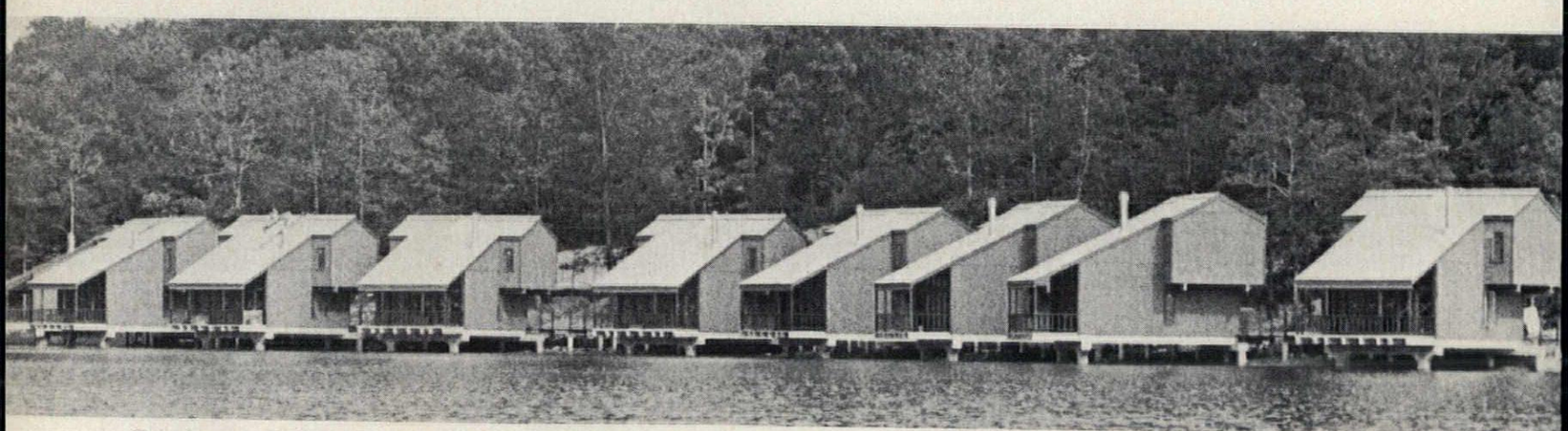


The architect in the park

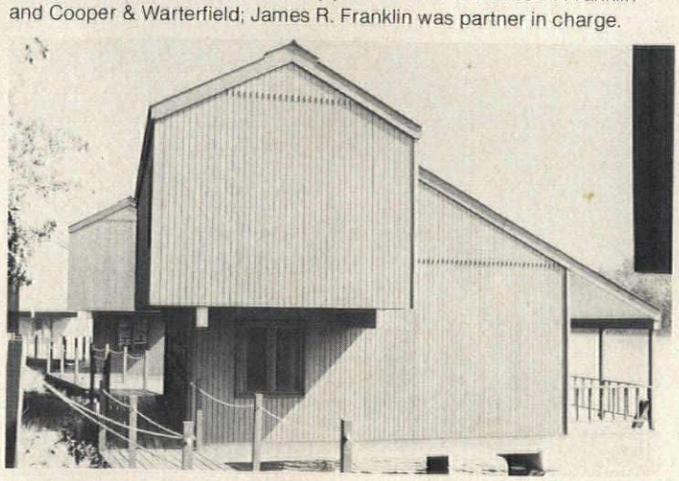
For the most part, the architect's part of the park planning and design process—in fact, of the whole area of designing for recreation—has been something of a minor one. He has designed buildings—in great number and in even greater variety—in parks and beside parks, but until recently he has not been very much involved in large scale park planning.

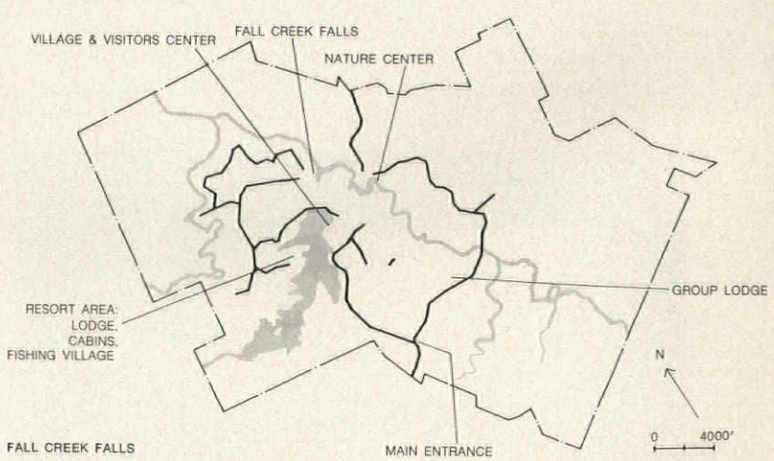
There are reasons. One park official suggests that some architects and engineers just aren't very good at the sort of overall master planning needed for something like a major national park. There is also a malady sometimes labeled the "6 percent syndrome," a combination of the architect's tradition of designing and building buildings and the fee system that makes his income dependent on designing and building buildings. That, coupled with highly commendable desires to preserve nature and the complexities of acquiring park land, has made park planning and design largely the responsibility of planners, landscape architects and conservationists.

But distinctions are blurring these days: landscape architects often specify as much concrete as they do topsoil; some architects would as lief advise their clients not to build; everybody with any sort of conscience is on the side of environmental protection. Most park projects require the talents of a wide variety of professionals, and the architect has something to contribute to the process.



Resort area of Fall Creek Falls State Park includes motel-like lodge and fisherman's village, both hugging lake shore (above, below). Other facilities are provided elsewhere in park. Architectural design and park plan were done by joint venture of James R. Franklin and Cooper & Warterfield; James R. Franklin was partner in charge.





Tennessee sets an example

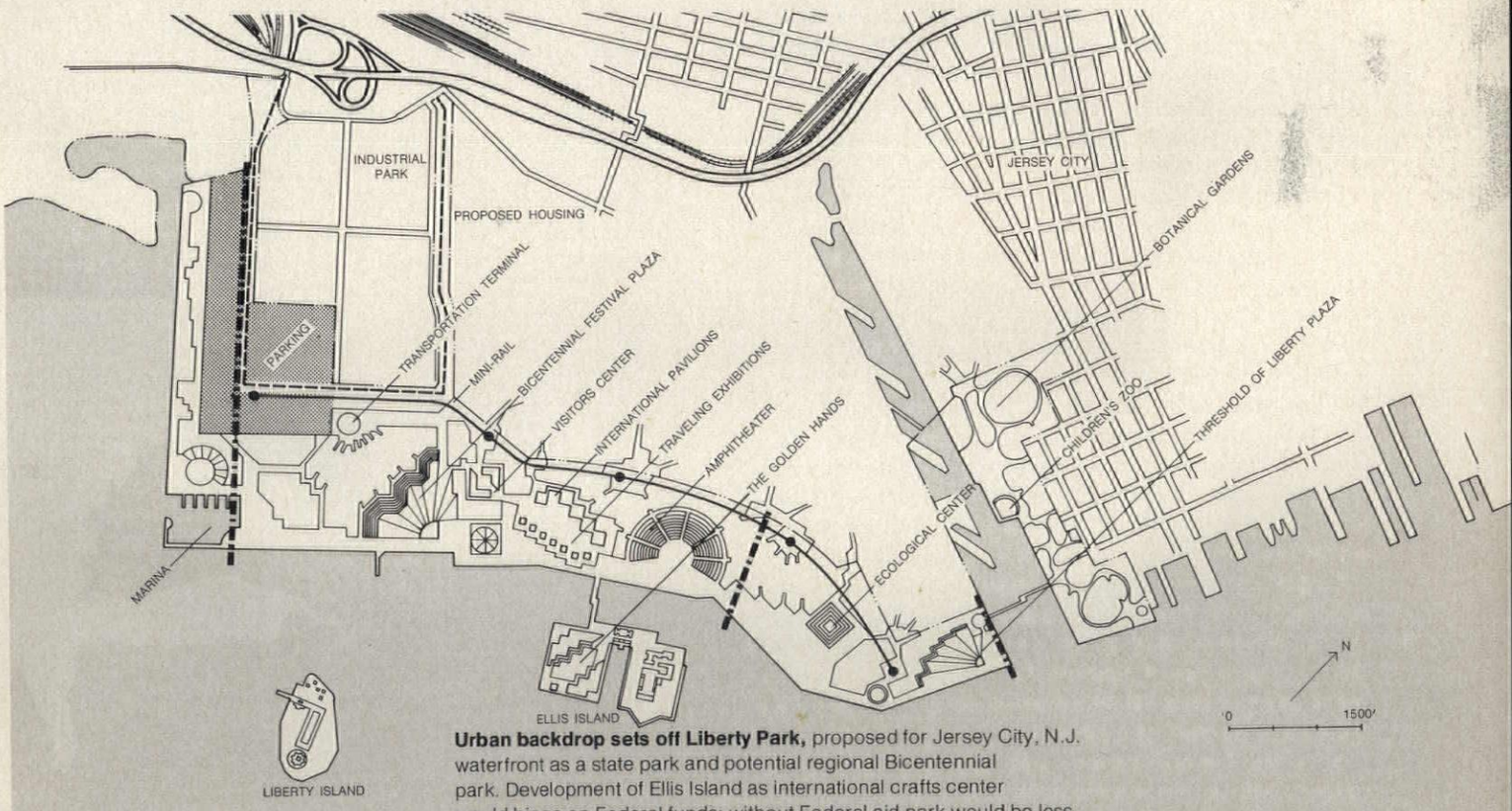
It was thinking somewhat along those lines that prompted the State of Tennessee to involve some new people in planning and designing its state parks. Park plans had tended to become "planners' recipes," says James Franklin, a Chattanooga architect, "with stock facilities descriptions, derived from population tables and driving time calculations." Combining this information with data from state development plans and other statistics and projections yielded "a magic number of picnic tables, pool areas for swimming and other facilities, so all the park plans came stamped out of the same mold with only minor variations." So, in 1968 the state architect's office decided to go after a more effective approach in park planning, more realistic building site locations, more accurate cost data and new design thinking.

Franklin's was the first architectural firm chosen to try its hand at state park planning, and his first commission was a master plan for further development at Fall Creek Falls State Park, 16,000 acres which had been acquired in 1943 (when the National Park Service, which had owned the land since the late '30s, decided not to make a national park out of it) but een very sparsely developed. In 1966 a 335-acre lake was completed, offering a variety of recreational activities, but the general lack of development persisted, bringing with it an unusual problem. Although the park was relatively undeveloped, it suffered from overuse at several of its most scenic spots, leading to further misuse and abuse.

Two basic aims underscored the development of the master plan. One was to provide facilities for visitors without destroying the creek-cut gorges and sandstone palisades, the virgin timber and the cascades and falls that give the park its natural beauty. The other was that the park development should provide an impetus for economic growth, the tourist industry being, probably correctly, seen as a good alternative to strip mining, tree harvesting and bad farming methods.

To meet both goals, the plan called for the park to be divided into three zones. In one zone—the building and development district—most of the building would take place. This 150-acre zone would actually be two separate areas. One, the day-use area, would include the park headquarters, information center, recreation facilities, and services for park visitors along with parking. The other, the resort area, would be slightly more exclusive, and would include a lodge and restaurant along with vacation cabins and recreation areas. This heavy development zone wraps around one end of the man-made lake.

A second zone—the interpretive/outdoor environment district—consists of two separate parts in the central portion of



Urban backdrop sets off Liberty Park, proposed for Jersey City, N.J. waterfront as a state park and potential regional Bicentennial park. Development of Ellis Island as international crafts center would hinge on Federal funds; without Federal aid park would be less elaborate. Beachem, Richardson & Williamson, Inc., are architects.

LIBERTY PARK

the park. It is restricted to uses directly related to the outdoors—camping, golf, group camp facilities and educational programs. The third zone is a preservation district from which all destructive development has been removed; what remains are the interpretive devices, scenic overlooks and trails that let man come close to nature without destroying it.

A key element in the plan was the rerouting of roads. The park was cut in two by a major north-south highway, and rerouting the road eliminated a direct route through the park, thus eliminating through traffic. As rerouted, the road now also provides better access to the park facilities.

In a couple of ways Fall Creek Falls State Park was a pivotal project for Franklin's firm. While he avoids specializing in his practice, Fall Creek put the firm very solidly into the park planning and design field. In the last five years, he says, the firm has planned some $20 million worth of parks that are now under construction, and another $5 or $6 million worth are either on the boards or in the planning stages.

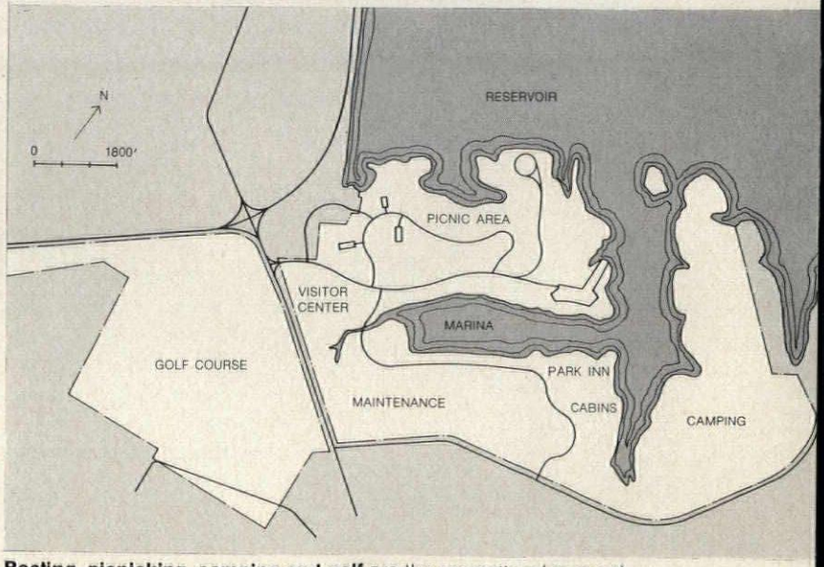
But Fall Creek Falls was pivotal in another way. Up until a couple of years ago, the approach toward park planning in his area was largely inspired by the very successful "resort parks" started in Kentucky some 15 or 20 years ago. These fairly posh parks account for a large chunk of the gross income in some Kentucky counties, primarily because they lie along the tourist route from the Midwest to Florida. In Tennessee, says Franklin, "the reaction to this rash of super parks and the present emphasis on ecology consciousness is producing a backlash to this approach, and the staff planners with the Department of Conservation (which owns and builds Tennessee's state parks) are much more inclined now to concentrate on a separate identity for each park and a minimum intrusion on the ecology."

Of the major parks for which Franklin and his team have been responsible only Fall Creek Falls and Joe Wheeler State Park in Alabama—planned around what is touted as the biggest inland body of water on the continent, other than the Great Lakes—are "resort parks." Of the others, Oak Mountain State Park is essentially an urban park on the outskirts of Birmingham, Ala. aimed at bringing otherwise unavailable recreation activities to the residents of that sprawling industrial city. There, a restaurant overlooks a game park; at a model farm city kids can watch as cows are milked and sheep are shorn, and can churn butter themselves. The top of Oak Mountain, previously reached by a ho-hum automobile drive, will be reached only by a more thrilling cable car ride.

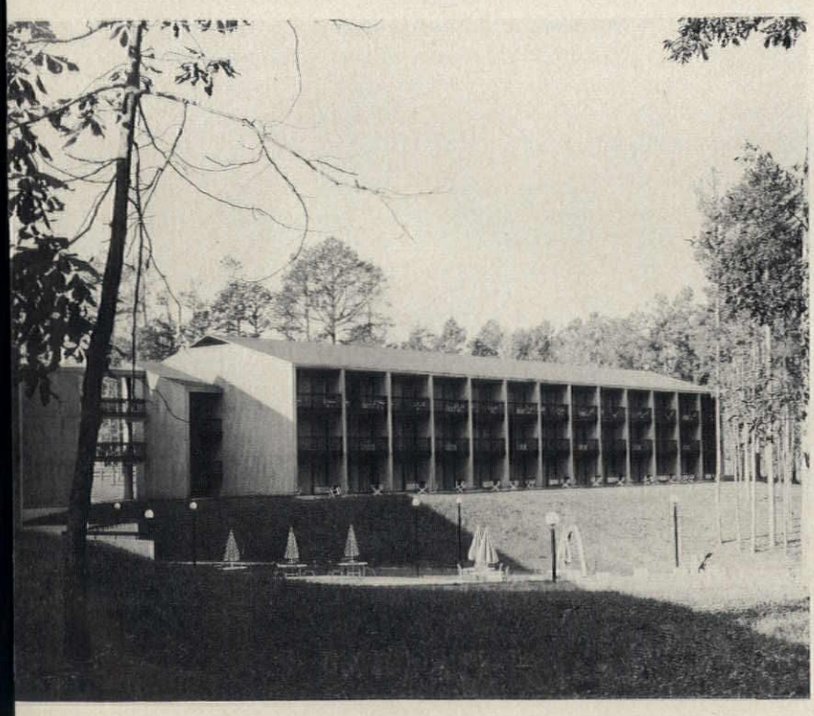
Probably Franklin's biggest departure from the resort park approach of Fall Creek Falls, is Bays Mountain State Park, being planned for 3000 acres of knobs and hollows between two mountains near Kingsport, Tenn. Part of the area is already taken up by a nature preserve, which includes the entire watershed feeding a 20-acre lake, and an Audubon Nature Center. The plan calls for adding enough land to the nature preserve to make the 3000-acre total and the "obvious plan concept," says Franklin, is to link the recreation program with the nature interpretive program. The slopes make road-building difficult and costly, and after all the costs and alternatives are considered, the "obvious" recommendation is a perimeter parking lot with a "people mover" transit system linking the nature preserve, the day-use recreation facilities, the overnight facilities and the camping grounds.

The benefits are as "obvious" as the recommendation: a central control point, an easy way to limit the maximum number of park users, and the opportunity to turn the transit system into a "nature experience" and recreation activity in itself. And, if the park is developed as planned, it will prove to be a good example of the self-discipline imposed on the architect to design the minimum facility necessary rather than the maximum possible intrusion. That underlines something Franklin said about Fall Creek Falls that is equally applicable to Bays Mountain: "More often than not, the best plans utilize the existing road systems and facilities locations." Existing roads and trails can become utility rights of way, and, at both Fall Creek and Bays Mountain, the best location for intensive development with the least amount of environmental intrusion was where the wilderness had already been violated. At Fall Creek Falls, Franklin's team concentrated on planning in the already somewhat developed area around the man-made lake, and were even able to justify a "considerable expenditure" to raze and scarify some other earlier developments that had been thoughtlessly stuck into highly scenic and valuable areas. "As a basic concept we tend to choose rather non-descript locations for the facilities, leaving the more striking views and natural phenomenon as excursion points or even as nature experiences to be "discovered" by the park user."

That sort of self-discipline is sometimes hard to come by—the old "6 percent syndrome" again—and the Tennessee Department of Conservation has recently made a policy change that helps. The new policy says, in effect, that the firm that plans the park can't also do the architectural design. Thus the situation at Fall Creek Falls State Park where Franklin's team planned the new development and then played a large role in the design of the facilities, or at Reelfoot Lake, another Tennessee State Park (p. 64) where the planners and architects were Gassner Nathan Browne, probably won't be repeated.



Boating, picnicking, camping and golf are the recreational menu at Pickwick Landing State Park, another Tennessee resort park. The Lodge (above) was designed by Mel O'Brien & Associates, Inc; swimming pool (left) is part of the lodge complex. Cabins (top) were designed by Bologna & Hamilton. Extensive use of redwood and plywood helps blend these nonrustic structures into the landscape. Photos: Simpson Timber Co.



"Suddenly," says Franklin, "we find architects from other parts of the state delighted when we're chosen for parks in their areas."

Part of a pattern

One architect, several parks and a couple of state park systems—but it is a pattern that is becoming clearer all the time. Behind it are some surprising figures, to start with the fact that 491 million acres of land in the U.S. are available to the public for recreation. That's a lot of land, and people are flocking to it. Some 33 million people visited national parks and monuments in 1950; in 20 years, that figure had grown to more than 200 million. There was an increase in national park acreage during that period (from 23 to 30 million acres) but the greatest factor in the increase in attendance is accessibility—better roads, more cars and more money mean more people can get out and enjoy themselves.

State parks are showing even more noticeable growth. During the same 20 years—1950 to 1970—state parks acreage rose from a little below five million acres to almost nine million, and attendance climbed from around 125 million people to something short of 500 million. That's an 80 percent increase in land and a whopping 300 percent increase in people. Add to the above the growing amount of urban parkland and you have a phenomenal increase in public park facilities.

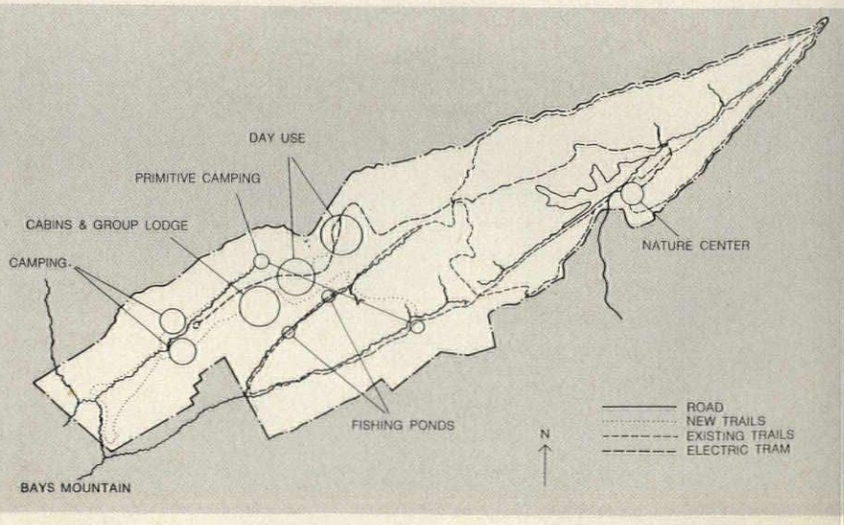
On top of that there is the fact that outdoor recreation has become big business, and an amazing amount of acreage is going into private facilities. There are something like 820,000 individual campsites in the U.S., and fully 65 percent of them are in private campgrounds; the rate of increase is about 15 percent a year, with franchise operations, motel chains and just about everybody else getting into the act. It is possible, these days, to go on a camping trip and not go anywhere near the woods; it is also possible to buy a campsite the way you might buy a condominium apartment.

Truly the lure of the wilderness, tamed and subdued as it may be, is strong, and the increasing number of park visitors is seen by some as a blessing, by others as a threat. State parks, it seems, have been actively encouraging visitors, while national parks have been trying to reduce crowding; arch-conservationists see any intrusion by man as a sin.

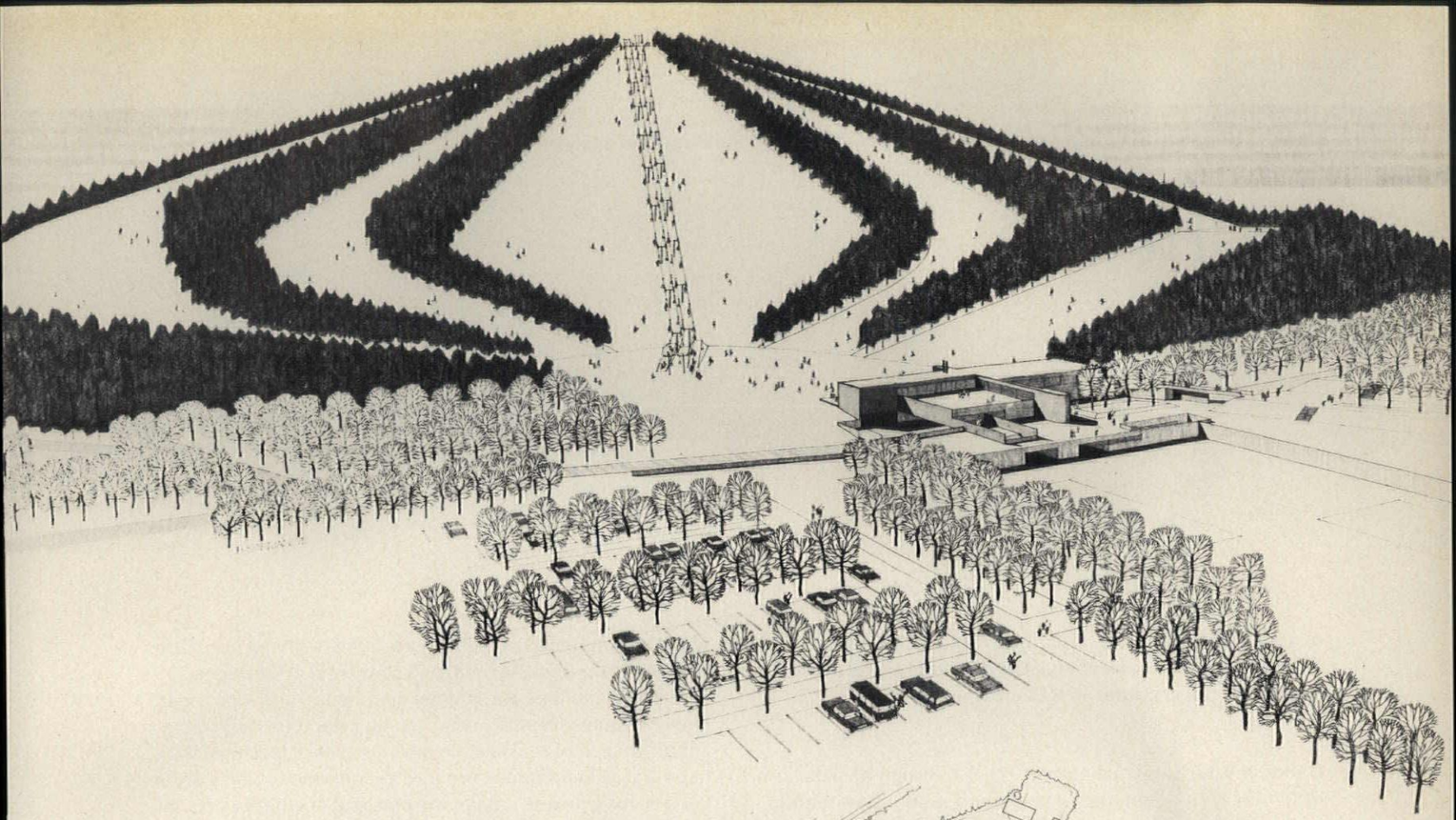
Crowding is sometimes hard to pin down. "The measure of the capacity of a park," says J.E.N. Jensen, assistant director for service center operations of the National Park Service, "is this: how many visitors can you have before they begin to impair the values people come to see?" John Bright, a planner in the NPS Denver Service Center (p. 70), points out three dimensions of park capacity: the resource or environmental capacity, measured by impairment of park values; the psychological capacity, measured in experiences; and the actual physical capacity, measured in square feet. He also points out that "there is probably not a single area in the National Park Service domain that cannot maintain more use; overuse occurs in a small space in a limited time."

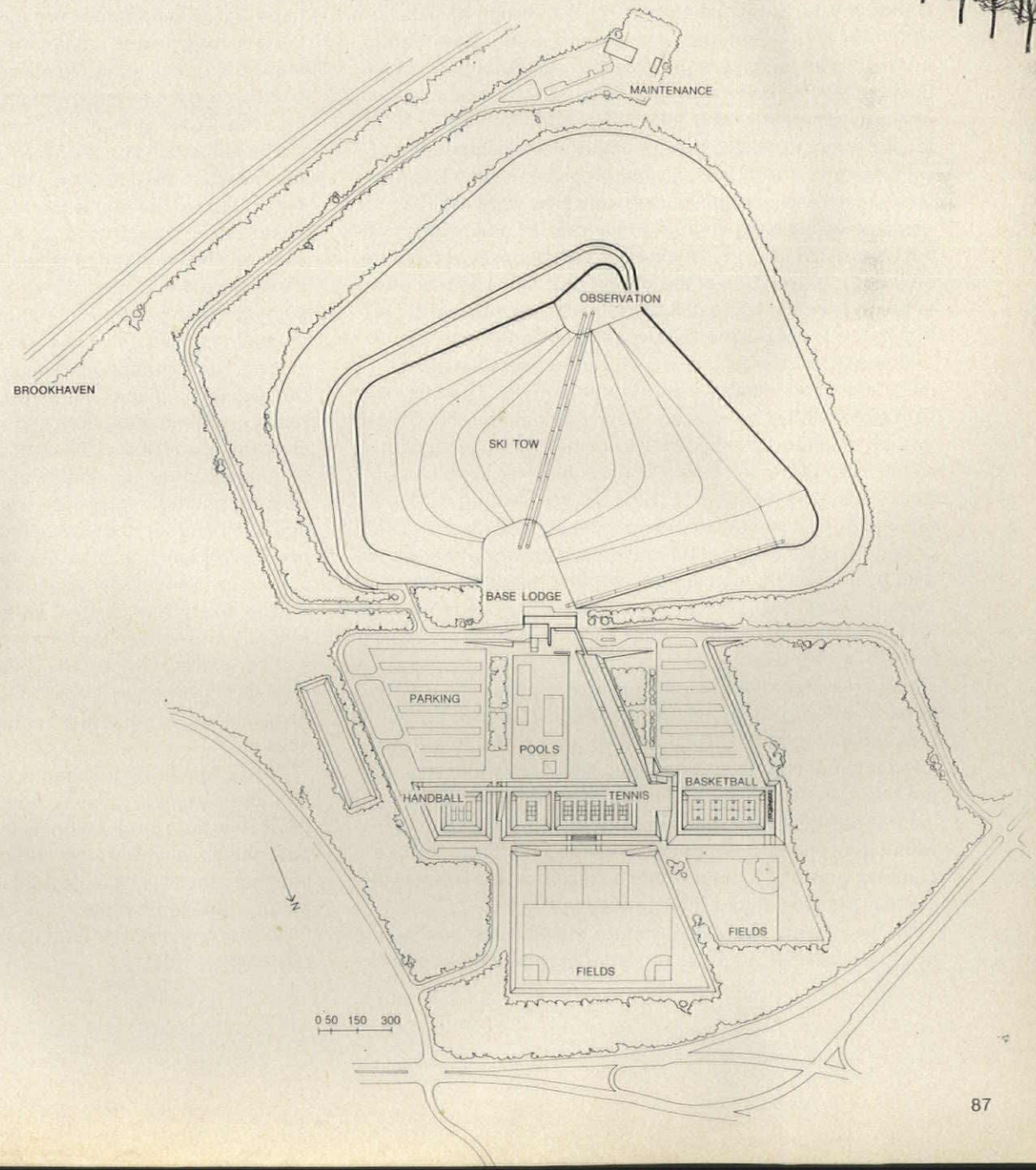
And for the National Park Service, at least, there is an irony in the worry over overcrowding. To get money for national parks, the Service must convince the public to believe in parks; to believe in them, the public has to be able to visit them. "In the long run," says Jensen, "keeping people out may do more harm than good."

That probably applies to all parks everywhere, for parks, after all, are for people (but not, necessarily for their autos, motorcycles and other technological wonders). To absolutely preserve flora and fauna, people do have to be kept out, and there are national and state areas set aside for that sort of preservation. But the success of a park depends on use—carefully controlled, intelligently planned use. And given the present lust for the out-of-doors, parks will be used. Today there is almost no way to overbuild a park: unless the plan and design are a total bust, capacity crowds will use any available recreation facility to the hilt. "You don't satisfy the demand," says Jim Franklin, "no matter how overbuilt a park gets. The real problem, then, in planning, is to determine the capacity of the land-base available to support recreational facilities and to plan a park with inherent limits, so that it can function at full capacity without degradation of environmental quality." Which is why there is increased attention to planning and design at all governmental levels involved with parks—national, state, regional and local. And why, along with everybody else involved with park planning and design, there is an expanding role for the architect. [CP]



Limited development and limited access are key elements of master plan for Bays Mountain State Park near Kingsport, Tenn. Existing road and nature center would be park's only public access, providing an effective control point. Tram system would link nature center with other park areas. James Franklin is architect.





Ski slope and sports facilities are highlights of a park to be built on landfill in Brookhaven, Long Island. Hill is to be 250 ft high with about 28 acres of ski slopes. Park is one of a series planned and designed by joint venture of architects Norval C. White & Associates and Pope, Evans & Robbins, consulting engineers.

John F. Kennedy Recreational Center, Cleveland, Ohio; P/A building cost analysis 2

Tight site

In southwest Cleveland, architects Whitley-Whitley's John F. Kennedy Recreational Center skillfully blends the needs of three separate clients into one building

During the deliberations of the 1971 P/A design awards, juror Ulrich Franzen noted that "limitations are your best friends . . . the more you have, somehow the more energy is channeled in the right direction." There is perhaps no better proof of his statement than the John F. Kennedy Recreational Center in Cleveland, where the architects were faced not only with the problem of dealing with three clients at the same time—restrictive enough in itself—but they were asked to come up with a solution to all of the clients' needs on a confined parcel of land that seemed too small to accommodate the needs of even one of the clients. But it was by responding to the overwhelming spatial constraints, the architects say, that much of the building's success was achieved.

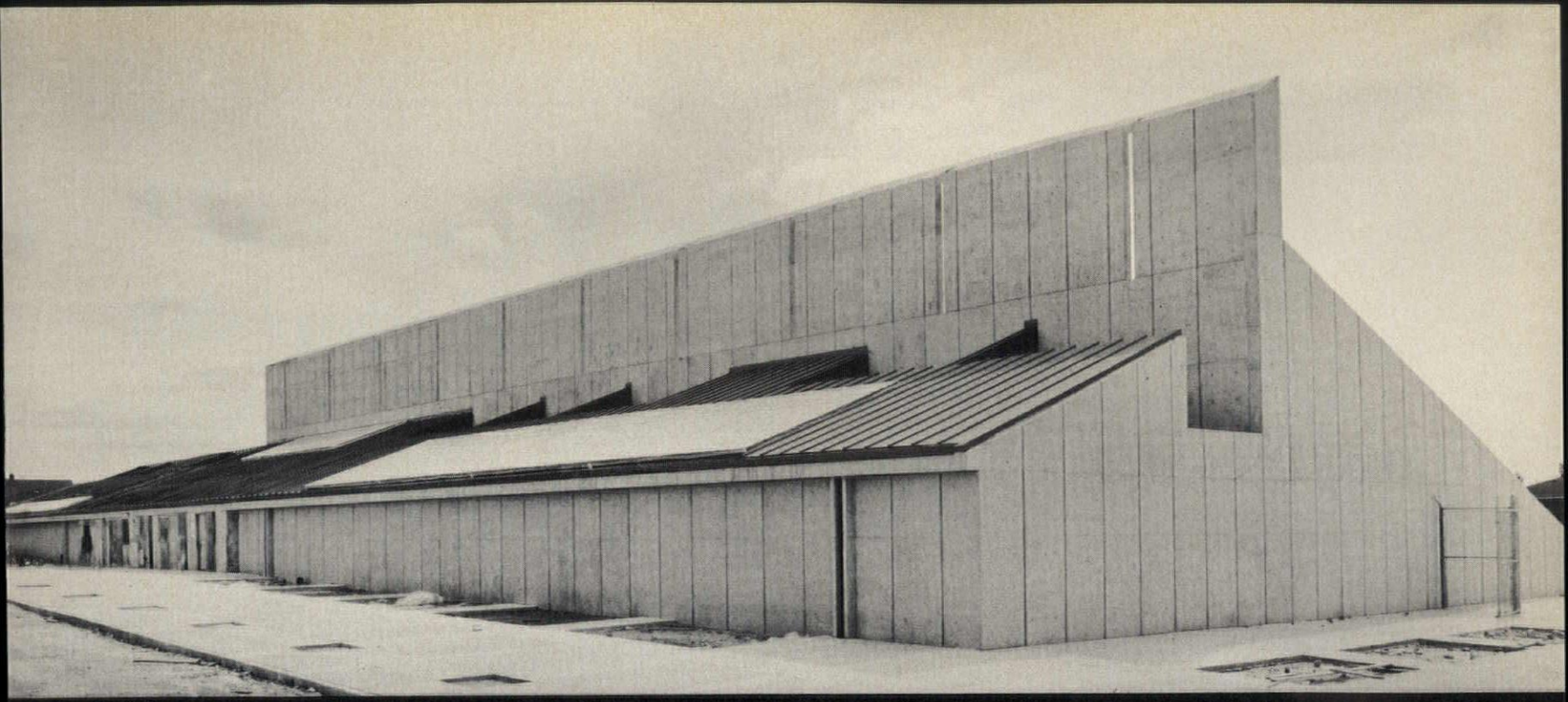
Of the three clients, the two who would become the ultimate users had different sets of requirements. The Lee-Harvard Community Organization needed meeting rooms, a gymnasium, multipurpose space, a swimming pool and locker rooms. The Cleveland Board of Education required an outdoor athletic field and track with bleacher seating for 3500 people. All of this was supposed to be squeezed into a site, provided by the board of education, which was already occupied by an existing high school, another building in the process of being renovated into a vocational school, a fire station and other athletic facilities. After the architects drew up some preliminary schemes, their original belief was confirmed: that without radically changing the program, there simply was no good way of providing the facilities needed in their proper orientation and relationships to one another in the space alloted. Then the architects came up with the idea of stacking the bleachers over the other facilities, a solution that became the P/A design award winning entry (P/A, Jan. 1972, p. 74), which juror Richard Bender commended for "organizing a complex group of functions into a clean context [where] the result is richness rather than confusion."

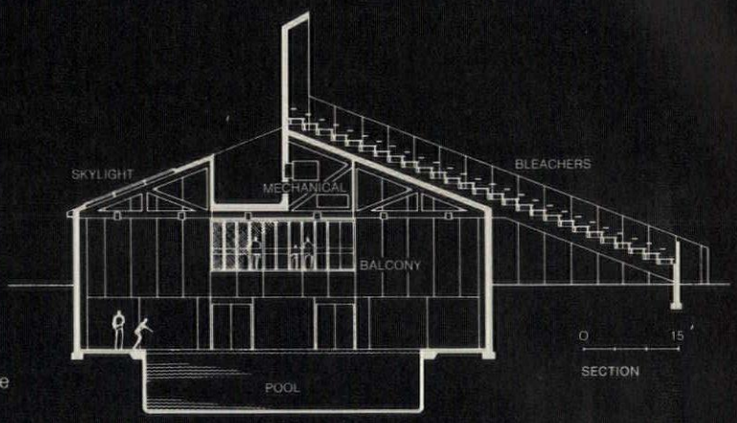
On this narrow space, in order for the bleacher seating to ride over the building at an angle congruent to the roof, the entire structure had to be depressed one story below grade. But this, the architects note, had some real advantages. It clarified and refined the internal circulation, and it provided meeting room spaces by establishing a second story in the center section of the building over the locker facilities. Perhaps just as important, it brought the normally clumsy proportions of the gym and natatorium massing down to a truly human scale at the entrance plaza, and it brought the entire building more into scale with the detached, two-story dwellings that make up most of the neighborhood.

The entire building is poured-in-place concrete, which is either board-formed or plain, with ¾ in. reveals expressing the 4-ft module of the formwork throughout. The roof system is comprised of steel trusses 20 ft on center, which are made up of ships channels and tube sections welded airtight against moisture and pool chlorine corrosion. Within the steel-framed superstructure, a spine integrates all mechanical and electrical systems from one end of the building to the other. On the exterior, a discontinuous trough of air pockets has been depressed into the apex of the metal-clad roof, and here the exhaust and air-intake grilles and ventilation stacks are located. Over the south side of the roof, precast concrete deck spans 20 ft between the top chords of the trusses, and over the trusses, poured-in-place stepped beams extend from the roof apex to the ground. Between the stepped beams, precast double-tee sections span 20 ft to form the bleacher seating.

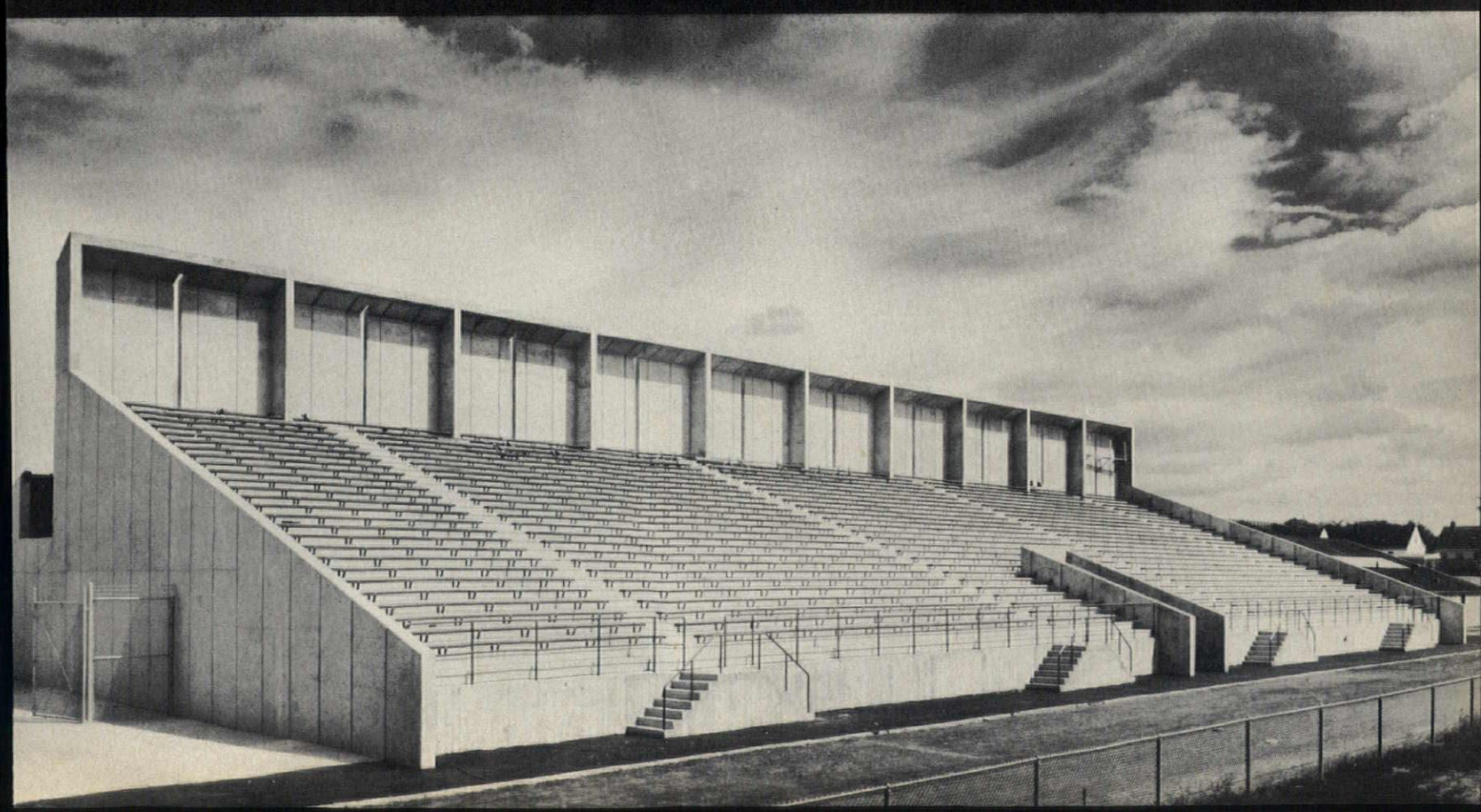
Because vandalism is high in this section of Cleveland, the design and type of finishes were selected to reduce maintenance and to keep repair to a minimum. Exposed concrete walls are relieved by accent colors, and colored ceramic and vinyl tiles enliven the floors. The only fenestration is at the entrance plaza, while all other natural light comes through skylights.

The building has not been occupied yet, so much of the functional aspects remains to be tested. But if the promise of the P/A awards program holds true, as it usually has in the past, the building will most likely live up to juror Lou Sauer's comment that it is "a most articulate, sophisticated architectural solution," which is, as juror Earl Flansburgh noted, "a skillful and simple integration of the needs of three separate clients." [DM]

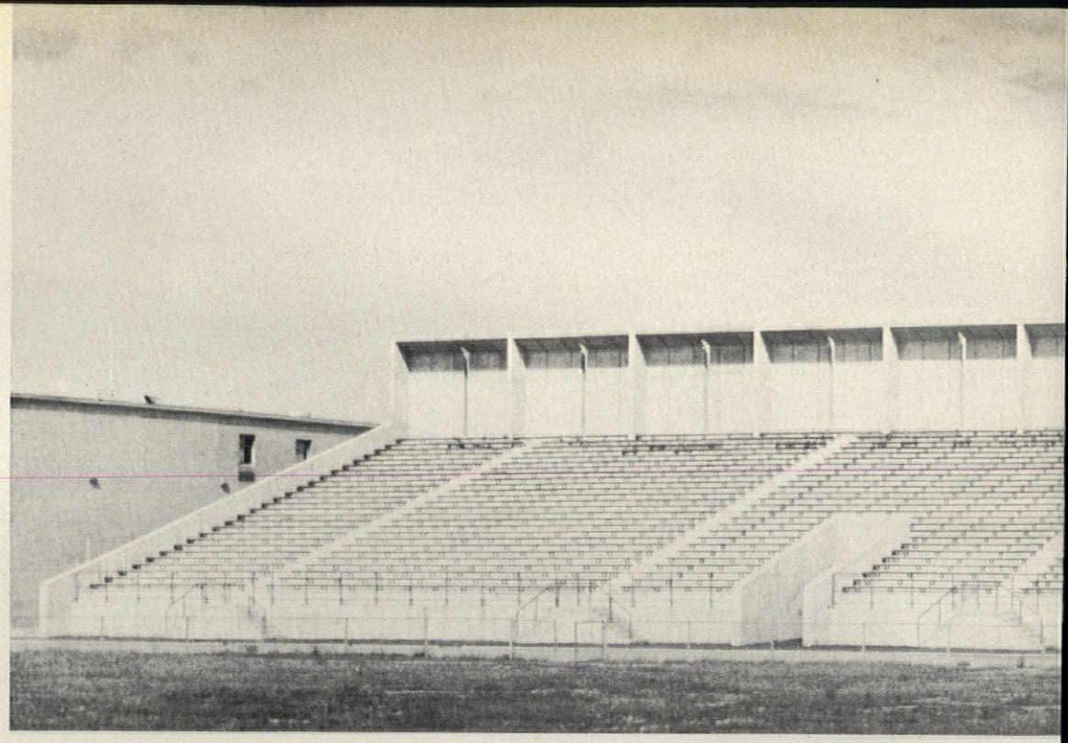


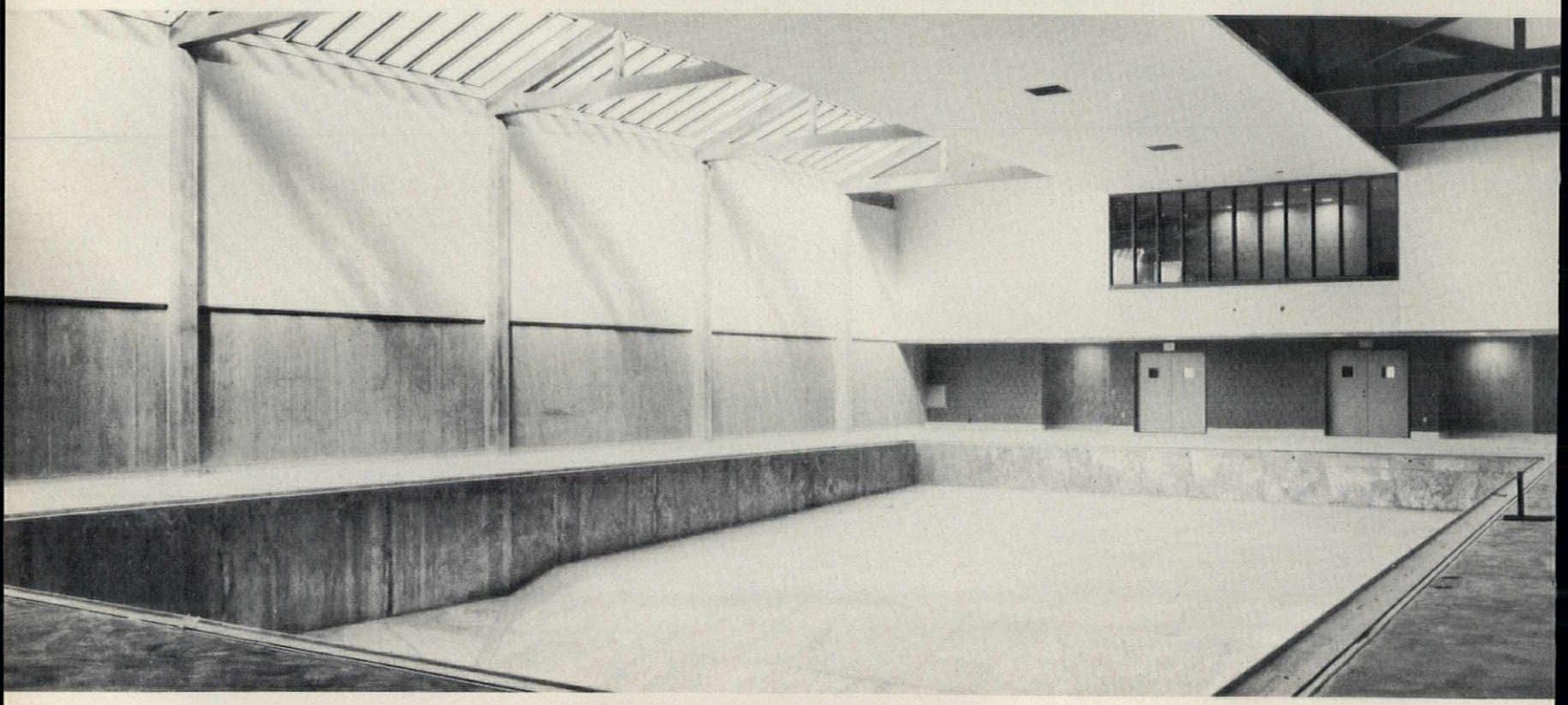


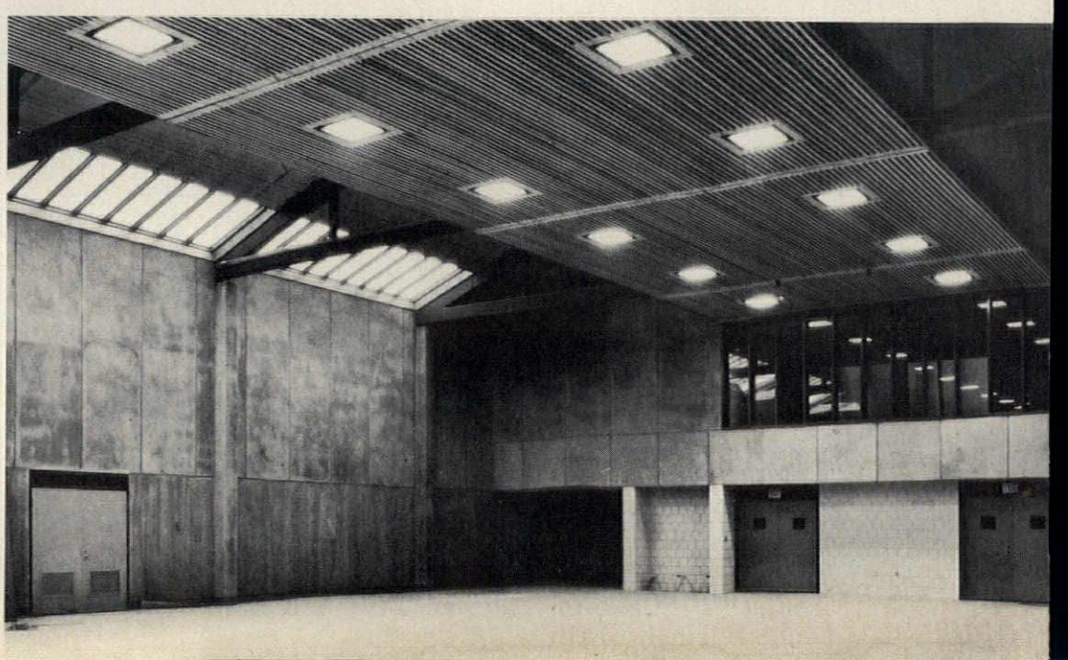
On a restricted site in Cleveland, architects Whitley-Whitley squeezed in a stadium and a recreational center by depressing the center one story below grade and then extending the bleacher seating over its roof. Space beyond building line under bleachers will be bad-weather indoor track.



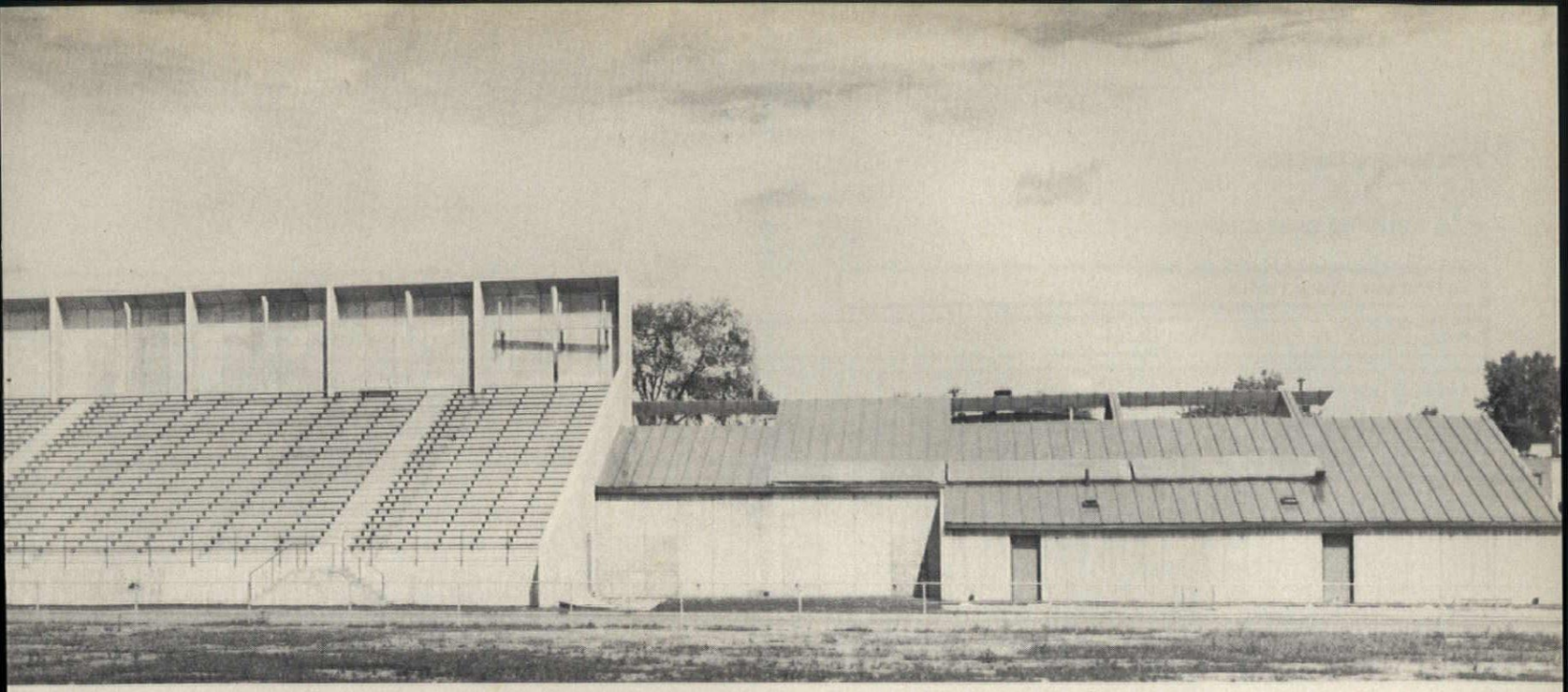
Tight site

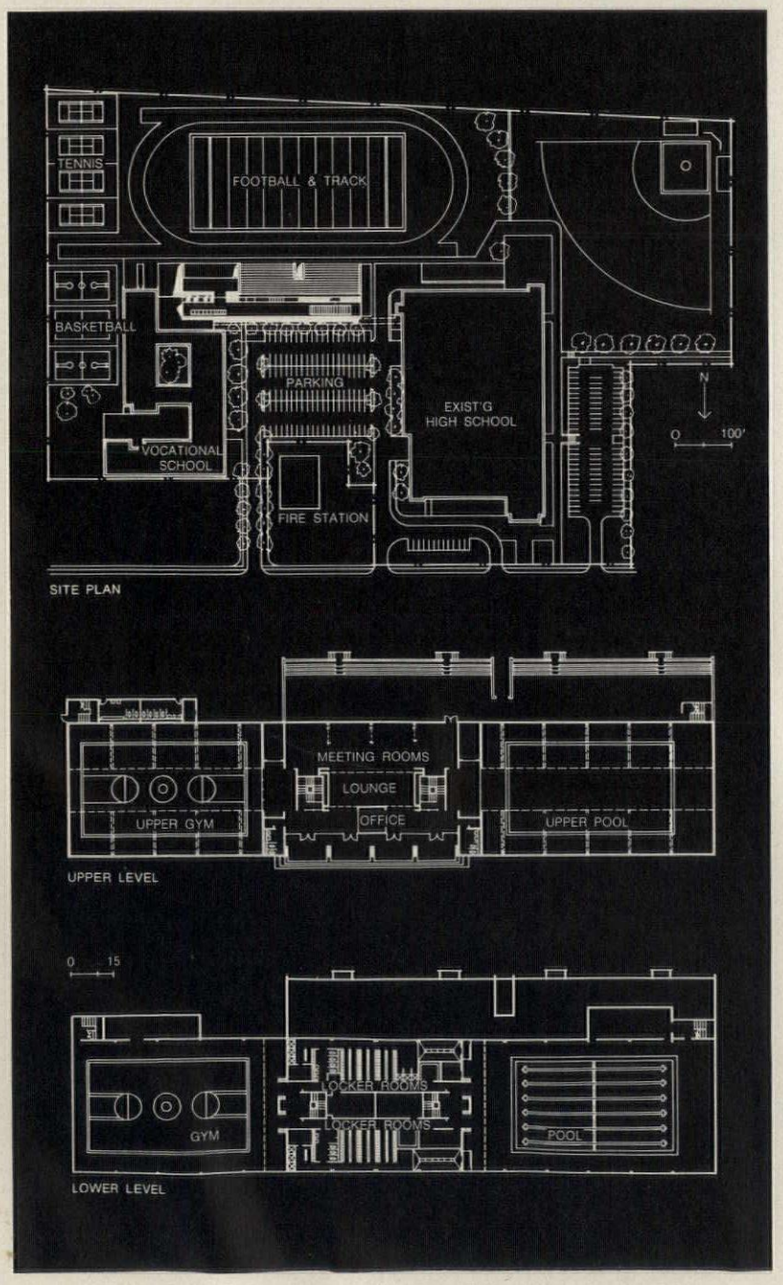






In a neighborhood where the urge to break windows is high, glazing has been kept to an absolute minimum, but skylights bring ample light into pool (above) and gymnasium (right).





Data

Project: John F. Kennedy Recreation Center, Cleveland, Ohio.
Architects: Whitley-Whitley Inc., Architects & Planners; James M. Whitley, William N. Whitley, R. Joyce Whitley, Michael Benjamin.
Clients: City of Cleveland, Lee-Harvard Community Organization, Cleveland Board of Education.
Program: a neighborhood center that combines the recreational and athletic requirements of three distinct clients, including meeting rooms, gymnasium, multipurpose space, swimming pool and locker rooms, outdoor athletic field and track and bleacher seating for 3500. Overall site planning requirements for outdoor athletics, parking and future expansion were part of the program.
Site: an extremely limited, flat parcel of land in southwest Cleveland confined by two existing schools, a fire station and other athletic facilities.
Structural system: poured-in-place concrete. Roof system is formed of steel trusses 20 ft o.c. made up of ships channels and tube sections welded airtight. Precast concrete deck spans 20 ft between top chords of the trusses. Poured-in-place stepped beams are positioned on the deck directly over the trusses, over which precast double-tee sections span 20 ft to form the base for bleacher seating.
Mechanical system: all exterior air-handling equipment is in a depressed open trough running the length of the building at the roof apex; in stadium section, enclosed mechanical rooms back on to trough. The entire spine integrates all mechanical and electrical systems. A hot water converter is tied into existing high school boiler room.
Major materials: design and type of finishes were selected for minimum maintenance. Fenestration is only at entrance; all other natural light comes through skylights. Floors are exposed concrete or covered in linoleum, vinyl asbestos tile or ceramic tile; all walls are painted concrete; ceiling is surfaced with gypsum wallboard or plaster; built-up roof is surfaced with terne metal; pool is aluminum.
Costs: see cost analysis, p. 92.
Consultants: George F. Evans Associates Inc., mechanical; Barber-Hoffman Inc., structural; Altemus & Associates, electrical.
Photography: Thom Abel.

P/A Building Cost File

P/A building cost analysis

Building type: Sports Facility

Classification No: 562

Project: John F. Kennedy Recreation Center

Location: Cleveland, Ohio

Architect: Whitley-Whitley Inc.
Owner: Cleveland Board of Education
Building Contractor: Alger-Rau Associates Inc.
Site Contractor: F. Buddie Contracting Inc.

Tender date/completion: Dec. 1971–Nov. 1972
Market conditions: depressed, 7 bidders
Cost index:

Elemental category	Element cost		Element amount		Cost per sq ft		%
	Quantity	Unit Rate	Sub	Group	Sub	Group	
100 Foundations	**20,780 sq ft**	**7.46**		**155,040**		**4.45**	**10.5**
110 Normal foundations	20,780 sq ft	3.21	66,680		1.91		
120 Basement excavation	251,630 cu ft	.35	88,360		2.54		
130 Special foundations	—	—	—		—		
200 Building shell	**70,080 sq ft**	**7.19**		**503,900**		**14.46**	**34.0**
210 Structure	**27,450 sq ft**	**5.12**	**140,440**		**4.03**		
211 *Lowest floor construction*	20,780 sq ft	1.84	38,260		1.10		
212 *Upper floors construction*	14,050 sq ft	1.78	24,940		.71		
213 *Roof construction*	13,400 sq ft	5.76	77,240		2.22		
220 Roof finishes	**13,400 sq ft**	**8.36**	**112,070**		**3.22**		
230 Exterior cladding	**21,850 sq ft**	**11.12**	**243,010**		**6.97**		
231 *Basement walls*	11,810 sq ft	10.85	128,080		3.68		
232 *Exterior walls above grade*	9,270 sq ft	11.63	107,850		3.09		
233 *Windows*	—	—	—		—		
234 *Entrances & storefronts*	770 sq ft	9.19	7,080		.20		
240 Stairs	**71 lin ft**	**118.03**	**8,380**		**.24**		
300 Interiors	—	—		**209,050**		**6.01**	**14.1**
310 Partitions and doors	**19,880 sq ft**	**3.10**	**61,700**		**1.77**		
320 Interior finishes	—	—	**83,180**		**2.39**		
321 *Floor finishes*	18,350 sq ft	.74	13,500		.39		
322 *Ceiling finishes*	21,310 sq ft	2.32	49,470		1.42		
323 *Wall finishes*	46,440 sq ft	.44	20,210		.58		
330 Specialties & equipment	—	—	**64,170**		**1.85**		
331 *Specialties & fittings*	—	—	8,890		.26		
332 *Equipment*	—	—	55,280		1.59		
400 Conveying systems	—	—	—	**NIL**		—	—
410 Elevators	—	—	—		—		
420 Moving stairs and walks	—	—	—		—		
500 Mechanical & electrical				**284,780**		**8.18**	**19.2**
510 Mechanical			**201,680**		**5.79**		
511 *Plumbing and drainage*	74 No	905.14	66,980		1.92		
512 *Fire protection*	—	—	—		—		
513 *HVAC*	430,860 cu ft	.31	134,700		3.87		
520 Electrical	—	—	**83,100**		**2.39**		
521 *Distribution*	—	—	44,140		1.27		
522 *Lighting*	—	—	28,870		.83		
523 *Special systems*	—	—	10,090		.29		
600 General conditions & profit	—	—		**79,030**		**2.27**	**5.3**
Net building cost: $				**1,231,800**		**$ 35.37**	
900 Site development	**230,820**	**1.08**		**249,720**		**7.17**	**16.9**
Total cost: $				**1,481,520**		**$ 42.54**	

Performance & Specification Data

Areas and volumes
Gross floor area (GFA): 34,830 sq ft
Net floor area: 27,220 sq ft
Volume: 430,860 cu ft
Exterior wall area: 21,850 sq ft
Roof area: 13,400 sq ft
No. of stories above grade: 1½
No. of basement levels: 1

Ratios
Net floor area/GFA – 0.78:1
Volume/GFA – 12.37:1
Exterior wall area/GFA – 0.63:1
Roof area/GFA – 0.38:1
Lin. ft. partitions/GFA – 0.048:1

Capacities
Percent exterior wall glazed: 5%
Soil characteristics: normal
Density plumbing fixtures: 1/470 sq ft
Heating capacity: 106/Btu/hr sq ft
Cooling capacity: 600 sq ft/ton
Ventilation capacity: 0.91 cfm/sq ft
Lighting intensity: 45 fc (av.)

Outline specifications
110 3000 psi conc. in spread footings.
120 Excavated material off site.
211 4000 psi concrete.
212 Mainly 4000 psi conc. joist slab (10" + 3¾"), conc. walls and piers, approx 20' x 20' bays.
213 6" cored precast back on steel trusses.
220 Mainly terne metal roofing on 1½" rigid insul. on v.b., p.w. glazed skylights.
231 4000 psi conc. "lower level" walls, metallic waterproofing.
232 Arch. finished 4000 psi conc. walls and cols.
234 Alum. entrance screen with wood doors, ¼" p.p. glazing.
240 4000 psi conc. stairs and steps with metal handrails, quarry tile finish to main stairs.
310 Conc. block partitions with h.m. and wood doors and frames, h.m. glazed screens, toilet, shower and changing cubicles, folding partition.
321 Mainly exposed conc. floors with some v.a.t. and quarry tile, "Tartan" finish to gym.
322 Painted susp. plaster and gypsum bd, ceilings, wood battens on insul. bd to gym, exposed precast conc. roof deck.
323 Painted conc. block, painted gypsum bd. and lath plaster, ceramic tile, exposed conc.
331 Millwork, toilet accessories, lockers, mirrors.
332 Sauna, gym, pool and kitchenette equipment.
511 Cast iron storm and sanitary, copper domestic hot and cold water systems tied into existing school bldg., sewage ejector.
513 4-pipe system connected underground to existing school system, cooling to gym, office and meeting rms, other areas exhausted, humidity control to pool, new converter in existing school.
521 Elec. services fed underground from existing school.
522 Mercury (gym) incandescent (pool, meeting rms.), fluorescent (lockers).
523 P.A., telephone, clock, fire alarm, emergency lighting.
600 General contractor's site mobilization, supervision, overhead and profit including bonding.
900 Site clearance, excavation, retaining walls, drainage, running track, asphalt paving, fencing, bleachers, seats, seeding.

Cost per cu ft $3.44

Cost and performance analysis prepared by Hanscomb Roy Associates Inc.

*Assumed corridors deducted from open spaces.

Analysis No. 2.

Estimating with recycled cost data

Brian Bowen

Continuing the P/A Building Cost File series which began in July, this article deals with putting cost data to use in estimating. The building classification code rounds out the actual filing guide, and the second analysis of the series is based on a 1972 Design Awards winner, p. 88

Any system of information analysis and storage is useless unless there are adequate methods for retrieving data and techniques for using it successfully for problem solving. We are all probably familiar with libraries, computer systems and the like which often become ends in themselves, exceeding the reasons for which they were originally established. Hopefully the cost data in the P/A Building Cost File and the building cost analyses, which we trust are being added to from your own resources, will not suffer from this problem. The purpose of the file is to provide a coherent framework for building cost and performance feedback and for the rationalization of cost data. The information to be stored in the file is intended to assist the designer in developing realistic cost estimates and construction budgets at the earliest stages of design and planning. Conversely, the information will also prove of value in developing outline designs to fit budget allocations.

It is ironic that the actual estimating process at the early design stage is incredibly simple, compared with the time-consuming performance at the other end of the design period, when detailed estimates must be prepared from complete working drawings and specifications. Depending upon the complexity of the work, these detailed estimates can readily consume from 40 to 80 man-days per million dollars of work, the bulk of which is taken up in laborious measuring and recording. Pricing the resulting quantities and operations is relatively easy because unit price records, labor and material costs, productivity records, etc. are readily at hand to contractors. Considerable skill is needed, of course, to put together these estimates, judge the competition and set the bid price. The architect, when required to prepare cost estimates from detailed working drawings and specifications, tends to short-circuit much of this bid preparation work. Thus, separate labor and material items tend to be aggregated, minor labor items ignored and measurements taken approximately rather than precisely. The object is usually to arrive at a broad comparison of anticipated bid prices and not the submission of a firm binding bid. Unfortunately clients cannot and should not have to wait for this stage to be reached before receiving reliable cost limit to their projects.

The actual estimating functions, in terms of measurement, are easier early in the design process, but the selection of price data within reasonable confidence limits is more difficult. At the stage where it may take no more than a few minutes to measure the gross floor area of a building, the selection of a single unit rate becomes highly judgmental and minor error deviations can be serious. The maxim is: the easier the measurement the more difficult the pricing.

The purpose of the form of analysis (p. 92) for the P/A file is to accumulate a body of pricing data in a form that will prove readily usable during these early design and planning stages. Actual building costs have been analyzed and translated into design language at three levels:

1 total building costs expressed as a single rate of one functional unit (cost per sq ft, cu ft, accommodation unit);

2 building costs subdivided into six major elemental or subsystem groups (foundations, shell, interiors, conveying systems, mechanical and electrical, general conditions, site development) and reduced to a cost per sq ft of building and a percentage of total cost;

3 building costs subdivided into 33 subelemental categories and reduced to a cost per sq ft of building area and further expressed, where appropriate, at a unit rate related to the actual overall quantity of the subelement itself (windows in dollars per sq ft of window area).

In addition, each analysis contains broad statistical data on the building and an outline specification indicating quality levels and scope. Armed with a file of such analyses, which synthesizes reliable cost data into a simple form suitable for use at early planning stages, the designer can begin to approach costing problems with greater sophistication and confidence. To correspond with the three levels of cost data, the information may be used for different degrees of estimating and cost planning.

Single rate estimating

Preparation of sq ft and cu ft cost estimates is widely preva-

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lent, widely misused and misunderstood; more misleading cost information is given based on cost per sq ft than on any other unit. I am tired of hearing claims that one office building, which incidentally has one parking level per five office floors and cost less than $25 per sq ft, is much cheaper than another around the corner which has no parking floors and cost $28 per sq ft. The tyranny of square foot budgets has been the downfall of many an architect.

Stored unit costs, recorded on a sq ft and cu ft basis, should be very carefully analyzed before they are re-used. Most buildings are agglomerations of different space uses and occupancy types, and the unit cost of a total building therefore tends to be the average of the costs of all these spaces. Ideally, building cost analyses should identify unit costs on an occupancy-type basis, but this is rarely possible due to the necessity of laboriously allocating cost items to spaces and the difficulty of agreeing on a standard method of allocating shared items such as foundations. The use of the space influences cost considerably, and is fundamental to the majority of cost problems; any re-use of unit cost data should take this factor into account.

For unit rate estimating, each building's functional area should preferably be costed separately at unit rates derived from the building cost data bank. It would seem sensible that the unit rate should include all normal and anticipated factors, and special conditions should be reflected in the estimate separately. Thus allowances should be made for a difficult site, poor soil conditions, special client requests, etc. and scope should be clearly identified—does it include carpets or not, site development, etc. Further, any special performance criteria should be taken into account. The data bank, presuming it follows the P/A format, should also provide useful data on net-to-gross floor area ratios for different building types and other statistics for formulating reasonable budget estimates on a single unit rate basis. Finally, remember to calculate floor areas and volumes consistently to ensure compatibility between unit costs in the data source and the estimate.

Elemental unit rate estimating

A slight refinement over single rate estimating involves the build-up of unit rates for each of the main elemental or subsystem groupings (groups 100 to 600 and 900 in the P/A elemental format). In this case, rates per sq ft of gross floor area are established after consulting the cost analyses of buildings in the file which meet similar performance standards. This allows for separate consideration of each major elemental group and the reflection in the unit rates of specific project characteristics. Where outline building configurations can be assumed, broad element quantities can be measured and suitable unit rates derived from the file (Table 1 shows an example) as follows:

100 Foundations: measure grade area to perimeter walls or extent of foundations
200 Building shell: measure total enclosure area, including all intermediate structural floors, roof and grade area
300 Interiors: use gross floor area
400 Conveying systems: use number of stories
500 Mechanical and electrical: use gross floor area and/or percentage
600 General conditions: use a percentage
900 Site development: measure area or use percentage

Elemental parameter estimating

Wherever possible, any form of single unit rate estimating should be avoided, parameter-type elemental cost estimates should be derived from the cost data from analyses in the file. It is quite possible to prepare elemental estimates, or establish cost plans, at the very earliest stages of projects. This can be done either through simulation or by measurement of key parameters from an outline conceptual design.

Elemental cost estimates are prepared by measuring or simulating the quantities of all 39 elements or subsystems required and pricing these at unique unit rates, taken from the cost data base. Measuring the elemental quantities should follow the standards used in the data file. Thus stairs should be measured in linear foot of rise, rather than square foot of plan area, although the latter would be perfectly acceptable if the costs in the file were analyzed using this unit. The majority of the elemental quantities can be derived from the basic surface area measurements of the proposed building—floor areas, wall and roof areas, grade area, etc. Where it is not possible to actually measure a quantity, this can often be simulated by the use of statistical ratios from the analyses, e.g., partition lengths can be calculated by selecting a suitable partition/floor area ratio.

The unit rates applied to the quantities must be selected with judgment and intuition. There is little merit in merely averaging the unit cost of all roof finishes (element 220) per sq ft of roof area for 100 projects. It is probable that having calculated the average, not one of the 100 buildings actually would agree with the unit cost figure—this is the problem with averages. Other statistical methods exist for giving a far better interpretation of a number of samples. These techniques, linked to some indication of performance criteria (which generally tend to have a strong influence on costs) and other statistical factors, provide an extremely powerful data source which can be used intelligently and with confidence by the estimator. It is not always necessary that the subsystem unit costs be derived from identical building types; transposition of costs for similar structural systems, for example, is possible for any type of building. There are some items at this stage which can only be estimated by the entry of a lump sum allowance (e.g., 332 Equipment), a unit rate based on gross floor area (e.g., 520 Electrical) or a percentage (e.g., 600 General conditions and profit).

On completion of the estimates for each subelement, element and element group, totals are extended and unit costs per sq ft of floor area calculated. These rates provide another opportunity to review the appropriateness of the overall estimate, comparing it to the data bank to see that sensible figures are being produced. The estimate should be prepared on a form closely resembling the P/A cost analysis sheet, with the added provision of an item for contingencies (design, escalation and construction changes).

What about computers?

As the volume of data in the file builds up, it readily lends itself to computer storage and the development of programs

1 Elemental unit rate estimate

Statistics

	Quantity	Ratio to GFA
Gross floor area	110,000 sf	
Net floor area	70,000 sf	0.64:1
Grade area	31,500 sf	0.29:1
Roof area	31,500 sf	0.29:1
Exterior wall area	42,650 sf	0.39:1
No. of stories above grade	3	—
No. of basement levels	1	—
Gross site area	81,500 sf	—

Estimate

Element	Element quantity	Unit rate	Amount	$/GFA	%
100 Foundations	31,500 sf	4.00	126,000	1.15	3.7
200 Building shell	184,150 sf	5.00	920,750	8.37	26.7
300 Interiors	110,000 sf	5.50	605,000	5.50	17.5
400 Conveying systems	4 stories	20,000	80,000	0.73	2.3
500 Mech. & electrical	110,000 sf	10.00	1,100,000	10.00	31.9
600 General conditions	%	10%	280,000	2.54	8.1
Sub-totals (building)			$3,111,750	$28.29	90.2
900 Site development	50,000 sf	0.50	25,000	0.23	0.7
contingencies	%	10%	313,250	2.84	9.1
Totals			$3,450,000	$31.36	100.0

2 Construction price indexes (Building and general construction)

Compiler	Building type: General	Industrial	Commercial	Public	Residential	Frequency: Monthly	Quarterly	Semi-annual	Annual	Geographical coverage	Type: Output	Input	Remarks
Aberthaw Co.		✓						✓		Boston	✓		Based on cost of constructing two-story 100,000 s.f. industrial building
American Appraisal Co.	✓					✓				22 cities		✓	Some productivity adjustment; Excludes mechanical and electrical
Austin		✓					✓			Central and Eastern Cities	✓		Based on repricing a single-story industrial building
Boeckh		✓	✓	✓	✓	✓				116 areas		✓	Some productivity adjustment
Dept. of Commerce	✓					✓				National average		✓	
ENR (Building Cost Index)	✓					✓				20 cities		✓	Based on weighting of skilled labor, steel, lumber and cement only
Fruin-Colnon		✓					✓			St. Louis	✓		Based on repricing five industrial buildings
Fuller			✓				✓			Eastern cities	✓		Based on repricing 36 major cost elements of a hotel, office building and warehouse
Marshall & Swift		✓				✓				East, Central and West		✓	An appraisal manual adjustment factor
Smith, Hinchman & Grylls	✓					✓				Detroit		✓	Includes factor for profit levels and market conditions
Turner	✓						✓			Eastern cities		✓	Productivity and competitive conditions considered

for interpretation, retrieval and analysis. However, any attempt to devise a fully automated estimating system should, in my view, be resisted. Any building estimating system should assume that those using it are intelligent and knowlegeable professionals, who know what they are doing and who, in the past, have only lacked a coherent body of cost data for the estimating function.

The subordination of professional skill and judgment to a machine's ability for statistical performance is not, therefore, recommended. Those systems which purport to provide a tax form type of approach to estimating are snake oil remedies, which flourish in an information vacuum.

Cost planning

Mention was made earlier of using the data base as a means of deciding the outline characteristics of a building for which cost limits have already been established. This is a sophisticated extension of the elemental cost estimating approach, involving the establishment of a cost profile or cost plan before conceptual designs begin. The cost planning process which follows allocates cost targets to each element; their total equals the budget. The cost information file is used to verify that the targets established can be achieved, and demonstrates the broad quality levels which can be expected.

Once the cost plan has been agreed upon and a verification estimate prepared using the elemental method, the resulting elemental cost targets provide a framework for on-going cost control during the design period. Increasingly refined estimates are prepared at each cost check to be reconciled against the cost plan, or individual elements are checked out as designs emerge and alternates are studied. This process is a more active and creative method of cost control, as it involves designing to a cost rather than passively and retrospectively costing a design.

Updating and transposing cost data

The successful application of elemental estimating techniques relies in large measure upon the intelligent use of stored cost information. Availability of enough relevant data is constantly jeopardized by the rapid "decay" rate of cost information and the difficulty of reliably transposing it from one locality to another. In order to retain relevance and comparability of building costs, a great deal of energy and effort is spent on measuring price change temporally (from time to time) and spatially (from place to place). Table 2 lists some of the better known cost indexes (or price indexes as they should more accurately be called) covering building construction.

These indexes are basically of two types: input indexes measure the price change of the basic construction inputs of labor, materials, equipment, etc. but ignore productivity differences, market conditions, profit levels, technological change, etc. Output indexes attempt to ascertain price changes at the output or finished product level and thus include some or all of the intangibles omitted in the input calculations.

There are some hybrid types, but most indexes fall into one of the two main categories, primarily the input type for the obvious reason that they are simpler and hence less expensive to calculate and maintain. It is difficult to give sound advice in this area, as frankly none of the indexes claims to be perfect and we all probably have had independent experience with some or all of them. For ourselves, we have found that the input series of indexes tend to overinflate during a period of time. There is nothing in the building side of the industry to compare with the Bureau of Public Roads Highway Bid price index, which is a good measure of actual price movements for road construction. Occasionally F.W. Dodge publishes statistics on price movements derived from contract award data for buildings. These tend to support the view that input indexes overinflate—the Dodge figures averaged an increase of 6.5 percent per annum for the five years to 1971, whereas the ENR Building Cost Index averaged 8.9 percent per annum for the same period. Interestingly enough, the Dodge statistics also found different rates of increase according to building type, ranging from 8.3 percent per annum for hospitals and institutional buildings to 4.7 percent per annum for apartment buildings for the same period.

The P/A cost analysis form leaves the cost index box blank for the individual user to apply the statistics he has found most reliable. Failing any experience (or disillusionment with all indexes), we suggest that the Bureau of Labor Statistics Consumer Price Index be used, as a secondary measure, until someone comes up with a more reliable set of figures.

To recapitulate, the P/A Building Cost File includes: Elemental categories for cost analysis (Table 2, July, p. 89) Description of elemental categories and units of measurement (Table 3, July, pp. 90-93) Floor areas and volumes: Rules of Measurement (Table 4, July, p. 95) Building classification code (Table 3, this issue, pp. 97-99).

The above will provide a suitable framework for the preparation, filing and retrieval of building cost data, including the regular P/A cost analyses which will continue to appear.

Building classification code

The code consists of three numbers. The first defines the function of the building in generic terms, the second deals with more specific building types and the third identifies those building types more precisely:

4 Indicates health and welfare buildings
41 indicates hospitals
419 indicates veterans' hospitals

The code is constructed to correlate with the international SfB classification system, freely adapted for North American terminology and building types.

Group 1 deals with engineering works, which is included for the sake of completeness. Groups 2 to 8 identify the majority of building types commonly encountered. Group 9 deals with internal and external spaces and can be used in conjunction with the building types.

Provisions are made in the code for some common types of multipurpose buildings. New codes may be created or Group 9 used as a general collector. Each group contains vacant or open numbers for the addition of other building types as the need arises. Users wishing to subdivide codes further, may do so by the addition of a fourth digit.

1 Engineering works
2 Transport and industrial buildings
3 Administrative and commercial buildings
4 Health and welfare buildings
5 Refreshment, entertainment and recreation buildings
6 Religious buildings
7 Educational, cultural and scientific buildings
8 Residential buildings
9 Spaces in general

3 Building classification code

1 Engineering works

11 Railroads
Bridges, tunnels, etc. see 18 unless specific to railway works
Buildings only see 21

111 Railways
112 Subways
113 Monorails
116 Cable railways
117 Light railway, tramways, rack railways

12 Road works
Bridges, tunnels, etc. see 18 unless specific to road works

121 Highways
122 Roads and streets
124 Light traffic roads, drives
125 Bicycle tracks, walks, footbridges

13 Maritime, river and canal works
Bridges, etc. see 182 unless specific to maritime, river, canal works
Buildings only see 23

131 Rivers, lakes, weirs
132 Canals, locks
133 Reservoirs, hydraulic construction, dams, barrages
Hydro electric works see 156
Bulk storage tanks see 184
134 Sea fronts, ports, docks, coast protection, breakwaters, jetties, piers
135 Lighthouses, beacons
136 Fisheries
137 Drainage and reclamation works, dikes, polders, irrigation works, culverts

14 Air transportation facilities
Buildings only see 24

141 Airports in general
142 Runways
145 Heliports, hovercraft stations
149 Runway lighting, radar, air traffic control

15 Extraction, power, communications,
Buildings only see 25

151 Windmills, watermills
152 Mines, quarries
154 Oil fields including pipelines
155 Gas extraction including pipelines
156 Electricity generating works in general, pylons, power transmission, nuclear reactors, tidal power, hydro electric works
158 Transmitters, etc.

16 Agricultural works
Buildings only see page 26

17 Public health engineering facilities

171 Waterworks, water towers, wells, pumping stations
173 Sewage works, treatment
174 Garbage collection, treatment, disposal, incinerators

18 Other engineering construction

181 Embankments, cuttings, etc., tunnels in general
182 Bridges, viaducts, aqueducts in general
183 Platforms, rigs in general
184 Bulk goods containers including gas holders, silos, grain elevators, storage tanks in general
185 Air-raid shelters, defense works in general
186 Towers, masts, large chimneys in general
187 Pipelines (large diameter) in general
See also 15
188 Monuments, civic memorials, gateways etc.

19 Vacant

2 Transport and industrial buildings

21 Railroad buildings

211 Terminal stations, stations in general
212 Local stations
213 Subway stations
214 Freight depots
215 Workshops, repair shops, engine, carriage sheds

22 Road transportation buildings

221 Bus stations
222 Bus depots and garages
Private garages see 881
223 Parking garages
224 Filling, washing, service stations
Showrooms see 349

23 Maritime, river and canal transport buildings

231 Passenger, freight terminals
232 Marine and waterside buildings
233 Port, harbour, dock buildings
Warehouses see 28
Custom houses see 315

24 Air transportation buildings
Heliports, hovercraft terminals see 145

241 Passenger terminals
242 Air traffic control towers
243 Cargo terminals
247 Hangars

25 Extraction, power, communications buildings

252 Mining, quarrying buildings
256 Power, generating stations, nuclear, hydro-electric buildings
258 Broadcasting stations
Studios when described separately see 784

26 Agricultural buildings, farms
Farmhouses see 861

261 Tower silos, bins, hoppers
262 Bulk storage buildings
263 General storage buildings
265 Controlled environment buildings, dairy and poultry buildings
266 Special purpose buildings, stables
Animal houses in general see 46
Slaughter houses see 386
268 Horticultural buildings, greenhouses, plant nurseries

27 Factories, mills and industrial plants, including multi-story loft buildings

28 Warehouses and storage buildings, including depositories, cold storage plants, depots

29 Vacant

3 Administrative and commercial buildings

31 Public administration buildings
Office buildings in general see 32

311 Administrative international buildings including UN buildings
312 Legislative national and international buildings, parliaments, capitols
313 Administrative national buildings, ministries, government departments
314 Legislative regional and local buildings, civic centers, county, city and town halls and offices
315 Administrative regional and local buildings, labour exchanges, customs houses, local offices of government departments, etc.
316 Ceremonial representative buildings, embassies, legations, consulates, high commissions, palaces, presidential and official residencies, etc.
Residential only see 86
317 Law courts, magistrates' courts, court houses, juvenile courts
318 Military buildings in general, camps, depots, including security buildings, guard houses, armories
Prisons, detention centers in general see 48
Military hospitals see 418
Military academies see 728

32 Office buildings
For office spaces in a specific building type, refer to the appropriate building type
Factories and offices see 27
City halls and offices see 314, etc.

327 Stock exchanges, chambers of commerce
328 Banks, safe deposits

33 Vacant

34 Stores, shops and showrooms

341 Auction rooms, sales rooms
342 Market halls, livestock markets, shopping centers. Mixed development—retail and offices
Mixed development—stores, offices and housing see 818
343 Shops in general, department stores
344 Supermarkets, food stores, bakeries
345 Confectionery, tobacco, newspapers including bookstalls, street kiosks
346 Clothing, footwear
347 Other household goods
348 Dealers, builders', merchants, etc.
349 Showrooms

35 Vacant

36 Vacant

37 Consumer service works etc.
Shops and stores see 34, which prefer if in doubt
Craft industry and workshops to which the public has access, e.g. dry cleaners, laundries, gunsmith, upholsterers, bookbinders, tailors, etc.

38 Public utility buildings
Services which are usually, though not invariably, non-commercial

381 Post offices, sorting offices, telegraph and telephone stations
382 Coast guard, life boat stations
383 Fire, ambulance, police stations
Police detention centers see 488
384 Water supply buildings
385 Comfort stations, wash houses, bath houses
Swimming pools see 54
386 Slaughterhouses, abattoirs
388 Mortuaries, crematoria, cemetries, funeral parlors
Mausoleums see 67
389 Mints and treasuries

39 Vacant

4 Health and welfare buildings

41 Hospitals

411 Teaching hospitals including postgraduate teaching centers
412 General hospitals
413 Mental hospitals, psychiatric hospitals
414 Maternity hospitals
415 Isolation hospitals
416 Other special hospitals: children's dental, neuro-surgery, etc.
417 Clinical research centers, health science centers
Research centers in general see 731
418 Military hospitals
419 Veterans' hospitals

42 Other health buildings
If described separately from hospitals

421 Health centers (clinics and group practices combined, also health clubs)
422 Clinics, including maternity and child welfare, outpatient
423 Surgeries including group practices, doctors' surgeries
424 Dental surgeries and clinics
425 Day centers (psychiatric, geriatric, rehabilitation)
426 First aid posts, emergency and field posts
427 Crèches, day nurseries, day care centers

43 Vacant

44 Homes
Residential buildings general see 8

442 Nursing homes, convalescent homes, sanatoria
443 Homes or centers for chronic invalids, addicts
444 Homes for mentally deficient, handicapped
Training centers, special schools see 717
445 Homes for physically handicapped, blind, deaf
Special schools see 717
446 Orphanages (children's homes)
447 Homes for the aged (senior citizens')

45 Vacant

46 Animal welfare buildings in general
Agricultural buildings see 26
Slaughter houses see 386
Animal laboratories see 732
Zoos see 75

461 Veterinary hospitals, etc.
462 Animal clinics, dispensaries
464 Animal houses in general, including experimental

47 Vacant

48 Prison buildings
Reformatories see 718

481 Special prisons including maximum security prisons
482 Medium security prisons
484 Open prisons
488 Military, police, detention centers

49 Vacant

5 Refreshment, entertainment & recreation buildings

51 Refreshment buildings
For refreshment buildings with other building types, see other types, e.g. Hotels, inns (residential), etc. see 85

511 Canteen, refectory buildings, cafeteria
512 Restaurants, commercial refreshment buildings in general
514 Military messes and clubs
515 Cafés, snackbars, coffee bars
517 Bars, taverns

52 Entertainment buildings and facilities
Studios, etc. when described separately see 78

521 General purpose halls, dance halls, ballrooms
Community halls, church halls see 532
522 Auditoria, amphitheaters
523 Concert halls, opera houses
524 Theaters, playhouses
525 Motion picture theaters, drive-in movie theaters
526 Amusement arcades, pier buildings, casinos
527 Fairs, circuses, amusement parks
528 Park buildings, band shells, playgrounds
Zoos, etc., botanical gardens see 75

53 Community buildings
Residential clubs see 856

531 Congress and conference buildings, convention halls
Exhibition buildings when described separately see 77
532 Community halls and centers, social and cultural centers, church and village halls
534 Youth centers, students' union buildings, clubs

54 Swimming pools
Washhouses, baths see 385

541 Covered swimming pools
543 Open-air swimming pools
546 Thermal, vapor, including sauna

55 Vacant

56 Sports buildings
Combined exhibition and sports centers see 533

561 Playing fields in general, tennis courts, golf courses
562 Sports centers, including games halls, gymnasia and courts for badminton, billiards, bowling, boxing, fencing, squash, table tennis, tennis, etc. Sports centers may also include swimming pools and other facilities
563 Bowling alleys when described separately
564 Stadia, including grandstands, for racing, baseball, football, etc.
565 Riding stables, riding schools, kennels
Animal houses in general see 46
566 Marinas, boathouses and yachting clubs
568 Ice rinks and arenas, curling clubs, skating rinks

57 Vacant

58 Vacant

59 Vacant

6 Religious buildings

61 Religious buildings complexes
Episcopal palaces, pastoral centers, retreats
See also 84

62 Cathedrals

63 Churches, chapels
Church halls see 532

64 Mission halls, meeting houses Masonic halls

65 Other non-residential religious buildings
Temples, sanctuaries, pagodas, shrines, mosques, minarets, etc.
Synagogues see 66

66 Monasteries, convents, nunneries, abbeys

67 Funerary sepulchral architecture
Mausoleums
Cemeteries, crematoria, mortuaries in general see 388

68 Synagogues

69 Vacant

7 Educational, cultural and scientific buildings

71 Schools
Orphanages see 446
Youth centers see 534

711 Nursery, pre-school
Day nurseries, crèches see 427
712 Elementary, infants, junior, etc.
713 Secondary, polyvalent, high schools, vocational
716 Boarding schools in general
717 Special schools, physically handicapped, training centers for mentally deficient, etc.
Home only for mentally, physically handicapped children see 44
718 Reform schools

72 Universities, colleges
Refectory buildings if described separately see 511
Student unions if described separately see 534
Libraries if described separately see 761
Halls of residence if described separately see 847

721 Universities
722 Polytechnics, technical colleges, colleges of education, colleges of further education, community colleges
724 Academies, music academies, etc.
728 Military academies, training establishments

73 Research, scientific centers

731 Research centers in general
732 Laboratory buildings
736 Computer centers
737 Observatories
738 Meteorological, geophysical, seismograph stations

74 Professional and learned societies' buildings
Professional and learned societies' buildings which cannot be classified as any other building type
Libraries if described separately see 763

75 Zoos, museums, art galleries, etc.

751 Zoological and botanical gardens and buildings, herbaria
Animal welfare buildings see 46
Park and garden buildings see 528
753 Aviaries
755 Aquaria
756 Museums
757 Art galleries
758 Planetariums

76 Library buildings

761 National, university libraries
762 Public libraries including commercial lending libraries
763 Research institutes' and learned societies' libraries
764 College libraries
766 Special libraries, e.g. illustrations
767 Record offices, archives
768 Patent offices

77 Information and exhibition buildings
Combined exhibition and sports centers see 533
Zoos, museums, art galleries see 75
Libraries see 76

771 Information centers
773 Design centers, building centers
775 Exhibition buildings, exhibitions
778 Halls of fame

78 Studios, etc.

781 Art studios, design studios
782 Motion picture studios
784 Radio and TV studios
Broadcasting stations see 258
787 Photographic studios

79 Vacant

8 Residential buildings

81 Housing, dwellings in general

811 Single-story, bungalows
1 Detached
2 Semi-detached
3 Linked
4 Terraced (row)
812 Up to three storeys, including houses in general. Subdivide as 811
814 Up to four storeys
815 Five storeys and over
816 Apartment houses in general
818 Housing with offices, stores, etc.

82 Vacant

83 Vacant

84 Special residential
Embassies, etc. see 316
Homes see 44
Prisons see 48
Monasteries see 66
Boarding schools see 71
See also 85, 86

841 Parsonages, caretakers' houses, etc.
842 Barracks, married quarters
844 Farmhouses
845 Holiday houses, cottages, camps
846 Hostels, e.g. YMCA, Youth Hostels
847 Nurses' residences, students' residences, dormitories
849 Mansions, country houses

85 Hotels, etc.

852 Hotels
853 Motels and motor hotels
854 Guesthouses
855 Inns (residential)
856 Clubs (residential)
857 Apartment hotels

86 Vacant

87 Mobile homes
Houseboats, trailers, trailer parks

88 Ancillary buildings

881 Private garages, carports, bicycle sheds
883 Domestic greenhouses

89 Vacant

9 Buildings, architecture, internal and external spaces in general

Buildings and spaces in general and special building types not provided in 2/8 including:
- demountable buildings in general
- floating buildings in general
- multi-purpose buildings in general
- single-storey buildings in general
- submerged buildings in general
- tall buildings, skyscrapers in general
- temporary buildings in general
- underground buildings in general

Specs should be classified where possible according to a specific building type, e.g.
760 spaces in library buildings
7620 spaces in public library buildings

90* External spaces
Patios, courtyards, gardens, etc.
Playgrounds in general see 528

91* Circulation spaces
Entrance halls, corridors, horizontal and vertical circulation, stairways etc.

92* Room spaces in general

921 For sleeping
922 For relaxing, eating
e.g. waiting rooms, lounges, dining rooms
923 For clerical work
e.g. writing, reading, drawing spaces etc.
924 For other non-manual work
e.g. computer rooms, dark rooms in general
925 For manual work
e.g. workshops in general
926 For sitting assembly
e.g. spaces with fixed seats, lecture theaters
927 For standing assembly
e.g. halls, auditoria in general

93* Culinary spaces
Kitchens (cooking facilities)

94* Sanitary spaces
Bathrooms, toilets, etc.

95* Cleaning spaces
Laundries, utility rooms, etc.

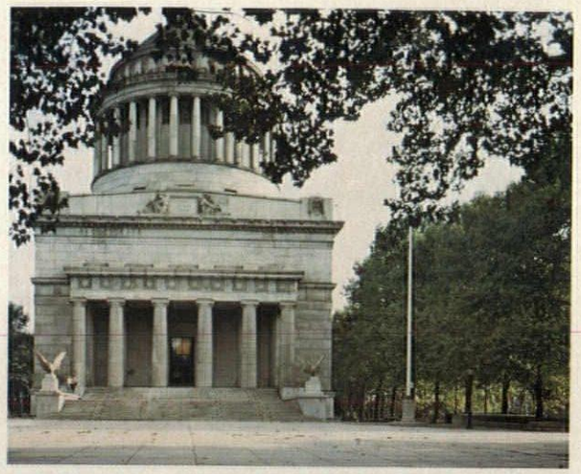
96* Storage spaces
Store rooms, vaults, record rooms, cloakrooms, etc.

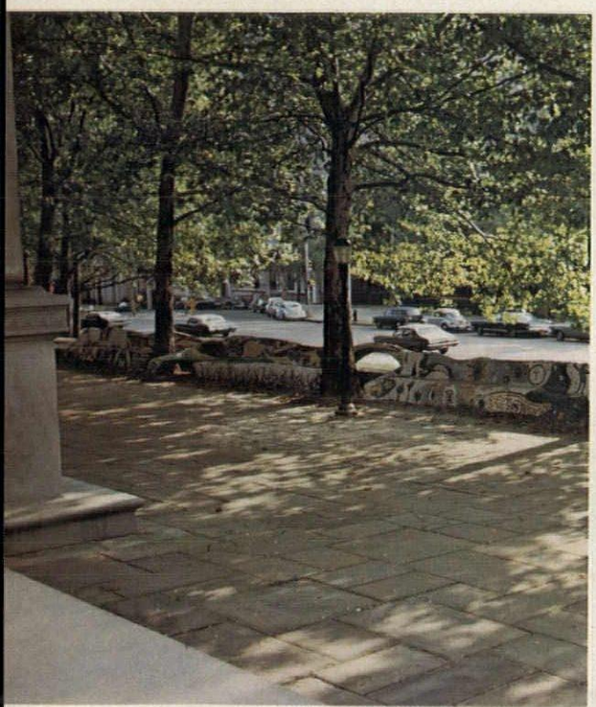
97* Ancillary spaces and buildings
Plant rooms, boiler rooms, garage spaces, etc.

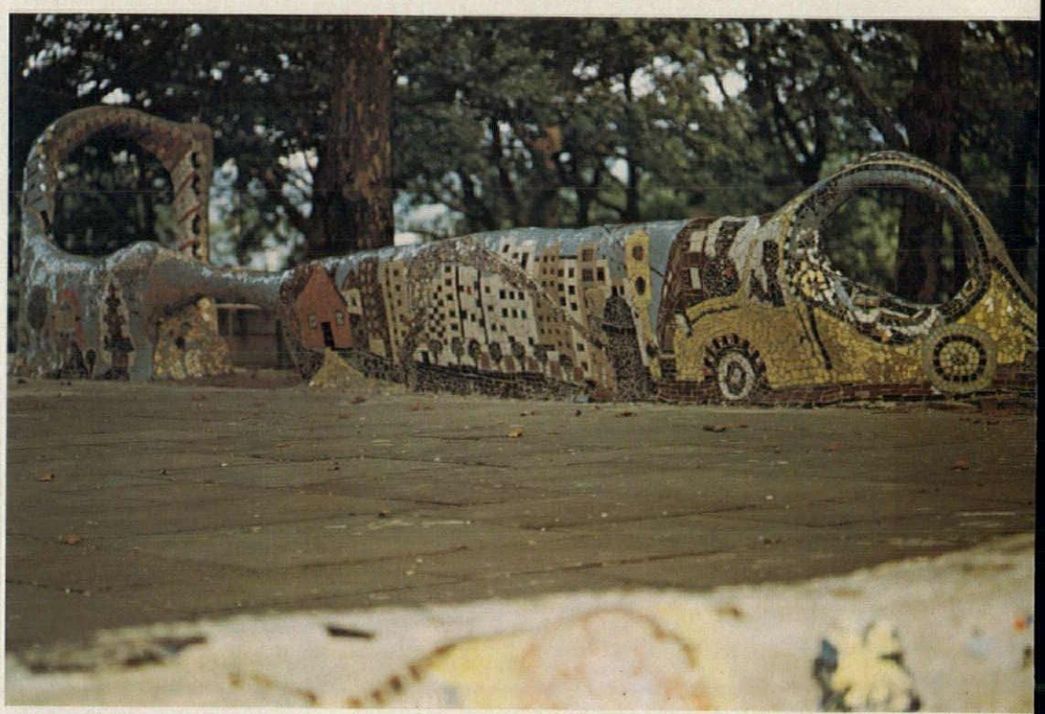
* These members can be combined with building type members

General Grant National Memorial

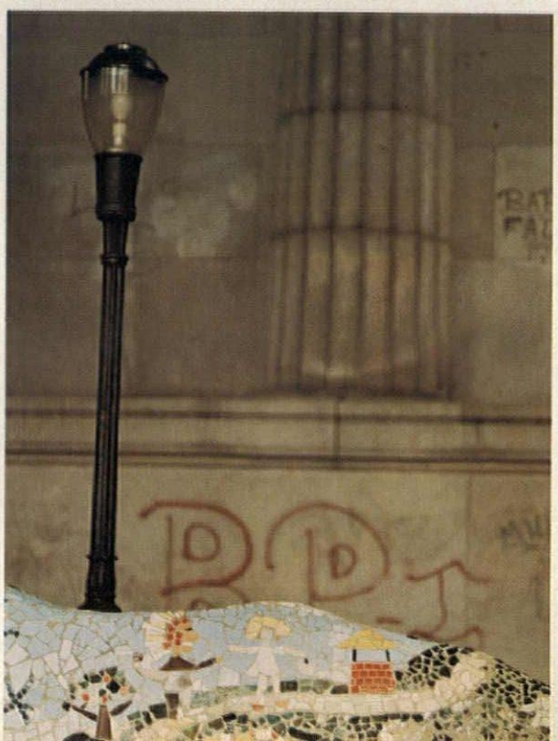
What General Grant didn't know

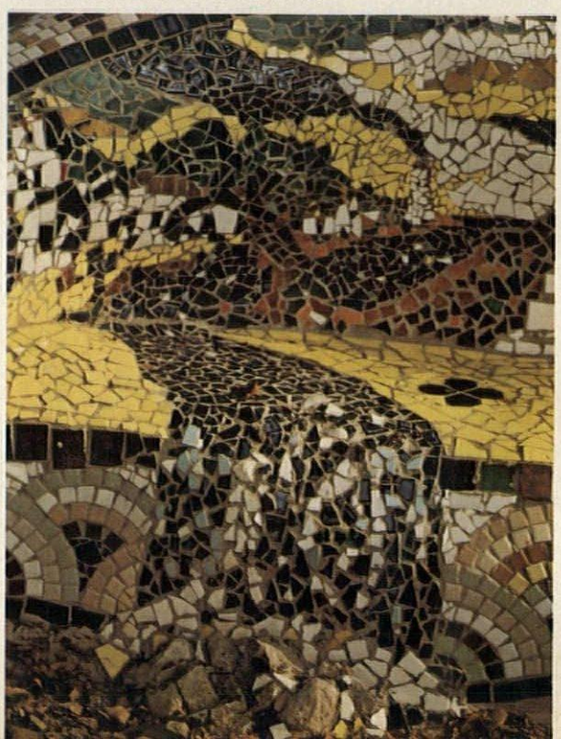






Themes on benches include nursery rhymes, city life and nature; waterfall cascades into mosaic foam.



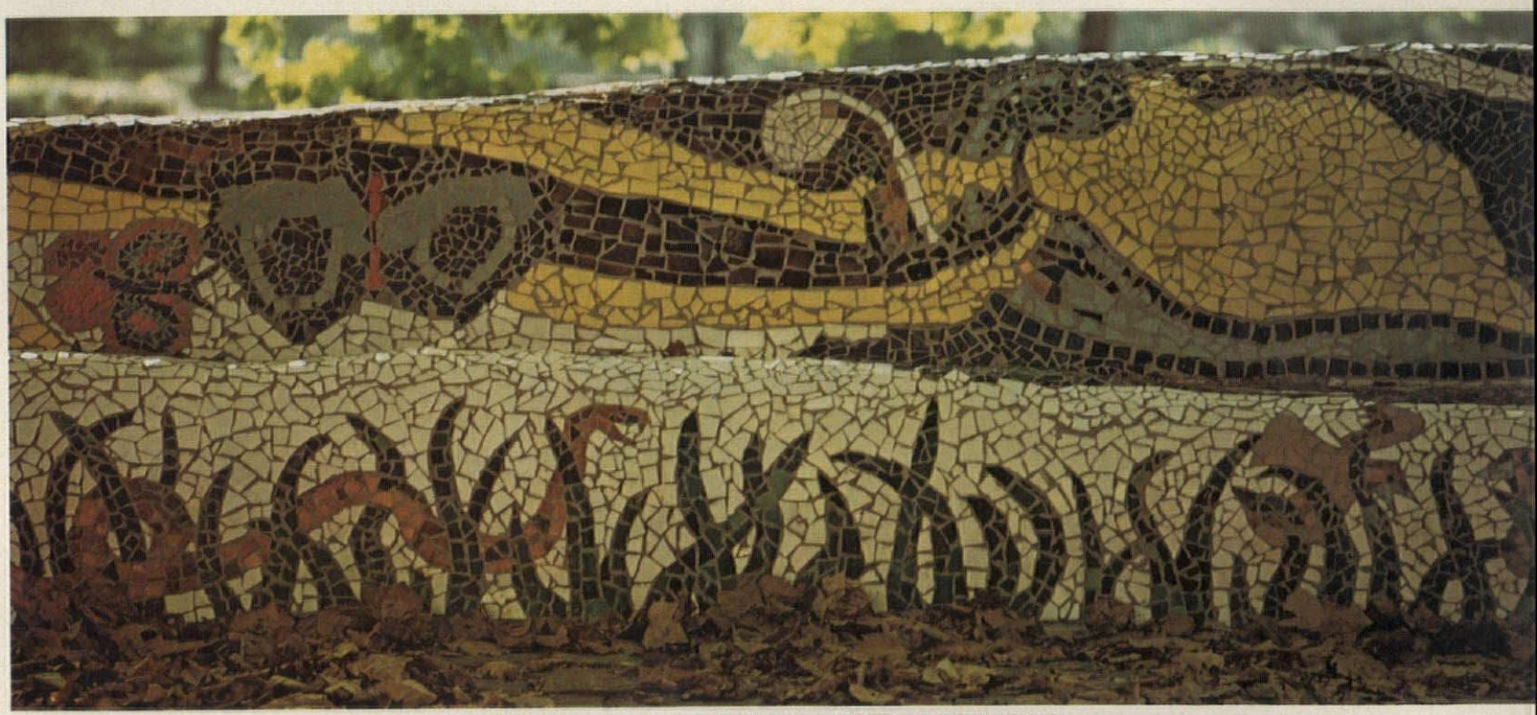


National monuments usually project a 'hands off' attitude, but at Grant's Tomb it was local residents who carried out a beautification project

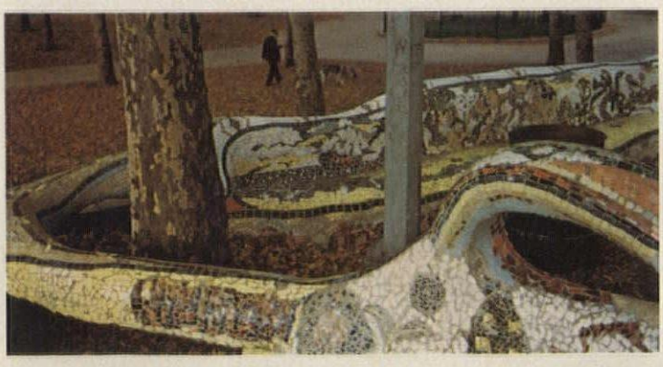
Grant's tomb is never going to be the same. In fact, the General and Mrs. Grant are probably turning over in their graves at this minute. For 76 years they have enjoyed relative peace within the security of the General Grant National Memorial high above the Hudson River on Manhattan's Upper West Side. But a few years ago, local artists began decorating the tomb with "masterpieces," their word for grafitti. When time came last year to commemorate the National Park Service Centennial, the Service invited Cityarts Workshop—a community art program—to co-sponsor a beautification project for the plaza surrounding the tomb. The idea to involve the community is working beautifully; the response has been enthusiastic from both participants and the public.

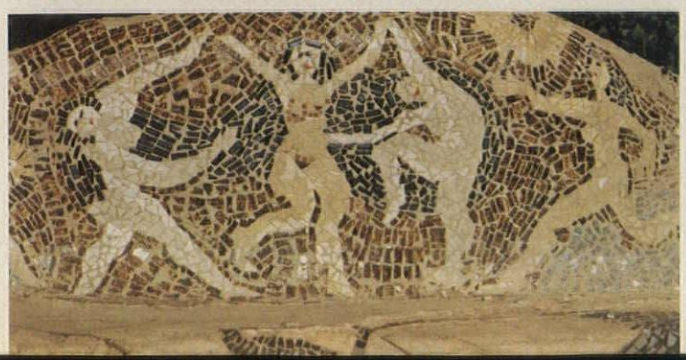
Cityarts project director Pedro Silva—a sculptor inspired by the works of Antoni Gaudi—designed a flowing, 150-ft-long cement bench around the sides and back of the plaza. Then he showed local residents slides of Gaudi's and Simon Rodia's works, and instructed them in the art of cutting and setting mosaic tile. For over a year now, people from the neighborhood have been encouraged to do their own thing on the bench, with the only established guideline being the unfinished bench itself. The project is about half finished and the influence of Gaudi and Rodia is very much apparent. In fact, if it weren't for the neoclassical tomb looming in the background, the area would seem to be a beautiful fantasyland of half part Ciutadella Park of half part Watts Towers.

Funding for the project came from the National Park Service, the New York City Parks, Recreation and Cultural Affairs Administration and the Canada Dry Corporation (whose gingerale can is now immortalized in the bench). Other contributors were the J.M. Kaplan Fund, the National Endowment for the Arts and the New York State Council on the Arts. [DM]



Winding benches face toward either tomb or park; unfinished portions (below right) include Matisse-inspired dancers.





Message from the publisher

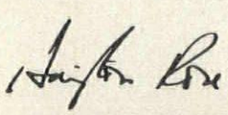
During recent months, the editors and marketing department have been conducting extensive research among Progressive Architecture's subscribers. Rare indeed is the subscriber who has not received one or more questionnaires involving either his readership of editorial articles or advertisements in the magazine.

The purpose of the research on editorial material should be obvious. We are engaged in a program of upgrading the quality of the magazine to better serve the information needs of our most important constituency, our paid professional subscribers. In order to keep abreast of what those needs are, we must go to the source—the subscribers themselves—on a regular basis.

Research on your reaction to and actions taken on advertising is important, too—not as obviously so, perhaps, as research on editorial. But when you consider that fully one-half of the magazine's information value derives from its advertising pages, you'll see why the advertising content must constantly be evaluated in terms of its service to you. Passed along to advertisers, your comments help them design ads, to keep you better informed.

The craft of publishing requires first, enhancing the most valuable franchise of all: the contract with one's readers. And second, helping advertisers to communicate effectively with those readers. The information that you are occasionally asked to give helps me to fill both requirements.

Accept my sincere thanks for your cooperation.



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Simmons Contract coordinates total interiors for health care, innkeeping and educational institutions, drawing on the resources of all Simmons partner companies. In addition, the company has its own comprehensive lines of institutional furnishings, beds, bedding, chairs, Hide-A-Bed sofas, office furniture, case goods and carpeting. **Contact** Bob Costello, Chicago (312) 644-4060.

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Katzenbach and Warren is the only authorized maker of Williamsburg® Wallpaper Reproductions—each, in design and colorway, a faithful reproduction of original antique documents in the Williamsburg collection. In addition, the company offers a wide range of traditional and contemporary roller-printed wallpapers, cork laminate papers and woven textures imported from the Orient. **Contact** Charles Salembier, New York (212) 759-5410.

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Circle No. 368, on Reader Service Card

It's the law

Third party claims

Bernard Tomson and Norman Coplan

Rules of law which ordinarily apply to claims against the architect by the contractor's employee may be varied if contract contains indemnification provision

In last month's column we discussed the right of an architect to secure indemnity against a contractor 1) when a dangerous condition has been created at the site by the contractor, 2) which condition resulted in an injury to a third person and 3) when liability was charged to the architect arising from his failure to stop the construction work. We indicated that where both the architect and the contractor were deemed actively negligent, such indemnity would not be forthcoming. It was further pointed out that even where the architect's negligence was passive, the judicial trend appeared to be to compare the relative faults of the architect and the contractor and to apportion liability accordingly.

Rules of law otherwise applicable may be varied by contractual undertakings which change the legal relationships between the parties involved. Thus, for example, if a contractor, in his construction contract, agrees to indemnify the architect as well as the owner, for any liability arising out of the contractor's performance of the work, the right of the architect to such indemnification will depend on the interpretation and validity of such a provision.

The effect of contractual indemnification provisions upon the common law rules applicable to this subject matter was recently considered by the highest Appellate Court of New York in *Margolin* v. *New York Life Insurance Company* (34 L.R.N. No. 34). The facts in this case involve injury to a plaintiff who fell upon a patch of ice located on a sidewalk which was part of an apartment complex owned by the New York Life Insurance Company. The owner had a contract for maintenance with Park & Estate Maintenance, Inc. to keep the walks of the apartment complex clear of snow and ice. At the time of the accident, the sidewalk was clear of ice, except for this one patch which had formed as a result of a structural defect—a depression in the sidewalk. The plaintiff sued both the owner and the maintenance company.

During the trial, the Court dismissed the plaintiff's suit against the maintenance company and the jury found in favor of the plaintiff against the owner, New York Life. The cross-claim of the owner against the maintenance company for indemnification was also dismissed. The issue on appeal, therefore, was whether the owner of the apartments was entitled to indemnification from the maintenance company under the indemnity provisions of their contract.

The maintenance contract with the owner stated:

"The contractor (Park & Estate) hereby assumes entire responsibility and liability for any and all damage or injury of any kind or nature to persons whether employees or otherwise, and to property, including property caused by or resulting from the execution of the work or occurring in connection therewith, and agrees to indemnify and save harmless the owner, his agents, servants and employees from and against any and all claims, liability, loss, expense, damage or injury to persons and to property caused or occasioned directly or indirectly by the contractor or its work, or resulting from the use by the contractor, its agents or employees, of any materials, tools, implements, scaffolding ways, works, or machinery or other property."

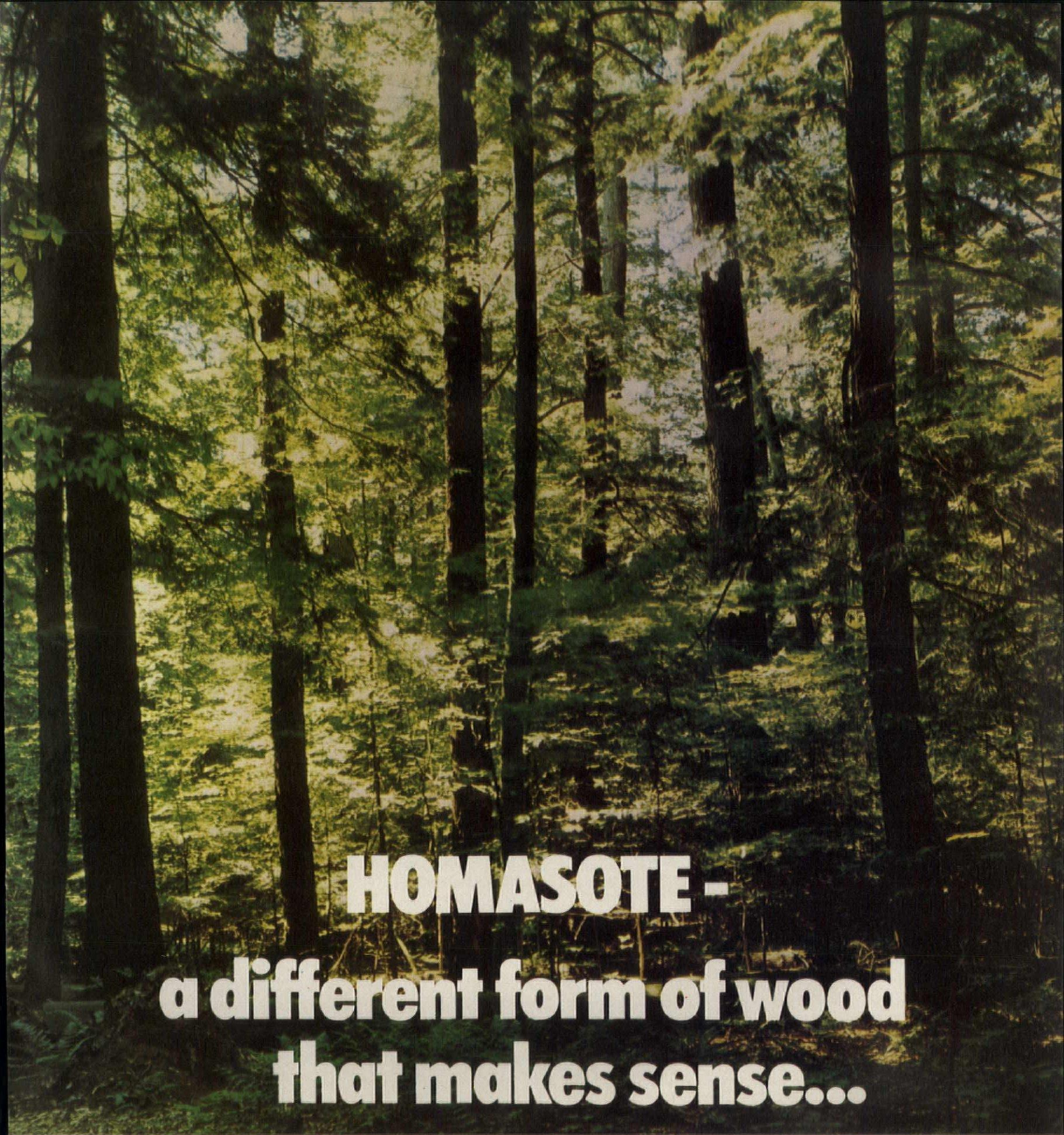
The Court, in considering the right of the owner to indemnification, first pointed out that since the maintenance company was not found to be negligent, and the proximate cause of the accident was concluded to be a structural defect rather than failure to keep the walks clear of snow and ice, indemnity could not be granted based on the common law. As to the contractual indemnity, however, the Court stated:

"It has long been recognized that a party may protect itself from losses resulting from its liability for negligence by means of an agreement to indemnify. The rule is restricted to the extent that indemnity provisions will not be construed to indemnify a party against his own negligence unless such intention is expressed in unequivocal terms. That is not to say that the indemnity clause must contain express language referring to the negligence of the indemnitee, but merely that the intention to indemnify can be clearly implied from the language and purposes of the entire agreement, and the surrounding facts and circumstances. . . . We conclude that the parties clearly expressed their unequivocal intention to have Park & Estate assume the entire risk of any liability arising from its work in removing snow and ice from the sidewalks, whether or not New York Life was negligent. . . . This conclusion is based upon the broad and all-inclusive language contained in the indemnity agreement, and the fact that Park & Estate undertook to remove snow and ice from New York Life's sidewalks and failed to carry out this undertaking."

In a dissenting opinion, a minority of the Court pointed out that the maintenance company had undertaken to indemnify the owner only for liability "caused or occasioned directly or indirectly by the contractor or its work" and that the liability here did not arise from the work of the contractor, but rather the structural defect, as found by the Trial Court.

Contractual indemnity which covers the architect, as well as the owner, can be a very significant safeguard against liability. However, the provisions of a construction contract which are intended to provide such indemnity may not result in the desired objective unless those provisions are carefully and appropriately formulated.

Authors: Bernard Tomson is a County Court Judge, Nassau County, N.Y., Hon. AIA. Norman Coplan, Attorney, is Counsel to the New York State Association of Architects, Inc./AIA.



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Our "different form of wood" is used to produce structural sound-control floors for garden apartments and pre-finished decking for contemporary homes, as well as decorative interior panels with cork, burlap and vinyl finishes.

It is also used extensively in many industries including automotive, glass, appliance and others for in-transit product protection, as well as for concrete highway expansion joints.

For more information, write direct to Homasote Company, Box 240, West Trenton, N.J. 08628.

CONTAINS RECYCLED MATERIALS ONE HUNDRED PERCENT!

homasote

Circle No. 397, on Reader Service Card

3-177-1

Fluid applied membrane

Harold J. Rosen, PE, FSCI

The absence of standards and recommended practices for these materials and their installation has created a great many problems for the specifier. Help is on the way

With the proliferation of different types of elastomeric waterproofing for building decks, there has arisen simultaneously a profusion of terms to describe the types of systems, i.e., fluid applied membranes, liquid applied membranes, liquid membranes, etc. ASTM Committee C24 has assigned task force committees to the development of standards and recommended practices for these materials and their installation. In order to do so it has had to establish specific terminology so that the current Tower of Babel would be eliminated.

To reduce confusion, the following terms are in use today: 1) "Fluid applied membranes" for membranes covered with a wearing surface, earth or submerged in water. 2) "Liquid waterproofing membranes" for those with an integral wearing or traffic surface.

This article concerns itself with fluid applied membranes consisting of a variety of elastomeric materials that range from one and two part polysulfides and polyurethanes to the same polymers extended with tar or asphalt, and rubberized asphalt. At present there are approximately 80 manufacturers of fluid applied membranes that have different compositions and installation recommendations. A check of the dozen or so manufacturers of this product with the literature illustrates vividly the disparate approach to identification of physical properties, terminology and application. The specifier is truly bewildered when he attempts to compare their "or equal" characteristics and differences.

The theoretical advantages governing the use of fluid applied membrane waterproofing systems in lieu of build-up bitumen and felts and in lieu of synthetic rubber sheets such as butyl, neoprene or EPDM have been acknowledged by many waterproofing and roofing specialists.

The current problem surrounding their use is the absence of an industry standard setting forth the physical properties and a standard addressed to the application of the material. ASTM Committee C24 is in the process of developing standards for these systems and installation. However until these standards are promulgated, the specifier faces the problem during the design stage of materials evaluation to ascertain the outstanding products and, during the construction phase, of evaluating the inevitable substitution.

When the first fluid applied membranes came on the market, the prices were in the range of $8 to $9 a gallon, but with the absence of standards and the desire to be competitive, the product was diluted and the quality and the price went down. The danger in all of this is that a perfectly good concept such as fluid applied membrane may be in danger of being prostituted for lack of standards or for lack of insistence on sticking to a good specifications when substitutions are offered that only carry with them reductions in cost and reductions in quality.

The present situation is somewhat akin to what happened 10 to 15 years ago with tilelike glazed coatings and building sealants until industry standards were developed to circumvent the sale and use of shoddy and inferior products. What may occur is a rash of failures four or five years hence resulting from some of the inferior materials being installed today which would plague the industry as a whole. During this period, while no industry standards are available, it is essential that specifiers carefully review product literature and resist substitutions, especially those involving credits only.

The more important characteristics to be reviewed and compared are the following:

Thickness: There is no standard here. Yet there are producers who recommend 60 mils, some recommending 50 mils and some even 40 mils. There is some correlation between thickness and the gap to be bridged when hairline cracks occur in concrete due to shrinkage or slightly larger cracks result from structural settlement. Roughly, the mil thickness should be equal to the width of the crack to be tolerated. 60 mil thickness of fluid applied membrane waterproofing should compensate for a crack width of $\frac{1}{16}$ in. As the manufacturer's recommended coating thickness decreases, so does the width of crack that can be tolerated.

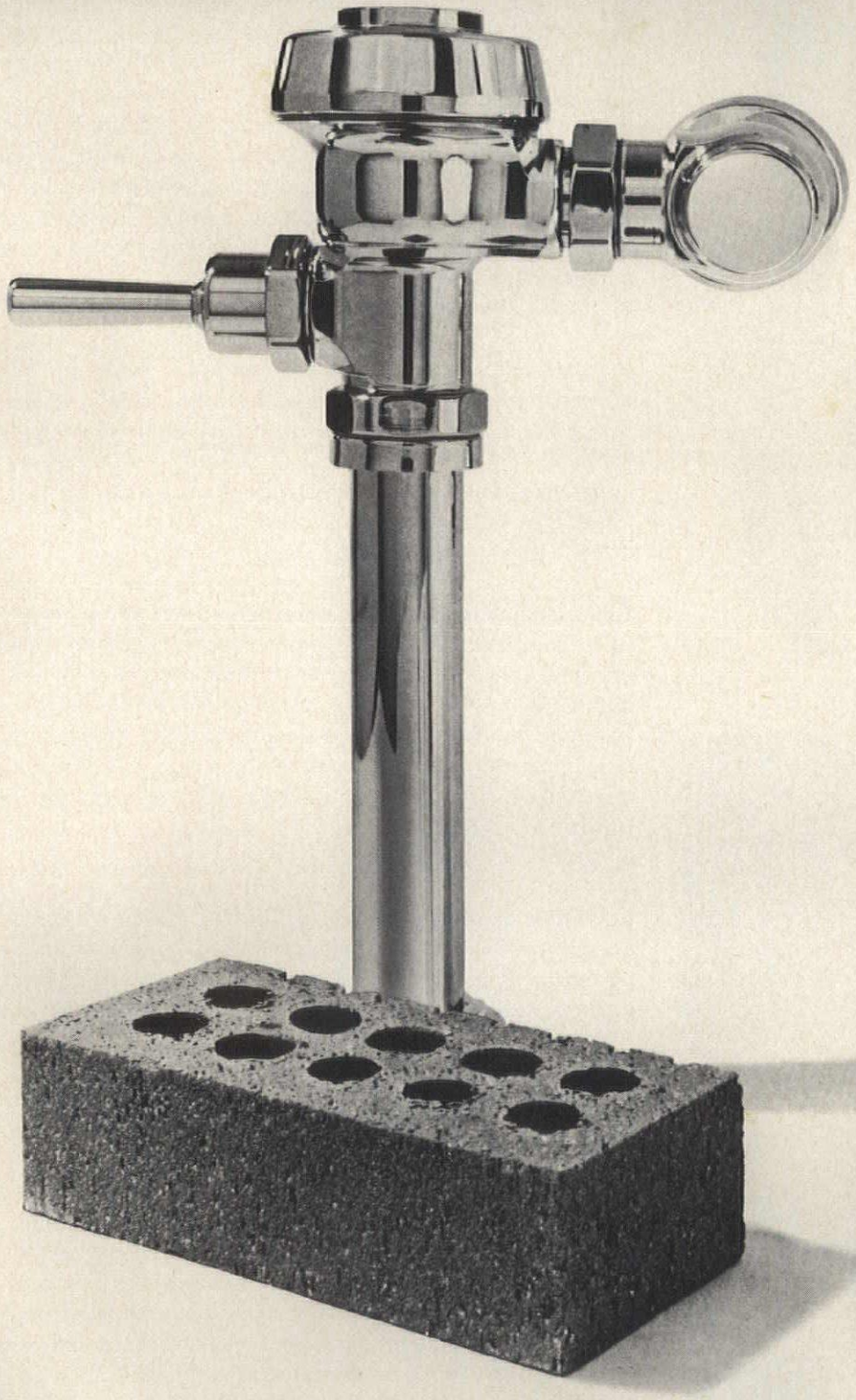
Heating aging: Again, there is no standard here. However it is quite valid to assert that a material that aged less under heat would last longer before cracking, therefore being a more reliable material.

Adhesion: Adhesion to the concrete substrate is a characteristic stressed by most manufacturers. These materials must adhere so that water cannot travel beneath the membrane. To assure satisfactory adherence, a good peel-test value would be required. Check for data on peel strength to obtain a relatively good material.

If a fluid applied membrane is to be used, ask for data on these characteristics and compare the values based on the same test procedures so that it is judged on the same criteria.

Author: Harold J. Rosen is an independent construction specifications consultant in Merrick, New York.

The sure way to save water- without a brick



People have been putting bricks in toilet tanks for years.

It's an old trick that shuts the water off sooner than normal after operation and one which has received a lot of recent publicity.

You save one brick's worth of water—the brick's displacement volume. But you still may be losing many bricks of water due to leaks.

These days there's a better way for saving water and eliminating leaks,

The Sloan Flush Valve.

The Sloan Flush Valve positively prevents water waste.

It meters out water, automatically shutting off after delivering a sufficient amount to satisfy the requirements of the fixture.

You can't hold a Sloan Flush Valve open. It won't let you. Each flush uses the same minimal amount of water every time and does so for the life of the building.

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Sloan Flush Valves save water. Lots of it.

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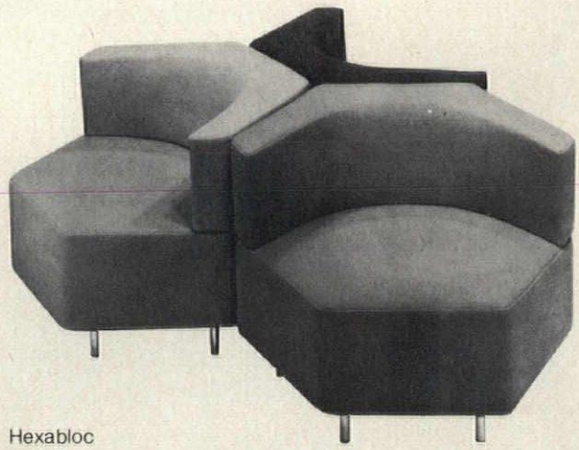
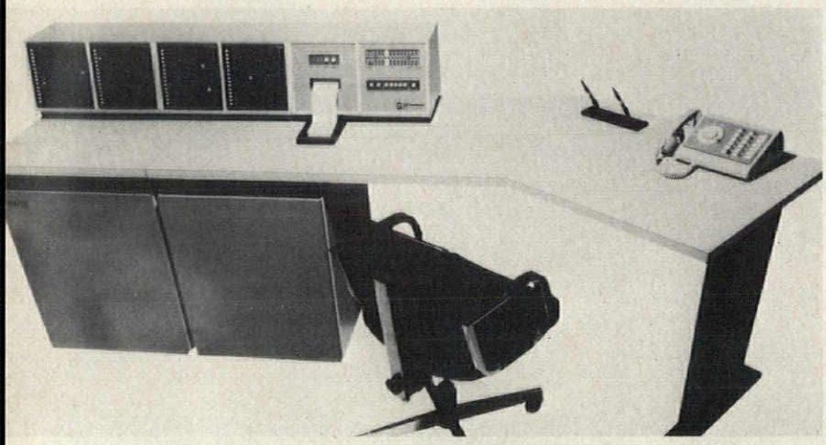
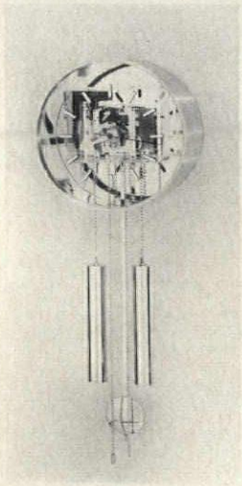
Products and literature



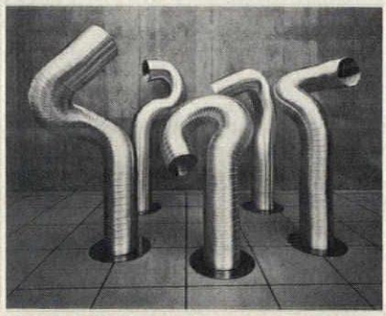
Hexabloc



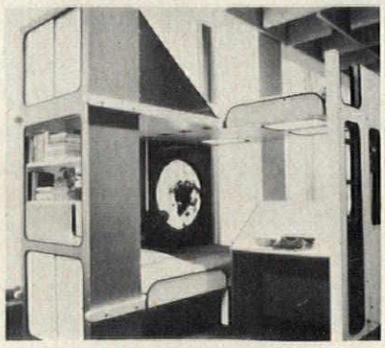
Security monitoring system



See-through clocks



Sculpture



Module for two

Hexabloc. An island seating group with many omnidirectional arrangement possibilities. Seating elements are constructed of flame retardant and self-extinguishing urethane foam molded around welded steel frames. Six integral legs provide stability and serve as anchors for optional steel coupling devices. Covers are easily removed for cleaning or replacement, an ebonized wood hexagonal plinth base is optional. Hexabloc tables are sheathed in charcoal plastic and come in two heights to align with chair seat or back. Harvey Probber.
Circle 101 on reader service card

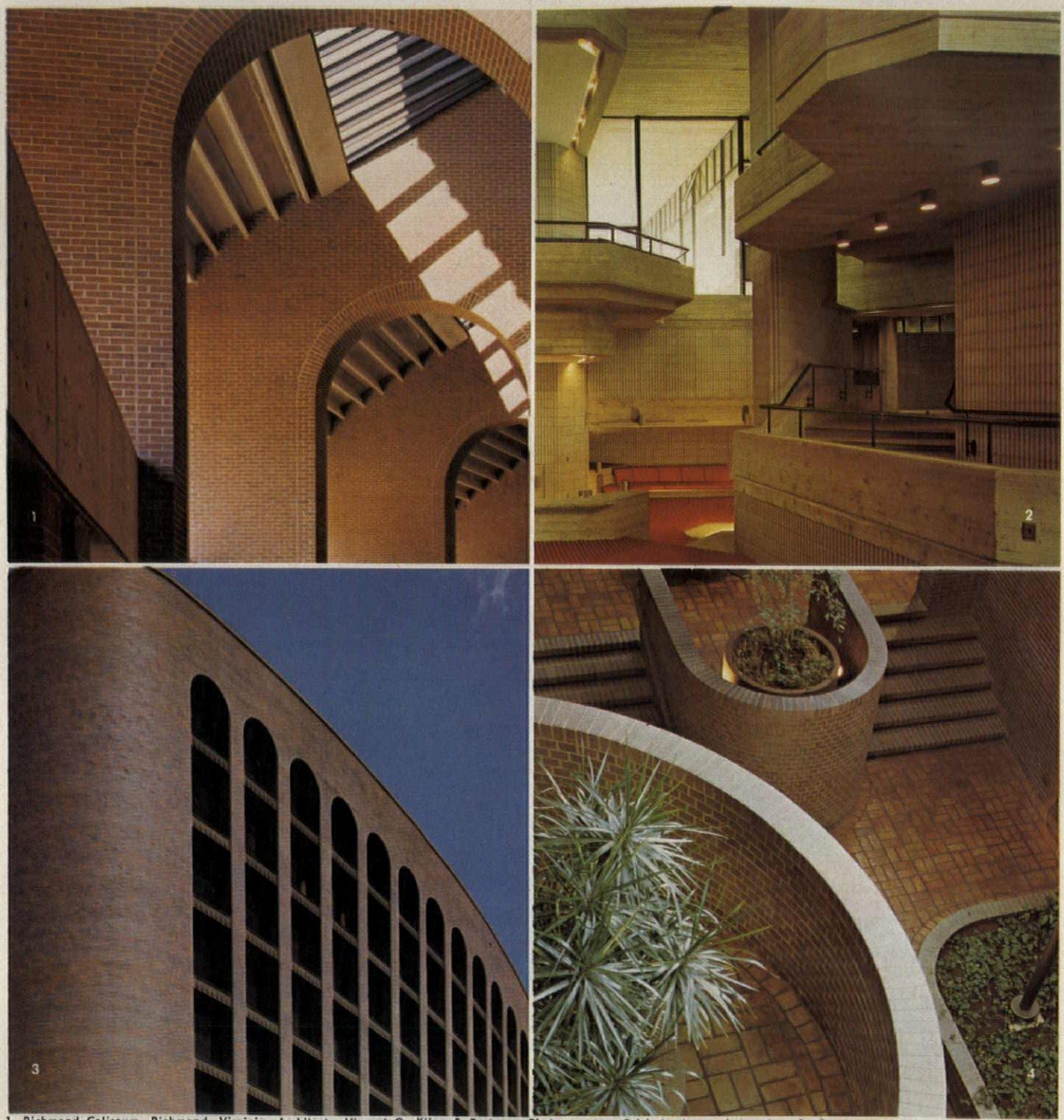
Security monitoring system. Called Pace (for Protection of Assets and Control in Emergencies), it can monitor up to 600 points of danger—fire, gas, smoke, burglary, unlawful entry, vandalism, sabotage, natural disasters and equipment malfunctions and breakdowns—within a facility or related facilities, even those many miles apart. A single guard, serving as the console operator, can monitor remote sensors, control remote devices, read status changes and talk to remote personnel. Every type of electrical or electronic sensing and control device including existing equipment, can be integrated into the system which consists of a printer/status display unit and a logic unit. Gamewell.
Circle 102 on reader service card

Spirals. A 6-ft-dia. model has been added to this line of handcrafted hardwood stairs, which are also available in diameters of 4, 4½ and 5 ft. Suggested uses include commercial buildings and motels in lieu of conventional stairs. Maker states larger size provides at least 20 percent more room on the stair tread. Stair-Pak Products Company.
Circle 103 on reader service card

See-through clocks. Round clear acrylic face is backed with a mirror which reflects its movements, including the intricate mechanism which controls the time-regulating pendulum. Satin aluminum case, chrome hour indicators, white hour and red minute hand on clear acrylic dial; brass movement, polished chrome pendulum and weights. Clock is 12-in. dia., has two-tone half hour and hour strike movements. Howard Miller Clock Company.
Circle 104 on reader service card

Sculpture. Modular forms of steel, scaled for use in interior and exterior display are created from segments of double-ribbed 14 in. dia. galvanized steel tubing. The bold-colored, rolling serpentine forms are 6′-5″ x 6′-5″. The Brewster Corp.
Circle 105 on reader service card

Module for two. A room within a room. A free-standing structure combining practical living necessities for two children. Unit measures 8′-3″x6′-9″x8′ high and contains two beds, has a built-in ladder to the upper berth, two sliding door storage units, shelf space for books and knick-knacks, and a back-to-back double desk. All edges are covered with soft rubber trim. Components can be moved easily to new locations and reassembled. Available two ways: with fiberboard panels in primary lead-free colors, which maker recommends for age group 3 to 10; natural birch ply with white satin accent panels recommended for ages 10 and up. Living Module Inc.
Circle 106 on reader service card
[continued on page 114]



1. Richmond Coliseum, Richmond, Virginia. Architects: Vincent G. Kling & Partners. Photo courtesy Brick Institute of America. 2. Southeastern Massachusetts University, Arts and Humanities Building, North Dartmouth. Associated Architects: Desmond & Lord, Inc., and Paul Rudolph, FAIA. Interior Consultant: Bill Bagnall Associates, Inc. 3. Public Service Alliance of Canada Building, Ottawa. Architects: Schoeler Heaton Harvor Menendez Associated Architects. Photo courtesy Brick Institute of America. 4. Executive Headquarters and Nassau Center Office. Hempstead Bank, Garden City, Long Island. Architects: Bentel & Bentel, AIA.

RUMORS THAT THERE ARE BUILDING SYSTEMS MORE VERSATILE THAN MASONRY ARE TOTALLY WITHOUT FOUNDATION.

INTERNATIONAL MASONRY INSTITUTE

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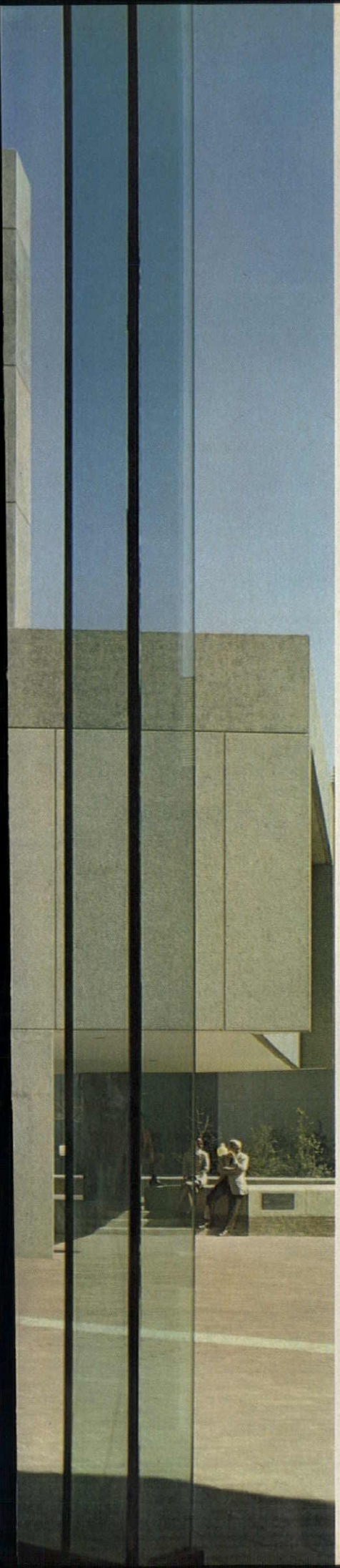
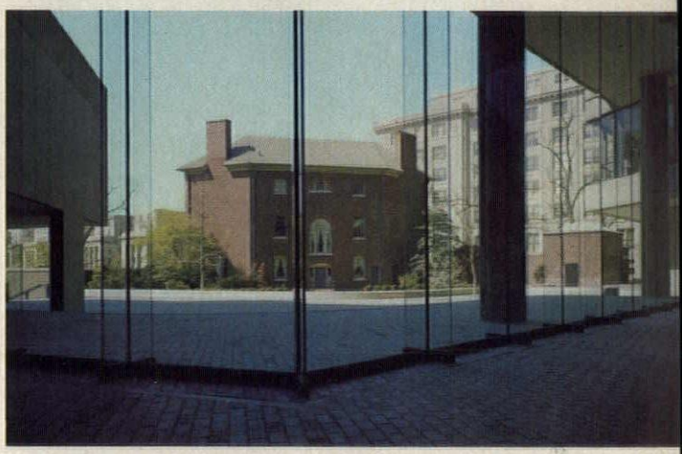


PPG's Total Vision System™ in the new AIA Headquarters gives you an unobstructed view of 1799.



The new AIA Headquarters Building shares the site of its historical counterpart, The Octagon House, to make a contrasting but complementing architectural statement.

Focal point of the new structure: a two-story Total Vision System by PPG in the center of the plan.

This totally transparent section integrates reception area, a grand staircase, and second-floor social gallery without seeming like an enclosure.

It also unites indoors and outdoors. The brick-paved lobby suddenly becomes the brick-paved terrace and Octagon House garden—creating a magnificent open feeling.

With no obtrusive metal.

You see, the major supporting elements in a Total Vision System are ¾-inch clear annealed float glass mullions. Unobtrusive aluminum sections frame the system at head, jambs, and sill. When installed, these sections, along with the black structural adhesive, seem to disappear.

Total Vision Systems are available as a single-source construction package from PPG. Complete information on glass recommendations, installation techniques, glazing details, test results, and other data is contained in the TVS™ Data Folder. Contact your PPG Architectural Representative or write PPG Industries, Inc., Technical Services Department, One Gateway Center, Pittsburgh, Pa. 15222.

Owner: The American Institute of Architects
Architect: The Architects Collaborative, Cambridge, Mass.

PPG INDUSTRIES

PPG: a Concern for the Future

Circle **No. 362**, on Reader Service Card

Products continued from page 110

Plex 70. A high-impact acrylic plastic sheet that is guaranteed against breakage for a three-year period when used as a conventional glazing material. When installed and maintained as recommended, maker states it will not show significant discoloration, embrittlement or loss of light transmittance due to weathering. Suitable for window glazing in schools, industrial plants, public housing, safety applications required by OSHA and other locations where exceptional transparency and a high resistance to breakage are required. Rohm and Haas Company.
Circle 107 on reader service card

Reflective bronze glass cabinets, headboards wardrobe wall system are trimmed with bronze anodized aluminum frames. Clear mirror façade with silver aluminum frame or a lacquered finish facade with either silver or bronze aluminum frame are optional. Cabinet tops and sides are surfaced with polyurethane ebonized enamel, come in 21-, 31- or 45-in. heights, may be free-standing or built-in. Matching wardrobe stands 89-in. high. Matching fascia panels are available to enclose the space between cabinet tops and ceiling. Harvey Probber.
Circle 108 on reader service card

Sanitary waste disposal. Physical-chemical treatment unit is compact enough to house easily and complete enough to return the treated wastewater to water table or nearby streams, according to maker. Designed to physically and chemically separate suspended solids, precipitate dissolved solids and separate them, adsorb remaining dissolved organics and, without smoke or odor, incinerate the wastes. Clarified water is returned to the environment. Especially suited for park sewage treatment and disposal. AWT Systems, Inc.
Circle 109 on reader service card

Pooldome: Pool enclosure provides year-round swimming for country club, motel, hotel, school, private and municipal pools. An aluminum-truss structure with a high strength vinyl membrane, which can be doubled for added insulation, can be rolled up or removed in warm weather. Pool and structure's interior is heated by the sun's rays on clear days, or by a supplemental heater. A thermostat provides control. Available sizes are 25′x50′; 32′x64′ and 60′x120′; also can be lengthened in 10-ft increments. Dome East.
Circle 110 on reader service card

Floor, door mats. Made of a lightweight, durable nonwoven vinyl surfacing material having a porous construction which traps dirt and allows it to filter through, thereby keeping surface clean. Two types are available: one has a foam backing and is used where dirt pick-up and retention are required; the other has no backing and is for wet area applications. Material is flame-resistant and easily cleaned by shaking, vacuuming or washing, will not mat down, is easily cut or trimmed with a scissors or razor blade. With foam backing, material comes in 3′x20′ rolls and in 3′x5′ mats in gold, green or beige. Without backing, it comes in 3′x20′ rolls in gold or green. 3M Company.
Circle 111 on reader service card
[continued on page 118]

Beauty That's Much More Than Skin Deep...

Split Block with Medusa White

It's easy to see that Split Block made with Medusa White Cement is beautiful on the surface! But its real beauty is more than on the surface.

Your economical Split Block wall provides a lasting beauty of fire-safety, sound absorption construction, self-insulation and freedom from costly, continual maintenance. All of which adds up to more than meets the eye for your building dollar.

It is a strikingly elegant design tool combining practicality that retains inherent wall beauty over many, many years. And one thing more, it's readily available now — nationwide — in a wide assortment of colors and textures.

So satisfy your esthetic and economic values at the same time with one beautiful wall material . . . Split Block with Medusa White. And for matching, contrasting or complementing mortar, specify Medusa Custom Color Masonry Cements . . . in any of a multitude of colors. For more information, write Medusa Cement Company, P.O. Box 5668, Cleveland, Ohio 44101.

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MEDUSA CEMENT COMPANY Division of Medusa Corporation

Security

There's more to security than togetherness. Taken in context with the times, security can often be defined as a defense against crime.

If your new building, for example, must include security in its design, for protection against losses of inventory from within; or thefts from drug storerooms; or acts of corporate espionage, it well might pay you to consider the Sargent Maximum Security System.

It costs only slightly more than conventional master key systems. Yet the additional security it provides could save you thousands of dollars required for more costly preventive measures. Consider the mechanics of this system.

The Sargent Maximum Security System uses a highly pick resistant cylinder... a cylinder compatible with all standard Sargent mortise and other architectural locksets. And a unique key with precisely milled depressions providing seven levels of masterkeying.

Should electronic, remote control of doors be required, the Maximum Security System can be augmented by the Sargent exclusive *Restrict-A-Key*™ electromechanical access control system.

The Sargent Maximum Security System has proved so effective, it is currently in more than 4,000 installations in the nation's most security-minded buildings.

For additional information, write Sargent and Company, New Haven, Conn. 06509

SARGENT®

First in quality since 1864.

Circle No. 366, on Reader Service Card

Products continued from page 114

Plan holder. Designed to hold blueprints, plans, maps or art work, device consists of a steel hook, four-link chain, steel rod and clear plastic flanges with identification label. Will support 100 sheets or 30 lbs of blueprints. To use, open center page of blueprints and pull hook and chain through or insert prints between flanges. Hang on any rod, bracket, pipe, etc. Sizes range from 4 in. through 42 in. in length, and 6-in. bracket holds as many as 24 sets of prints. Technical Products Co.
Circle 112 on reader service card

Self-closing torsion hinge eliminates the need for springs and overhead closers. It is available in a number of different finishes, is UL listed and designed for use in hospitals, motels, schools, offices where building codes require door closors. Can be adjusted to close interior doors weighing as much as 100 lbs. Only one center-mounted torsion hinge and two standard ball-bearing hinges are required for each door. Hager Hinge Company.
Circle 113 on reader service card

Rubber mulch. Made by shredding worn rubber tires, it is said to be long lasting, resistant to decay, color change, wind and water erosion and termites will not inhabit it. Also excellent for paths, walkways and under children's playground equipment as it does not stick to shoes. Environmental Products Corp.
Circle 114 on reader service card

Parking curbs. Recycled polyresins are used in molding parking curbs, receiving dock edging, edging for green areas, islands or other temporary edgings. Solid in color and core, it weighs less than 40 lbs, is 6'-10" long, 8-in. wide and 5-¾ in. in height; is secured in place by three drive pins of bridge nail type. Maker states it will withstand a high degree of impact without shearing or cracking and the elements or climatic changes do not affect it. Recology, a division of Kurbers, Inc.
Circle 115 on reader service card

Barnboard. Kiln dried northeastern white pine, spruce, hemlock. Surface is distressed to resemble natural weathered look; comes in red, silver gray or brown finish, random width or board-'n-batten, 8-ft lengths. Available with Class A fire treatment. Vermont Barnboard.
Circle 116 on reader service card

Aquamatic. On-off, recessed sprinkler is designed to shut itself off automatically after suppressing a fire, turn itself back on if fire is rekindled. Each sprinkler operates independently. Due to 40 percent less water discharge it is reported to be especially valuable in protecting high-value inventories and water-sensitive materials, or areas with high risk of flash fires or where water shortage exists. Chrome-plated unit should be of interest to architects and owners of hotels, motels, restaurants, offices, retail shops and other buildings where decor is important. For new construction, or it can be integrated into most existing sprinkler systems. UL listed. Grinnell Fire Protection Systems Company, Inc.
Circle 117 on reader service card
[continued on page 124]

Take it up with Armor. No matter how many floors.

We've won our share of battles for the glamorous high-rise elevator jobs. In fact, we win more of them every year. Which is one reason we're growing faster than ever.

But Armor also shines in low and medium rise buildings. With a complete line of tough, dependable geared machines. And solid-state control if you wish, for ultra-fast, smooth, efficient operation. Plus advanced hydraulic elevators—including pre-engineered packages that practically drop into the hoistway. Everything you need for any building, no matter what its size, or its type—or its height.

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Get the full story and go right to the top with Armor. No matter how many floors.

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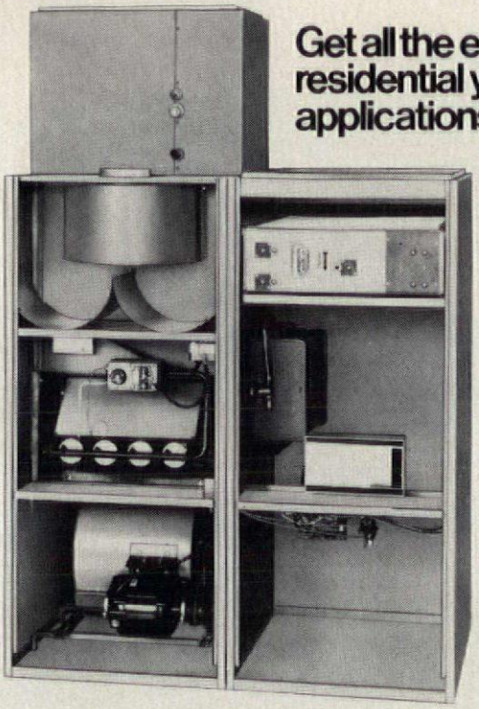
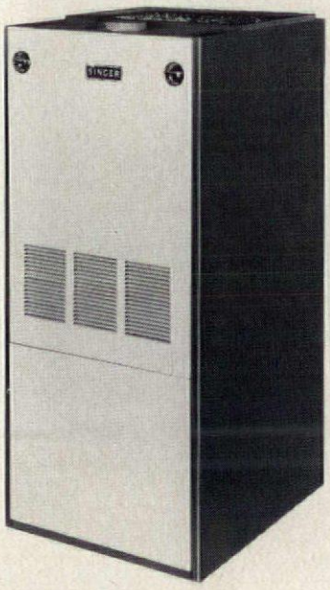
Get all the equipment you need for residential year-round air conditioning applications from one source.



The Series GB1500 Gas-Fired Furnace

The heart of the package. Ranges in capacity from 100,000 to 250,000 Btuh. Designed to adapt to Singer Cooling, Electronic Air Cleaning, Automatic Humidification and Deodorizing.



Total Comfort Package

Series GB Furnace with components: Alumaklad Heat Exchanger, Silent Comfort Circulator, Duo-Flame Burner Assembly.
Matching Return Air Cabinet components: Electronic Air Cleaner, Humidifier and Deodorizer.

The Series ACR 50000 Half-round Condensing Unit

The ACR 50000 Series is the latest development in the Singer line of whole house air conditioning equipment.

The compressor is spring mounted, permanently lubricated and hermetically sealed and is warranted for five years.

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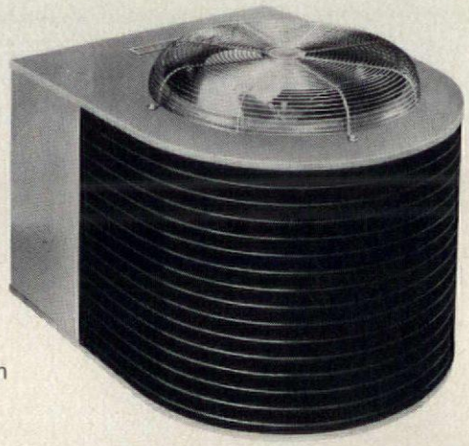

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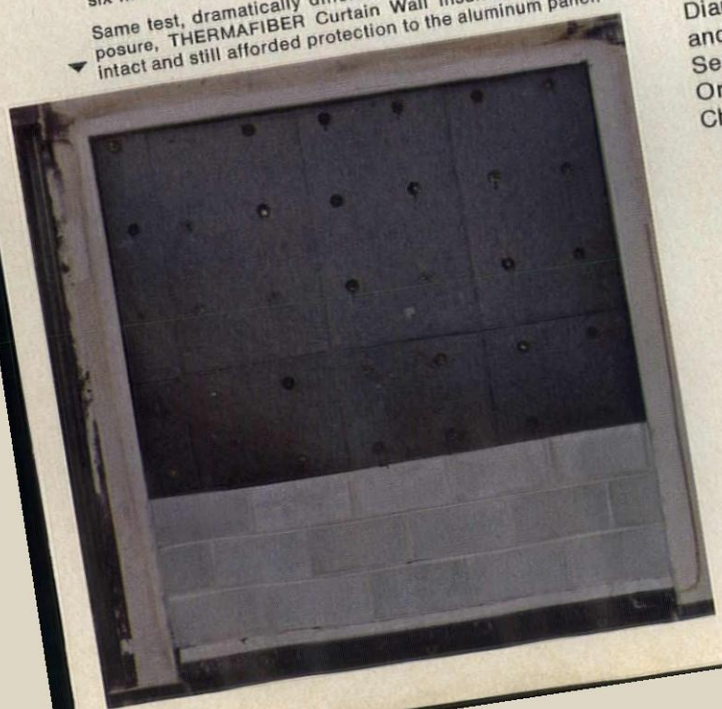
New THERMAFIBER® fire-safety system for high-rise construction.

▲ Furnace fire comparison test at the U.S.G. Research Center resulted in complete disintegration of polyurethane foam insulation within five minutes.

▲ Identical fire testing of glass fiber curtain wall insulation resulted in melting and general deterioration within twenty-six minutes.

Same test, dramatically different result. After a 2-hour exposure, THERMAFIBER Curtain Wall insulation remained intact and still afforded protection to the aluminum panel. ▼

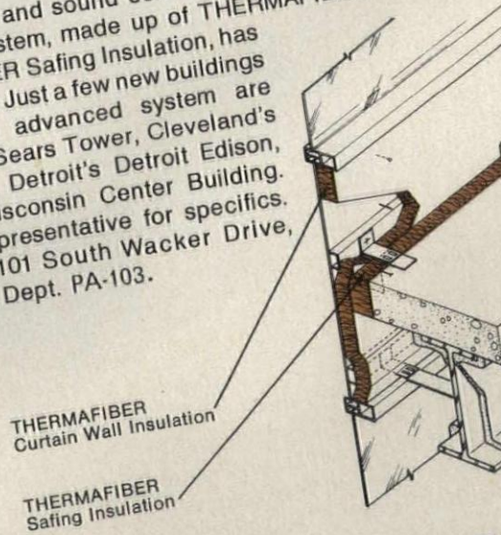


THERMAFIBER Curtain Wall Insulation proved its effectiveness in recent 2 and 3-hour fire tests witnessed and certified by recognized consulting engineers. Temperatures were controlled to follow the ASTM E119 standard time-temperature curve. THERMAFIBER Curtain Wall Insulation protects spandrel panels, exterior column covers, window and track fillers. This quality fire-resistant product is available in regular blankets or foil-faced to eliminate need for separate vapor barrier. Attachment is mechanical using impaling clips or fasteners. See test pictures at left for the revealing results of this highly effective fire-safety system component.

THERMAFIBER Safing Insulation also proved its superior fire-resistance in a separate 3-hour fire test. Furnace temperatures conformed to the ASTM E119 time-temperature curve. Results showed a melt point of over 2000°F. The Fire Hazard Classification for unfaced curtain wall and safing, tested in accordance with ASTM E84, is Flame Spread 15, Fuel Contributed 0, Smoke Developed 0 (foil-faced: 25-0-0).

THERMAFIBER Safing Insulation provides the compressibility to allow it to be installed between the floor and curtain wall; yet it's sufficiently resilient to seal the gap tightly. Insertion on support brackets or impaling clips is recommended. THERMAFIBER is non-corrosive to steel or aluminum, vermin-proof, moisture-resistant and mildew-proof.

Add thermal efficiency and sound control and you'll readily see why this fire-safety system, made up of THERMAFIBER Curtain Wall and THERMAFIBER Safing Insulation, has been so well received. Just a few new buildings now employing this advanced system are Chicago's 110-story Sears Tower, Cleveland's Diamond Shamrock, Detroit's Detroit Edison, and Milwaukee's Wisconsin Center Building. See your U.S.G. representative for specifics. Or write to us at 101 South Wacker Drive, Chicago, Ill. 60606, Dept. PA-103.



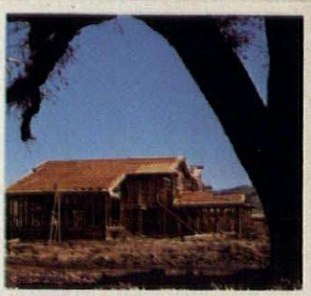
UNITED STATES GYPSUM BUILDING

Circle No. 380, on Reader Service Card

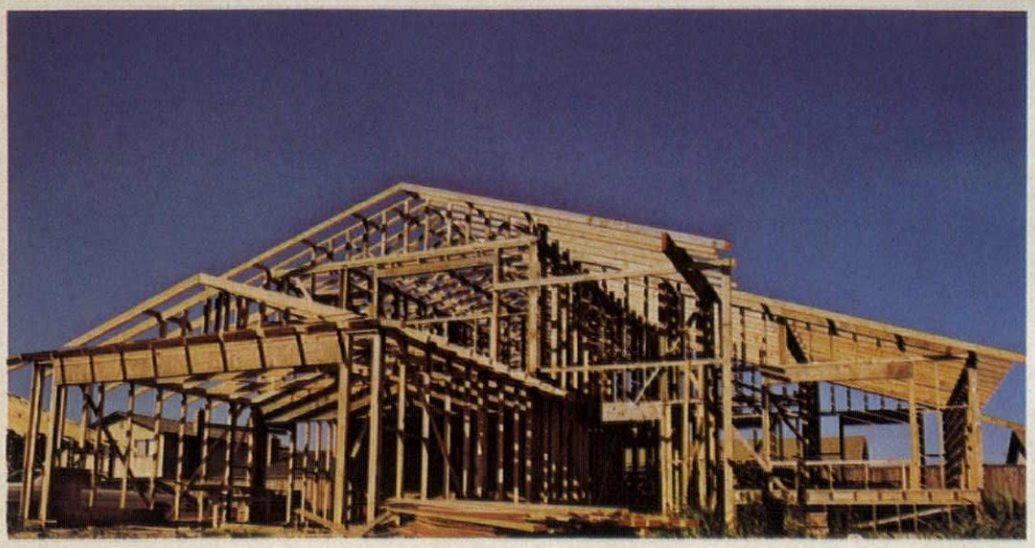
Wood framing lets you retain design control with the newest building techniques.

Architects for the Larwin Group, Inc., one of the country's largest residential builders, used the 24-inch framing system in three successful prototype homes. Now Larwin uses the system wherever possible: it lets architects retain the same design control they enjoy with conventional framing. And it saves money, too. As Larwin explains: "Cost savings on a 1,500 square foot single-family home are significant."

The three test homes in Cypress, California, convinced Larwin that 24-inch framing was "the way to go." Two hundred identical homes were then built in two successful developments. As a result, the firm now plans to use 24-inch wood framing and pre-cut Western Wood in much of its production this year.



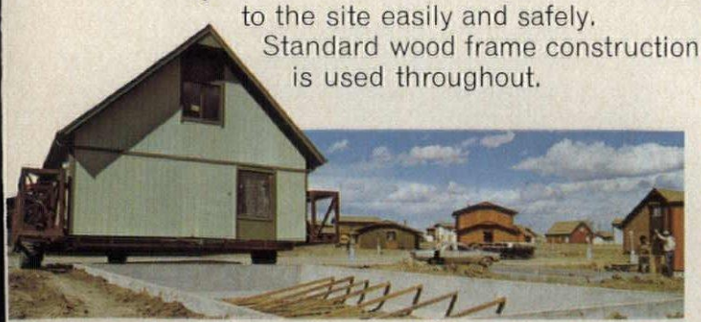
Larwin investigated a variety of building materials and settled on one as the most economical and most attractive: pre-cut Western Wood. Larwin homes bear a distinctive "wood look" throughout, with large structural wood members left exposed for appearance.



Architects for Kaufman & Broad and other leading single-family homebuilders save money at the design stage by specifying 24-inch wood framing: 24-inch framing lets them retain maximum design flexibility while reducing materials and labor cost. In addition, wood is familiar to available labor everywhere assuring adherence to specifications and a finished product of quality construction and appearance.

Free!
All you need to know about wood.

Imaginative design and Western Wood make it possible for Trend Homes in Colorado to build complete two-story homes in-plant. A specially engineered wood and plywood floor joist system allows the homes to be moved to the site easily and safely. Standard wood frame construction is used throughout.



Free data file includes: A NEW LOOK AT WOOD FRAMING. This new brochure shows how these and other architects are using Western Wood in the latest building techniques for conventional, componentized, and manufactured housing. File also includes: CATALOG A, PRODUCT USE MANUAL—a guide to use selection of Western Wood; and MOD 24 BROCHURE—a comparative cost study with technical data on 24-inch framing. Mail the coupon for your free file today:

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Western Wood Products Association
Dept. PA-1073, Yeon Building, Portland, Oregon 97204

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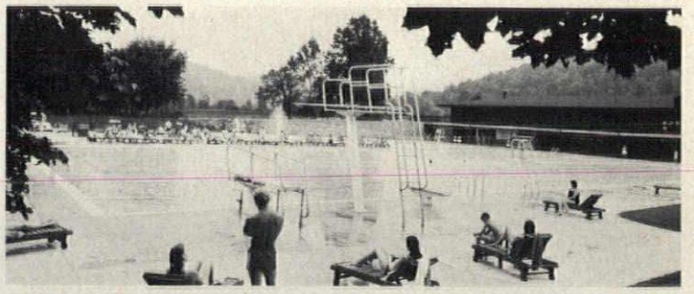
One of a series by members of the American Wood Council.

Products continued from page 118

Literature



Pre-fab pool

Prefabricated aluminum swimming pools that are welded at the site are described in brochure. Available in large sizes especially suited for park areas, the pool is a complete system. Sidewall construction houses recirculation and perimeter piping, filtration system and piping between filter and pool. Vacuum diatomaceous earth filters to clean the water and boilers to heat it can be located in an underground filter room nearby. Pumps circulate up to 600,000 gallons of water every six hours. Chester Pools.
Circle 118 on reader service card

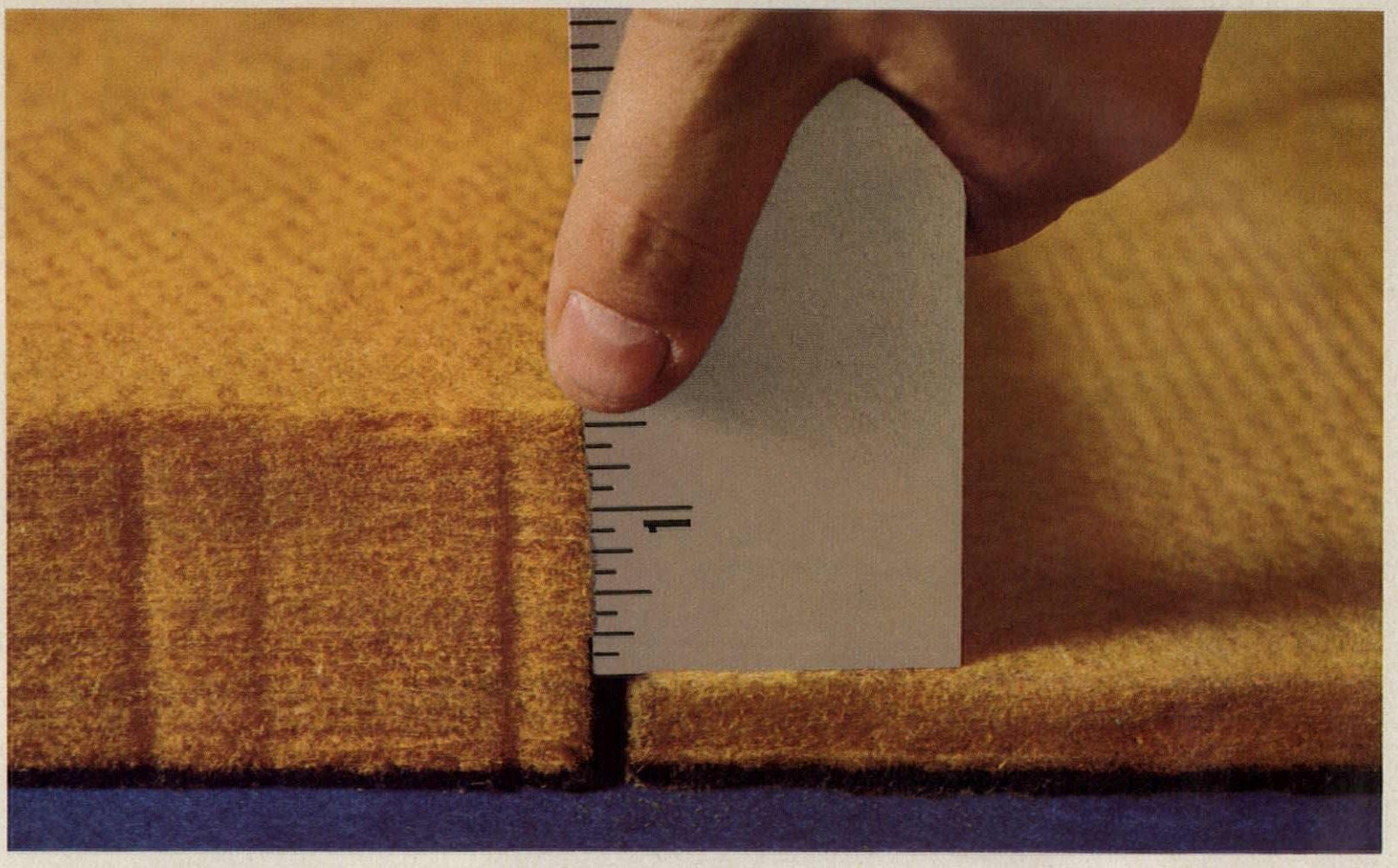
Demand control. Twenty-four-page manual covers the theory of demand control, a control technique which allows large users of electrical energy to realize significant dollar savings, states maker. The operation, adjustment and installation of equipment is also explained. Square D Company.
Circle 119 on reader service card

Color coat. Described in color bulletin is an acrylic copolymer latex for blacktop tennis courts and park play areas, said to improve play resulting from true bounces on uniformly textured areas, eliminate glare, lower court temperatures and lessen player fatigue. The 20 Fillercoat is for in-depth surfacing or filling surface imperfections. The 22 Finish Coat is recommended for finishing and for refreshing courts which require only color dressing. Said to be colorfast and nonfading, resist weather, dry quickly and be easy to apply, clean and maintain. Maintenance, Inc.
Circle 120 on reader service card

Flooring. Sixteen-page catalog contains color illustrations of all colors and patterns available in maker's asbestos and asphalt floor tile, feature strip and vinyl cove base. It also includes information on sizes, gauges, uses, recommended installation, light reflectance values and a brief specifications guide. Azrock Floor Products.
Circle 121 on reader service card

Porcelain enamel. Brochure summarizes documented results from 30 years of weathering tests by the National Bureau of Standards. Tests were conducted on a wide variety of porcelain enamel formulation applied to steel panels to determine the overall durability in terms of corrosion protection of the metal, color stability and gloss retention during exposure to the elements. Porcelain Enamel Institute.
Circle 122 on reader service card

Efficient building idea: Use this much more Fiberglas roof insulation and save up to $27,000 every 60,000 sq.ft.



Those are the potential savings you could realize on the initial cost of heating and cooling equipment. Your client could also save an additional $2500 a year on fuel.

Simply by using 2¼" instead of ¾" of Fiberglas* roof insulation.

These particular savings were figured for a suburban office plaza in the northern climates (zone 1). Factors taken into account were: the normal temperature range of the region, size and type of roof deck, the "U" improvement due to thicker insulation. And the added cost of the thicker insulation.

How much can you and your client save by using 2¼" insulation?

Send for our free booklet "Raising the Roof." It'll show you how to figure your own savings for your section of the country for common types of roof decks.

Write Mr. R. H. Meeks, Architectural Products Division, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

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Owens-Corning is offering awards to stimulate new designs and ideas for conserving energy. Special Steuben sculptures will go to the three architects or engineers who—according to a panel of independent judges—do the best job of designing buildings that don't waste fuel. For details, write to Mr. Meeks at the above address.

*T.M. Reg. O.-C.F.

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OWENS/CORNING FIBERGLAS TRADEMARK (R)

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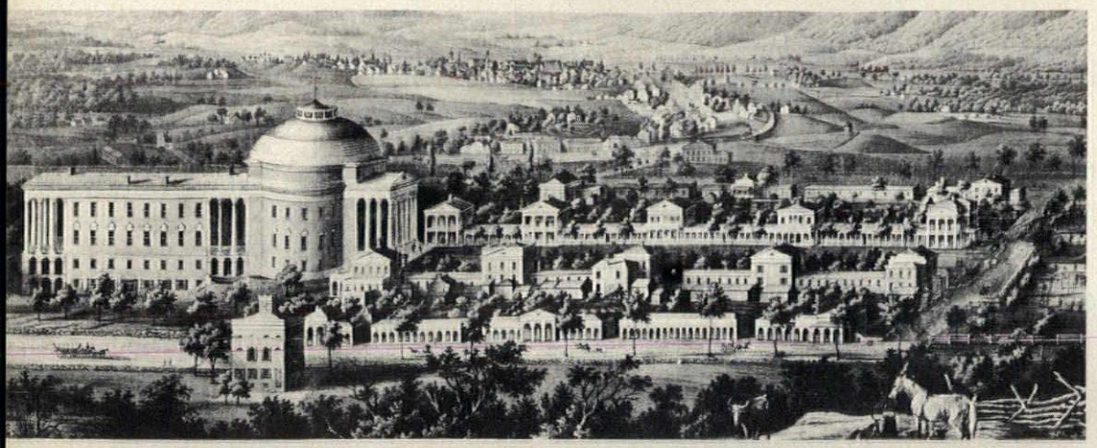

Books

Mr. Jefferson, Architect

Mr. Jefferson, Architect *by Desmond Guinness and Julius Trousdale Sadler, Jr. New York: Viking Press, 1973. 172 pp., $14.95.*

It was a simpler era when the President of the United States could take time from official duties to design houses for himself and his friends. The authors have compiled a history of Thomas Jefferson as architect, noting his other careers and pursuits only as they affected his buildings.

In addition to Monticello, which he built and rebuilt for some 40 years, and the University of Virginia, the book shows 13 houses, noting their origins and subsequent fates. Also included are Jefferson's design for Virginia's Capitol at Richmond (1784) and his submission in the President's House Competition of 1792. His anonymous entry took second place.

It is a middle of the road book, written for architectural buffs and history buffs and thoughtful travelers rather than for architects, historians or tourists. Historians might be content with its broad-brush outline, but architects might appreciate more floor plans, especially of the unfamiliar houses. Otherwise, the book is handsomely illustrated with original Jefferson drawings, sketches by his granddaughter, Cornelia Randolph, lithographs by later 19th-Century artists, early photos illustrating before-and-after restorations, and new photos—those of Monticello and the University of Virginia being the most lavish.

The authors emphasize Jefferson's (Mr. Jefferson's, as he is referred to in most of the captions) influence on the architecture of the new nation. It was he who determined that its buildings imitate those of Greece and Rome rather than "decadent" England. And for a time, due to his appointment of Benjamin Latrobe as Surveyor of the Public Buildings, they did.

[continued on page 135]

LIGHTWEIGHT SOLUTIONS TO WEIGHTY PROBLEMS

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Roof gardens that are gentle on the roof.

You can now reduce the weight of planter mix at least 60%.

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And the end result is better.

Consider the fact that 12 inches of soil add 100 pounds or more per square foot to the roof load, and that small trees usually require a depth of three feet of soil or planter mix. That's why lightweight perlite-peat moss mixes are so ideally suited for rooftop planting. And you can reduce weight even more by specifying that planters themselves be constructed of Permalite perlite aggregate concrete! Preformed fiberglass planters may also be used to save weight.

Permalite perlite aggregates can provide lightweight solutions to many weighty problems: from slope-to-drain roof decks, fire-rated curtain walls, fireproof plaster for walls and ceilings to fire-rated masonry fill. Write for Roof Garden data sheet and Permalite technical bulletin.

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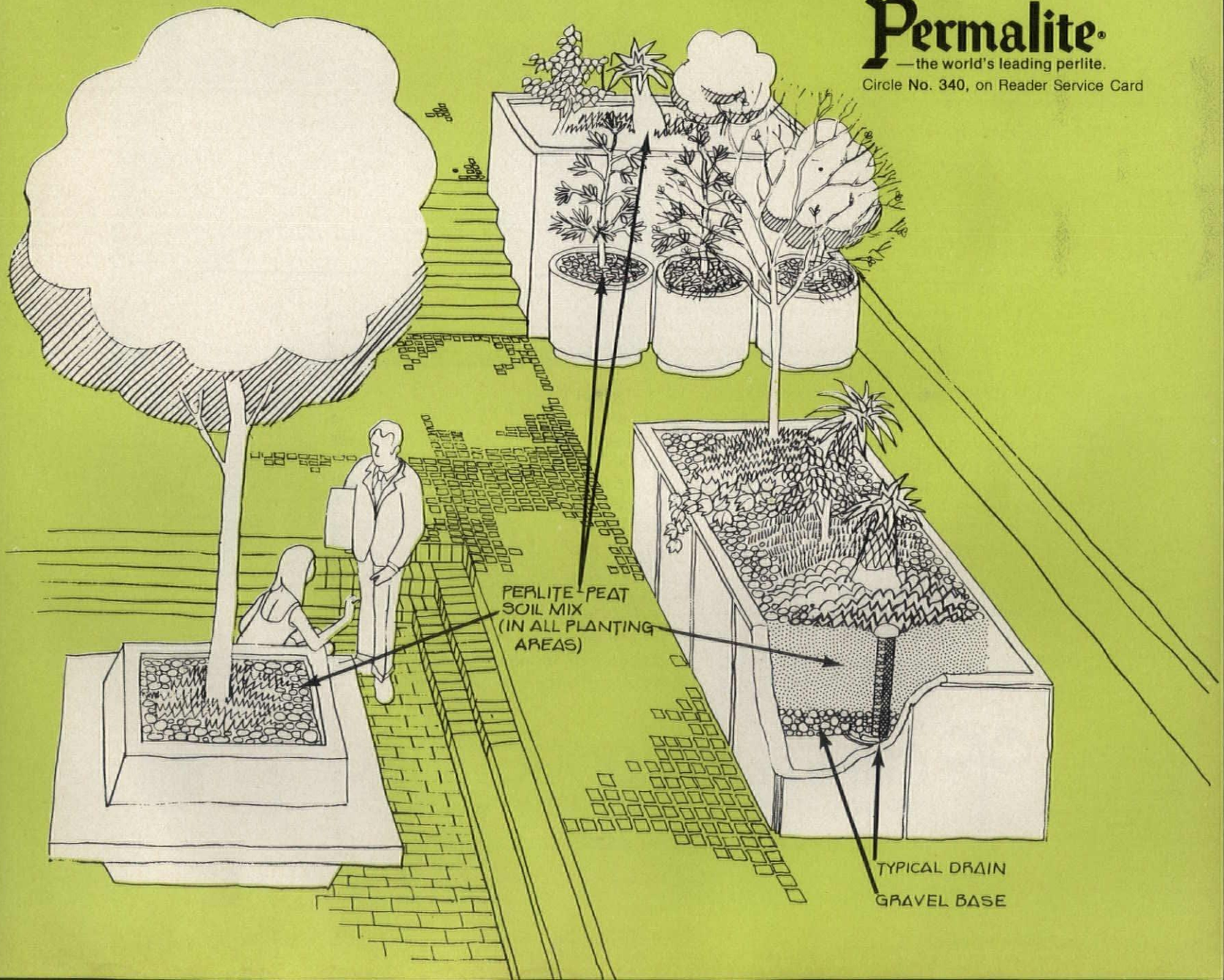

simplify pool construction eliminate major repairs

50 Meter Olympic Swimming Facility
University of New Mexico, Albuquerque
Van Dorn Hooker, University Architect
Buckley, Merker, Luna, Joint Venture Project Architects
Dr. Dale Hanson, Chairman Dept. H.P.E. & R.
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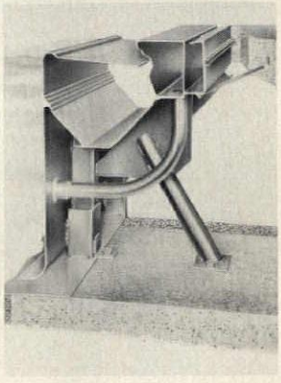
More than a pool . . . a pool system. Overflow, recirculated clean water return, and deck drain system are integral channels of the Chester roll-out ledge extrusion and side-wall construction. With the addition of a Chester Diavac filter the Chester pool becomes its own complete recirculating system. This self-contained design significantly simplifies pool construction and eliminates a potential area of major repairs.

All-aluminum side-walls are completely self-supporting. Structural vertical braces and A-frame buttresses provide all necessary side-wall rigidity for imposed loads. Aluminum floor construction compensates for contraction, expansion, shear movement, and all other stresses to prevent cracking.

The Chester all-aluminum pool . . . complete, with a 5 year warranty. In ground, elevated, indoor or out . . . Olympic, N.C.A.A., A.A.U. or designed to meet your specifications, consult the pool builders with over 20 years of proven performance. Complete pool system engineering service available.



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THONET
CENTER OF DESIGN

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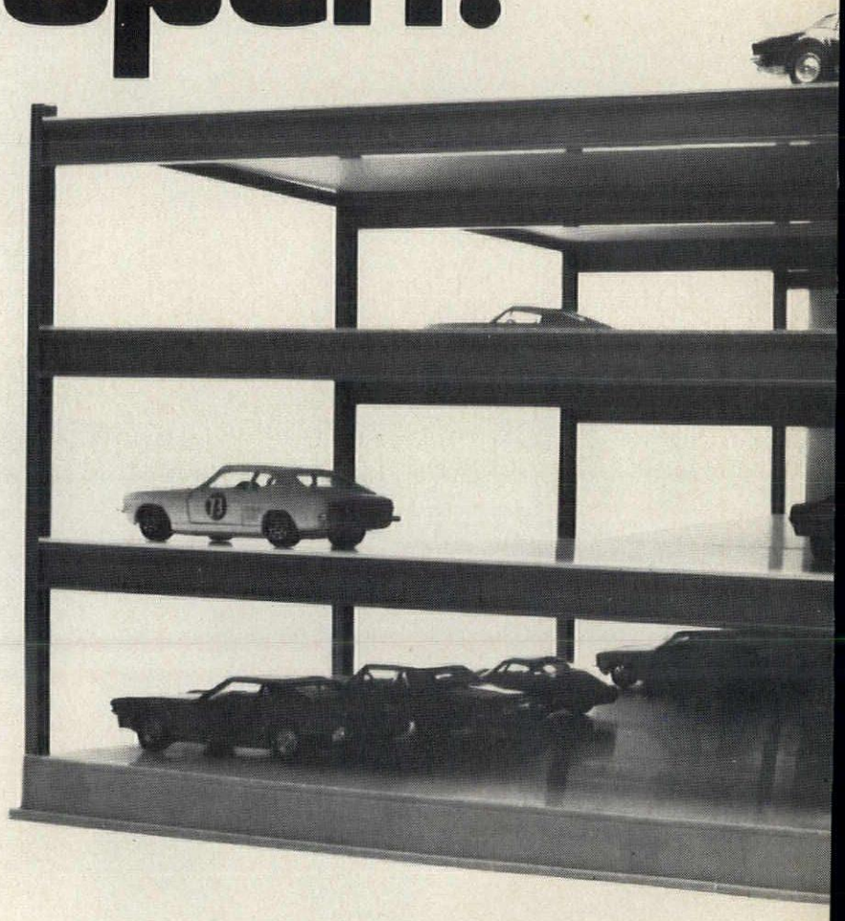
The future of parking garages is wide open!



(Because the steel-framed, long-span concept gives you more usable space at lower cost.)

Right now, an increasing number of long-span, open-type parking garages conceived in exposed steel are on the drawing boards—and many have already been constructed. For very good reasons.

Steel means fewer interior columns! Long-span, steel-framed structures are lighter, reduce the number of interior columns and need fewer footings. This means more wide open spaces. So, self-parking is easier and attendant-parking more efficient. And with steel, you're not tightly locked-in to a structural plan—you can rearrange the parking layout, and even add more levels at a later date.

Steel parking structures have low fire risk! A recent extensive survey showed that losses resulting from fire in open-type parking garages were insignificant. Realizing this, many cities are permitting code deviations in allowable heights and areas of unprotected steel parking structures. Also, a recent fire test conducted in an actual parking structure in Scranton, Pa., showed no damage to bare steel structured members exposed to the fire. Naturally, with little or no fireproofing necessary, construction costs can be cut considerably.

Just how much can you save? Perhaps as much as $1 per square foot!

Steel goes up faster! Erection of structures with steel can be faster than other systems. Recently, in Detroit, a three-level, open-deck parking struc-

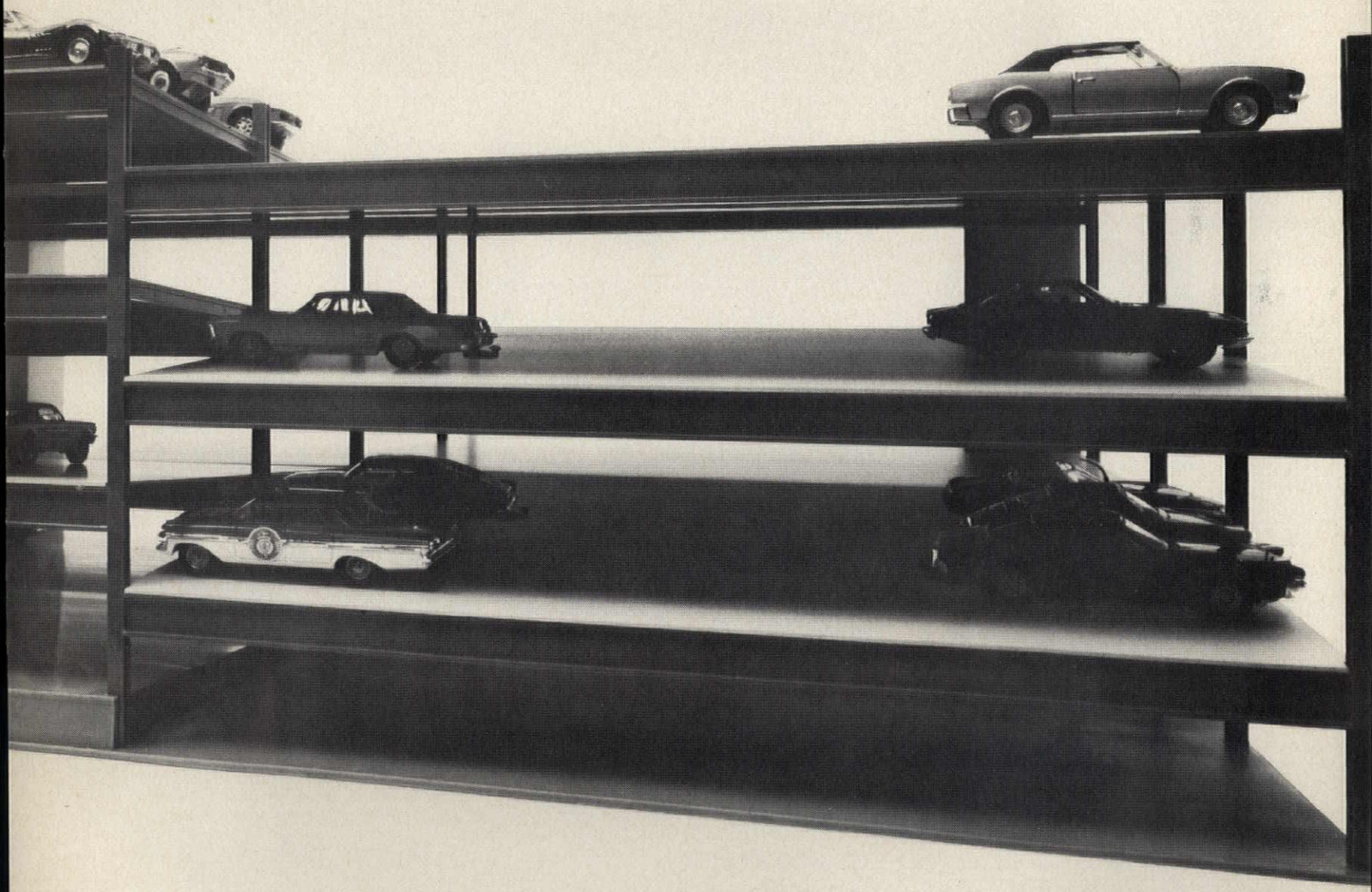
ture with a total supported frame area of 156,800 sq. ft. was finished in just five and a half months. So, you can lower costs by lessening the time it takes to build!

Steel is more economical! Faster construction also means that you can generate cash flow much sooner. With this factor and all others considered, steel framing often turns out to be the most economical system. And with the benefit of more usable space, it is proving to be the most practical and desirable system, too.

Consider erecting your next parking garage with exposed steel... and take advantage of the wide open spaces!

For a copy of our Brochure "Technical Report on Steel-Framed Parking Structures" (ADUSS 27-5264-01) and to find out how we can help you program your next garage, call our nearest sales office and ask for a USS Construction Marketing Representative. Or write to U.S. Steel, Box 86, Pittsburgh, Pa. 15230.

USS TRADEMARK **United States Steel**



Texas Tech Law Building, Lubbock, Texas. Omniplan Architects Harrell & Hamilton, Dallas.

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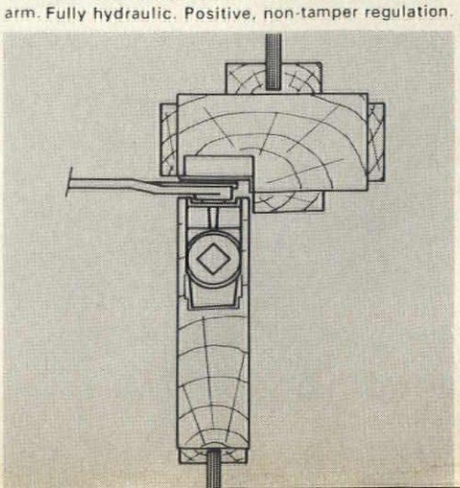

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LCN CLOSERS, Princeton, Illinois 61356

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Duramel. The material we spent seven years developing.

Now available in our new 19″ Contura™ Lavatory.

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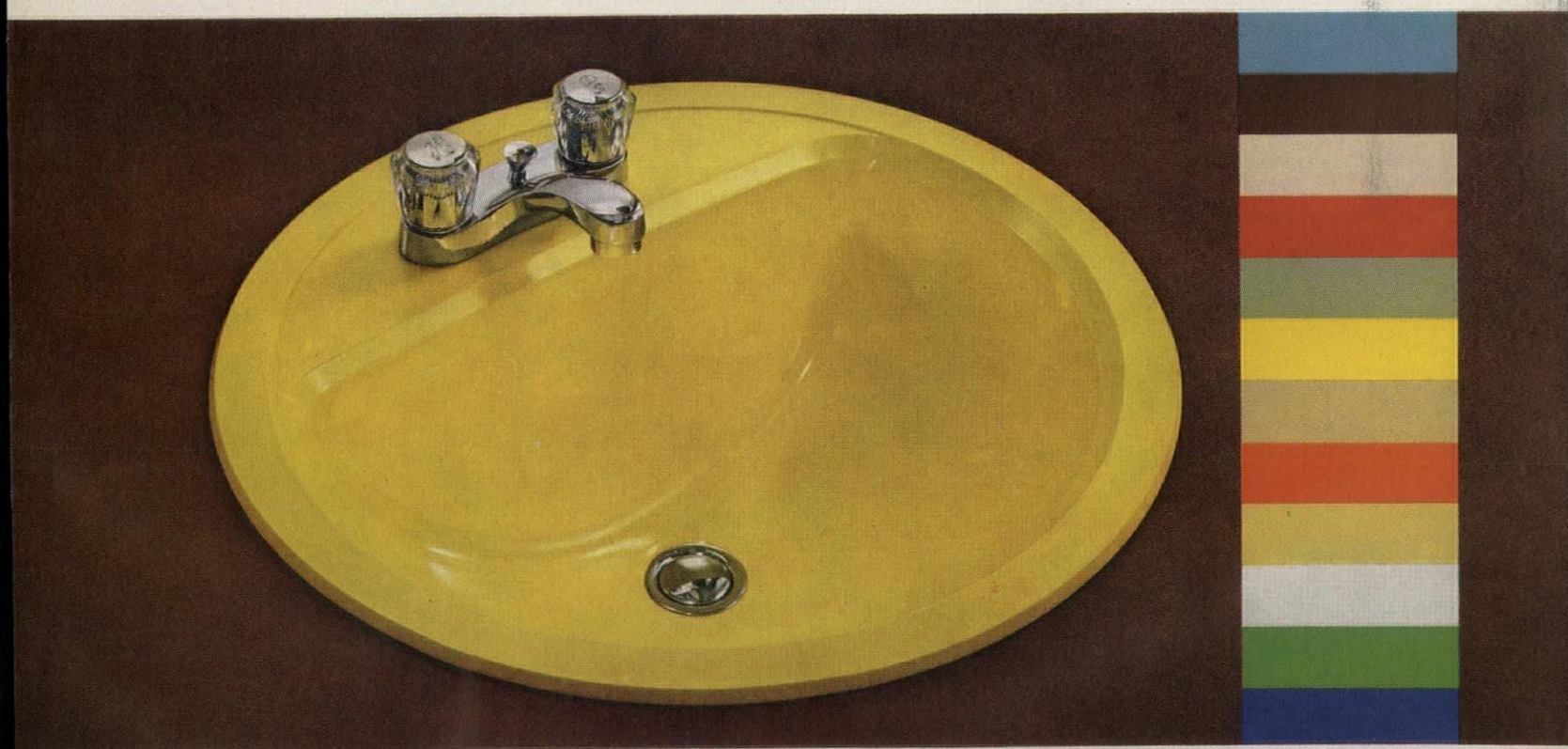
Once installed, the happy owner can look forward to years of rust-free, stain-resistant service.

Want to solve all your bathroom problems? Ask us. We've been coming up with the answers for over 100 years.

For any further information, please write to American-Standard, Plumbing/Heating, P.O. Box 2003, New Brunswick, New Jersey 08903.

Made from Duramel™ The high performance material.



The Contura™ self-rimming lavatory

12 new decorator colors

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For beautiful fixtures that work beautifully.


Introducing
the ultimate sealant.
790
building sealant
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Books continued from page 126

Urban Environments and Human Behavior: An Annotated Bibliography, *edited by Gwendolyn D. Bell, Edwina Randall and Judith E. R. Roeder. Stroudsburg, Pa.: Dowden, Hutchinson & Ross, Inc. 1973. 271 pp., $15.*

In this bibliography, the major ideas of design, human behavior and the urban framework are annotated with brief conceptual summaries to make the growing literature in the fields of environmental design accessible to designers and planners. The book is divided into three major parts. The first section, on design approaches to the urban environment, examines the literature concerned with the formulation of the built environment. The second part deals with social interaction—the patterns that lead from atomistic societies of individuals to communities. The final section consolidates the literature dealing with various subsets of the built environment, subsets that range in scale from the room to the city center.

The Architecture of John Wellborn Root *by Donald Hoffmann. Baltimore: The Johns Hopkins Press, 1973. 263 pp., $13.50.*

With this volume, a continuation of The Johns Hopkins Press's studies in 19th-Century architecture, Donald Hoffmann has written an intensive and well-illustrated study that compares Root's contributions to those of Adler and Sullivan. Hoffmann argues that Root, not Sullivan or Wright, was the principal figure of the first Chicago School since, even in the 1880s, Root was designing higher and larger buildings with rational floor plans, innovative foundation techniques, and an expressive richness that came to grips with the social problems still inherent in the skyscraper.

Separate chapters are devoted to analyses of the Rookery, the Monadnock and Reliance building, and the milieu of the Chicago School ; concluding with an analysis of the World's Columbian Exposition.

Documents

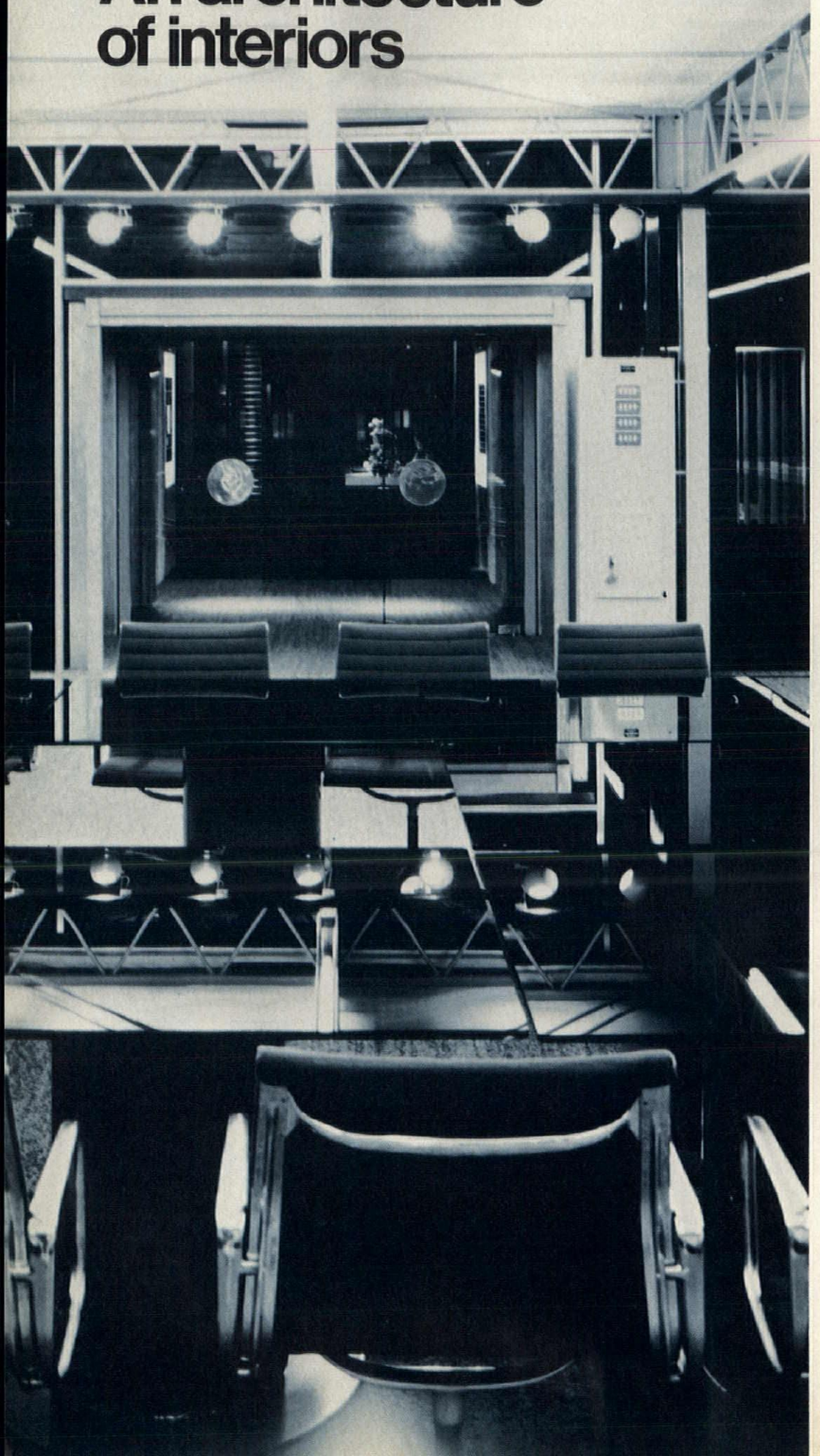
[*The documents listed below are available from the associations and agencies cited. Request for such documents should be directed accordingly.*]

The Greening of the High School *by Ruth Weinstock of the Educational Facilities Laboratories (EFL), published jointly by the EFL and the Institute for Development of*

[continued on page 140]

Coming in November

An architecture of interiors



When you cover interiors all year long, as P/A has for decades, a Special Issue on interiors is bound to be very special.

The November P/A is going to be more than a collection of outstanding interior design works. It is going to be a statement about where interior design has been, where it is going and, especially, where it ought to be. P/A Interior Design Editor Sharon Lee Ryder is convinced that interiors should *be* architecture—that we can have truly satisfying buildings only when the interior and the exterior (and the professionals who design them) are reunited. And the P/A editors have assembled some persuasive examples to demonstrate the point.

Among the features of P/A's November issue:

A historical overview by Architect Kenneth Frampton sets the stage by analyzing attitudes and landmarks of interior design from the Middle Ages to the present.

The mechanical aesthetic is explored in full-color presentations of these precedent-setting interiors—an early learning center in Brooklyn, an office building lobby in New York, and a systems building prototype at Milton Keynes, England.

A profile of Deborah Sussman displays the work of a remarkably versatile Los Angeles designer and analyzes the thoughts behind it. Through her exceptional integration of interiors, exteriors, graphics and packaging, she gives the commercial client a highly distinctive, unified image.

The Madonna Inn demonstrates how owner-builders with no design training can create an object lesson for architects and designers through their rare perception of public needs and sensibilities.

These articles and others will make the November Progressive Architecture an issue you will want to have and to keep.

Progressive Architecture

600 Summer Street, Stamford, Conn. 06904

Glasweld gives you the durability of masonry, the beauty of glass, the flame-resistance of stone, and the low cost of Glasweld.

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Skidmore, Owings & Merrill, Architects.

With all that going for it, no wonder the architects chose Glasweld® for this building in Oregon.

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Glasweld is a flat, inorganic fiber-reinforced panel, coated with an all-mineral, colored enamel surface.

It is highly versatile, too. Except for the windows, all major surfaces in this photograph are Glasweld. Window-wall insert panels, fascias and fabricated coffer soffits. Even interior wall linings.

Another feature is permanence. The kind you find in the very best grades of porcelain enamel and ceramic tile.

As if that weren't enough: Glasweld is incombustible, waterproof, impervious to stains, simple to cut and drill, and easily applied. So, installation and maintenance costs are low.

But the real beauty of Glasweld is on the surface. The fine-brushed slate surface, the two textured sand finishes, and the 23 other colors.

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Bally

Address all correspondence to Dept. PA-10.
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Books continued from page 135

Educational Activities (IDEA); available from EFL, 477 Madison Ave., New York, N.Y. 10022, 88 pp. $2.

Compelling notes from a 1972 EFL/IDEA conference comprise the latest in EFL's long line of studies on the learning environment. Drawing together 35 planners, educators and architects, the conference was called to investigate problems coupled with, or caused by, radically changing high school life patterns. While the teen years are widely recognized as some of the most difficult in a child's lifetime, educational processes have not kept pace with earlier maturity and increased awareness that now takes place during those years. High schools have been locked into an emphasis on *teaching*, not *learning*, on conforming to college entrance requirements, not on varied learning opportunities. While the participants of the EFL/IDEA sessions readily admitted that they didn't possess all of the answers, the dialogue in this report makes fascinating reading for anyone involved in education. It joins other voices in decrying the absurd lockstep of an educational system that ignores those it purports to serve.

Federally Assisted New Communities: New Dimensions in Urban Development. *The Urban Land Institute, 1200 18th St., N.W., Washington, D.C. 20036. 288 pp., $12 to ULI members, $16 to nonmembers.*

For use by architects, developers, investors, builders and others interested in community development, this guide includes Title IV and VII program provisions, complete application processes, detailed descriptions of new towns in the U.S.A., information on new towns economics and financing, HUD suggested format for Title VII cash flow analysis, sample agreements and a valuable appendix.

Reinforced Plastics/Composites Institute Conference Papers. *The Society of the Plastics Industry, Inc., 250 Park Ave. South, New York, N.Y. 10017. 832 pp., $25.*

The proceedings of the 28th Annual Conference of the Reinforced Plastics/Composites Institute contains the full texts of 96 technical papers presented at the 1973 conference. The papers—many by world authorities in reinforced plastics—are illustrated with graphs and tables and cover the latest developments in resins, reinforcements, processing, product applications and markets.

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An integral part of the hinge itself, the non-removable pin insures maximum security, eliminates intermeshing of knuckles, protects against door sag. Hidden from view, its recessed oil-impregnated bearing teams with a Zytel T door leaf bushing for a maximum of smooth, quiet, self-maintaining service. The result...a completely superior hinge, slim and trim with only one horizontal line across its barrel.

MODERNE II is available in all types, finishes and materials for specification in commercial buildings, schools, hospitals...all your especially important jobs. For bulletin "MODERNE II by McKinney" write DEPT. 236, McKINNEY, SCRANTON, PA. 18505.

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BUILDERS HARDWARE MANUFACTURERS ASSOCIATION MEMBER bhma

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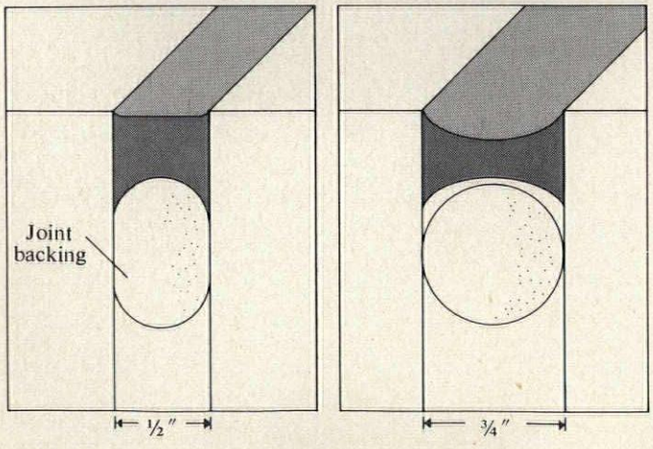
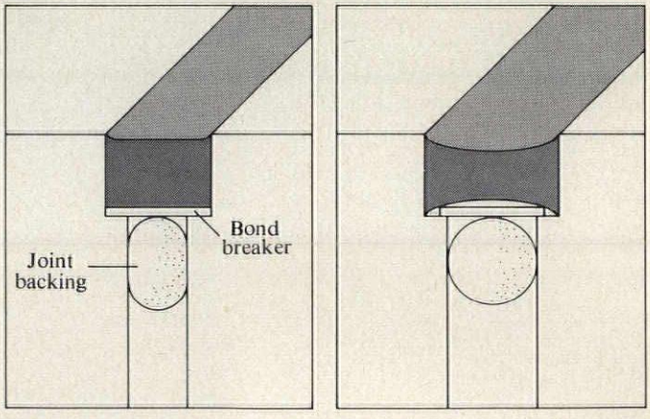
How to avoid sealant problems when you design with precast concrete panels.

Obviously, you don't want sealant-adhesive failure in the joints between the panels. Your precast contractor doesn't want it. And certainly we — Tremco — don't want it. So here's a brief guide to potential problem areas and tips on how to prevent and solve them.

Let's start with design. When you're designing a joint, be sure it's wide enough to allow the sealant to move within its capabilities. If the joint is found to be too small on-site, it should be saw cut to a sufficient width. A good rule of thumb is to design ½″ wide joints for panels up to 15 feet. Larger panels will require a ¾″ or wider joint.

While you're in the design stage is also a good time to meet with your precast contractor and your Tremco man. By discussing some of the following problems, odds are you can avoid them.





Form release agents: friend and foe. Form release agents are helpful in removing dense concrete panels from forms. But they can also become a major problem for sealants.

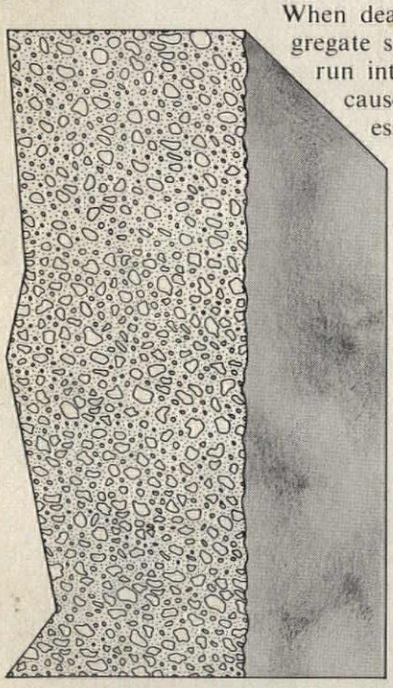
Agents containing wax, oil or silicone create a surface film which impairs adhesion of the sealant bead to the joint interface. When this happens, the sealant may lose its grip. This could happen within weeks or months, depending on the type of sealant and the amount of joint movement.

To prevent this, your precaster should use an agent that will be absorbed by the concrete in the curing process. If your precaster uses new fiberglass forms, he should remove the wax from any portion that comes in contact with the joint interface.

If release agents are found on the joint interface, they must be removed before caulking. The only sure method

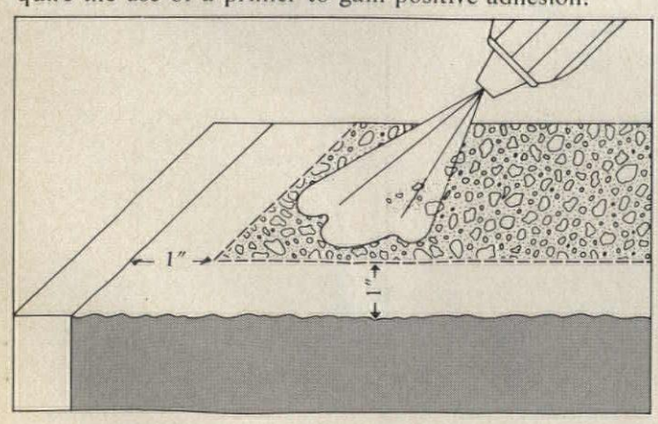
of removal is light sandblasting. If this isn't possible, the job may call for mechanical wire-brushing, grinding or high-pressure water and detergent, depending on the type of release agent used.

Don't take a powder. Another common problem affecting sealant adhesion is laitance — a dusty or powdery condition — of the joint surface. Interfaces should always be checked for laitance. If masking tape picks up loose particles, laitance is present.



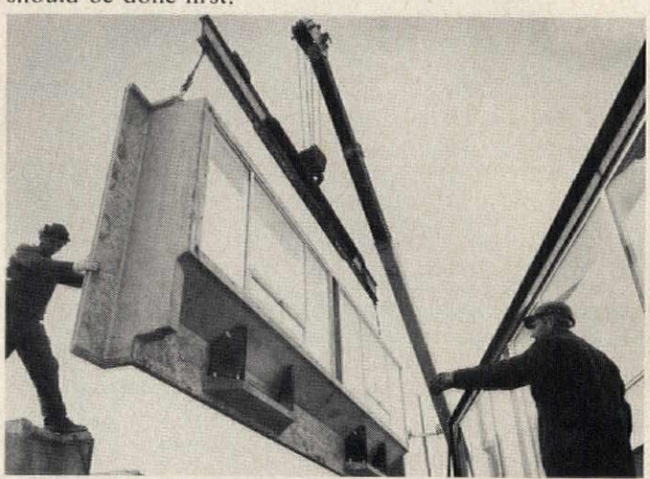
When dealing with exposed aggregate surfaces, you may also run into a powdery problem caused by the retarder process. To prevent this, your precaster should select an application technique that will limit the retarder to the panel face only and prevent migration to the joint interface. The application should stop at least one inch from the panel edge.

To correct either problem, wire-brush. Or use a high-pressure water spray. Or grind lightly. Before caulking, a wipe with an oil-free solvent is recommended. Some sealants may still require the use of a primer to gain positive adhesion.



Waterproofing woes. Waterproofing solutions can also cause sealant failure.

If your precaster is going to apply waterproofing to the panel before delivery, he should mask the joint interface before he sprays the panel. Or, if your specs call for waterproofing when the panel is in place, the caulking should be done first.



There are some waterproofing materials that will impair sealant adhesion. The waterproofing can only be removed by mechanical wire-brushing, grinding, or light sandblasting.

To avoid potential problems, always caulk first, then waterproof.

An ounce of prevention. Remember, your Tremco man will be happy to meet with you and your precaster before the job is begun to discuss effective sealing of the walls and to identify potential problem areas.

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So talk to Tremco first. And you won't have joint sealing problems later. For help, contact your Tremco rep. Or The Tremco Manufacturing Company, Cleveland, Ohio 44104. Toronto. Canada M4H 1G7.

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GENERAL ELECTRIC

Notices

Appointments

Federman Construction Consultants, Inc., New York City, announces the following appointments: **Nathan Borsuk**, vice president; **Edward A. Mermelstein**, chief estimator; **Albert J. McNamee**, assistant chief estimator.

Dwight Corkins, AIA, Robert Greager, AIA and **Sjirk Zijlstra, AIA** have been named associates of Rossetti/Associates, Detroit.

William L. Fix and **Peter Dopulos** are now associates of Grillias Pirc Rosier Alves, Santa Ana, Calif.

Lesley Wheel has been named president of Wheel-Garon, Inc., a New York City lighting design firm.

Ellis, Ingram & Parris is now Ellis, Ingram, Parris & Gregory, Valdosta, Ga., with the addition of **Thomas L. Gregory, Jr.** as partner.

Joseph Chiesa has joined Abraben, John, Perkins & Will, Fort Lauderdale, Fla., as designer.

Jean Benedetti has been appointed director of design for United Business Interiors, Los Angeles.

Joseph Stein, former New York City building commissioner, has joined Tishman Research Corp. there as a vice president.

Donald Sachar has been named vice president of Saphier, Lerner, Schindler—Environetics, Inc., New York City.

Ralph T. Rowland, AIA has been elected a vice president and director of Fletcher-Thompson, Inc., Bridgeport, and will head the new project management division.

Carl M. Conner has been named director of engineering for Samborn, Steketee, Otis & Evans, Inc., Flint, Mich.

Larry C. Dean, AIA, B. Mack Scogin, RA and **K.P. Reddy, PE** have been appointed vice presidents of Heery & Heery, Atlanta.

New addresses

Dalton Dalton Little Newport, Plaza Executive Center, 1515 N.W. 167 St., Miami, Fla. 33169.

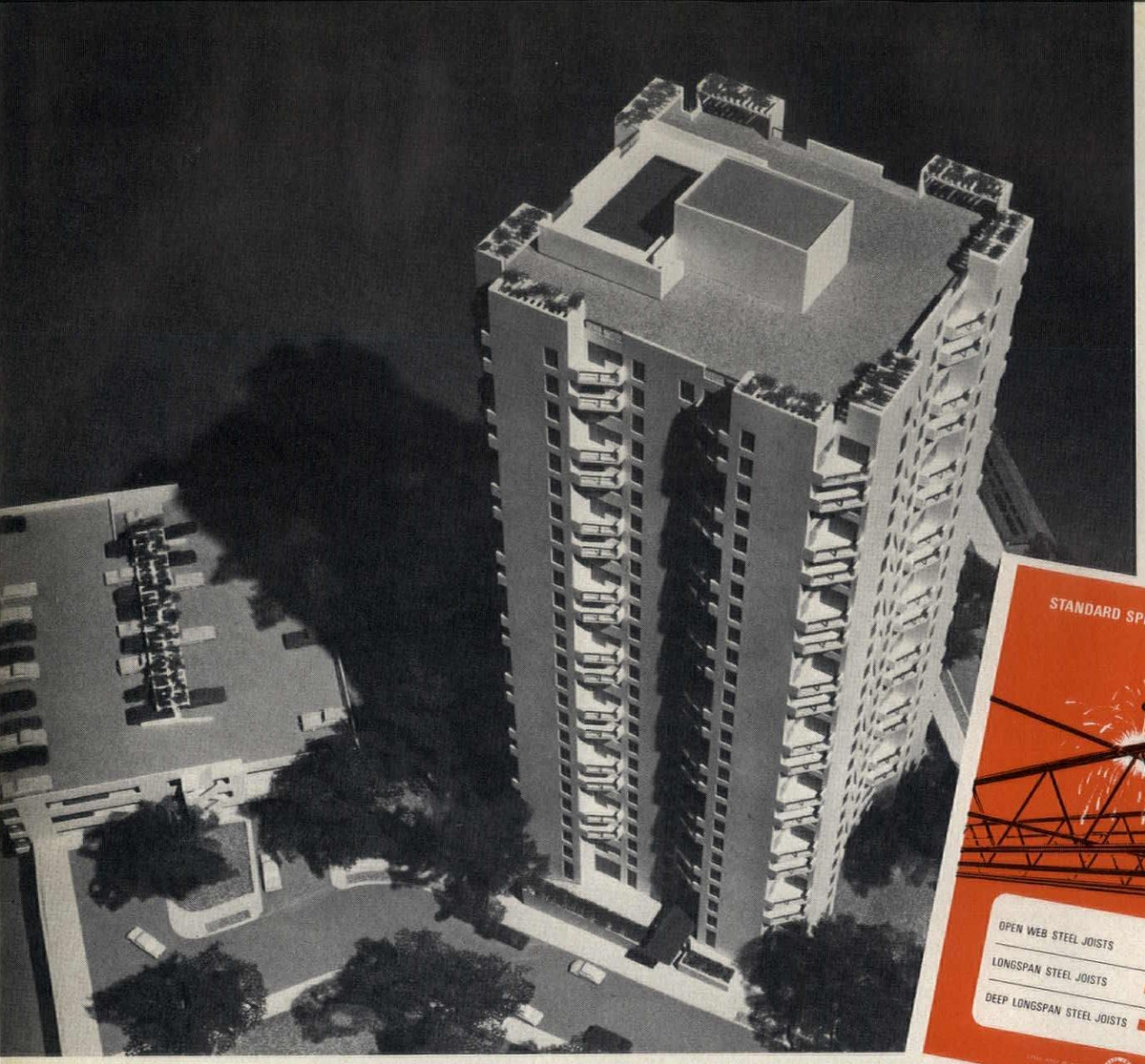
Yeates & Gaskill Architects, Inc., 2080 Peabody Ave., Memphis, Tenn. 38104.

Team Four Inc., 14 N. Newstead, St. Louis, Mo. 63108.

Thomas Hansz Architect, 237 N. Woodward, Birmingham, Mich. 48011.

Craig & Kohler, Architects, 200 Tremblay Rd., Ottawa, Ontario, K1G 3H5, Canada.

William S. McDuffie & Associates, 151 Ellis St., Atlanta, Ga. 30303.



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Architect or Architectural Designer-Draftsman: Minimum 5 years experience, top salary, challenging opportunity and valued fringe benefits. Permanent position in firm doing diversified projects. Send resume and examples of work. Tully, Ames, Elzey & Thomas Architects/Planners, 222 E. Town St., P.O. Box 8658, Columbus, Ohio 43215, 614-221-7481.

Architect/Designer: Large architectural firm in Jacksonville, Florida offers outstanding opportunity for qualified design oriented project architect. Varied practice includes large commercial and institutional work. Send resume. An equal opportunity employer. Reply to Box #1361-585, *Progressive Architecture.*

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Architectural Draftsman: Senior draftsman position leading to Project Architect for small multi-family housing division of a major corporation. Must be able to produce working drawings. Degree not mandatory. Live in family oriented midwestern city near university. Relocation, excellent salary, fringe benefits and growth potential. Send resume with salary history to: Ed Vance, Personnel Manager, General Growth Companies, 1055 —6th Avenue, Des Moines, Iowa 50306.

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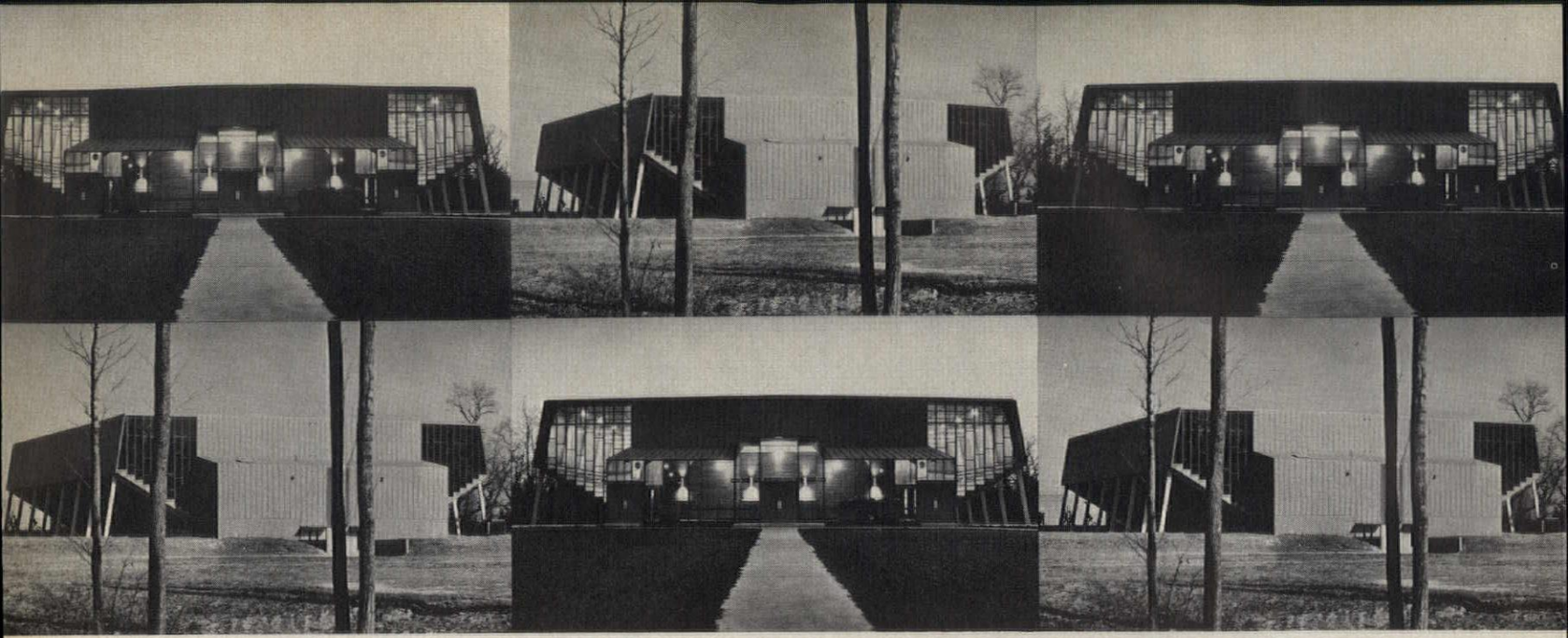

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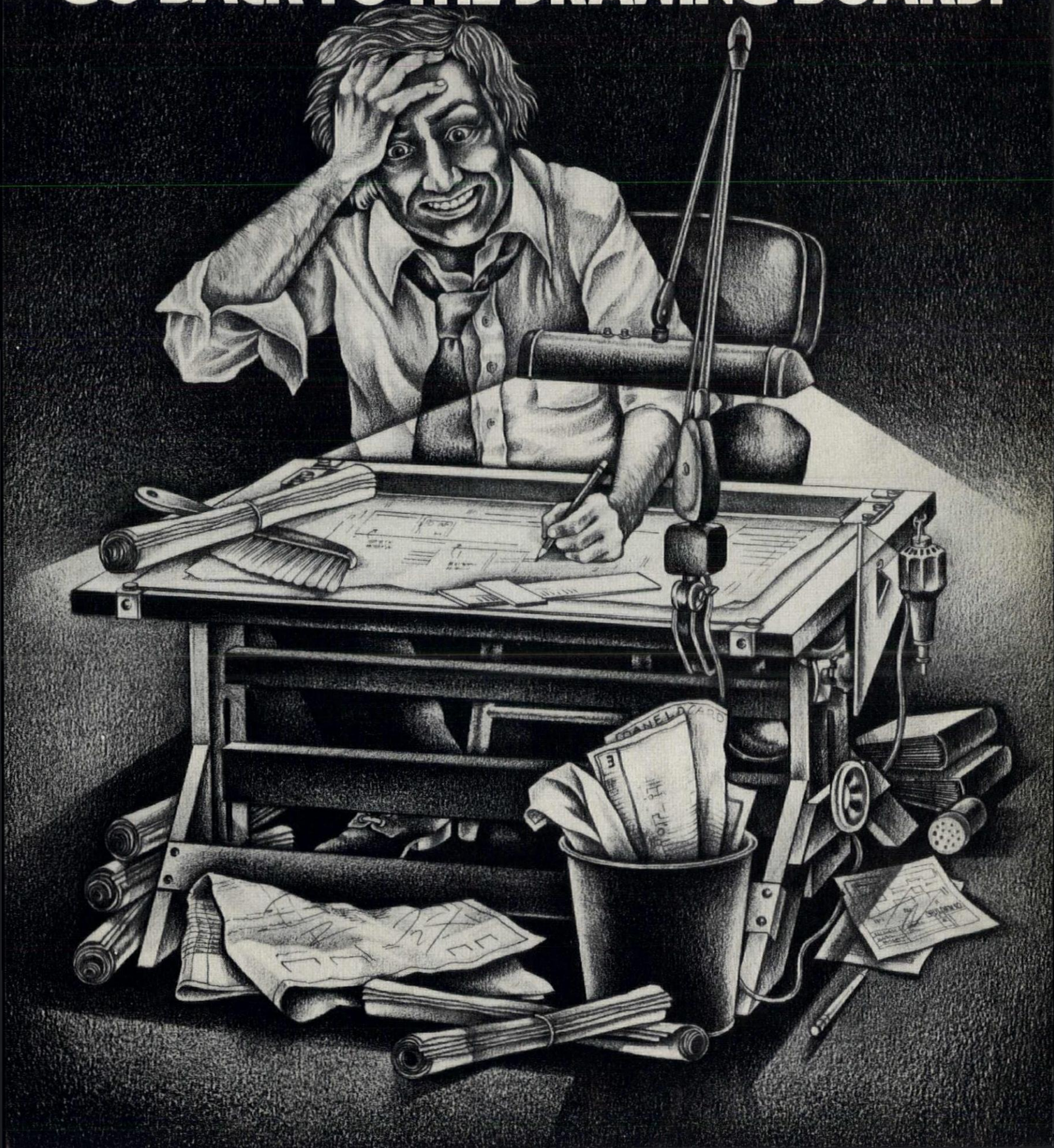

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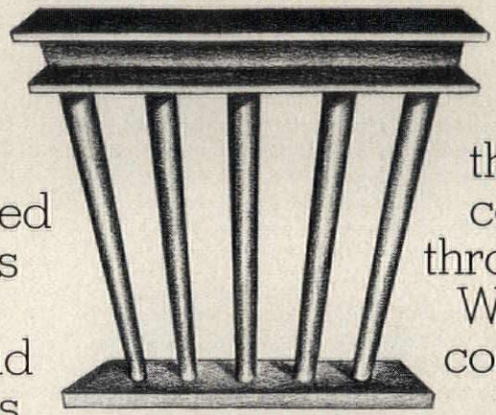

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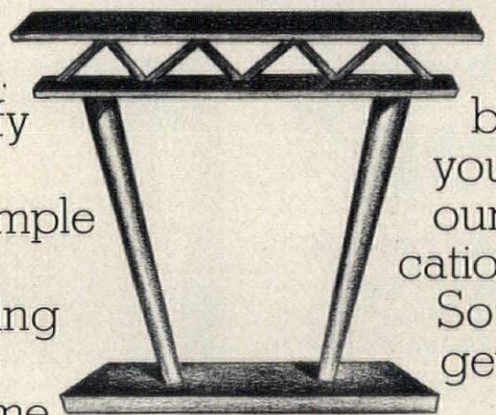

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Job mart *continued from page 150*

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Consultant: Experienced design architect—office buildings, medical, collegiate, library facilities, planning etc., seeks opportunities with firms needing short term consulting services at realistic fees. Background includes many awards for design work plus American Institute of Architects Fellowship. Presently member faculty large West Coast architectural school. Reply to Box #1361-587, *Progressive Architecture.*

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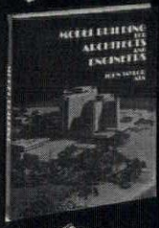

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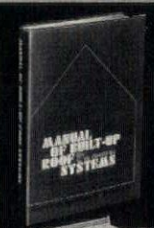

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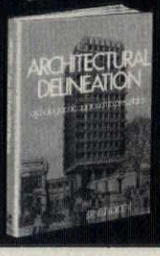

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