THE INTERNATIONAL MAGAZINE OF ARCHITECTURE DECEMBER 1975

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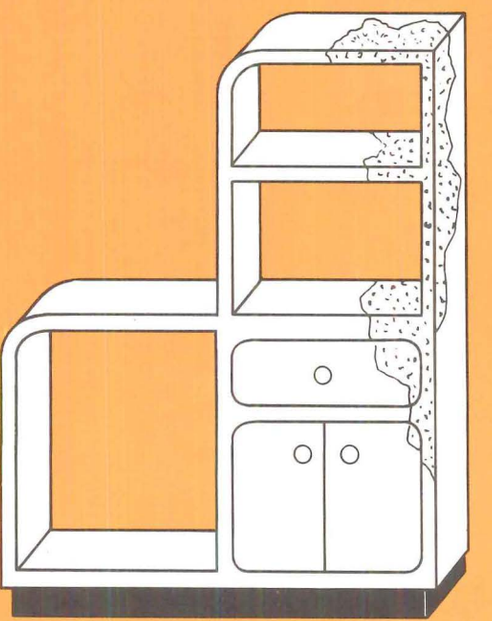

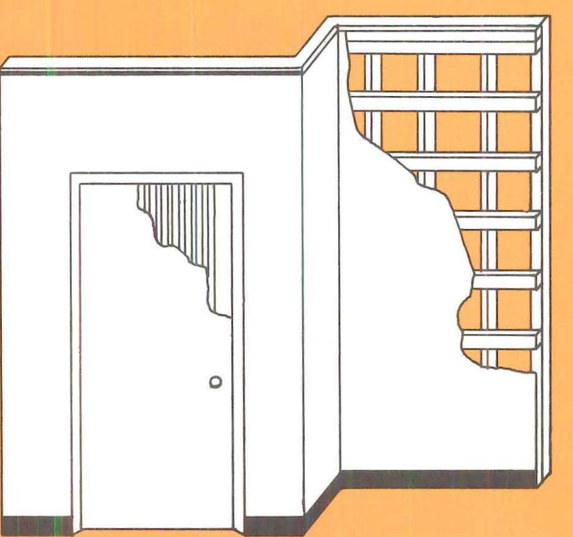

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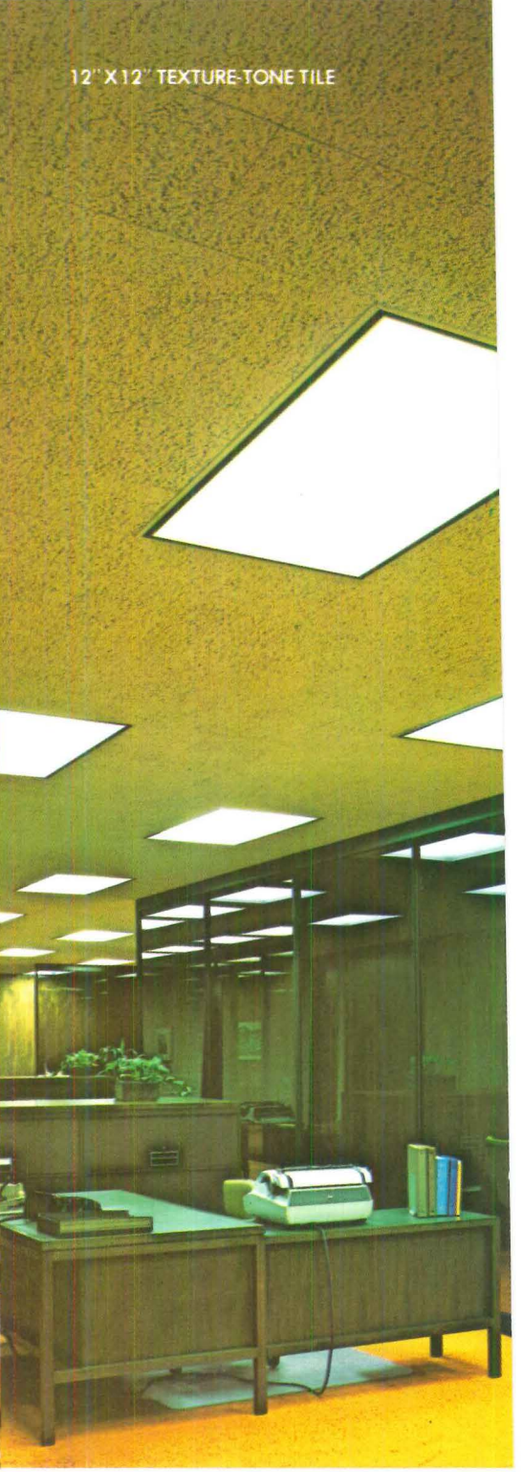

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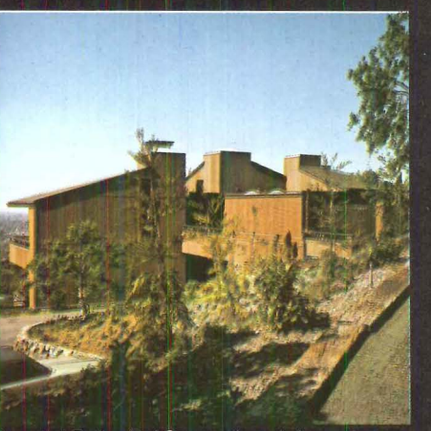
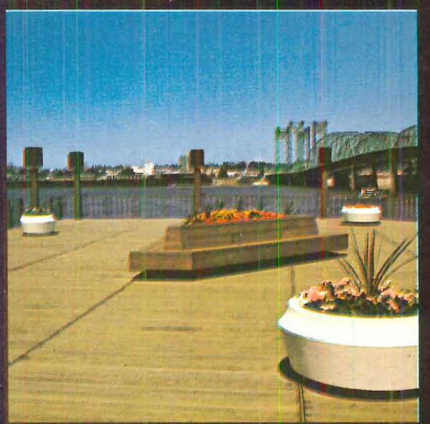
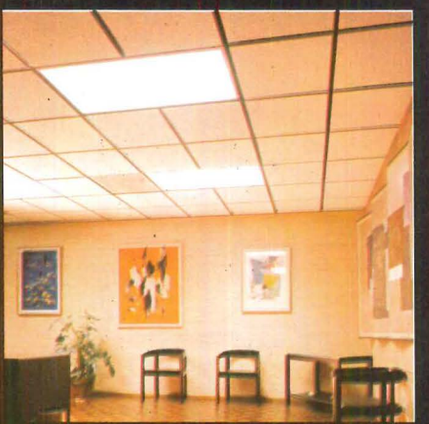


Inverted Batten Ruf-Sawn redwood plywood on custom residence

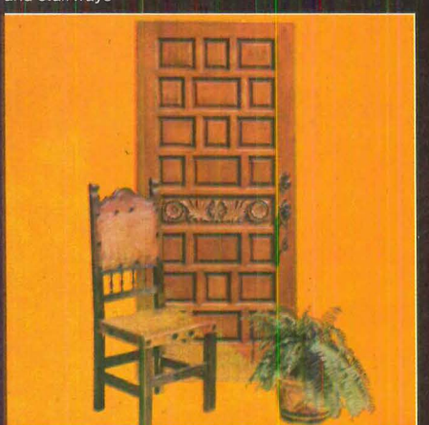


Redwood lumber for commercial decks, patios and stairways

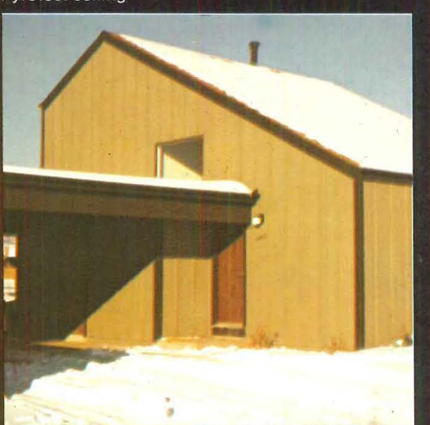


Recessed edge, non-directional fissured Pyrotect ceiling

Redwood lumber siding lends lasting warmth to office buildings



Castillo pattern entrance door from the International series



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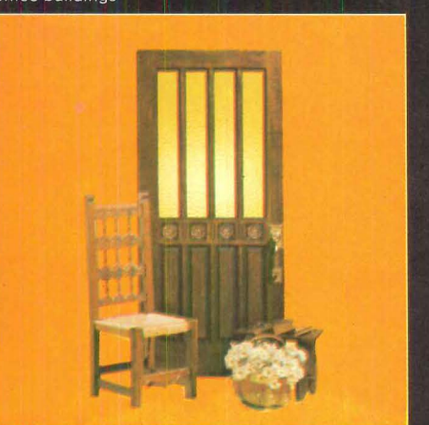

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ARCHITECTURE plus

The International Magazine of Architecture December 1973

Cover photo: detail of Ivan Chermayeff house in Cadaques, Spain

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Book Review

Frank Lloyd Wright. An Interpretive Biography by Robert C. Twombly. Published by Harper & Row, New York. 373 pages. Illustrated. $10.00.

Reviewed by Dorothy Grotz

Another book about Wright. This one by a young historian, the outgrowth of a Ph.D. thesis on Wright the man, his architecture and the background against which it was created. An ambitious study beginning with Wright's childhood and covering seventy years of productive work, the book sometimes bogs down under the sheer weight of so much material. The poor quality of the illustrations does not add to the visual pleasure of the book.

The love life of Wright often so sensationally dealt with is sensitively handled—his idealism, his romanticism and really his puritanism—and his need to rage at and to outrage the community.

The author weaves his story in and out between Wright's personal life and his architectural achievements. It is in his interpretation of Wright's houses, not in architectural but in psychological terms, that the author attempts what he considers additional criticism to the already heavy biographical material on Wright.

An example: in speaking of the prairie house, Twombly elaborates poetically, "Doorways in Wright houses hardly ever opened directly to the street; usually tucked behind a wall, out of sight around a corner or in a secluded alcove they discourage casual approach. Open porches, verandas and terraces were generally guarded by walls, roofs, or arbors minimizing exposure. Casement windows opening out increased one's sense of control over the environment. The inevitable dark recesses, the shadowed facade, even the complexities of surface, suggested there was more to the building than met the eye, that deep inside was a family approaching the world on its own terms."

Whatever the family did in approaching the world, Wright certainly approached it on his own terms. Some of his flamboyancy, his humor, his color, are ground down in the research process and although Twombly pursues his subject with painstaking labor and obvious affection, he is at times hard on him. As a spokesman for the younger generation, he harshly states, "At Spring Green the students became ingrown, isolated and provincial neither criticising their master nor equaling his achievements." While some of this was true, in later years especially, Wright himself complains of student subservience in his "Autobiography." On listing "Fellowship Assets" he mentions "the capacity for faith and rebellion."

Probably he did not always encourage this. But in the early days at least the students and Wright and Olgivanna Wright certainly had a shared experience. The building of Taliesin West, the pioneering in Arizona, the sleeping bags, the long desert trek and finally the work of the Wrights and the thirty young men and women who helped with the work constituted a common adventure.

Again in discussing Wright's larger projects Twombly asserts, "The ultimate irony is that by extolling human variety so energetically, he might have created a surfeit of sensory experience, a different kind of dehumanization. Indeed the suspicion lingers that only Frank Lloyd Wright could have lived comfortably in a landscape of his own design." This could be said of most great architects. One wonders whether it is expedient to go back in time and place to try to reconstruct in one volume, the life of a man as complex as Wright really was, half Victorian and half avant-garde, often elusive and always controversial. It took Leon Edel five volumes to get through Henry James. I suspect this is the problem here. Twombly, undoubtedly a talented writer and a conscientious researcher, has taken on too much.

Perhaps Wright's story of himself, humorous, poetic, inaccurate sometimes but never dull, is the best.

Dorothy Grotz is a painter who sometimes writes.

Two Brazilian Capitals: Architecture and Urbanism in Rio de Janeiro and Brasilia by Norma Evenson. Published by Yale University Press, New Haven, Connecticut, 1973. 225 pages text plus illustrations. $19.50.

Reviewed by Jim Morgan

Professor Evenson's book was on my desk when I returned from a trip to the Southern Hemisphere, including a week in Brazil—specifically in Rio, Sao Paulo and Brasilia. Even though that was a very short visit, it was long enough for me to recognize that she has written an extremely valuable book.

For those who have been to Rio and Brasilia and those who are planning to go, the book will be useful because it provides an over-view of each that will come in handy, especially in the case of Rio whose plan has none of Brasilia's clarity. But it is not an architectural guidebook of the sort we now have for almost every North American city. The value of the book lies in its study of the urban fabric of each city and in its comparison of their profoundly different qualities. Finally, much of what Professor Evenson says about cities in general will be worthwhile to the reader who cares about the forces behind urbanization.

Rio de Janeiro was first settled in 1504 and became the capital of Brazil in 1763. The

Life in Rio centers around the beach and *futebol*. Both are available on the new landfill areas (top and middle) along the Copacabana and other beaches closer to downtown Rio. A new subway is under construction (bottom) on land that was the original Gloria-Flamengo beach.

continued on page 80

Letters

Sears Tower

First, may I congratulate you and express best wishes on Architecture PLUS.

In this spirit of good will, it is particularly saddening that your August issue puts up the Sears Building in a curiously dismembered and therefore inevitably inaccurate fashion.

You've got Sears there. And SOM. But the bridge that links owner and architect is nowhere in sight. Whatever happened to SLS whose space studies determined floor space requirements and led to the ultimate size and shape of the building?

Of course, you are perfectly aware that someone had to determine floor space. You handed that solution to SOM. Possibly to SOM's chagrin. For they know better.

The actual procedure was the following: 1. SLS was on the scene first—retained by Sears before the architects—in order to do space studies to lead to determination of the size and shape of the building. SLS worked on this assignment for more than a year and, for your information, a whole crew of SLS people actually worked right on the Sears premises during this period. 2. SLS fed its findings to the architects who were charged with the responsibility of creating a building around the space planners' dictum.

The sad thing is that in by-passing SLS, the magazine not only wiped out a peer participant in the creation of the building but deprived itself of a wonderful opportunity to show off the great talents of the architectural profession. For SOM's really "romantic" achievement, it seems to me, is not so much that it came up with a workable, functional, and good-looking building (wouldn't SOM take umbrage at any suggestion that they ever do anything less?) but that it did so within the unbending restrictions established by the space planners.

NATALIE PARRY
New York, New York

McGraw-Hill Buildings

Jim Morgan's article on the comparison of the two McGraw-Hill buildings (October issue) was a good one. Since I was working for John Russell Pope in New York at the time, most of the research on the first building brought back memories. I also knew Kenneth Murchison (the Will Rogers of the architects at that time) and Raymond Hood was a good friend of his. In this way I got first-hand reports on his accomplishments.

In the comparison of the two buildings and the reflection of the attitudes and philosophies of the leadership in each case, Morgan hit on a good explanation of the manner in which many large corporations operate these days. The joint decisions made could hardly ever be traced to any one board member. Therefore, the result is a sort of inhumane trend in which each board member can hide behind the shield of the big "Headless Monster," if the occasion ever presents itself.

It took courage to publish what you did and you have touched on a journalistic approach that I have not noted before. It has a lot of meaning but I am sure a great many readers will not grasp the significance of meaning behind it.

The article of Ellen Perry Berkeley on the Boston City Hall (see February, 1973 issue) was very well worthwhile and much can be learned from this type of reporting if the reader has his eyes open.

DALE A. WHITE
Architect, Mount Vernon, Ohio

The Hardoy Chair

With much interest I read the article about the Hardoy chair in the May 1973 issue.

Your article seems not to describe what for me is the "real" Hardoy chair, but rather the small, somewhat uncomfortable, and heavy steel rod chair.

The "real" chair being of the same look, but large (36 in. above floor) and made of springing ½-in. pipe making it far more comfortable in use and much easier to move around.

This chair is screwed together (from "inside" under the chair) at all pipe crossings and after the screws are removed the shape can

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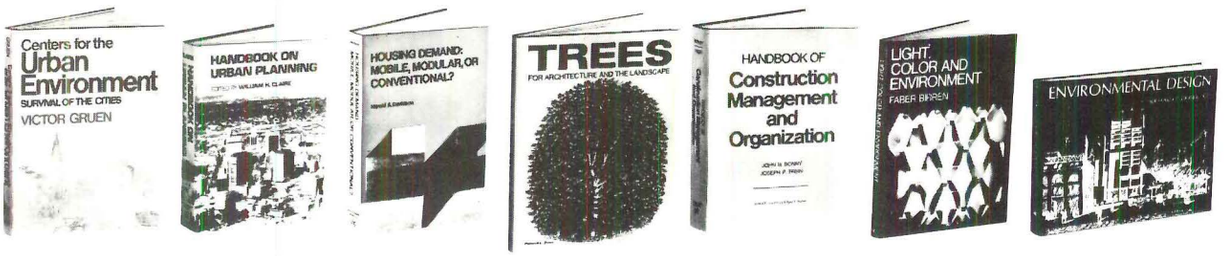

BOOKS FOR A BETTER ENVIRONMENT

CENTERS FOR THE URBAN ENVIRONMENT: Survival of the Cities

By Victor Gruen. Written by one of the world's leading urban planners, this book discusses the growing importance of environmental planning as a force for maintaining the ecological and biological balance of of our planet. It shows why the over-all problems which stem from the global environmental crisis cannot be solved by the defensive actions of environmental protection alone, but must be attacked offensively by means of environmental planning. Special emphasis is placed on new, future-oriented environmental planning elements – now emerging in the form of multifunctional centers. *288 pages, $24.95*

HANDBOOK ON URBAN PLANNING

Edited by William H. Claire. This book is a practical set of "how-to" instructions on community planning and development. It has been written to help solve one of the most pressing problems of our time – that of planning effectively for the vast and growing numbers of people living in urban areas. It takes into consideration past trends, accurately determining and portraying existing conditions, and prepares sound estimates of future needs. *416 pages, $19.95*

HANDBOOK ON HOUSING SYSTEMS FOR DESIGNERS AND DEVELOPERS

By Laurence Cutler and Sherrie Cutler. Here is a view of industrial buildings in which the living units, when joined, offer themselves as total units. These buildings can be composed in an almost infinite series of arrangements, as compared with other building systems, which offer precut units with a limited number of unit types or models. *160 pages, $17.50*

HOUSING DEMAND: MOBILE, MODULAR, OR CONVENTIONAL?

By Harold A. Davidson. This book identifies and evaluates determinants of the demand for mobile homes in relation to the demand for conventional housing. It depicts major problem areas, as well as new developments, relevant to the current and future total housing market; analyzes historical growth of the mobile home market; evaluates factors limiting the growth of mobile home sales; forecasts the demand for mobile homes through 1980. *422 pages, $17.50*

TREES FOR ARCHITECTURE AND THE LANDSCAPE.

By Robert L. Zion. Both magnificent and useful. Covers virtually everything an architect should know about trees to complement buildings he designs – tree height, spread, leaf and bark texture, spring and autumn coloration, density of foliage – as well as cost considerations, planting, maintenance, rate of growth, city and seashore recommendations, and a state-by-state listing of native trees. *168 pages, $25.00*

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Edited by John B. Bonny and Joseph P. Frein. Twenty-five contributing authors, all associated with various aspects of the construction industry, have written this treasure of up-to-date practices for organizing and operating all phases of a construction business. Covering every facet of construction management from site investigation to contract completion and settlement, these outstanding authorities explain what it really takes to assure success and minimize the possibility of failure in today's highly competitive construction industry. *704 pages, $32.50*

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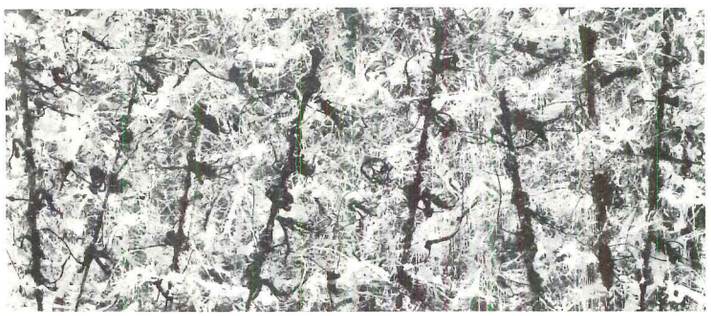

Blue Poles

A couple of months ago, the international art market started behaving like the stock market, only worse.

It all began with the purchase, by the Australian Government, of Jackson Pollock's 1953 painting, *Blue Poles,* which is to be installed in Canberra's National Gallery. The Gallery's Director, Jim Mollison, paid a cool $2 million for the painting, which enabled *Blue Poles'* (ex-)owner, the art collector Ben Heller, to turn around and buy Jasper Johns' *Double White Map* a couple of weeks later from taxi fleet owner (and also art collector) Robert Scull for $240,000. (Scull had bought it from Johns for less than 5 per cent of that . . .) Nobody except Ben Heller knows what Heller plans to do with the remaining $1.76 million, but the art market is quivering in anticipation.

Blue Poles is a terrific painting, as visitors to *Washington's* National Gallery could see when that establishment opened one of its cosmic shows late in October. But it is not quite as terrific as some other Pollocks of the same general period—especially one that was and is reputedly for sale for around $1.2 million. (Mollison, however, is believed to have about $3 million left for fiscal '73/'74, so all is not lost—he can always sell *Blue Poles* to the Japanese, if necessary.)

The Robert Sculls' collection—or, rather, a somewhat second-rate portion of it—was auctioned off in mid-October for a total of $2.25 million at Manhattan's Sotheby Parke Bernet, while some of "Scull's Angels" (his allegedly underpaid cab drivers) picketed outside. Some of the artists who *ought* to have picketed, if only because they are even more underpaid than cab drivers, mingled with the fashionable crowd inside. There were closed circuit TV screens, paparazzi, flashbulbs, and everybody was trying to figure out who, among the lesser-known bidders, was fronting for Australians, Japanese, Germans, or merely Texans.

These events are very nice, like Miss America Pageants, and it is fitting that Johns, the flag-painter, won the crown. These events also tend to enhance the market value of De Koonings, Motherwells, Rauschenbergs and Warhols—which is good for these artists, though not quite so good for other artists of possibly comparable quality whose works are not usually traded on Madison Avenue. It is also nice to know that Jackson Pollock, in his grave out in The Springs, Long Island, is helping President Nixon to improve the U.S. balance of trade, and prop up the U.S. dollar—a piece of printed matter which somehow eluded him through most of his life.

Since everybody, nowadays (including some people Jackson wouldn't have recognized in a police line-up) writes books about his or her intimate friendship with him, I am reluctant to talk about Jackson—perhaps because he really *was* a very close friend. This was before MOMA, before Heller, before Sotheby Parke Bernet. It was when, for example, Jackson and Lee Krasner, his artist-wife, had to bicycle through the bitter cold in The Springs to get the groceries, because they didn't have the money to buy

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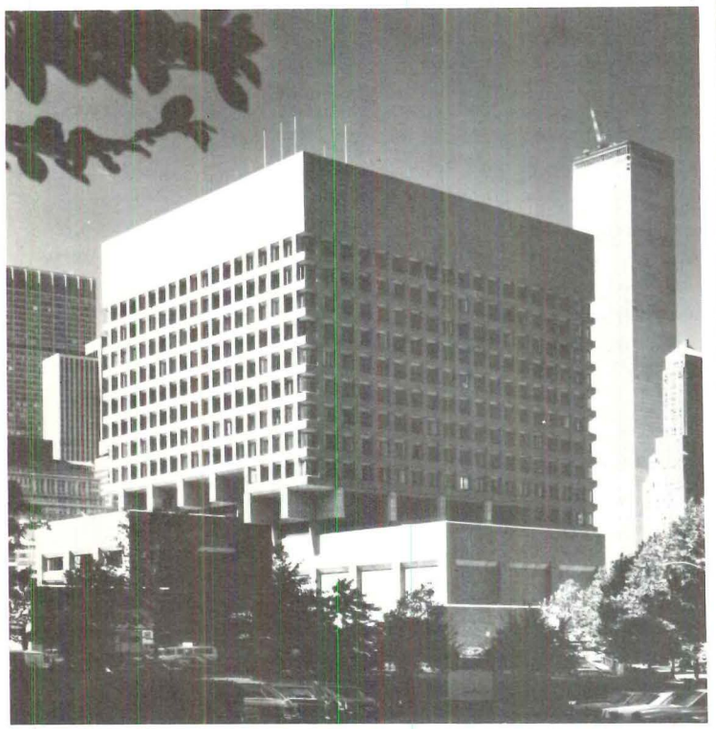
Many of the news reports and comments are from our regular field editors: John Donat (London), Gilles de Bure (Paris), Detlef Schreiber (Munich), Vanna Becciani (Milan), Charles Correa (Bombay), Patricia Boyd and Neil Clerehan (Melbourne), Yasuo Uesaka (Tokyo), and Leonardo Aizenberg (Buenos Aires). Plus correspondents are identified by their initials; other contributors by their full names. The remainder is contributed by our New York staff.

another jalopy after the first one died. (They sometimes paid Dan Miller, who owned the local General Store, with paintings.) Jesus Christ—what Jackson could have done with Two Million Bucks! He might have bought the entire Atlantic Ocean! And he certainly could have afforded a cab ride in one of Bob Scull's taxis when the north wind was so cold it sliced you and your bike apart.

Well, no such luck. He wasn't so poor when he died in 1956; he was rather rich, in fact, because—unlike those who have profited considerably from his very lonely acts of courage in that shingled studio on Accabonac Harbor—unlike them, he laid it all on the line.—PETER BLAKE.



New York City Police Headquarters

Gruzen's Corners

With the completion of the Police Headquarters for New York City in Lower Manhattan, the urban design goals of Gruzen and Partners there begin to come into sharp focus. Within an area smaller than some football stadiums, the firm has done seven major buildings. Beginning with Chatham Green Apartments, completed in 1963, the firm has designed Chatham Towers Apartments, the Police Headquarters, two annexes to the Federal Courthouse and a new commercial high school, the latter three still under construction. Also nearby is the Bache & Co. building and several housing groups.

All of this work has been fitted into an already tightly-developed area so that it is not immediately obvious that so much new construction has occurred. That is the triumph for the architects. Instead of the empty and monumental plazas now found in other cities around new public buildings, New York will have a dense, rich urban fabric when these are complete.

In the case of the Police Headquarters, the relationship to existing conditions is especially masterful. Above a spaghetti-like web of service roads connecting the building to the Brooklyn Bridge, FDR Drive and city streets, a serene plaza designed by M. Paul Friedberg and Associates effects an axial tie to the rest of the City Hall area. Its cubical red brick mass neatly closes the vista when seen through the arches of the Municipal Building by McKim, Mead and White (above).

In addition to the urban design accomplishment, the Gruzen firm has been lauded for its commitment to completion of its projects for the city. Operating within what is perhaps the most elaborate municipal bureaucracy in the United States, the architects have been involved in the police building commission since 1956. In those seventeen years, many different police officials and mayors have been involved with only the architects continuing for the entire period. From retiring mayor John V. Lindsay, the project had top priority his entire tenure and upon its completion, B. Sumner Gruzen said, "This structure is really a success story for the city; proof that dedication and perseverance can still bring distinguished architecture out of a bureaucracy."—J.M.

Wohnungsbau

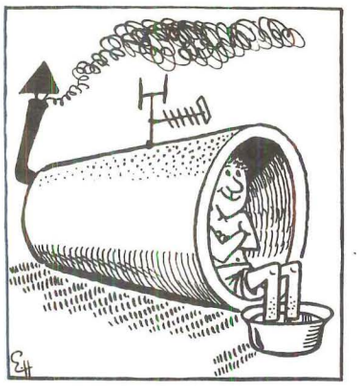
Homebuilding in West Germany is growing at a fast clip: last year, 630,000 new residential units were constructed in the Bonn Republic; and the stock of residential units has increased from 10 million in 1950, to more than 22 million today. Almost all of these units have a bath, 98 percent are heated, and, in 1972, one third of all units constructed were subsidized for families with lower incomes. Current projections suggest that a minimum of 500,000 units must be constructed in the Republic, annually, to take care of replacement of dilapidated housing as well as normal population growth.

One factor that has enabled West Germany to meet and exceed its annual quotas in housing production is the increasing use of prefabrication. Every eighth single-family house is now being constructed of prefabricated components. In 1972 alone, 57,000 residential units (in houses as well as apartments) were largely prefabbed—a growth-rate of 26 percent in prefabrication over the previous year.

A concrete example

George Izenour says that the Edwin J. Thomas Performing Arts Hall at the University of Akron (Ohio) is "the most flexible building of its type in the world." That's because Izenour, the world's leading proponent of the mechanized theater has had a chance to design, not only his usual backstage electronic extravaganza but a vast movable ceiling that reduces the auditorium size from 3000 seats to either 2400 or 900 seats in a few minutes. In other words, both sides of the footlights can be manipulated to provide flexibility that would otherwise require three or more single-purpose halls.

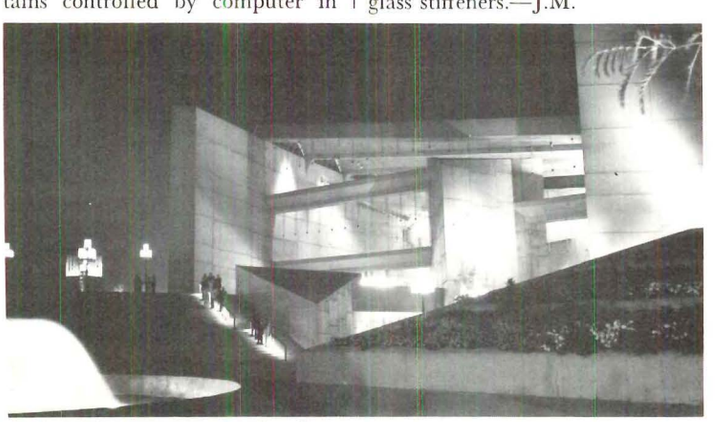
Working with Vern O. Knudsen the acoustician, Izenour has developed a space that supposedly can accommodate performances of Beethoven's Ninth Symphony and puppet shows with equal ease. A series of 38 sound-absorptive curtains controlled by computer in conjunction with the ceiling's 3800 sound-dampening steel panels, varies the reverberation period of the room to suit the performers' needs. The 27 chrome-plated counterweights for the ceiling hang as sculpture in the lobby.



An architectural consortium of Caudill, Rowlett and Scott, Houston; and Dalton, Van Dijk, Johnson and Partners, Cleveland have enclosed this masterpiece of theatrical flexibility with a monsterpiece of inflexible concrete that stands between downtown Akron and the campus like a fortress on the Maginot Line.

Citing sound and vibration from an adjacent railroad yard as their excuse, the architects have placed an enormous poured concrete wall, 90 feet high, 8 feet thick and 585 feet long (16,000 cubic yards), between it and the new auditorium.

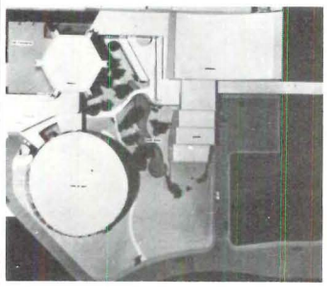
The glazed sidewalls (below) use butted glass sheets manufactured in England—an interesting piece of internationalism for a state that is one of the major producers of window glass in the United States. In order to avoid mullions, which at this scale would weaken the visual clarity of the concrete structure, the architects specified a structural glass wall system. At the time the building was being bid, explains Charles E. Lawrence, CRS Executive Vice-President, such systems could only be obtained abroad. With the system used, pieces of quarter-inch tempered plate glass are hung by steel brackets, one below the other. The top piece is then braced by glass stiffeners.—J.M.



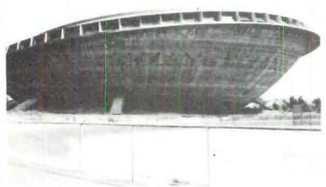
Edwin J. Thomas Performing Arts Hall, University of Akron

Sporting scene

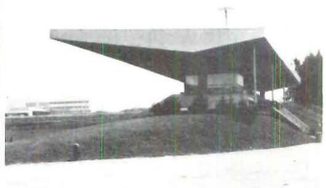
What does a Minister of Sports do? Push-ups? Not in France, he doesn't, or not exclusively, anyway. The French Ministry of Sports has been busy, over the past two years or so, covering the country with stadiums, enclosed swimming pools, gymnasiums, and other facilities that are believed to encourage exercise. The architecture of these new facilities, while not uniformly impressive, suggests that there was certainly enough good will in the government departments involved, and that the failure may have been in the architects' response. In any event, here are samples of the latest crop of Sports Centers, from all over France.—G. de B.



Agora d'Evry

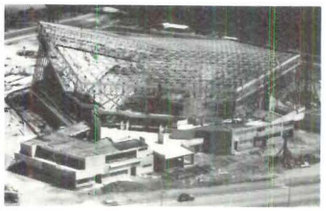


Grand Marais Saint-Nazaire



Pierre de Coubertin a Vittel

La Piscine Tournesol



L'île Beaulieu a Nantes

Day at the opera

If there has ever been anything quite like Australia's Sydney Opera House, there certainly has never been anything quite like its official opening on October 20. It was a mixture of grandeur, kitsch comedy and straight-out vulgarity. It was organized by a public relations consultant, Sir Asher Joel, famous for his staging of the Captain Cook Bi-Centenary in 1972.

This year Sir Asher re-used the aboriginal motifs: A black actor, complete with warpaint and lap-lap, appeared at the peak of the highest "sail" of the Opera House, and spoke about his people; reminding an estimated five million white Australians that the Bennelong Point site had been famous once before—for the meeting of the first white settlers and a friendly black—Bennelong (who later went to London and died an alcoholic).

The impersonation had been pre-recorded; but even with the help of two television monitors the synchronization was faulty—what with a 40-knot gale, vertigo and the drama of the occasion.

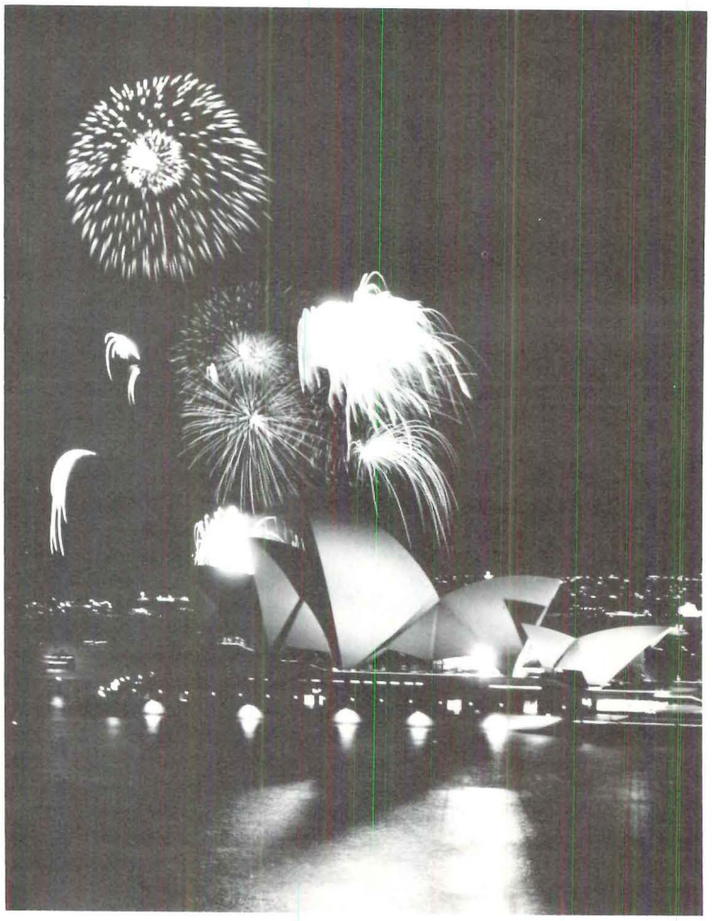
All four Sydney daily papers, the one national newspaper and two of Melbourne's four dailies, produced special supplements devoted to the Opera House in four color offset and gravure. Never was a building more praised, and much of the reporting consisted of serious architectural criticism. Architect Jørn Utzon's original idea was lauded. The handsome, idealistic, "inexperienced" architect was given full credit for his part in circumstances few architects could have handled successfully.

Queen Elizabeth II, newly entitled "Queen of Australia" by the nation's Federal Labour Government, opened the building with a few words—and Sydney went mad for 24 hours and became the only major city in the world to have a great modern building as its symbol.

After the F-111 fly-past (spelling out E.R. for Elizabeth Regina), the balloons, the fireworks and Beethoven, Australia had its biggest lesson in architecture and building economics (the Opera House, even in revalued Australian dollars cost $25 million more than New York's entire Lincoln Center).

The Queen's formal inspection was on Saturday afternoon but, wanting to see more, she walked on Sunday from Government House with her husband and, unattended, went with thousands of other visitors around the harbor-level terraces, through the four halls and then walked home across the Botanic Gardens. Security forces were in an uproar.

The Federal President of the RAIA, Peter McIntyre, couldn't get from Melbourne up to the opening to represent the profession. A pity, because he would have worn his official sign of office—a handsome eight-year-old silver chain made by and presented to the Institute by a one time member of the New South Wales Chapter—Jørn Utzon.—N.C.



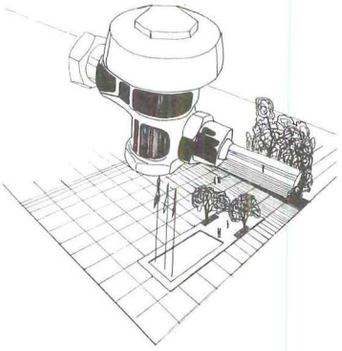
And Sydney went mad for 24 hours

A+ to two more minuses

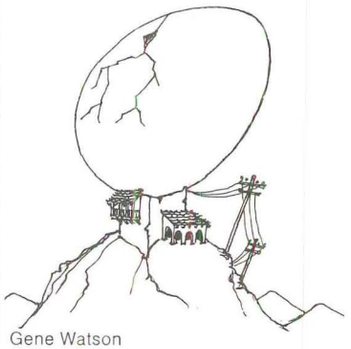
Here are two late entries to the first Architecture Minus competition: a gigantic hollow egg from Chicago, and five student proposals from the University of Florida (this last, the result of a one-week sketch problem given to fourth year architecture students, reports Lance J. Hawkinson, Assistant Professor).

Shown here is one of the student projects. Luis A. Falcon was the designer. There really is a Nixon library behind all that flushing mechanism: reading room, auditorium and museum. (Honorable mention and thanks to fellow students Blackiston, Dunlap, Hamm and Rodriguez.)

The egg, suggests its designer Gene Watson of North Architectonics in Chicago, is meant to symbolize "the greatest ever laid by any administration" and "the ultimate victory of wisdom (egg-heads, nattering nabobs) over phony California Missionary conservatism." Watson specifies "thin shell foam plastic construction with nothing inside (maybe just a Justice Department notice of receipt of the tapes)." The base or "shaft" would be of solid papier mache "produced from the original White House shredding machine." Watson continues: "Entrances would be totally false and, in fact, unnecessary." Services would include "direct telephone lines from ITT piping in various denial speeches with occasional attacks on the press and the Justice Department."



Luis A. Falcon



Gene Watson

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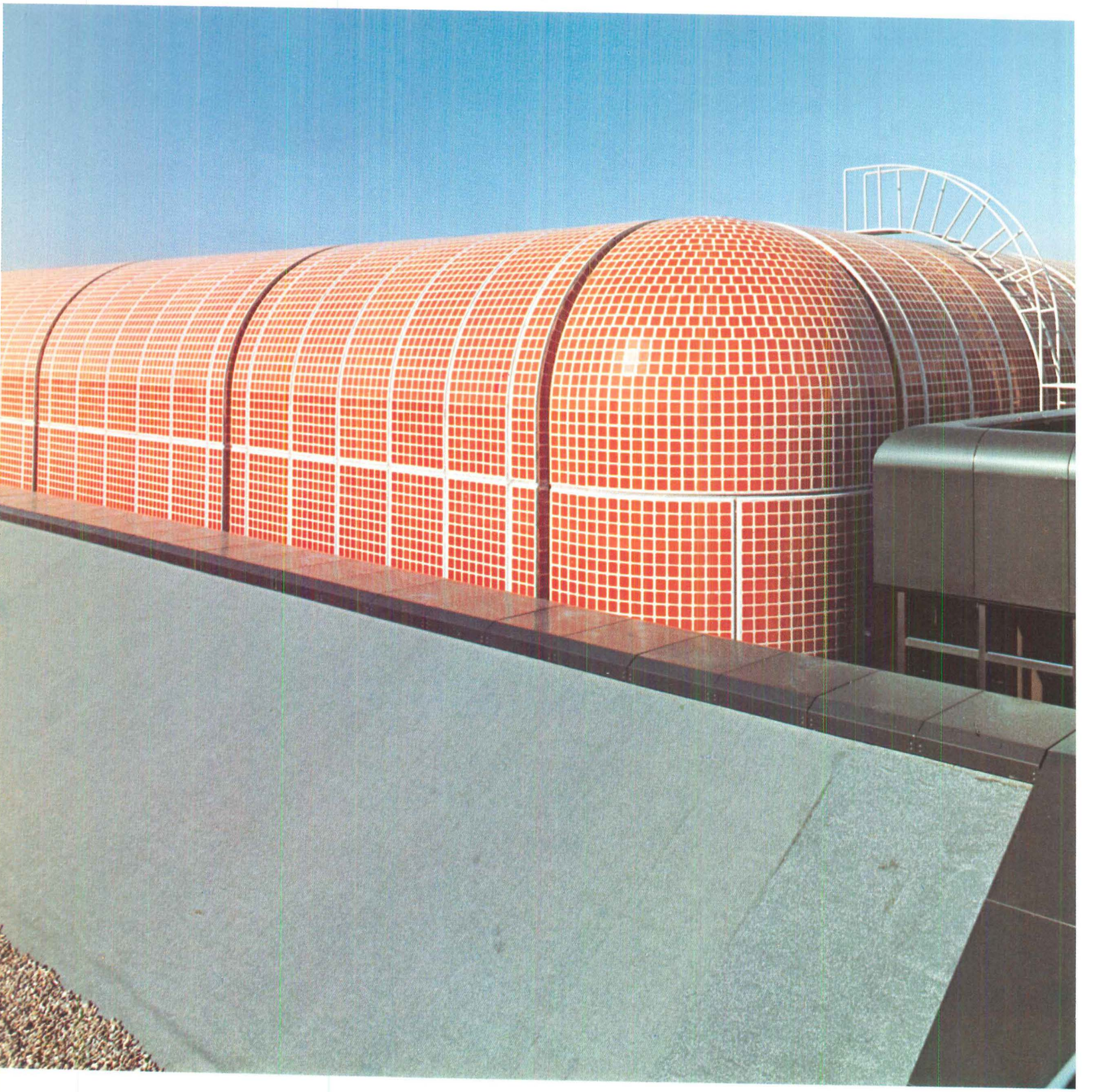


Computers under a tile bonnet

On Amsterdam's bland modern skyline, this bright new building stands out and delights

"Change, complexity, participation, equality of individual rights—these words characterize our times and perhaps the future. But the most important one, to me, is 'equality of individual rights.' Personally, I agree with the poet Robert Frost: 'Everybody is born free and equal—free at least in his right to be different.'" That was the way architect Jacob Bakema summed up his humanistic concerns when he spoke at the dedication of this computer center for the Amsterdam-Rotterdam Bank recently.

The ideas and work of Bakema and his partner, J. H. van den Broek, who have been practicing architecture together in Holland since 1948, are not very well-known in the United States. Yet as one of the founders of Team Ten, which grew out of CIAM almost twenty years ago, he has had an enormous influence on those interested in architecture as it relates to change.

The new computer center exemplifies much of Bakema's thought about building for change and growth. It is located in the suburb of Amstelveen, between the Schipol Airport and Amsterdam itself. A conjunction of elevated highways, nearby high-rise apartment buildings and the airport glidepaths inspired the red-orange Delft tile roof above the large computer hall.

For Bakema, the roof also expresses the central activity of the building itself. The other, subordinate forms are necessary to assist the computers' functioning. "It is as in life," says Bakema of the structure's organization, "in which everything has significance, but which is placed (when all is in order) into commonly agreed-upon hierarchies." For him this relationship of elements, with the central space visually dominant, gives the building an organic quality which will allow it to expand without compromising either its convenience for those who work there or its esthetic expression of expandability.

In a structure like this, says Bakema, changes in the program can occur between the time foundations are poured and the roof is completed. Thus his office made use of a system it calls the *boite spatiale* or the "space box." With this method, somewhat like the axonometric system of drawing used by many English architects, it is easy to see how physical modifications necessitated by program changes will modify the three-dimensional or design quality of the building, even after construction has begun. For such a system to work when construction deadlines are tight as they were in this case, cooperation between all members of the group involved in the project—contractor, design team and client—is essential.

Bakema and Team Ten

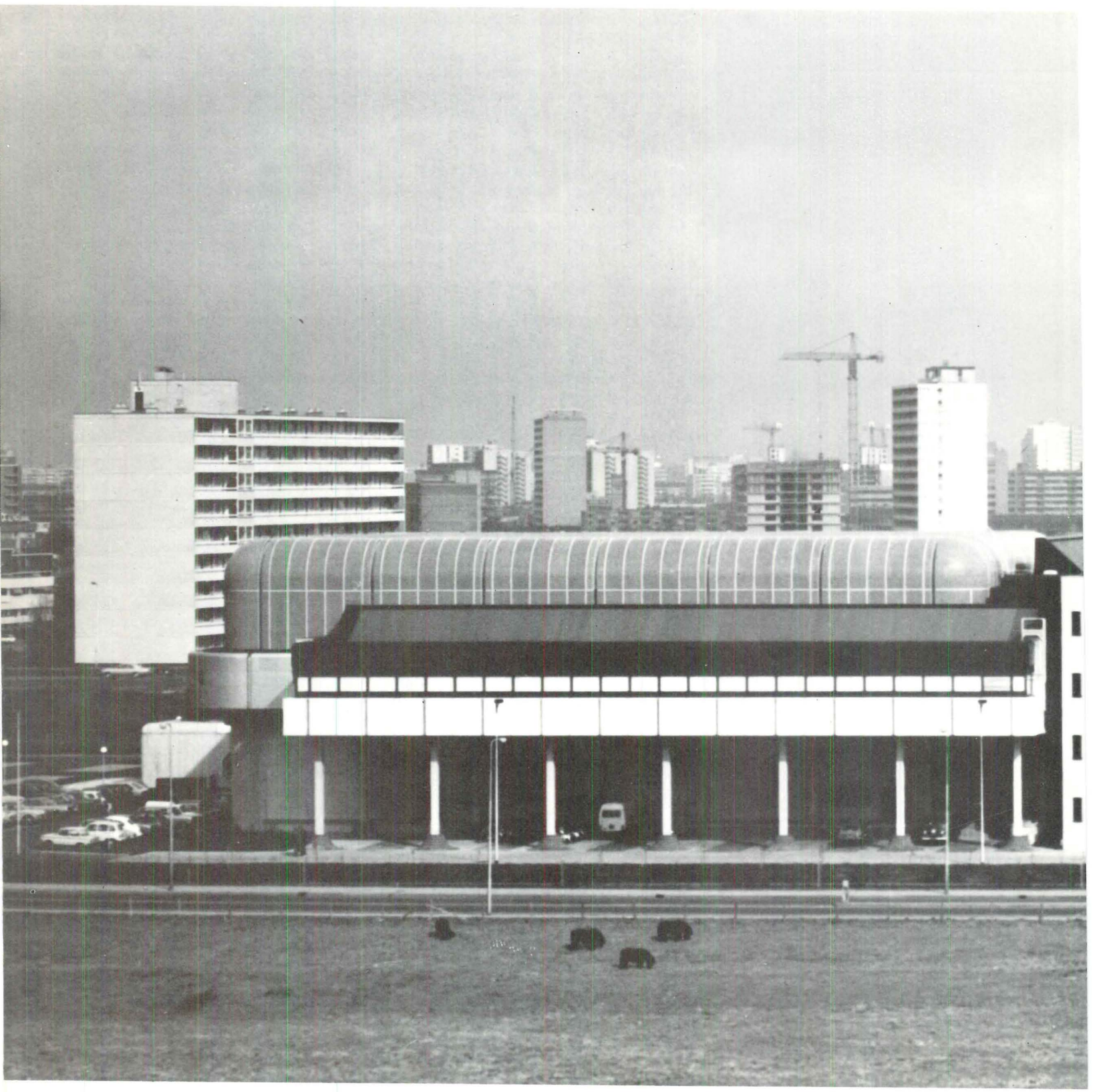
Concern for human welfare in particular circumstances, such as a computer center, rather than heroic abstractions, is what distinguishes Team Ten from the group out of whose ashes it has grown, the Congrès Internationaux d'Architecture Moderne. The history of its development began after World War II. In 1947, CIAM VI was held in England as a great reunion, twelve years after the previous meeting. During that hiatus, *The Athens Charter,* which had been drawn up at CIAM IV in 1933 as the position paper on town planning of the group, had become in Reyner Banham's words, "the established dogma of progressive town planning." It was the proposals of *The Athens Charter,* with emphasis on high-rise urban housing in green belts that led to the disaster of Pruitt-Igoe and other public housing concentrations in the U.S.

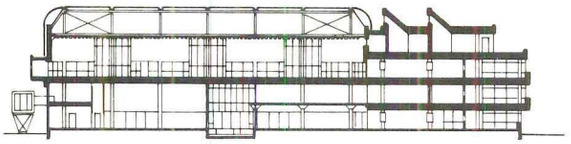
But at the same time that such thinking was taking hold on an official level, younger European architects came back from the war with grave doubts about CIAM's abstractions. It was a group of these, members of the committee charged with preparing for CIAM X, who rebelled "against the large-scale generalizations of the Athenian tradition," says Banham, "and set up the personal, the particular and the precise," as the criteria for future action.

In its charge to CIAM X (1956), the radical members of Team Ten, Bakema, Georges Candilis, Peter and Alison Smithson, Aldo van Eyck, W. G. Howell and John Voelcker said, "CIAM X must make it clear that we, as architects, accept the responsibility for the creation of order through form . . . the responsibility for each act of creation, however small."

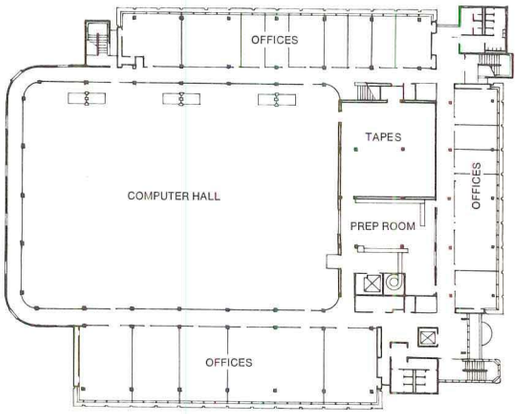
In short, Team Ten began by re-emphasizing the humanistic sources of architecture and town planning. *The Team Ten Primer,* edited by Alison Smithson (MIT Press, 1968), is an excellent sourcebook for understanding their position. It also makes clear that Jacob Bakema has consistently striven to maximize, within his own ideological framework, that concern for humanity: "Each man has the right to be in

The hierarchical organization of the computer center is as clear when it is seen in its suburban context as it is in plan and section. Clustered around the clear-span computer hall are three blocks of offices and other ancillary functions. Behind the principal structure (first stage of an expandable scheme) is the mechanical equipment building whose umbilical connection to it will permit various modes of expansion. But no matter how the complex grows, the computer room roof of glowing red-orange Delft tiles will always dominate the composition of volumes.

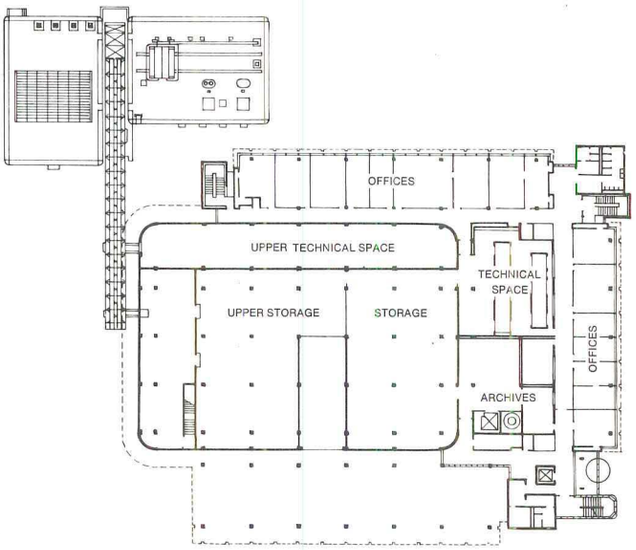




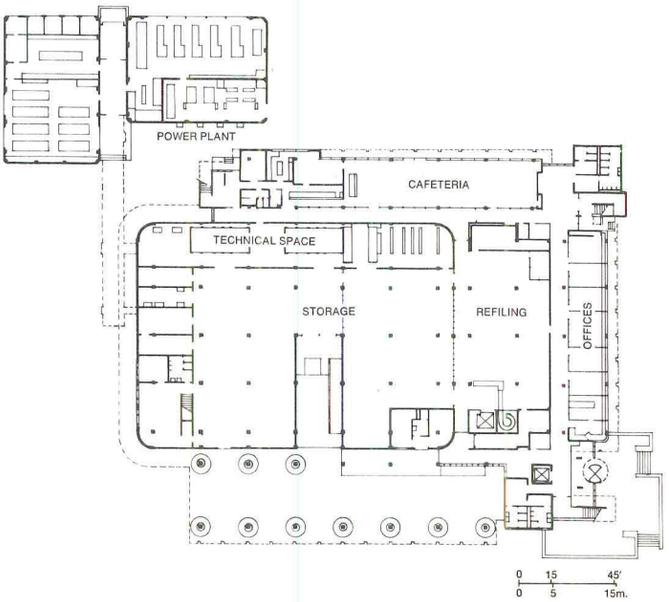
SECTION



THIRD FLOOR



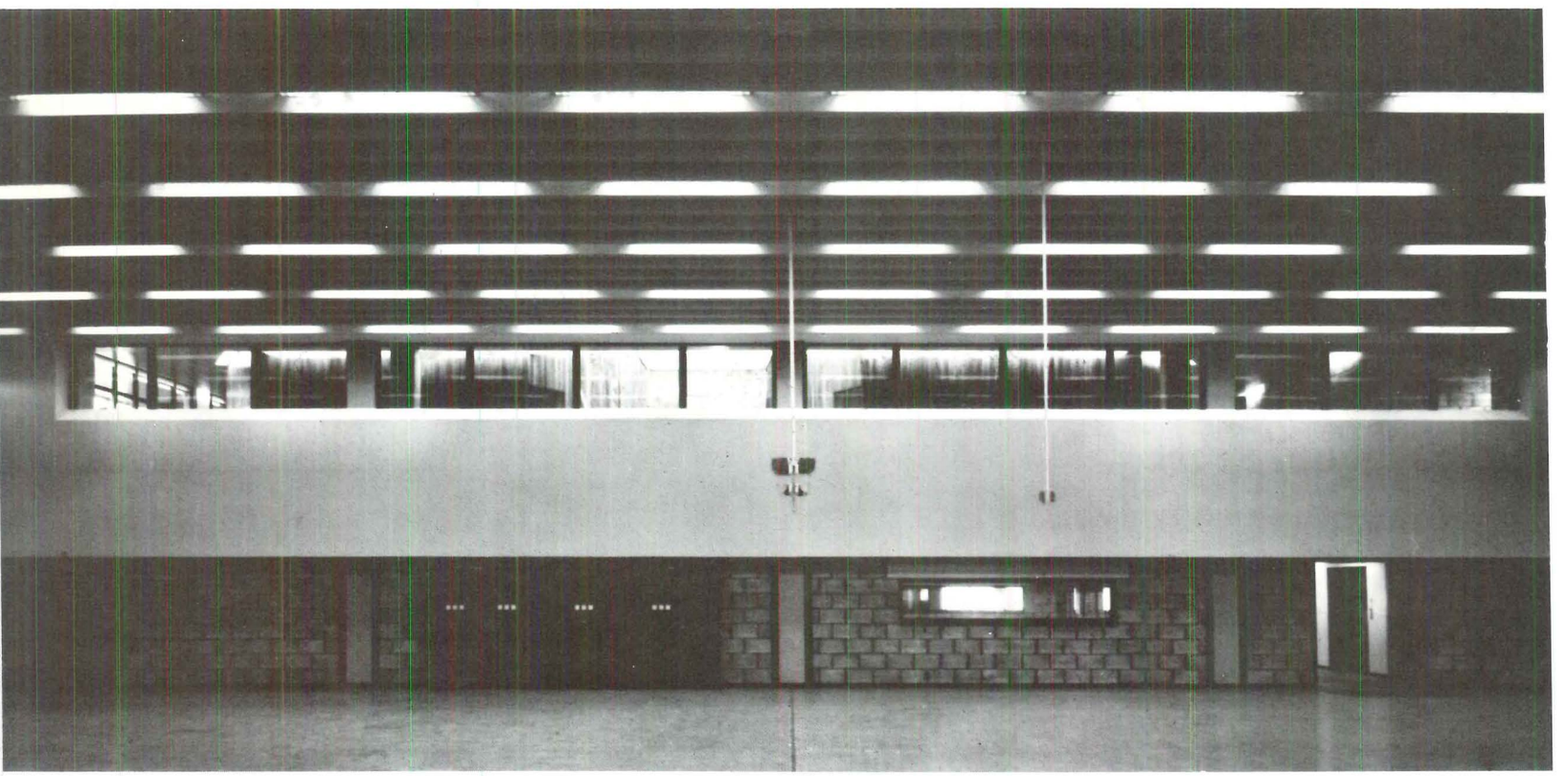
SECOND FLOOR

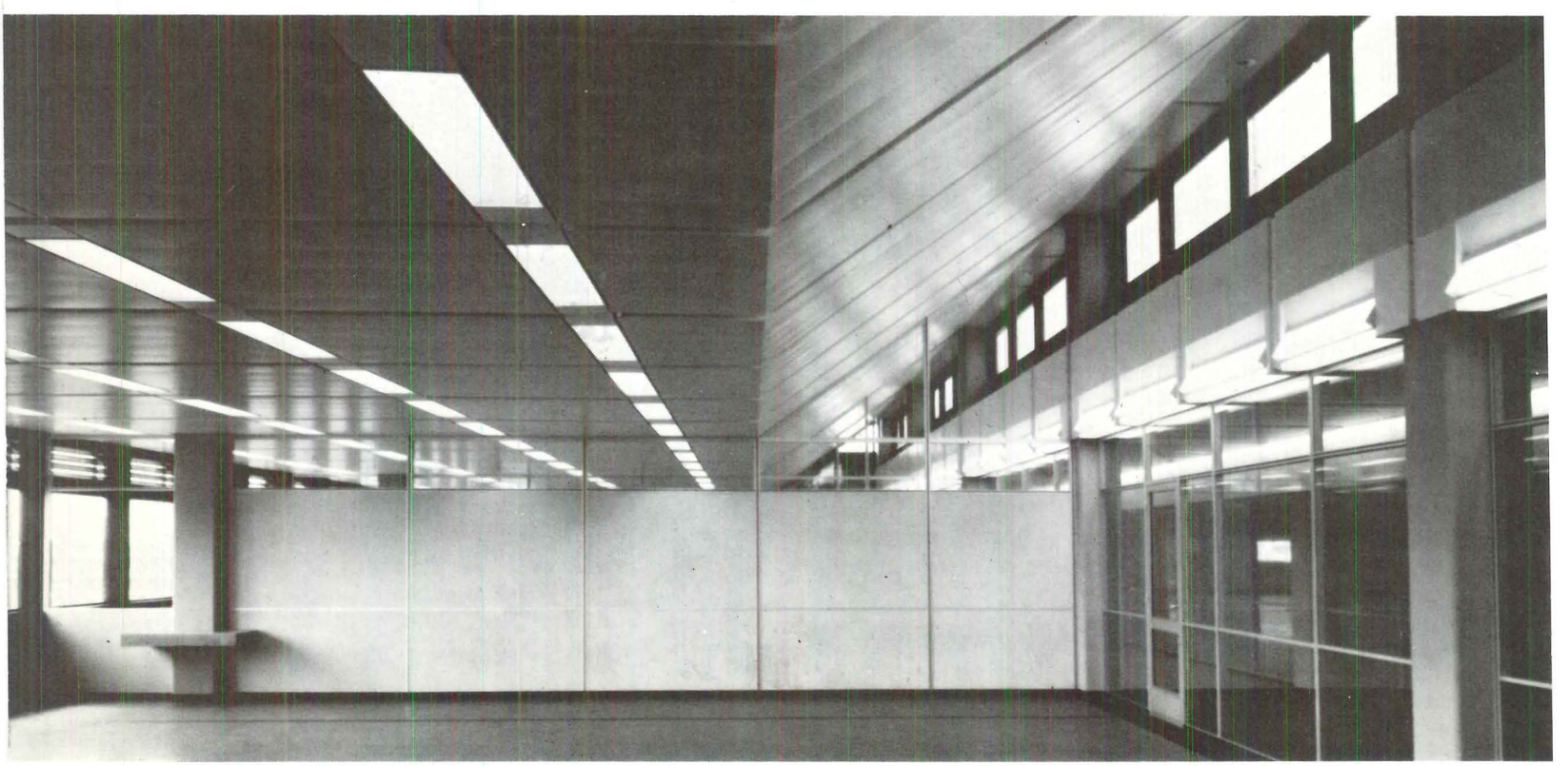


FIRST FLOOR

Although the prefabricated panels of red tile dominate visually, a number of other materials were used, as necessary, to facilitate the fast construction of the center (16 months). Poured-in-place concrete was used for all elements coming out of the ground. The office blocks were faced with white tile and were capped with curving fascias of black anodized aluminum. An exterior passage around the computer room is enclosed in natural-finish aluminum panels. The passage connecting the mechanical equipment facilities to the main building is clad in blue aluminum panels.

Interior spaces vary in size from individual offices to the 100 x 150-foot computer hall (below), shown before the computer components were installed. From the horizontal band of windows on the mezzanine, bank personnel being trained in computer techniques can look out across the large room and watch others using the equipment. The smaller offices on the top floor of each office block have clerestory windows through which the red tile roof can be seen (bottom). The stairways (opposite) also have windows which reveal the roof and the sky to workers moving from one floor to another within the building.

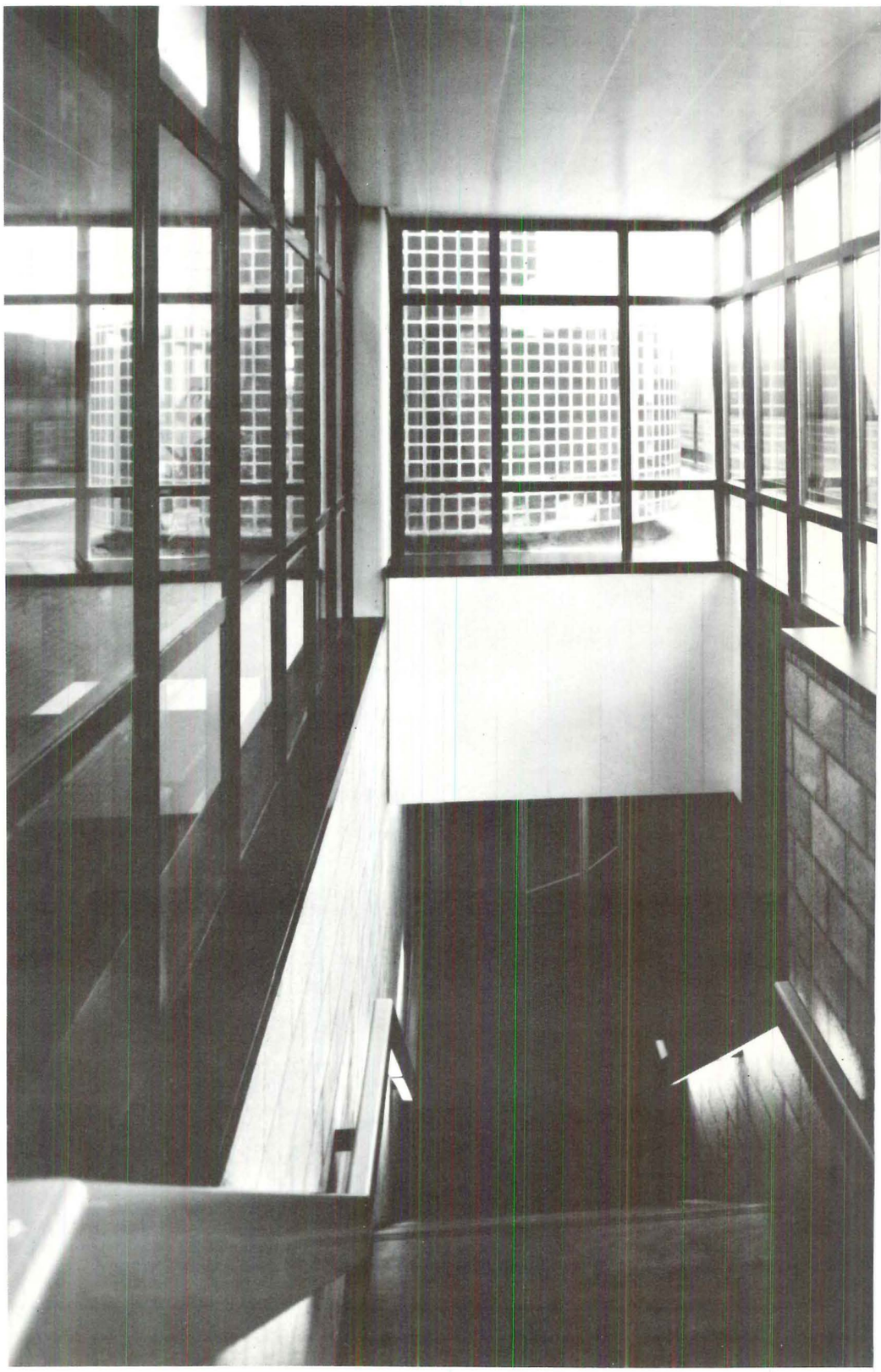




contact with that phenomenon called total life and it is through constructed volume that it may be attained."

The work of van den Broek and Bakema has been recognized for its openness to change and growth and for its awareness of human needs. The first major product of their collaboration was the Lijnbaan, a pedestrian shopping street completed in 1953 as part of the reconstruction of Rotterdam. In its scale and integration of storefronts into a larger whole, it has been a prototype for all the shopping malls that have followed. Another important project of Bakema's office is the Town Hall for Marl, West Germany (1964-69). It is an example of the Team Ten approach, notes Charles Jencks in *Movements in Architecture* that provides, "a greater variety of accommodation which can take into account more complex social structures than the previous CIAM categories. Their Marl Town Hall shows both the same complex articulation and room for expansion which characterized their earlier projects."

It is also possible to see a connection in the work of van den Broek and Bakema, especially in the computer center, with the Japanese Metabolist movement. In each case, the elements of the building are pulled apart in order to convey an expression of sequence and growth. Furthermore the individual forms, not just their components, are made to appear as if prefabricated elsewhere and brought to the site for assembly. Although the upper walls and structure of the Dutch building were prefabricated, the lower portions are poured-in-place concrete. The rounded corners of both the Japanese work and this building emphasize the industrial metaphor. Finally, there is a startling resemblance between the element which connects the mechanical facilities to the computer building and a similar tube in Kenzo Tange's training center for Olivetti in Japan (PLUS, Sept., 1973).



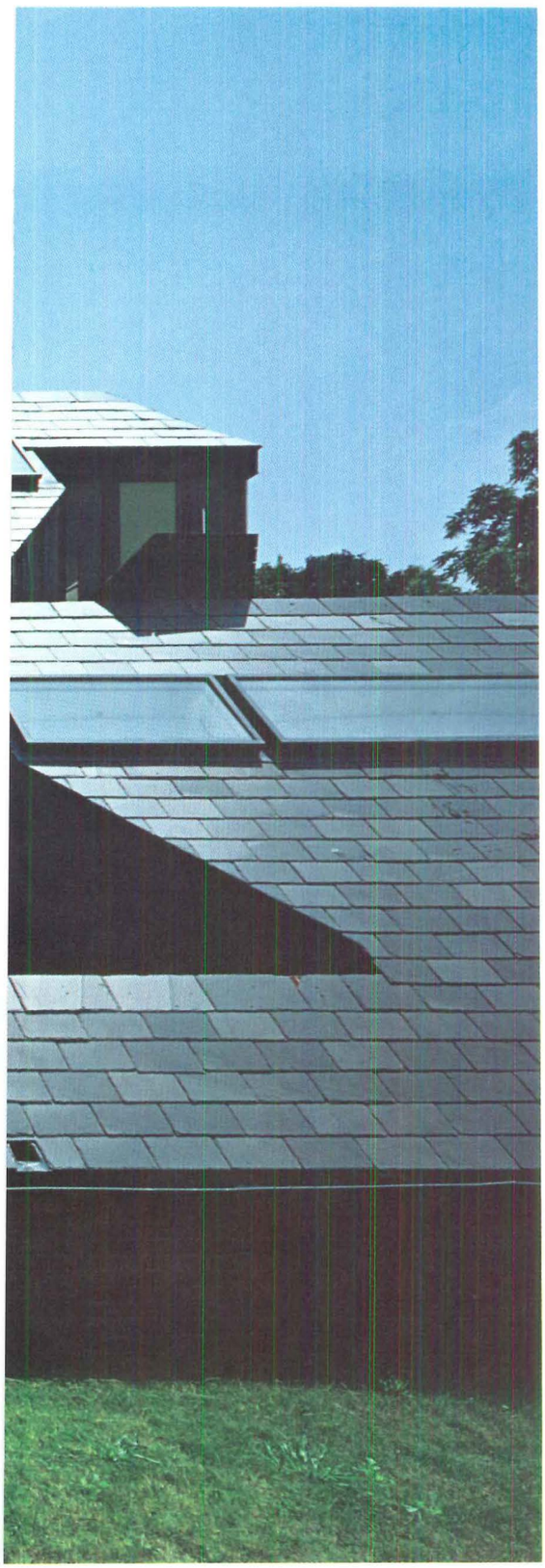
Facts and Figures

AMRO Computer Centrum, Amstelveen-Groenelaan 2, Holland. Owner: Amsterdam-Rotterdam Bank N.V. Architect: Architectengemeenschap van den Broek en Bakema. Associate-in-charge: Ir. J. Boot. Engineers: Aronsohn N.V. (structural); Nagtglas Versteeg N.V. (mechanical); Valstar/Simonis b.v. (electrical). Consultants: Ir. V.M.A. Peutz N.V. (acoustics); Twijnstra en Gudde (organization). General contractor: Bataafse Aanneming Mij. Floor area: 113,500 sq. ft. Photographs: Vrijhof & Co.

Building Suppliers listed on page 77.

Zig-zag dorm

Girls' dormitory in Washington, D. C., is a building of many images.



We've all seen houses said to have a Queen Anne front and a Mary Ann back, and this dormitory by architects George Hartman and Warren Cox is equally as schizophrenic. Intentionally.

Whatever its consequent loss in architectural unity, the building is a clear gain for the unity of its campus (for which Hartman-Cox did a master plan in 1968). Mount Vernon Junior College, in the Georgetown section of Washington, D.C., was begun as Mount Vernon Seminary in 1875. Its campus is small (26 acres), pleasantly wooded and rolling, yet quite open in some places and quite consciously respectful of its suburban residential neighborhood. Except for a small gate house and an AIA award-winning chapel, both also by Hartman-Cox, its buildings are mundane c. 1946 neo-Georgian. Materials everywhere are the same—rosy brick walls, dark blue-black slate roofs—and the new dormitory is no exception. Only the older buildings' white-painted trim is missing; "We just couldn't bring ourselves to that," Cox says.

But there is much more to this building than the quiet brick façade it presents to the old campus. It snuggles into its hillside site in such a way that it appears, from the campus, only two floors high, but this is a deliberate understatement, the entrance level being actually at the middle of the dormitory's three levels. And away from the campus, facing a beautifully wooded valley, the architects have indulged themselves in a quite dramatic and clearly un-Georgian cascade of rooms, each opening to the view with its own small terrace. On these geometrically intricate slopes, only the great expanse of slate roofing and a low band of brick at grade recall the character of the older campus.

But such exterior felicities were not the only concern here. Two considerations determined interior planning: first, the breakdown of the dormitory into intelligibly small units for sixteen girls, twelve in double rooms, four in singles, each unit split into two sub-units which share, at their junction, a common corner lounge. In most units, the corridors widen as they approach these common facilities. A second planning consideration was for accommodating an experimental program of study in which the girls would concentrate on only one subject at a time, attending instruction in seminar rooms in the same building in which they live. Small kitchens are provided for in-house eating, and two rather eccentrically shaped faculty apartments are also included—in all, a mix of facilities promisingly off-beat.

Unfortunately, the promises of these innovations are still largely untested. Designed in 1970, during a period of premature optimism about Mount Vernon's immediate growth, the building has yet to be used exactly as intended.

The dormitory's structure is a system of concrete block bearing walls exposed on the interior and painted white (perhaps a maintenance handicap even for the expected population of demure young ladies), spanned by precast concrete planks. Exterior walls are of block faced with brick.

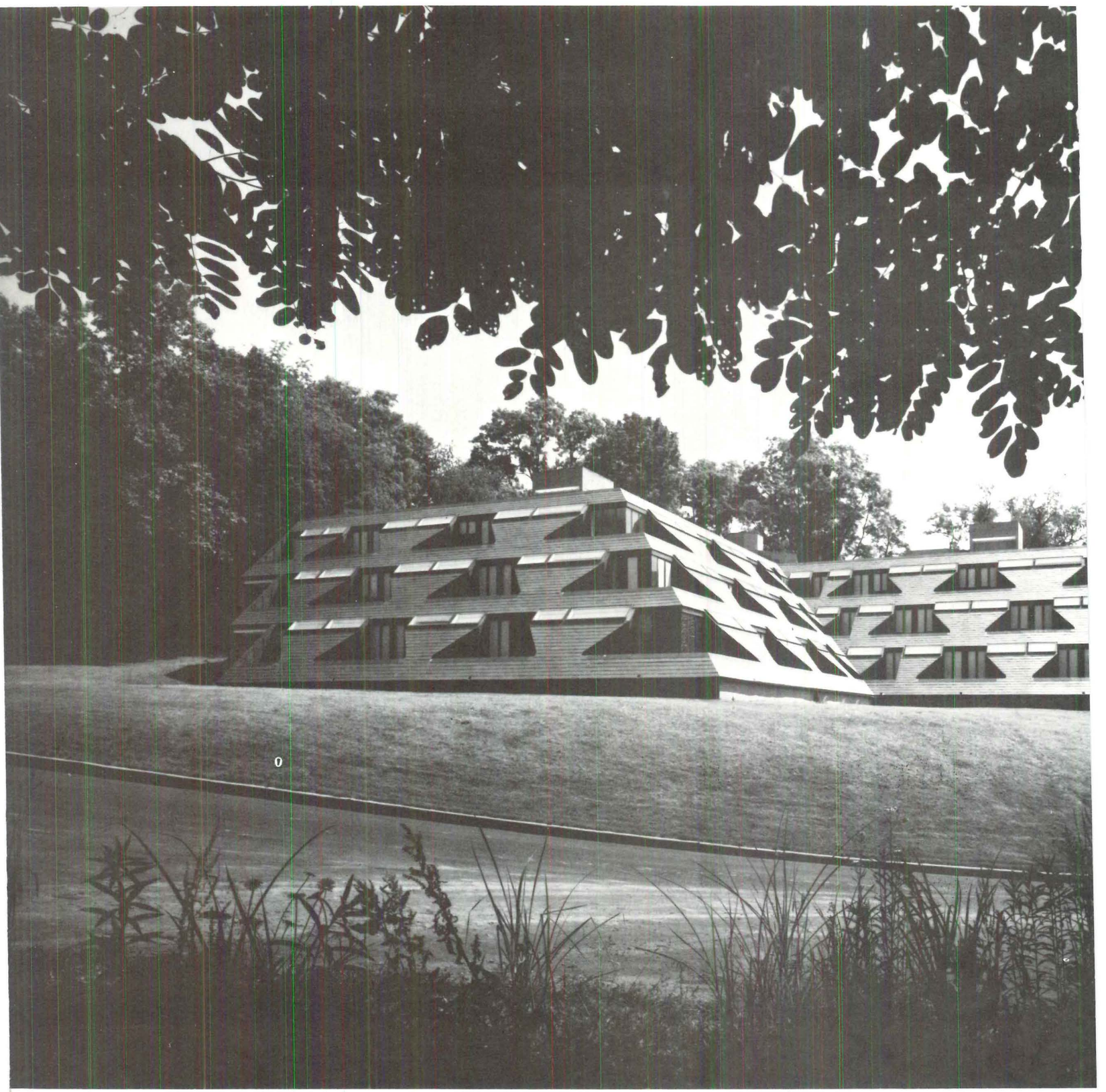
The junctions of this structural system, at forty-five degrees with the entrance façade, have resulted in some curious conditions; generally, they have been skillfullly capitalized on, but they do deny to a visitor the pleasures of comprehending a clear structural organization. Other complications have necessarily arisen from the required circulation system—a network of balconies and stairs to carry male members of the faculty families discreetly to grade without mingling with the girl students, a requirement which now seems a bit ingenuous, if not downright Victorian.

But despite the untested nature of its programming and a few obscurities in its design, Hartman-Cox's dormitory still impresses: where needed, it is reticent; where allowed, it is exciting; in every respect, it is both handsome and appropriate. There aren't many nicer things to be said about a building.—Stanley Abercrombie

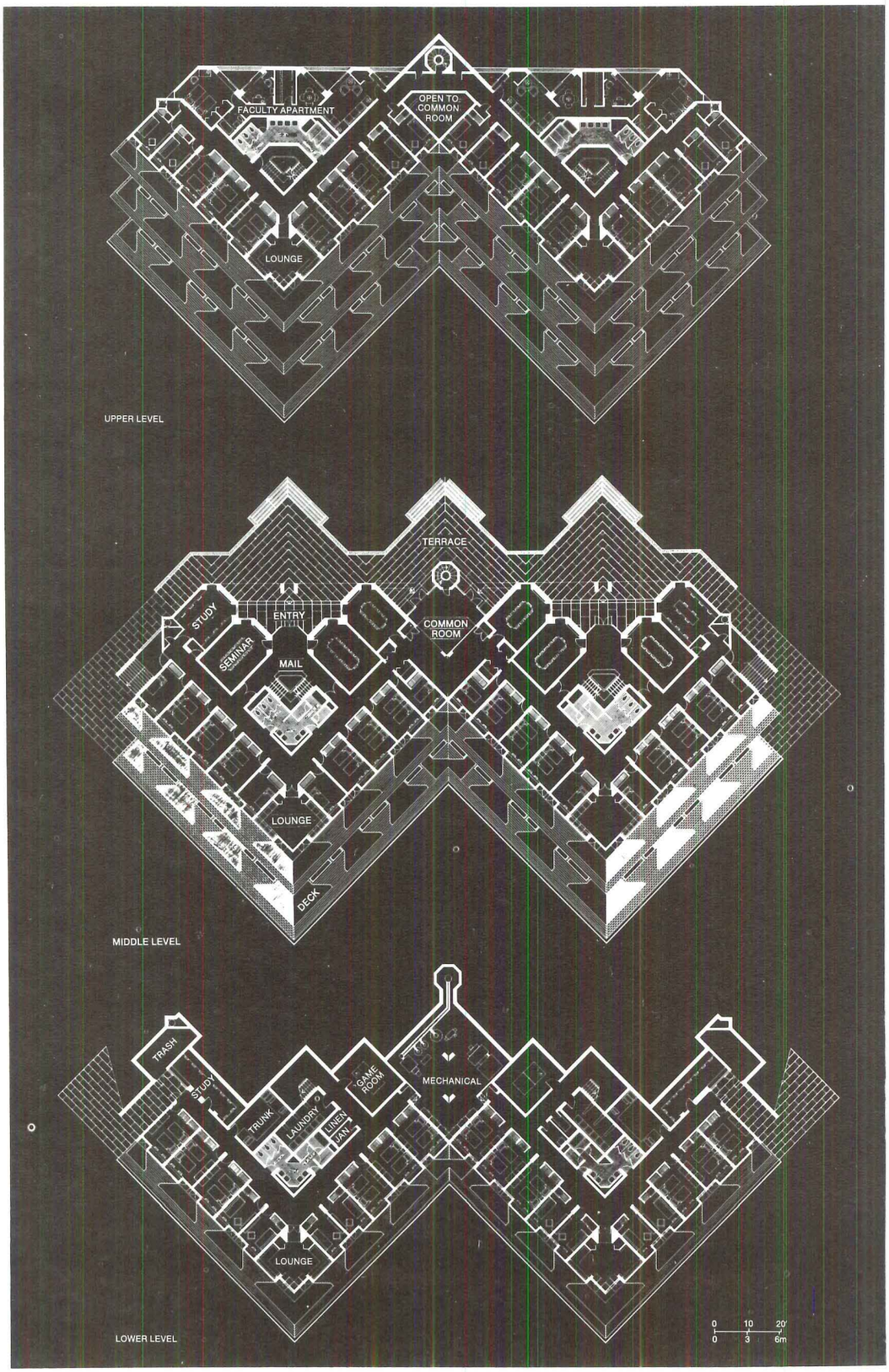
Facts and Figures

Mount Vernon College Dormitory, 2100 Foxhall Road, N.W., Washington, D.C. Owner: Mount Vernon Junior College. Architects: Hartman-Cox. Engineers: Alfred H. Kraas (structural); Smith and Lee-Thorp (mechanical and electrical). Landscape architect: Lester A. Collins. Interior Designers: Hartman-Cox. Contractors: E. A. Baker Co. (general); Arey, Inc. (mechanical); Alexander, Inc. (electrical). Building area: 28,500 sq. ft.; 2,651 sq. m. Construction cost: $783,000. Photographs: pp. 24, 26, and 29, J. Alexander; p. 28, Robert Lautman.

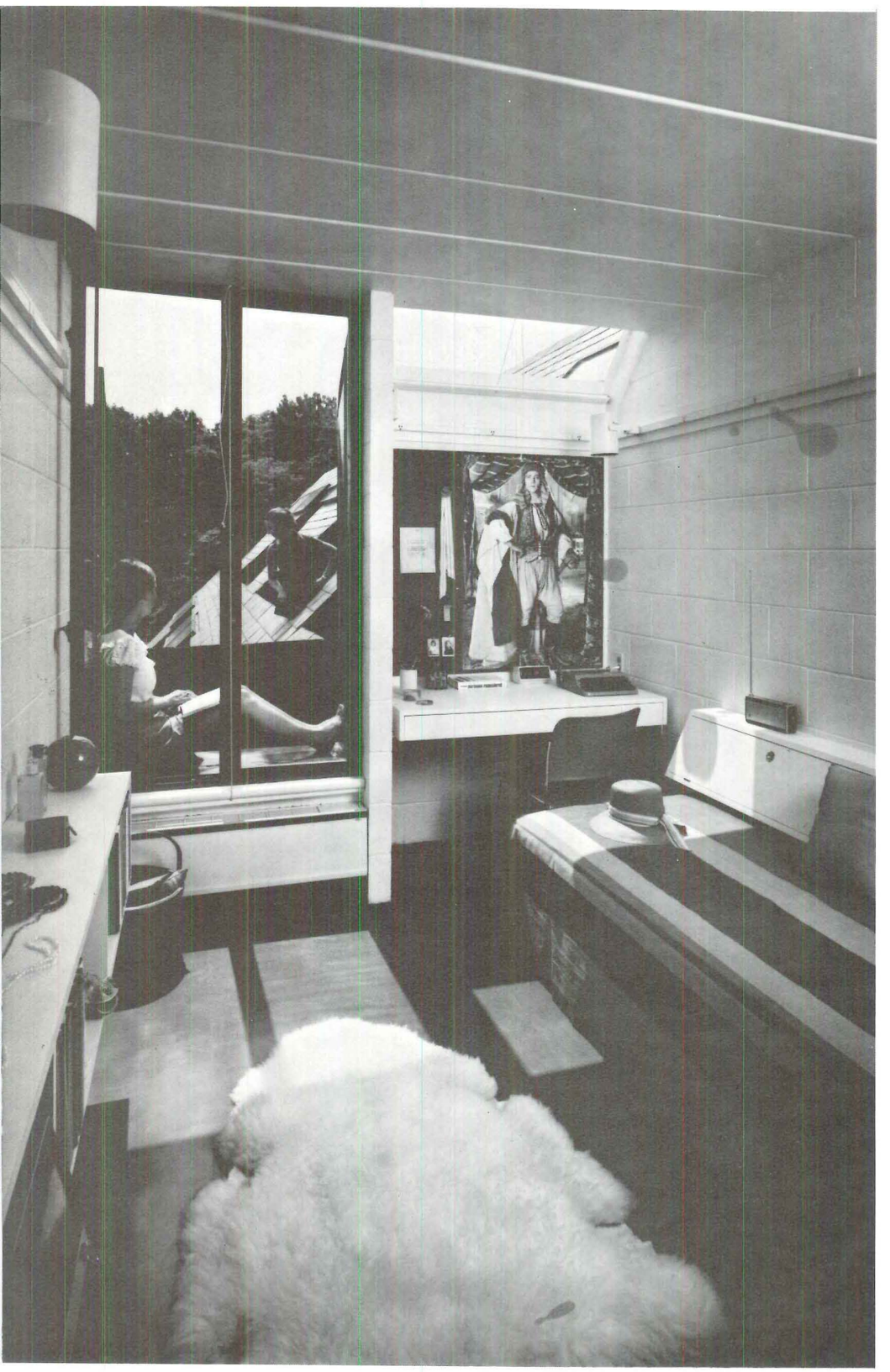
Building suppliers listed on p. 77.

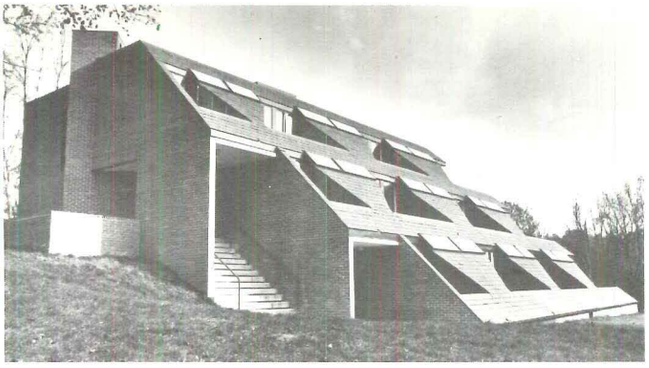


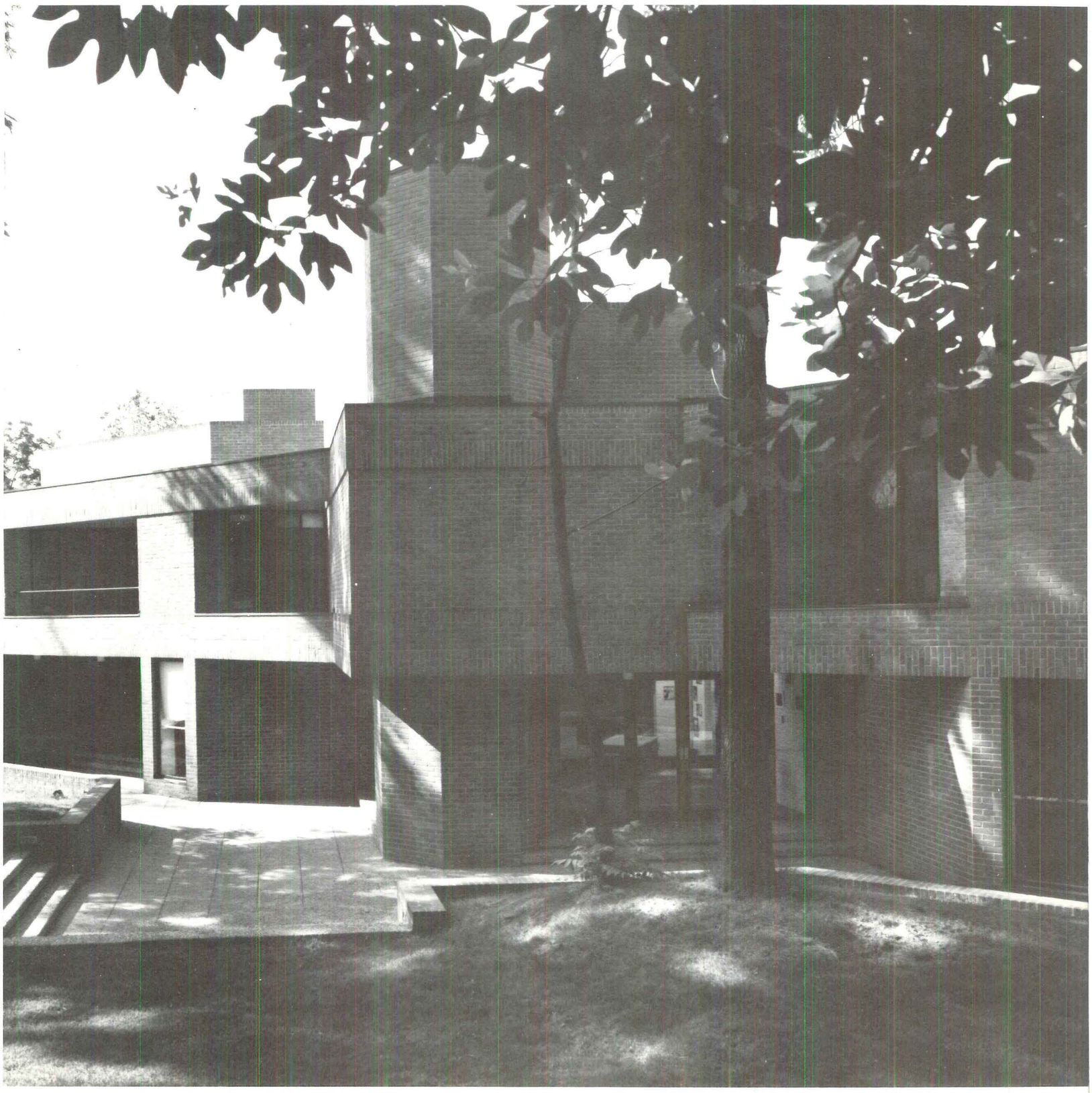
The slate-surfaced pyramids at left are exuberantly picturesque, and yet fit easily and naturally into the hillside. Triangular openings allow for a small roof deck outside each room, and the more generous corner openings give sweeping views of the valley to lounge areas.



Individual rooms, although small, are well equipped with handsome plastic laminate-covered cabinetwork designed by the architects. Each room opens to its own private roof deck. Concrete block bearing walls and concrete plank ceilings are exposed and painted white. Right, above, brick walls on the ends of the building step down the hillside and accomplish the transition between the building's two main faces. Right, below, the serene plane of the campus façade is punctuated only by an octagonal stair tower for private access to the faculty apartments.







The education of women architects

A history of the Cambridge School

By Doris Cole

In the fall of 1915 Henry Atherton Frost, a young instructor at the Harvard School of Architecture, was requested by James Sturgis Pray, then head of the Landscape School at Harvard, to tutor a young woman in architectural drafting—since, of course, it was impossible to allow her to study at Harvard.

Henry Frost wrote with sympathy and humor that "from the middle of October to Christmas-time I met Mr. Pray's young lady two or three afternoons a week in her mother's living room—or did we call it parlor in those days? A card table was set up, the drawing board was hauled out from behind the piano, bright new instruments, T-square, triangles and scale were laid out, and we attacked the classic orders of Vignola, the bible of the architects of the day." But after such an experience, "I had . . . decided that tutoring the Tuscan orders on a teetering card table in a lady's parlor produced a certain sense of unreality . . . and I had told my student that if she wished to continue, it must be at a solid drafting table in my office where I could drop in every day. . . . If I had expected this would end it all, and there is no proof that such was my motive, I sadly misjudged the modern young woman of that day." Not only did this young woman accept enthusiastically, but soon there were five other young women requesting instruction.

Henry Frost and his partner, Bremer Pond, a landscape architect, decided to tutor the five new applicants, but "of course we agreed sternly that this was as far as it would go. We could not let a group of women disrupt our office practice." And so on February 14, 1916, "we had a school and were not aware of it, indeed would have resented the accusation as vigorously as we resented the title of the Frost and Pond Day Nursery conferred upon us by a humorous friend. Indeed the term 'school' found favor with the students before it did with us. They began to refer to it as 'the little school.'" Thus began the Cambridge School of Architecture and Landscape Architecture, the first and only serious architectural school for women in the United States.

Though women were still confined to the domestic, many educational and social changes were going on during those early years of the twentieth century. "We grew up in a period when women were more and more assuming responsibilities outside their homes," wrote Henry Frost. "Their struggle for equal suffrage meant simply to us that they wanted to vote, and we, who

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did not vote if to do so was inconvenient, marvelled at their tenacity." He further explained: "we had no training that helped us to understand that [when founding the Cambridge School] we had quite by chance been caught up in a small eddy of a greater movement in which women were beginning to demand equal educational rights with their brothers."

But the notion of women practicing architecture professionally did not suddenly become an issue in 1915, nor did it preoccupy the minds of women alone. E. C. Gardner, Calvert Vaux, and other men, as well as such women as Harriet Beecher Stowe and Catherine Beecher, had recommended women to the profession of architecture in the nineteenth century, though one must remember the qualification that found women suited for the study of domestic architecture in particular rather than for architecture in general. The great leap from the homely arts to all building types was not even suggested, which is not surprising in light of the nineteenth-century concept of women professionals. This confinement to domestic architecture persisted, without development, even in 1915. That year, when the Cambridge School of Architecture and Landscape Architecture was founded for the education of women, its curriculum was geared for and based upon the firm conviction that women were particularly suited for domestic architecture, and domestic architecture only.

Calvert Vaux found the study of domestic architecture well suited to the feminine nature while, as late as 1928, Henry Frost wrote that "there seemed to be a consensus of opinion that [women]... were best suited to do domestic work." Frost also had his eloquent argument for women in domestic architecture:

The two professions of architecture and landscape architecture are peculiarly adapted to women. They are artistic professions such as appeal to the naturally artistic feminine instinct... the man is likely to be better in monumental design... while the woman student has a tendency towards the more delicate side of design, the more intimate scheme. The woman, again, is likely to have a better sense of color and of detail.

Each man certainly meant these thoughts as liberal compliments to women wanting to educate themselves in the profession of domestic architecture. Extending the feminine domain from home management to home design seemed to them a natural and charming idea. In fact, this idyllic image was abhorred by women architects: in it they saw revealed the difficulties of fully practicing their profession.

Teaching domestic architecture was the objective of Henry Frost and Bremer Pond; it was not the goal of the six women who

Henry Atherton Frost

prevailed upon the liberal ideals of these two men. These women had come to learn everything they could, and they soon stretched the boundaries of the domestic realm to unbelievable frontiers. These first six and the many who followed them redefined domestic architecture to include schools, hospitals, pavilions, concert halls, country estates, restaurants, modern art centers and boat clubs, and even the planning and design of entire villages. Only in 1941 could Henry Frost admit to the fact that the Cambridge School students were not being taught solely domestic architecture:

A few years ago... specialization in domestic architecture would have been a satisfactory solution. In these later years, first of depression now of war, the woman student has progressed to a degree which astonishes us who work with her daily. She thinks clearly, reasons well...

Mr. Frost was delighted with his revelation and with the progress of his students. It was not, however, revelation to them; they had come to the school to study architecture and "the students led the way, sponsoring new advances. Theirs was the conviction and determination, the vision of changing conditions."

The Cambridge School was established not to teach architecture to women in the passive manner or only as an intellectual pursuit, but to ensure that they could actively practice their profession upon graduation. With this attitude, Mr. Frost took up their cause and "assumed that they are interested in entering these arts only on a strictly professional basis. There are too many poorly trained people in all professions to encourage any other point of view." The School did admit special students who were not working towards a degree, but these women were not encouraged, and the School preferred to increase the number of women seriously directed to professional practice. When possible, the School also accepted women who had not graduated from college, and they could earn a Certificate after completing the required curriculum. But from its founding the Cambridge School was essentially a graduate school for women who had previously finished four years of college. The record shows that in the first sixteen years of the School, 72 percent of the students were college graduates, while the remaining 28 percent had qualified for admission through previous study, travel, and office work. They came from forty states, from England, France, Canada and Mexico, and from forty different colleges.

As a group these women were unusual. Great pains were taken to discourage the hesitant applicant; the hard work, long hours, sacrifices and existing prejudices were pointed out to the potential student,

The Cambridge School women dressed for a costume party with the Harvard School of Design, circa 1924.

for Frost knew well what was ahead for them and wanted only those strong in purpose at the Cambridge School:

If in the face of all the discouraging arguments that are presented to her, a woman still persists and is determined to make the necessary sacrifices that hard work entails, the chances are that she will find congenial and attractive work and reasonable opportunities for success.

This policy of realistically appraising all the disadvantages of practicing architecture did seem to be successful in giving those truly interested a chance to study. As of 1930, 83 percent of the graduates were active in professional work, making a very high ratio of more than five-to-one. Considering the record of married graduates alone, there were still 60 percent active professionally. Such statistics reflect changes from cultural patterns of the nineteenth century, and also, perhaps, Mr. Frost's efforts to discourage the uncommitted from attending his school.

Nevertheless the question of marriage was still an issue in 1928, as it had been in the nineteenth century. With 40 percent of women graduates from six representative architectural schools married, the traditional constraints on women still applied:

In the nineteenth century work outside the home was unthinkable for the married woman . . . there were objections from husbands and society to consider. That is why the convinced feminist of the nineteenth century often spurned marriage. Indeed, it is often forgotten that the feminist movement was a form of revolt against marriage . . . The tendency [not to marry] was most pronounced, as was to be expected, among highly educated women . . .

The difference was that now women like those in the Cambridge School wanted both to marry and to have a professional career. They were interested in finding some reasonable solution towards "the principle of continuity in woman's intellectual, as in her affectional life, as the only condition of her mental health and happiness and the best interests of her family."

One of the ways found and practiced by women was to marry architects. The women of the Cambridge School did share projects and parties with their male peers at the Harvard School of Architecture. These activities led to marriages between members of the two schools. Ethel Howes of the Institute for the Coordination of Women's Interests was ecstatic over the "still more inspiring possibilities of married partnerships in the profession. . . . It is more favorable than even an optimistic view could have foreseen . . . here again emerges the general solution of more than one problem; not only that of continuity in individual work . . . but that of the pres-

sure of inhibitions against marriage itself, which no woman of tested ability entirely escapes." Marrying an architect increased the likelihood of having a husband who understood and had sympathy for one's work. Marriage to an architect in private practice also solved the need of finding a job, working part-time, and coordinating vacations, work schedules and care of children. The professional marriage that Ethel Howes envisioned was ideal so long as the husband upheld the conviction that architecture was the shared domain of both men and women.

For women who did not have these "married partnerships," there existed the problem of finding architectural offices that would hire them. Henry Frost promised "reasonable opportunities for success," but as a practicing architect, he knew the frustrations and difficulties of this most exacting profession even for men, and wrote that "success comes usually from keeping everlastingly at a thing . . . if such a statement is true for men, it is equally true for women." He understood, however, that female students suffered special handicaps, for "as in all other professions, there seems to be some doubt as to just what women can do in professional work. There is still prejudice on the part of more conservative men . . . and even in many of the co-educational schools . . ."

Though Mr. Frost attributed these doubts to "conservative men," he himself did not escape these prejudices. In a study for the Institute for Coordination of Women's Interests in 1928 he wrote that "women seem to be as yet not as creative in their design work as men are, [but] this does not indicate that woman is not without value in an office." Despite his doubts about women's creative ability, he saw other avenues open to them; he very accurately explained that in the offices "design, while still of importance, is more dependent upon those who excel in construction, in writing of specifications, in the ability to estimate costs and returns and other practical matters which the student is likely to scorn." Unfortunately "there seemed to be a consensus of opinion that they [women] were not as able to do work in engineering and construction as men." And he further observed that "people are apt to be skeptical as to the ability of women to do work, especially that requiring knowledge of engineering and construction details, and their ability to deal with contractors and workmen." It was not surprising that in the face of such criticism and doubts "women as a rule seem to prefer to work on what they can handle and supervise in detail themselves."

Though Mr. Frost expressed reservations in his writings, his actions did not reflect these doubts. Not only did he place women graduates in offices, but he had a woman partner, Eleanor Raymond, from 1919 to 1935. During this period while his energies were directed more and more to the Cambridge School, she took over much of the responsibility for the practice. As of 1930, 34 percent of Cambridge School graduates were in independent practice or were associates or partners in architectural firms; 39 percent were draftswomen in offices; and 10 percent were in education, lecturing, or editorial work.

Although such achievements were in some respects remarkable, they certainly do not indicate that obtaining work was easy for these women. For one thing, the doubts and prejudices of society affected the type of work available to women. According to a 1936 bulletin of the Cambridge School, "women practitioners thus far, are more likely to be commissioned by individuals than by corporations and organizations." Women, when educated, were educated with other women, and their contact was largely with their servants, children and families; they did not have contact with the male hierarchies of corporations in a profession which depended largely upon personal contacts for commissions.

Another trend affecting the practice of architecture was specialization. Even in 1928, Frost noted that offices were beginning to specialize in particular building types—hospitals, schools, municipal buildings, or domestic architecture. He noted that "in both architecture and landscape architecture the modern tendency towards specialization offers little chance for the jack-of-all trades, and the general practitioner is disappearing." Collaboration replaced the individual's highly personal style in design, and large compartmentalized offices replaced the small, loosely organized firms. Women in independent practice usually had small offices and, as noted, had difficulty in attracting corporate clients; with the trend toward complexity, they were further pushed into the corner of domestic architecture. The alternative for women was to enter larger offices. To do this they had to gain acceptance by the men who ran them. As shown through records of the Cambridge School graduates, an attempt was made by working as associates, partners, and draftswomen in architectural firms, and by becoming the wives and thereby the partners of practicing male architects.

Like most architects, Henry Frost was concerned with improving public taste and clients' willingness to accept the forms of modern architecture, which were just beginning to appear in the United States. At that time the classical orders were still the style not only in buildings but in the curriculum of schools; the architectural profession, dependent upon clients and conditioned to serve their esthetic preferences, could not exist without the consent and encouragement of the public. Henry Frost did not except women from the responsibilities of trying to educate the public, and he actually placed great hope on the influence that they could exert. "The personal contacts that well trained women are in a position to make should prove to be an important factor in raising the standards required by the public." Realistically, however, the hundred or so women who had received degrees by 1936 could not have achieved this goal. But they were successful out of all proportion to their numbers. They spread the message of their work from Massachusetts to California and Tennessee and Maryland. In each place their buildings, although not always modern, were responsible and exemplary architecture. That is not to say that Cambridge School graduates were not innovative in their work; the *Architectural Forum* of 1933 published what it termed the first modern house in Massachusetts by one of them, Eleanor Raymond. The School's graduates had the "enthusiasm of youth and conservatism of maturity [that] mixed in proper proportions assure a progress from which there will be no need to turn back," said the bulletin of 1930.

Aside from professional practice, these women architects were strong supporters of the Cambridge School. Many gave scholarships and donations to encourage and provide opportunity to more women desiring careers in architecture and landscape architecture. The large building at 53 Church Street in Cambridge was given

"The woman student has progressed to a degree which astonishes us."—H.A. Frost.

to the School by one of its supporters. Another donated the use of a house in Rockport on Cape Ann for summer sessions.

Henry Frost was considered by the women of the Cambridge School to be an inspiring teacher. This opinion did not come from women who were inexperienced in the qualities of teachers, for the students at the School had, in general, completed four years at some of the finest colleges. Besides a liberal arts background he advocated a three-year graduate course, travel and study in Europe, and apprenticeship. Not only did he advocate this training, but he provided most of these items within the curriculum of the Cambridge School.

The staff, often young architects just starting their careers, grew from a very few in 1915 to over fifteen in 1936. Some of these teachers worked full-time at the School, but many came from the Harvard Graduate School of Design and similar institutions, or else were in private practice in the Boston area. Aside from this regular teaching staff, there were special critics and guest lecturers brought in throughout the school year. As in all architectural schools, the courses and faculty were diversified. Such people as Stephen Hamblin from the Lexington Botanical Gardens, Frank Rines of the Massachusetts School of Art, and Bracett K. Thorogood, educational counselor at Franklin Union, gave courses, and the record shows that many notable men and women architects began their teaching careers at the School—Freda Gilfillan, Mary Cunningham, Ethel Power, G. Holmes Perkins, Walter Bogner, and Edith Cochran were just a few of the many instructors. Henry Frost wrote to William Neilson, President of Smith College, about the Cambridge School in 1939, "G. Holmes Perkins and Marc Peter, Jr., both of whom are lecturers in your Graduate School of Architecture, are among the ten competitors who have placed in the preliminary competition for the new Smithsonian Institute. I thought you would be interested to know that we have some good instructors here."

The course of study offered at the Cambridge School was similar to the curriculum at other schools of its day. There were three major divisions—design, construction, and freehand drawing. Within these three divisions were such courses as architectural and landscape design, construction (working drawings and details), history, plant materials, mathematics, graphics and sketching. The students were required to take and demonstrate proficiency in all these courses. The School realized that "architecture and landscape architecture are professions combining requirements of design, technical understanding and business acumen. A perfect balance of such widely divergent qualities is not to be expected in any individual." But, like other architectural schools, it aspired to this "perfect

balance."

Collaboration and cooperation between the related disciplines were dominant points in Henry Frost's professional philosophy and were practiced at the Cambridge School of Architecture and Landscape Architecture throughout its existence. "It has always been, so far as I know, the only school maintaining a close relation between architecture and landscape architecture under one faculty requiring of its landscape students a considerable amount of architectural training." Not only were landscape students given training in architecture, but architectural students were given training in landscaping. This interdisciplinary education began when the School taught mainly domestic architecture and continued when it expanded in scope to include all building types.

Only much later, in the 1940s, after the Cambridge School closed and women were admitted to the Harvard Graduate School of Design, did Harvard stress the relationship between architecture and landscape architecture. This change at Harvard was partly due to Henry Frost, who continued teaching at Harvard and advocating the cross-pollination of the two professions. In 1943, while still corresponding with the former Cambridge School alumnae, he happily reported that "the collaboration between architecture and landscape architecture has been strengthened to a degree satisfactory to even its most enthusiastic sponsors. It would seem to me to possess now most of the virtues we so firmly approved of in the Cambridge School . . ." Thus the collaborative education begun by Henry Frost and the Cambridge School in 1915 was finally adopted by Harvard University in 1942.

At the Cambridge School of Architecture and Landscape Architecture the two professions were integrated in curriculum throughout the entire three-and-a-half-year course of study. "A student electing either of these programs is required to take a certain amount of work in the other, on the theory that an architect should know something of the principles of landscape architecture; a landscape architect, something of the principles of architecture." In common with other architectural schools of that time, as well as schools today, design was considered the most important course at the Cambridge School. What was unusual at the Cambridge School was that in the design studios the basic course was the same for both the architectural and landscape students; and during the intermediate and advanced design courses half of the problems were the same for both groups. It was only at the technical level of detail that the training divided, with the landscapers concentrating on plant materials and plant design while the aspiring architects studied professional practice, heating, plumbing and structural systems. The art history classes and freehand drawing studios were also combined for the two programs; this collaborative education did influence the professional approach of Cambridge School graduates. The works of Eleanor Raymond and Gertrude Sawyer, among others, show that landscape design has been a natural feature of their architecture.

During the first year of study at the Cambridge School, an additional summer term was required of all students. Where and how this summer term was taught varied through the years. In 1932 a generous alumna offered the School the use of her house on Cape Ann, Massachusetts. On one side of the drafting room was a box garden and apple trees, while the other side of the house opened to a view of green lawn, apple orchards, and the ocean. This idyllic setting was "cooled by a fountain that carries one back to Italian gardens." Unfortunately, the house was no longer made available to the Cambridge School after 1939. At this point the School negotiated a joint summer school with Harvard to be held at Robinson Hall. The Cambridge School suffered a loss of income, since the income from the summer session went to Harvard, and also a loss of direct control over its students.

Another feature of the Cambridge School was travel and study in Europe. These trips were by no means reverent pilgrimages to view the monuments of antiquity. Mr. Frost sagely observed that "in every age when struggles for existence and for governmental solidarity have passed on to economic well being, new and important edifices have arisen differing from those of former periods." It was with this attitude that he showed past and present architecture to his student travelers.

Apprenticeship was the final item on Frost's list of requirements for a proper architectural training. However, as much as he advised women to work in large offices and "assumed that they are interested in entering these arts only on a strictly professional basis," there seemed to be no organized plan for implementing the desired apprenticeship. Some graduates worked for Mr. Frost and Mr. Pond, others found job openings in schools such as Smith College and Northwestern University. As the record shows in 1930, with 83 percent of them active in professional work, Cambridge School graduates seemed to find employment by one means or another.

Reacting to the growing complexity of society in the United States, Henry Frost expanded his educational goals in accordance with professional needs. He found the Cambridge School woman capable of handling the new challenges: in 1941, he wrote that "she thinks clearly, reasons well, and is interested in housing rather than houses; in community centers for the masses rather than in neighborhood clubs for the elect; in regional planning more than in estate planning; in social aspects of her profession more than in private commissions." He had praise for her ability when he noted that "she is intelligent. She coordinates her work well, collaborates with others successfully . . . the woman student has progressed to a degree which astonishes us." He observed that "her interest in her profession embraces its social and human implications." Realizing this growth in ability and interest, Henry Frost proposed a new and expanded program for the degree of Master of Architecture at the Cambridge School. He proposed "that the year or longer required for the Master's degree both in architecture and in landscape architecture should be one of research and design in the direction of (for want of a better term) socialized architecture." As always, he was thinking in terms of practicing a profession, and he felt that this program would "fit them, perhaps as no other school does at present, for positions of responsibility on the planning boards of cities and towns, and in other organizations having to do with social welfare." He wanted them during this year or more of study to "come in contact with innumerable organizations and individuals engaged in planning for the future of our communities" and to "present to them real rather than hypothetical problems." He gave credit where it was due when he wrote that the idea "started undoubtedly with the students themselves, was recognized and has been encouraged by the faculty in the types of problems given them." Unfortunately, this expanded Master's program was never put into effect at the Cambridge School, for only one year later the School was closed permanently. And with the closing of the School there passed the opportunity to begin a program which would have been "in step with the spirit of the times and may be so organized as to serve the future."

Though the Cambridge School for women was incorporated in 1924 under Massachusetts law, it had the authority only to grant certificates to its graduates. These certificates had been sufficient in the past for the practice of architecture, but as government control was more formulated, the Cambridge School needed the ability to grant the professional degree which had become necessary, in many states, for those who wished to practice architecture. Therefore, the Trustees and the Director chose to seek out an accredited women's college for affiliation. In Frost's report to the Trustees in 1928, he pointed out that "there is one advantage that we lose permanently if we become part of a women's college. At some time . . . we shall want to make the School co-educational. This would be impossible as a graduate school of a women's college." Unhappily, he did not also foresee the loss of independence and self-determination through affiliation, and it was this loss which was later to become

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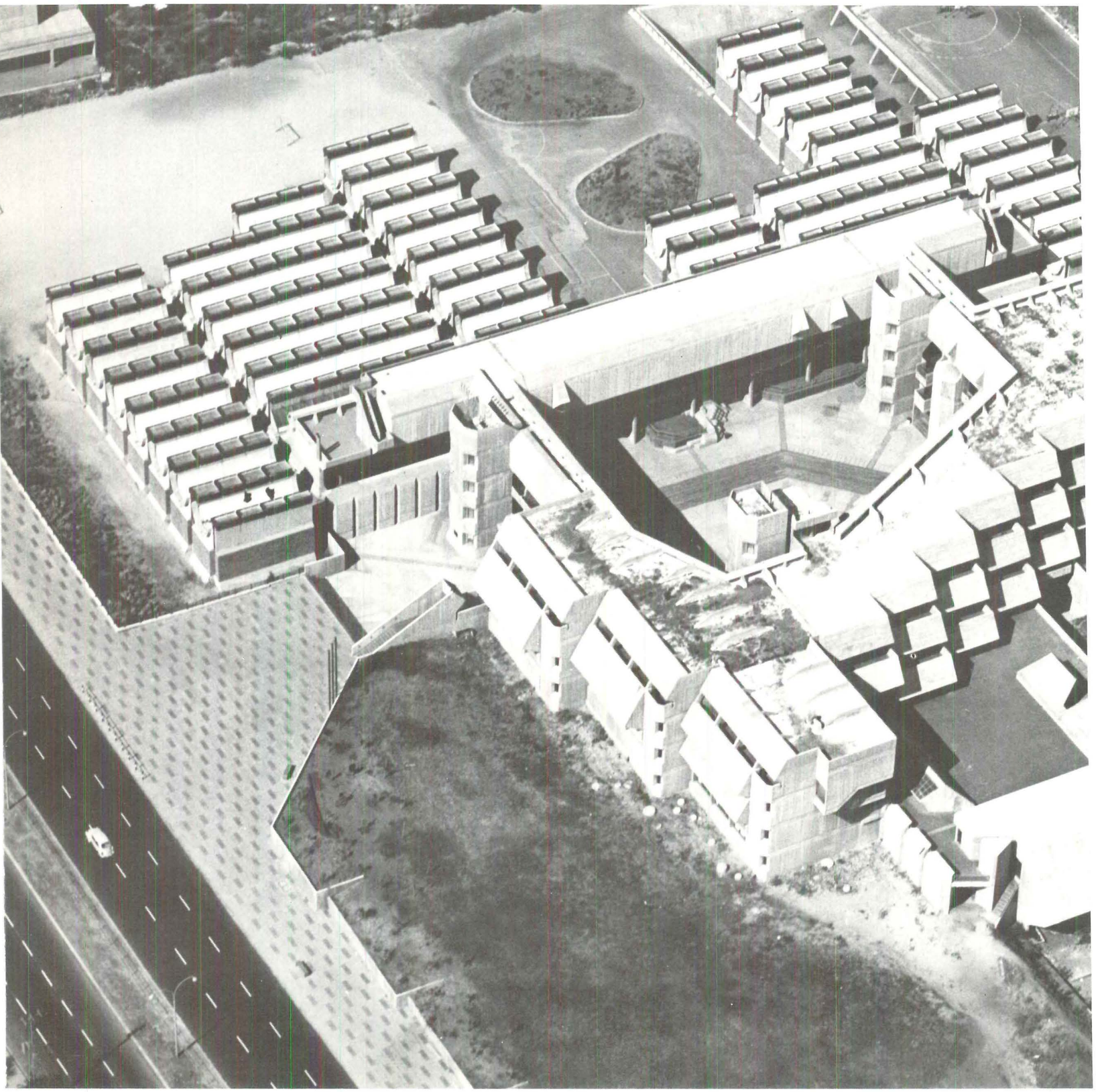
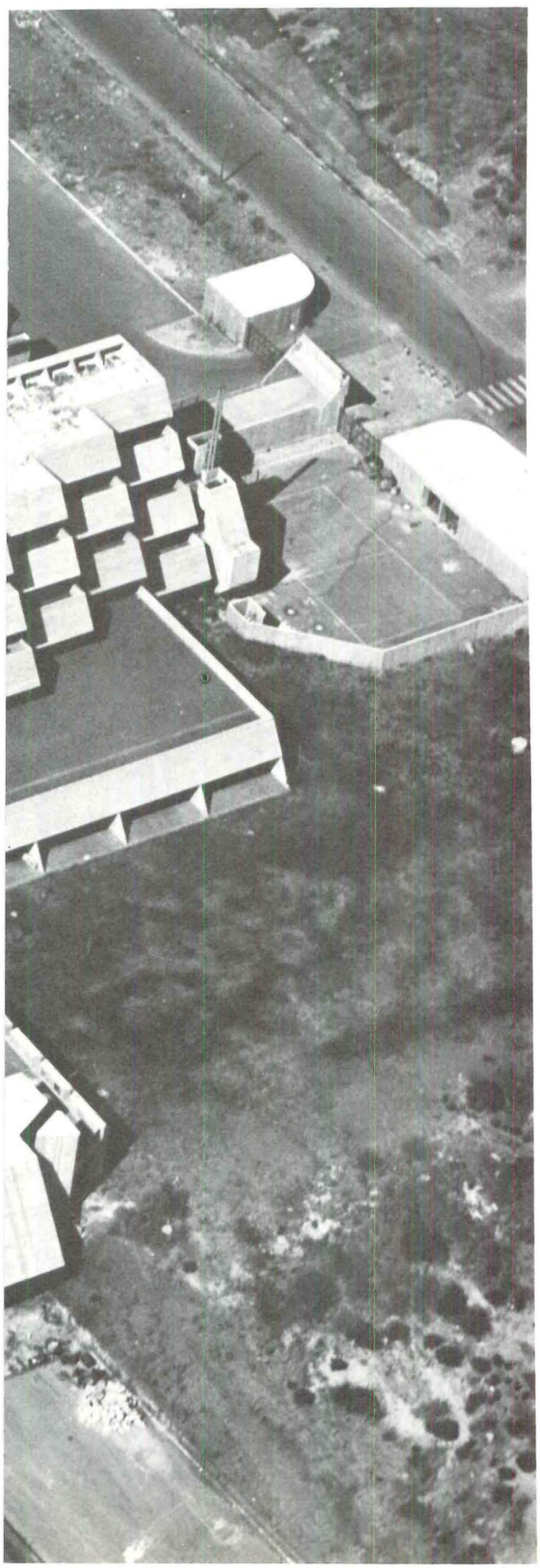


An Israeli school shaped for community



Some of the most important learning experiences at Tel-Aviv's Lady Davis vocational high school occur outside its classrooms. Looking back on their own school days, few people will consider this uncommon, but what is unusual is that this school was designed to encourage such happenings.

The heart of the school is a highly structured plaza that serves as a community and student commons, as well as a theater, playground and pedestrian street (guarded by two symbolic gates that never close). Ram Karmi, of Karmi Architects, then distributed the rest of the school in layers around the court, putting common, or public areas on the ground level and more private school areas on the upper floors. The workshop, sports and classroom areas are all designed as virtually independent structures on various sides of the court.

The court itself is modeled to form an outdoor amphitheater with built-in seating areas. Surrounding and complementing it are such ground floor facilities as a dining room, lecture halls, gymnasium and workshops, all of which are open to the public when classes are not scheduled there. The wall of the gym facing the plaza is movable so that it can open onto the plaza and serve as a stage (or as a backstage) area for large-scale student or community productions. (The far side of the gym faces the playing fields.) Three towers give triangular definition to the courtyard and contain stairs and utility areas for the upper floors.

Community use is no idle notion here. The school is located directly between two low-density residential neighborhoods and the plaza never closes to the public, which may congregate there or walk through. Portions of the court recede beneath the structure of the school and so become sheltered walkways. More importantly, perhaps, the school provides the two neighborhoods with a needed community and cultural center; several plays and ballets have been presented there.

The higher the floors of the school proper, the more private their function and entry. Open corridors, which double as balconies for the stage below, provide access to the rooms on the second and third floors. These rooms are reserved primarily for school use and include classrooms, lecture rooms, electrical and other laboratories. The fourth, or top floor, is far removed from the activities and sounds of the plaza, both by location and design. It has a walled corridor, and only occasional views of the court.

The concrete used throughout the school and the plaza unify the diverse structures for the various educational components of the school. Each of these areas has a unique style and each may expand outward from the plaza at its own rate. For example, the workshops are designed to look like modern factories and may expand linearly. The smaller classroom spaces are less open, with intimate shaded balconies.

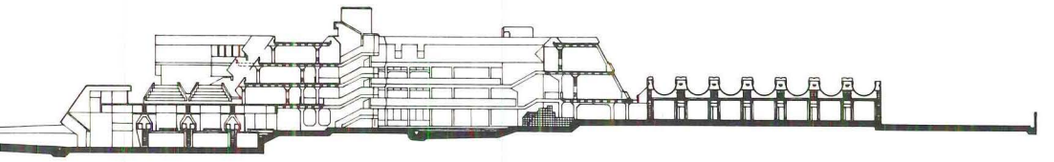
The scale of the school varies. The facade facing the court is large in scale and so magnifies the public aspects of the area. (The second and third-floor open corridors help to provide the illusion of an Elizabethan theater.) By contrast, the exterior facades of the building have smaller scale, befitting the residential surroundings of the school.

The sun is crucial to the design and performance of the building. The facade is shaped and oriented to increase natural illumination where possible, yet minimize solar heat gains, which could be devastating in this climate. The laboratories, for example, have northern exposure, where the sunlight is diffused and unlikely to cause interior heat buildup. Karmi, therefore, designed these rooms with large expanses of glass so that they almost resemble an artist's studio. Some classrooms, on the other hand, have southern exposures. Here, direct sunlight can increase interior temperatures tremendously and so the architects manipulated the facade to provide immense sunshades, which isolate the interior glass walls from direct solar penetration (see photo, next page).

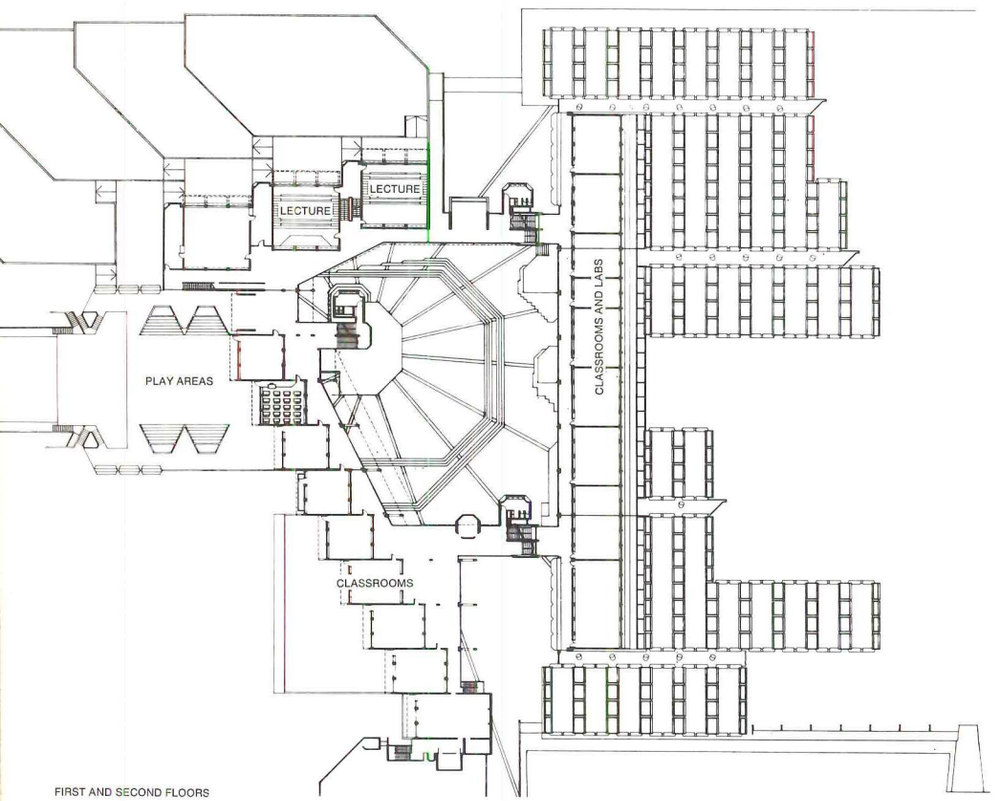
The workshops have upside down barrel vault ceilings to reduce solar heat. Small sets of louvers at each peak open to allow sunlight in and to let rising hot air escape. All interior rooms of the school, including the underside of the barrel vaults in the workshops, are plastered white to increase the effects of the natural lighting system.

Facts and Figures

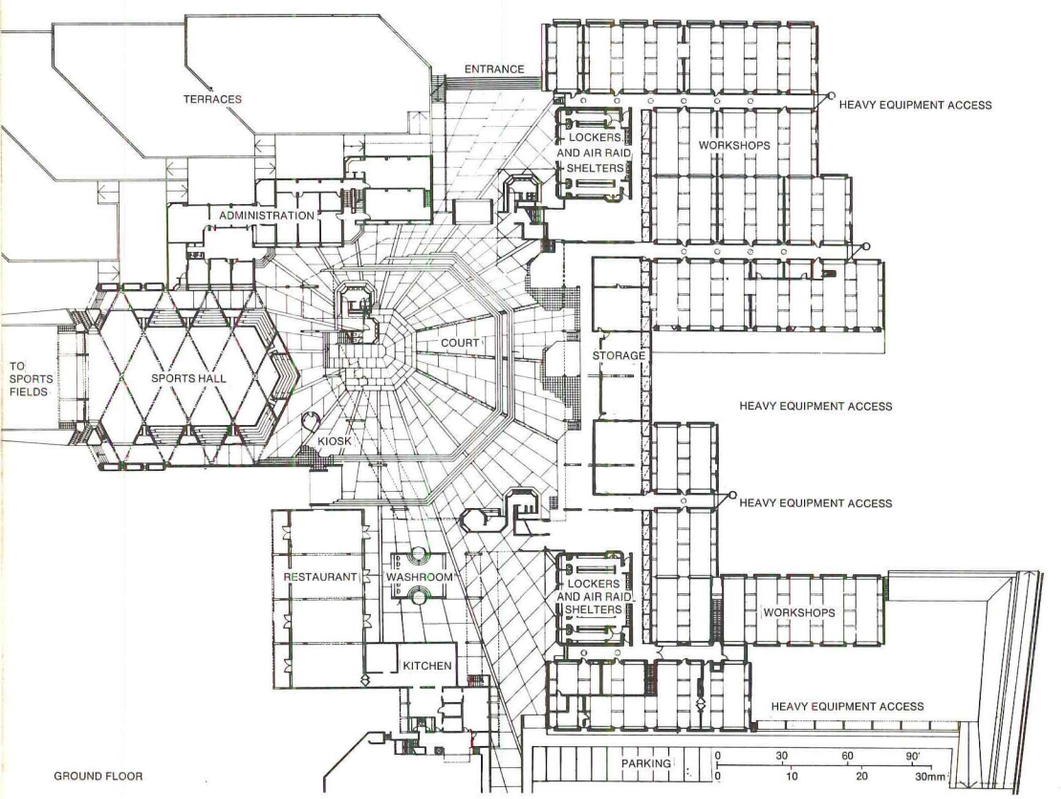
Lady Davis Technical Center—'Amal', Tel-Aviv, Israel. Owner: Histadrut 'Amal' Vocational Schools and Tel-Aviv Municipality Department of Education. Architect: Karmi Architects & Co., Ltd. (principals: Ram Karmi, Ada Karmi-Melamede, Ben Pelleg; job captain: Moshe Iwanir). Engineers: Pinchas Brosh (structural); Michael Rothchild (mechanical); Shalom Ozer (electrical). General contractor: Solel Boneh. Building area: 13,500 sq. m. Cost (excluding land): IL 11.5 million. Photographs: Ran Erde p. 36; Tom Uvegi p. 39; Judy & Kenny p. 40-43.



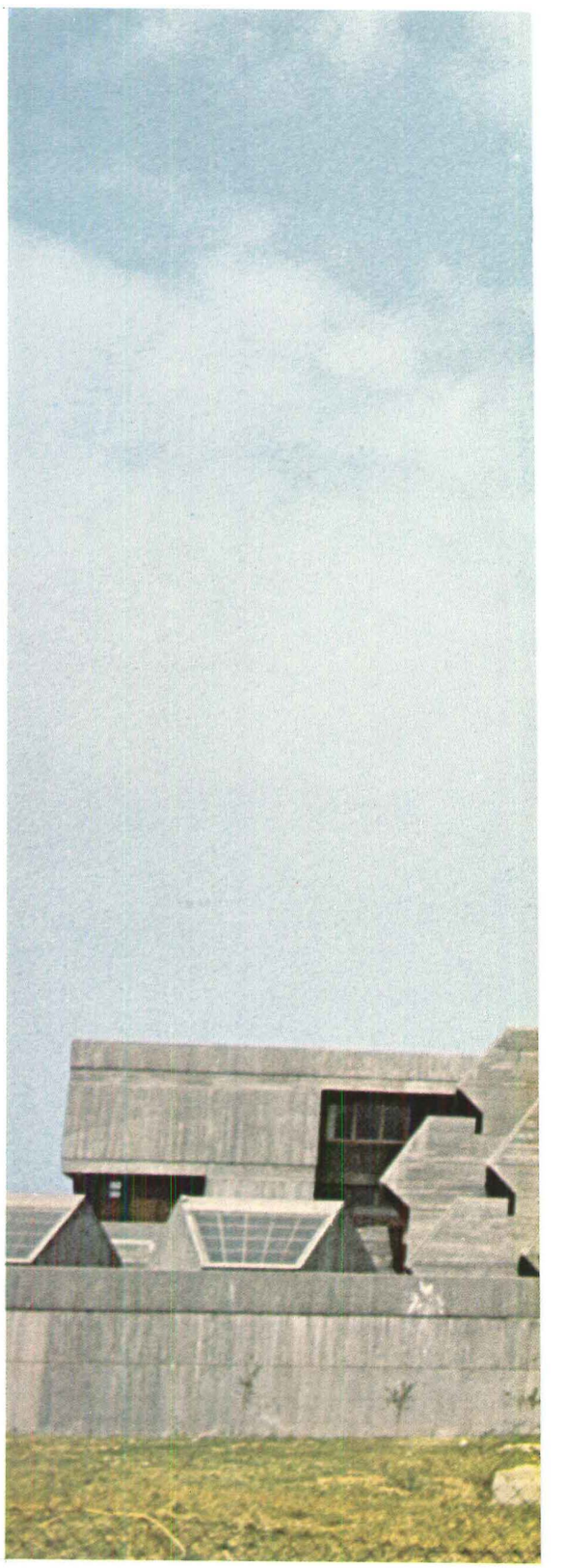
NORTH/SOUTH SECTION



FIRST AND SECOND FLOORS

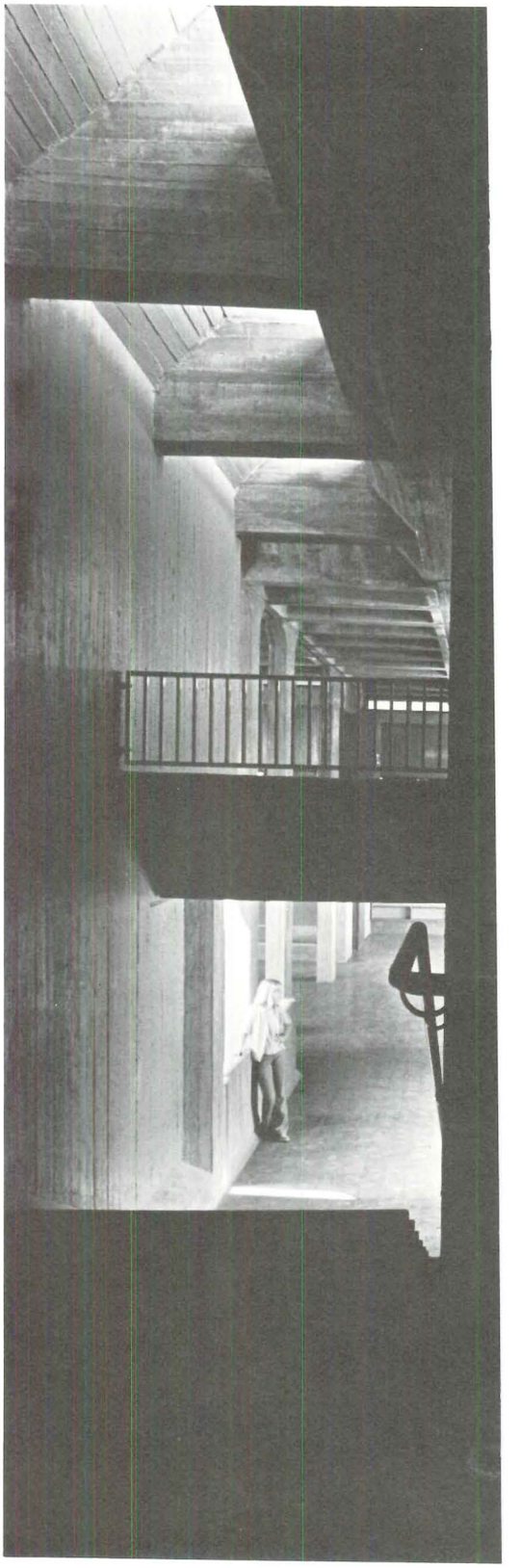


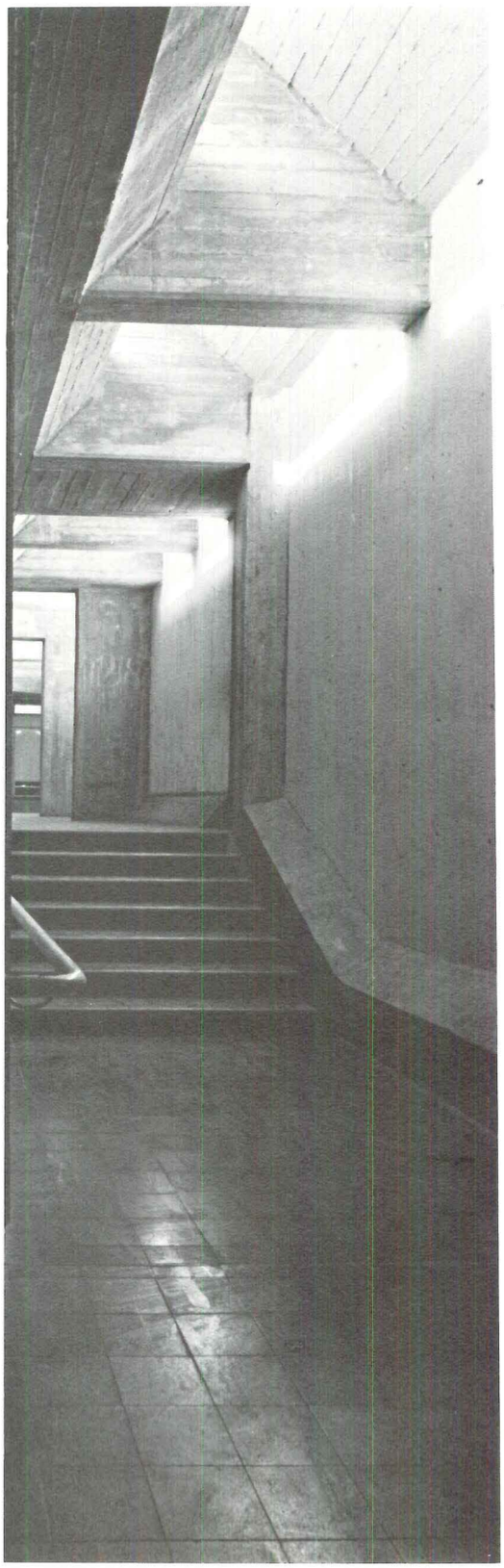
GROUND FLOOR

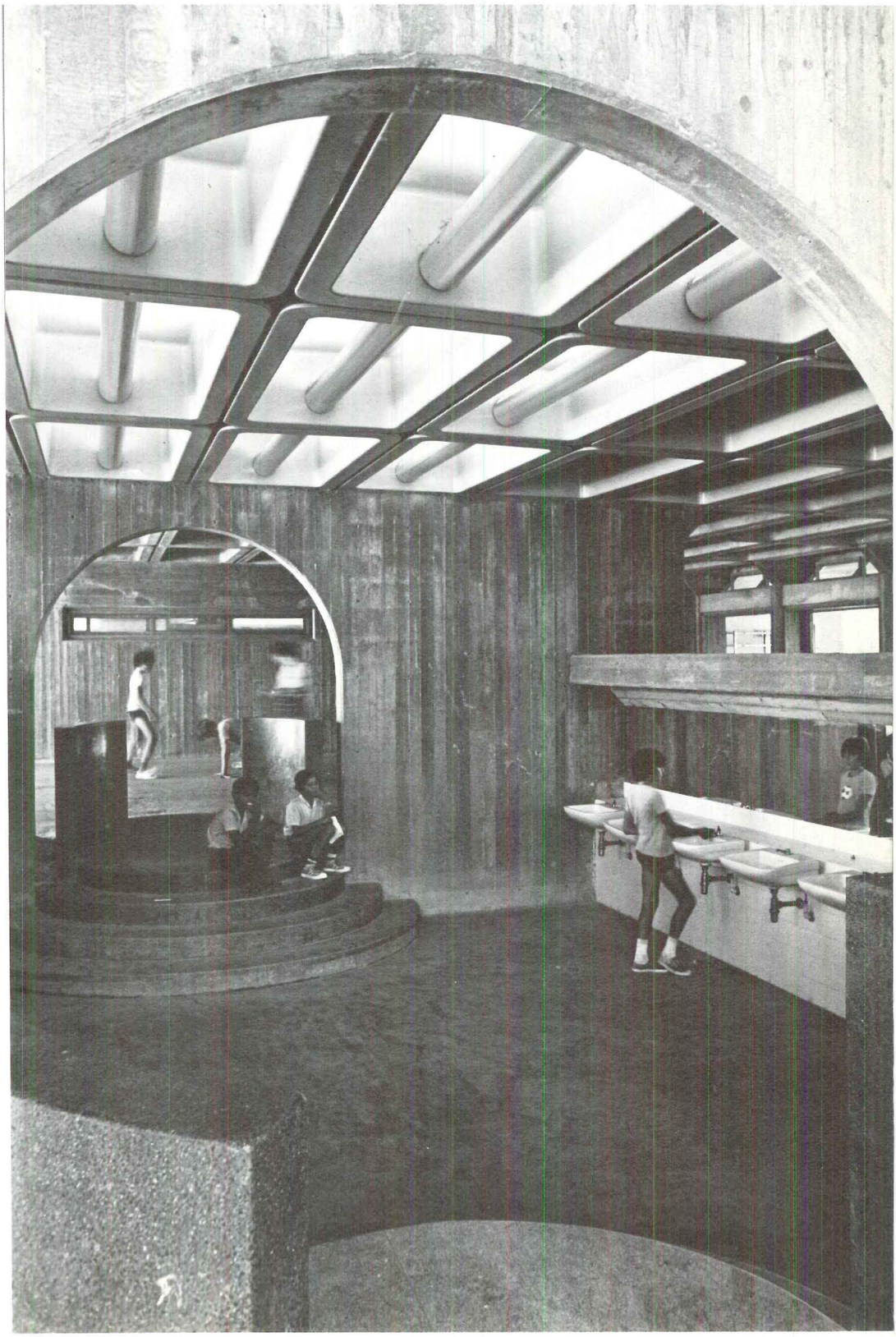


Classrooms facing south, where direct sunlight penetration can cause the most severe heat gains, are protected by a double wall system (photo, below). The classrooms are rectangular with an all-glass exterior wall, which is wholly shaded by the concrete hoods that are an integral part of the facade design. The hoods, or sunshades, also provide intimate covered balconies. In plan, the classrooms are primarily located in a staggered pattern along the east side of the plaza on the 2nd, 3rd, and 4th floors. The workshops extend from the north side of the court. The color on the lower plan indicates the community "street."

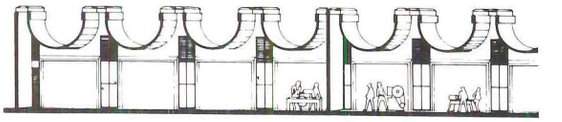
A typical workshop interior (left) receives natural ventilation and illumination through a combination of sidewall and ceiling windows and louvers. There is no artificial lighting except for small individual equipment lamps. The various floor levels (middle) are accessible by split-level interior staircases, as well as from the three primary stair towers in the plaza. The boys' washroom (right) is an informal adjunct to the gymnasium.



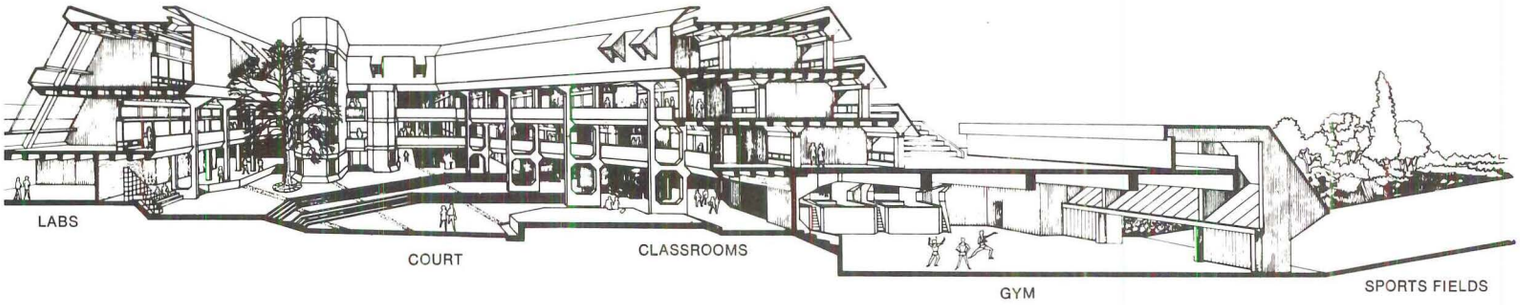




The perspective section at right illustrates the variety and mix of interior and exterior spaces in the school, plus the central role of the plaza. Persons passing through the interior court have the choice of a sheltered walkway around the edge, or a stroll right through the middle, usually under the eye of a student on the balcony (below, right). The plaza is open 24 hours a day and is the focal point of school and community recreation and cultural activities. The tower at the left of the plaza photo is one of three and contains stairs, toilets and other service areas. The left photo shows the intersecting floor levels adjacent to the stair tower.



PERSPECTIVE SECTION


LABS
COURT
CLASSROOMS
GYM
SPORTS FIELDS

Nuristan's cliff-hangers

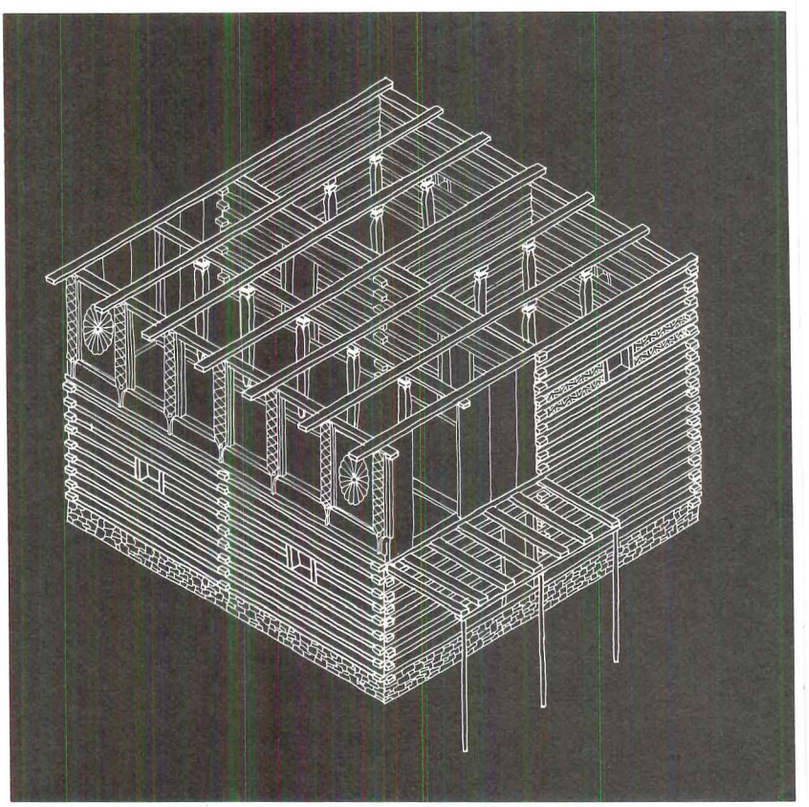
Text and photos: Stanley Ira Hallet

One of the more isolated parts of Afghanistan is Nuristan in the Kunar Province, close to the Afghan-Pakistan border. Here in the major valleys and the innumerable small ones, villages cling defensively to the hillsides. The Nuristanis traditionally chose to have little to do with their neighbors. The formidable mountains were the initial deterrent and their unique language, origin, customs and religion reinforced the isolation. The origin of the Nuristanis is still unknown. The occurrence of light hair, blue eyes and red beards among them could indicate a central Asian beginning. The most frequently cited theory is that they are Aryans who migrated into the area as early as 2000 B.C. Their language, although differing greatly from one village to another, is more like the Indian than the Iranian languages. Legends of the invincible Nuristani ancestors recall their successful defense against the Emperor Tamerlane in 1398 and even a joint campaign in India with Alexander the Great more than 2300 years ago.

Contact with the Afghans was rare and unfortunately in the form of raids. For many years the Islamic Afghans lived in constant fear of the Nuristanis, and referred to these warriors who swept down upon their villages to take slaves as "Kafirs" or infidels and called their territory "Kafiristan" or land of the infidels. The Kafirs were so independent and strong that it wasn't until 1896 that the Afghan kings finally subdued the area and converted them to Islam. King Abdur Rahman Khan set out for Kafiristan with Afghan troops and modern rifles and shot Kafirs until those remaining were ready to accept both Afghan rule and Islam. Kafiristan was renamed Nuristan or "land of light."

The social and economic structure of the Nuristani village is rigidly divided into two distinct groups: the cattlemen, the traditional ruling class; and the "Bari," once a slave caste but now, under Afghan rule, most often the artisans of the village. Money, only recently introduced to Nuristan, is of little importance. Barter is still the essential means of commercial exchange. For example, when a man wants to build a house he announces his intentions to the entire village. Neighbors who come and assist him for a day or two when they have the time are paid with food and hospitality. Most of the building is done by the Bari who are paid in fixed amounts of goods. Although it is possible for an entire house to be contracted for one cow or an extra room added for the price of a goat, the division of labor is respected. The people who cut and strip the trees in the forest are paid differently from those who deliver the wood, or those who erect the house or carve the decorations.

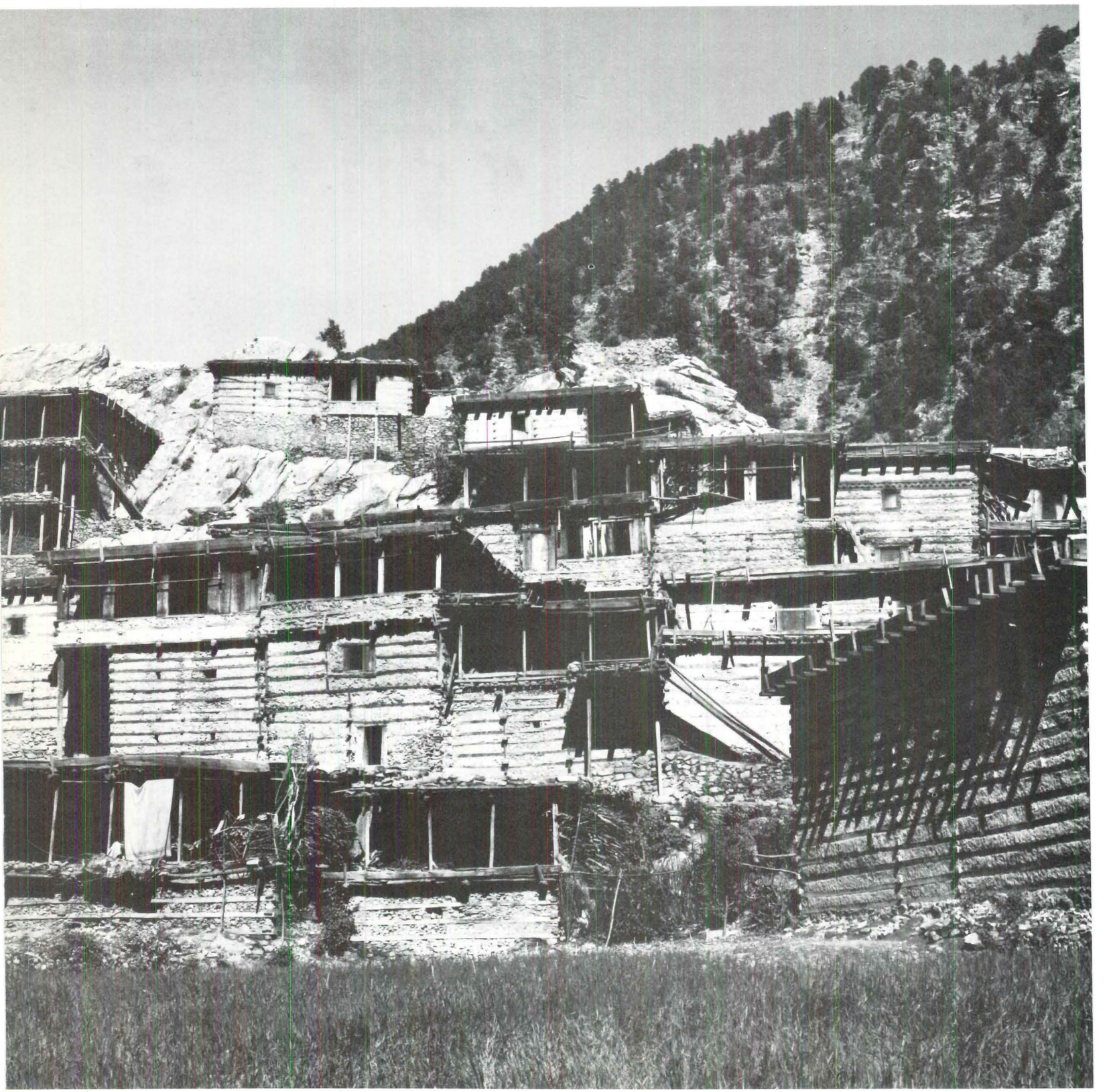
In Nuristan, the division of labor is unique to the rest of Afghanistan. Here the women do most of the hard work. They work the farms, tend the herds and prepare the dairy foods. The men hunt or stay at home to take care of the children and do the housework. Consequently the women have a very liberal tradition. Unlike other Afghan women, they have never worn the veil and they mix freely with the men of the village, participating in the singing and dancing festivities.



Stanley Hallet, Associate Professor of Architecture at the University of Utah, was the Fulbright Lecturer in Architecture during 1971-72 at the University of Kabul in Afghanistan. (See the July, 1973 issue for his article, "Afghanistan's Hot Rods.") This article is part of a planned book on traditional patterns of housing and community planning in Afghanistan.

The people of Nuristan, unique in many ways, also have their own way of building houses. On top of a massive base which combines masonry and wood in alternating, interlocking layers (below), they erect a light post-and-beam framework which follows a strict pattern (opposite bottom). The nearly impregnable base uses an infill of mud and stone to create a primitive sort of reinforced concrete whose wooden members are carefully placed to stiffen the walls laterally.

The village of Kamdesh (below) has 800 houses and is large for Nuristan. But its system of horizontal and vertical circulation using neighbors' roofs and ladders (right) is typical of communities elsewhere in the region. The top floor of a typical house in Kamdesh (below right) has a square plan with half the area devoted to a porch and the remainder divided into rooms for sleeping and for living. Supplementary columns are necessary in each space to support the roof beams.



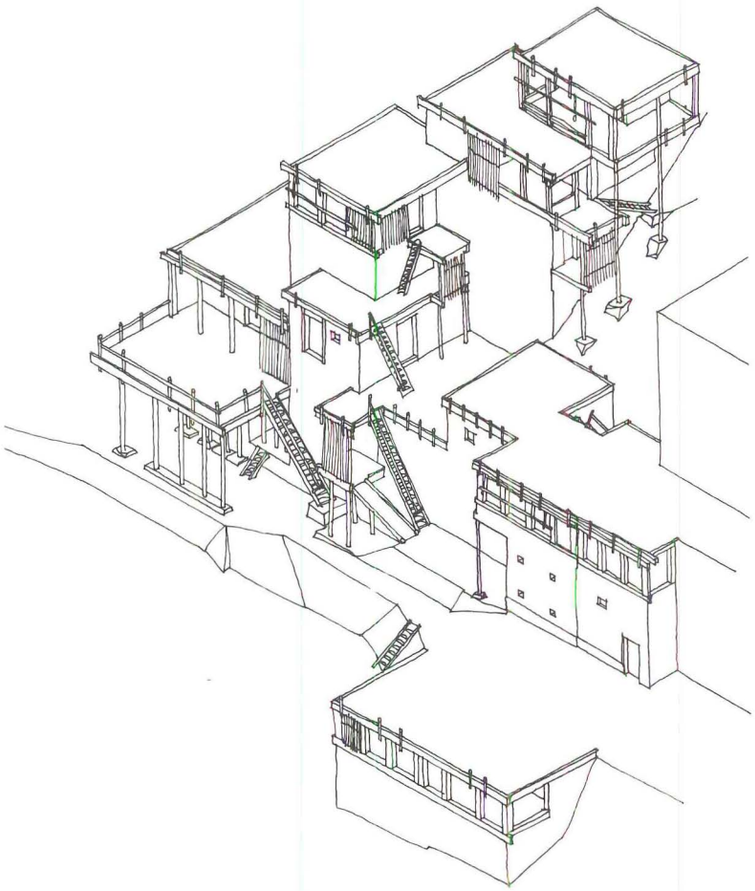
Most Nuristani villages are reached only after a difficult and exhausting climb. Even though the Nuristani women and children scamper up and down the hillsides, it took us two hours to climb to Kamdesh, a large village of approximately 800 houses. The defensive mountain sites of the Nuristani villages remind us of the days when one village would raid and plunder another. The physical isolation accounts for the important language differences between even neighboring villages. The distinctive dialects often make it difficult for a man to converse with someone from the next village.

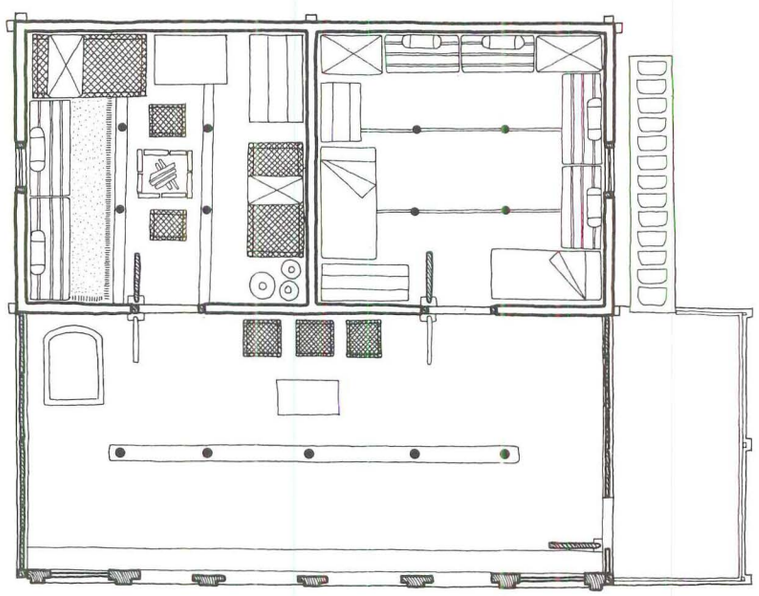
Kamu, a village overlooking a small river that joins the larger Landdai or Nuristan River, is another good example of a Nuristani village. It is located on an elevated basin amid softly rolling fertile mountain slopes. The village is nestled against several hillsides and its orientation is predominately to the south. The distribution of water in Kamu, as well as in most of the Nuristani villages, is quite ingenious. The water supply is carefully controlled by the community and elaborate water bridges carved of long logs carry the water from one point to another. Where the land is level, long dugout ditches are used. But where the water must cross small valleys aqueducts of heavy logs are constructed.

The Nuristani housing takes full advantage of the hillside. The houses cling to the mountain sides with one man's roof serving as another man's access. Many villagers must walk across the neighbors' roofs to reach their own house. Roofs and twisting paths take one along horizontally and an elaborate system of steep ladders leads one up vertically. In the more heavily trafficked areas, these ladders are carved of a single log with a handrail added to facilitate climbing. But in the relatively unused areas, ladders are thin twisted logs haphazardly notched here and there with steps long worn with age and use. These log ladders can be tricky since one must start the climb with the correct foot forward. The children who learned to climb at an early age race up and down the log without looking. These light ladder stairs can be hoisted into the house above, making access almost impossible to outsiders.

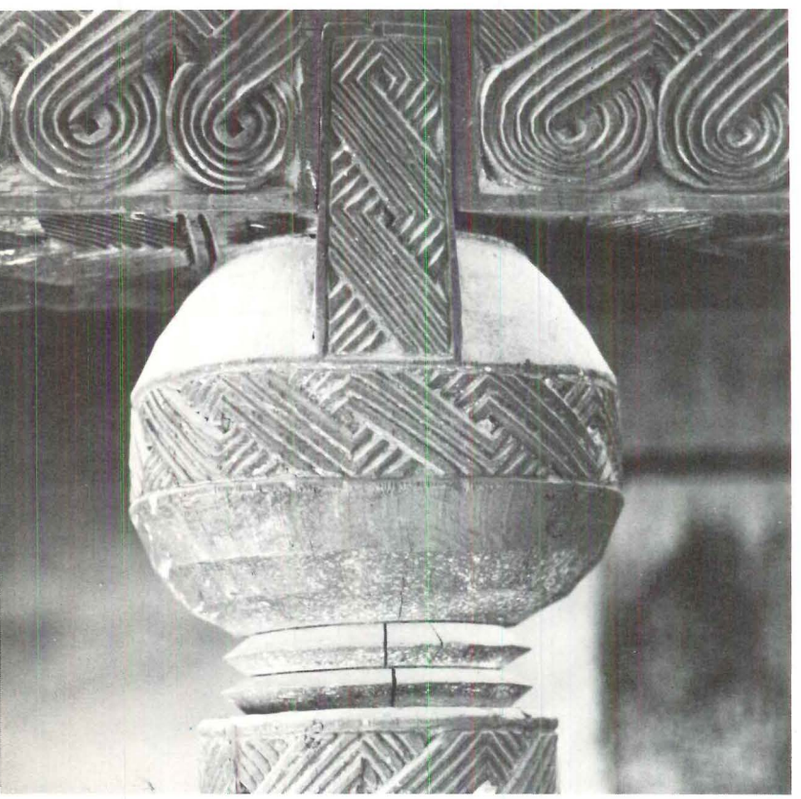
In contrast to the more traditional Afghan village forms, where the street is public and the family is well concealed behind high compound walls, in Nuristan the houses are so tightly pressed against the mountainside that the rooftops provide the major open space and the family moves onto them in search of sun. The rooftops swarm with children playing games and the women use these large flat communal work spaces for threshing grain. Close by the men sit in the shade discussing business. The communal rooftops give an impression of relaxed, inter-family communication and cooperation.

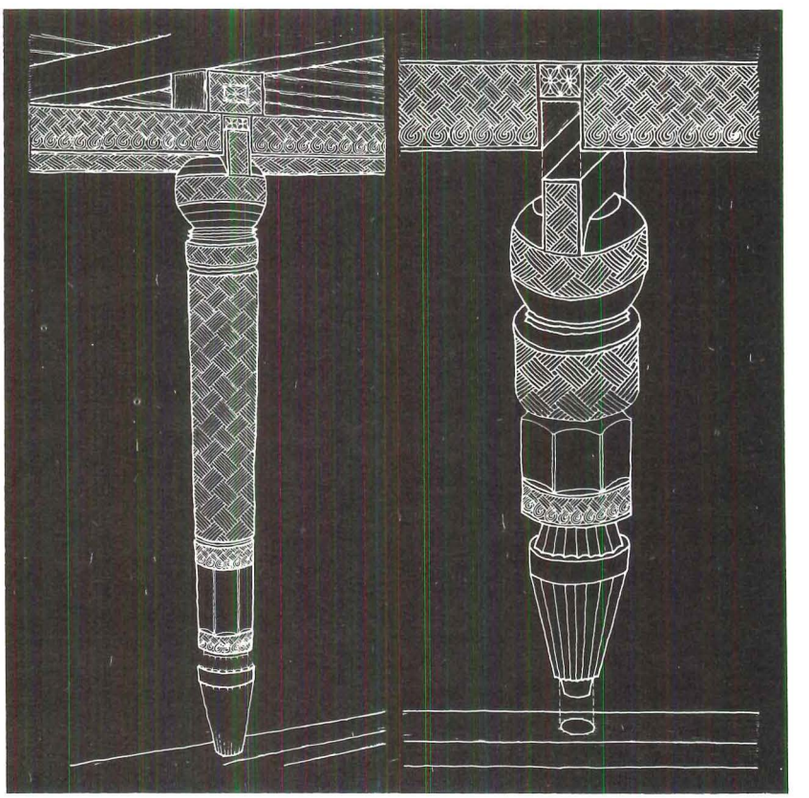
The basic Nuristani house is divided into two parts: the lower stories are enclosed by massive solid walls of alternating horizontal layers of wood and stone. They can be reached either directly from the lower level, where the animals are kept, or from the inside of the top living areas by a trap door and ladder system. When the exterior lower door is well bolted from the inside, the provisions are secure from theft. The interior ladders enable the family to bring up firewood, etc. without going outside. The interior access solution also allows neighboring units to be juxtaposed. The resulting higher density provides for economy of construction, better heat insulation and security. The back of the

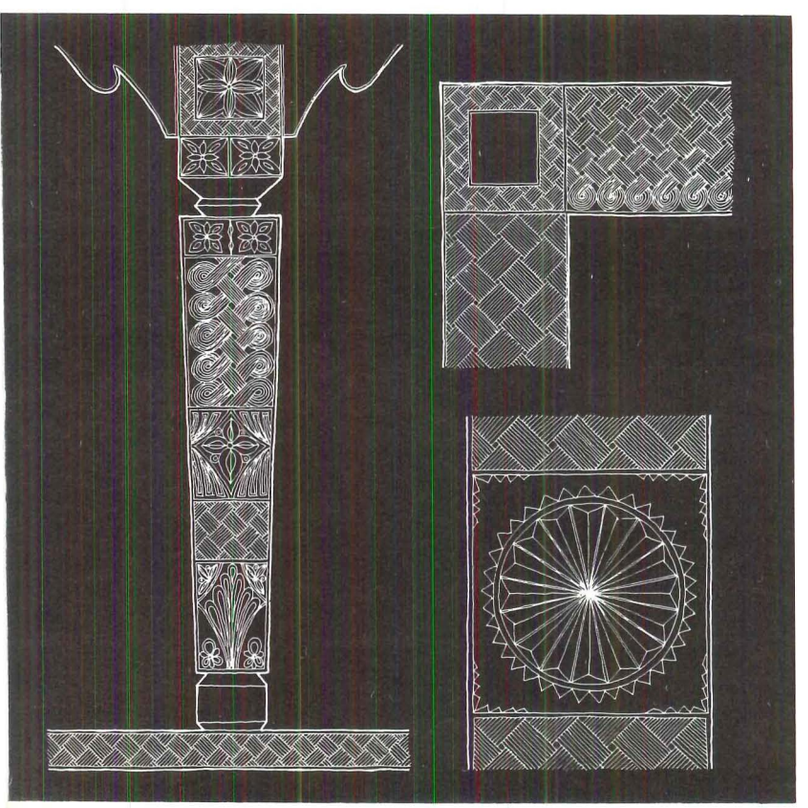


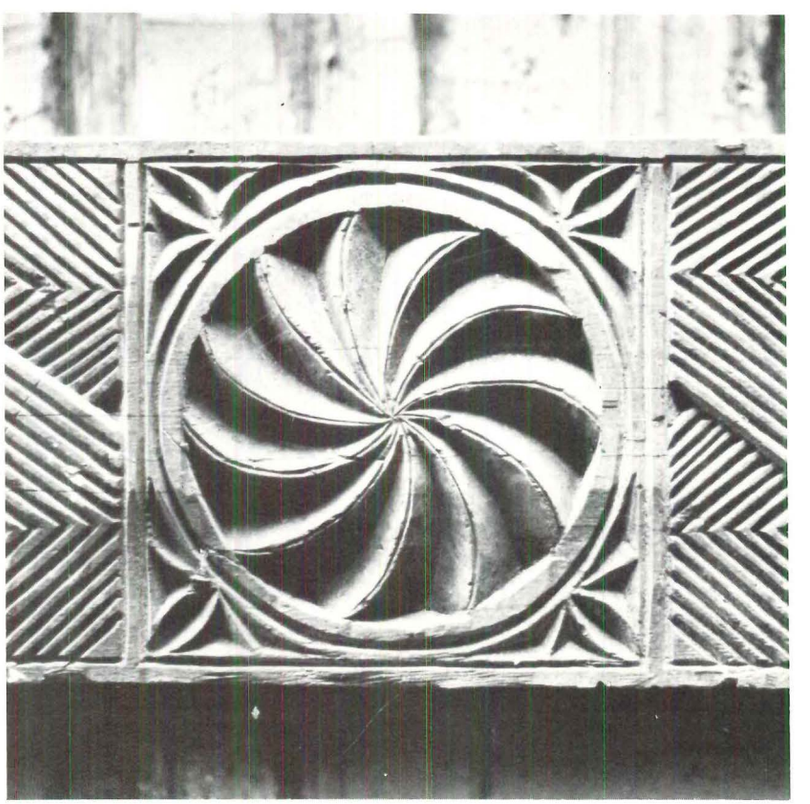


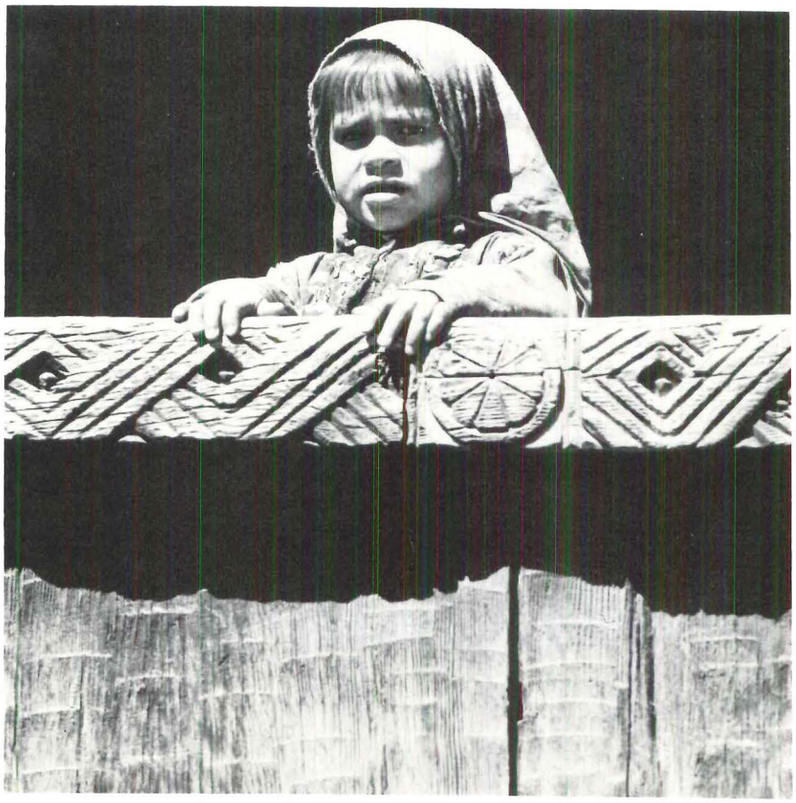
The internal structure of Nuristani houses, especially those of the wealthy cattlemen, is richly carved with geometric patterns. All of the illustrations here are of parts of houses in Kamdesh except for one drawing (bottom left) which shows decorative elements from a mosque in Kamu. The columns on the porch of the house (immediately below) are fitted into the beams and carry only vertical loads. In the living room (bottom right), which has a fireplace, a series of wooden members corbelled above the fire provide a smoke funnel.

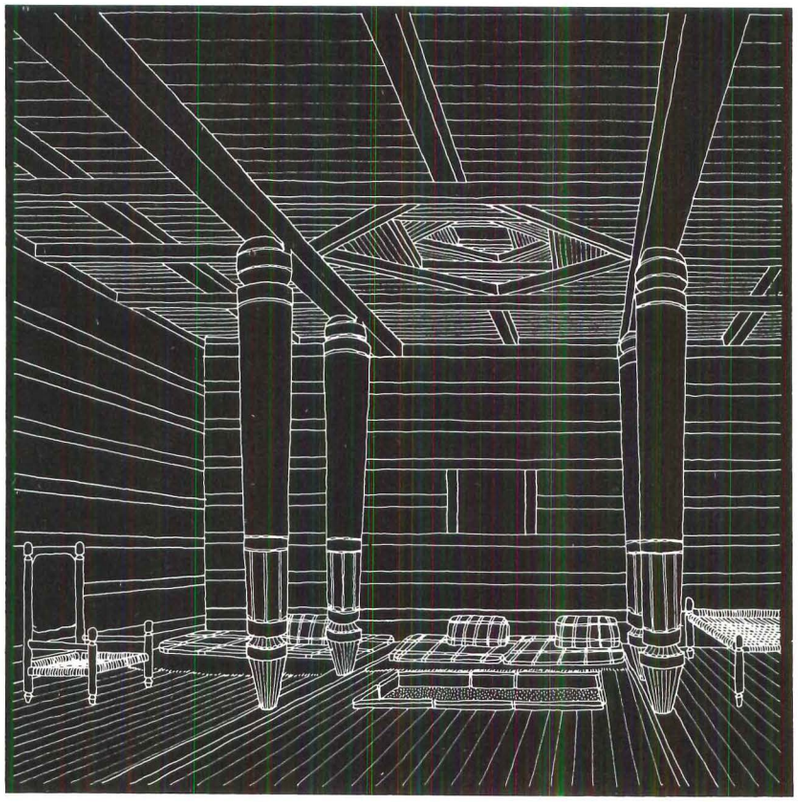












house is dug into the mountainside and neighboring houses are contiguous on both sides so only a single exterior wall with openings just large enough to provide ventilation of the storage areas is exposed to any possible threat. In contrast to the heavy solid base of the storage area, the top story is open, airy and well decorated with large wood panels that fit into a light post-and-beam framework.

The top story is divided into two major parts: a front porch with a view and plenty of fresh air, and back rooms nestled against the mountainside where more private activities occur. The porch is the principal multi-use area for the family and runs the entire length of the house. A line of richly ornamented wooden columns runs down the middle of the room. This large family space is usually kept open and commands an excellent view of the village below and the surrounding landscape. Well ventilated, it is the main entertainment and work space during the warm summer months. A long bench just below the front open balustrade is built for the family and the many visitors. Cooking is done off to the side of the porch.

Since most outdoor space becomes part of the general community circulation areas, the porch is the place for family activities in the Nuristan villages. Although the porches are covered and are an integral part of the house structure, in many ways they function like the interior courts of the traditional Afghan house.

The more private rooms are located at the back of the long linear porch. The members of the family retreat to these rooms for sleep or to get away from the more gregarious activities of the main porch. In winter the main porch is exposed to bitter winds. To escape from the cold, the family moves into the back rooms that are sufficiently heated by a small fireplace located in the middle of the room. To conserve the precious heat only a single small window in the back wall lights the room.

Connecting the back room to the main porch are heavy wooden doors consisting of two panels of wood, a lower half and an upper half. During the winter both panels are closed but during the warmer seasons the lower panel is closed for privacy while the upper panel is left open to let in more light. In the Kamu house only one back room is found behind the porch. In the more complex house of Kamdesh, two back rooms line the porch space; one is used for cooking and the other more elaborately furnished is used for entertaining and sleeping. The Nuristanis, unlike most Afghans, use wooden furniture, elaborately decorated low chairs and tables as well as beds. The furniture is placed along the perimeter of the inner room, leaving the center open for the fireplace.

In the larger houses of expanded families the front porch is further elongated in plan and many sub or nuclear family rooms are lined along the back of the porch. This arrangement gives the appearance of a central festive space with a string of almost hotel-like rooms along the inner side.

The multiple openings of the porch space are usually treated in the following manner: The two end modules of the cellular front face are usually kept permanently closed with large wooden panels hewn from a single piece of wood. Thus the corners of the porch area are more enclosed and shelter the more domestic activities of the family such as cooking and washing. From the exterior the end panels better define the porch area. Seen from a distance, the Nuristani village seems to be a wall of rowhouses but

the elaborately carved and defined porch areas individualize and particularize each house.

In the past the decorated elements were more deeply cut. In many cases a single column was carved into four columns still tied together with a common base and capital as in the mosque of Kamu. Although not found in the villages studied, older decorative motifs found in neighboring villages involved figures and faces indicative of the days before the Kafirs converted to Islam. The Nuristanis have altered these forms into the more appropriate geometric patterns condoned by Islamic law. Today the most popular wood carvings used are based upon the interweaving patterns found in grass mats. Symmetrical circles or flower forms are also found interspersed with the intertwining weaving patterns carved on the buildings.

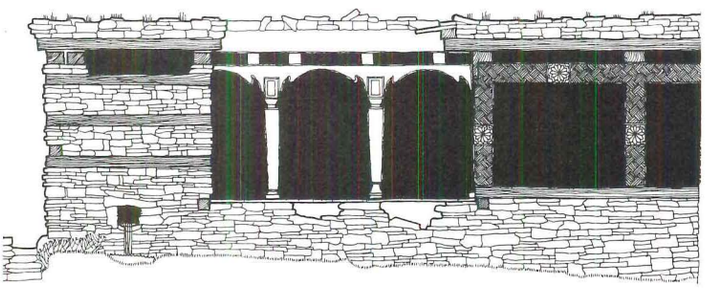
The flooring and roofing consists of a multi-layered system of girders, beams and crisscrossing joists and perlins, all framed together and supported by exterior bearing walls and interior heavily carved columns. A final layer of mud and straw is applied to the roof surface for water protection. When it rains the walking on the mud and straw compresses them, fills in the cracks and makes the roofs watertight. During the winter the snow is quickly shoveled off the roofs to prevent its absorption by the mud and straw.

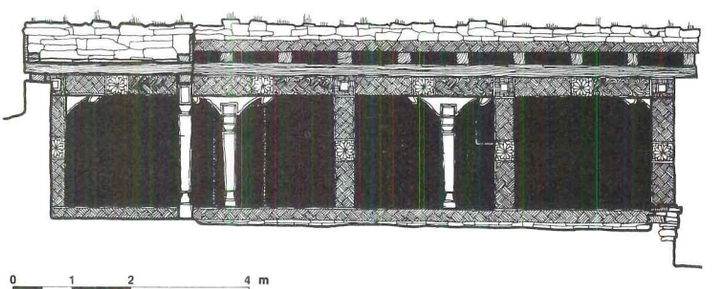
At times the use of columns occurs outside the massive bearing-wall structure; it is used to hold an extended porch or a landing where a large bearing wall would be inappropriate. In these cases the major part of the house rests solidly on its bearing wall base, but spindly exterior landing columns run ten meters down to the ground to perch precariously on large stones below. Apparently Nuristanis love to sit on the very ends of these jutting promontories enjoying the view and the potential danger equally.

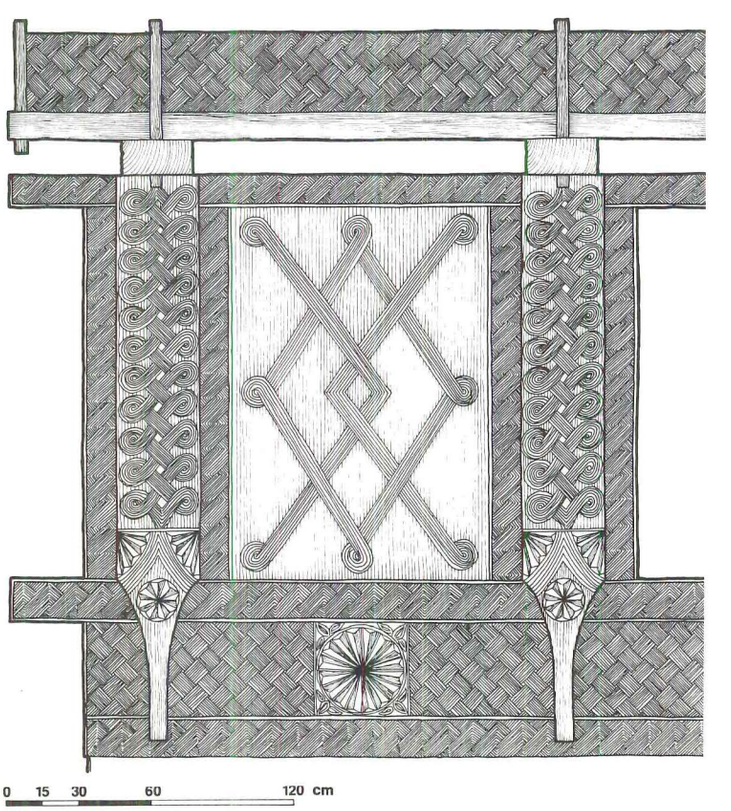
A wooden fascia board fully encloses the roof and is held in place by long wooden pegs. In some cases this fascia board is richly carved. Wooden rain spouts are placed at the corners to allow the roof drainage to spill out without running down the facade and eroding the mud infill of the exterior walls.

All of the interlocking of structural members and elaborate wood joinery are done without nails. Joists are cleverly notched to meet the beam and the corners are carefully spliced so that no gaps occur. The construction of the house takes place during the warmer season, but during the long winter months the heavy structural members are intricately carved. In some cases the wood members are carved before erection.

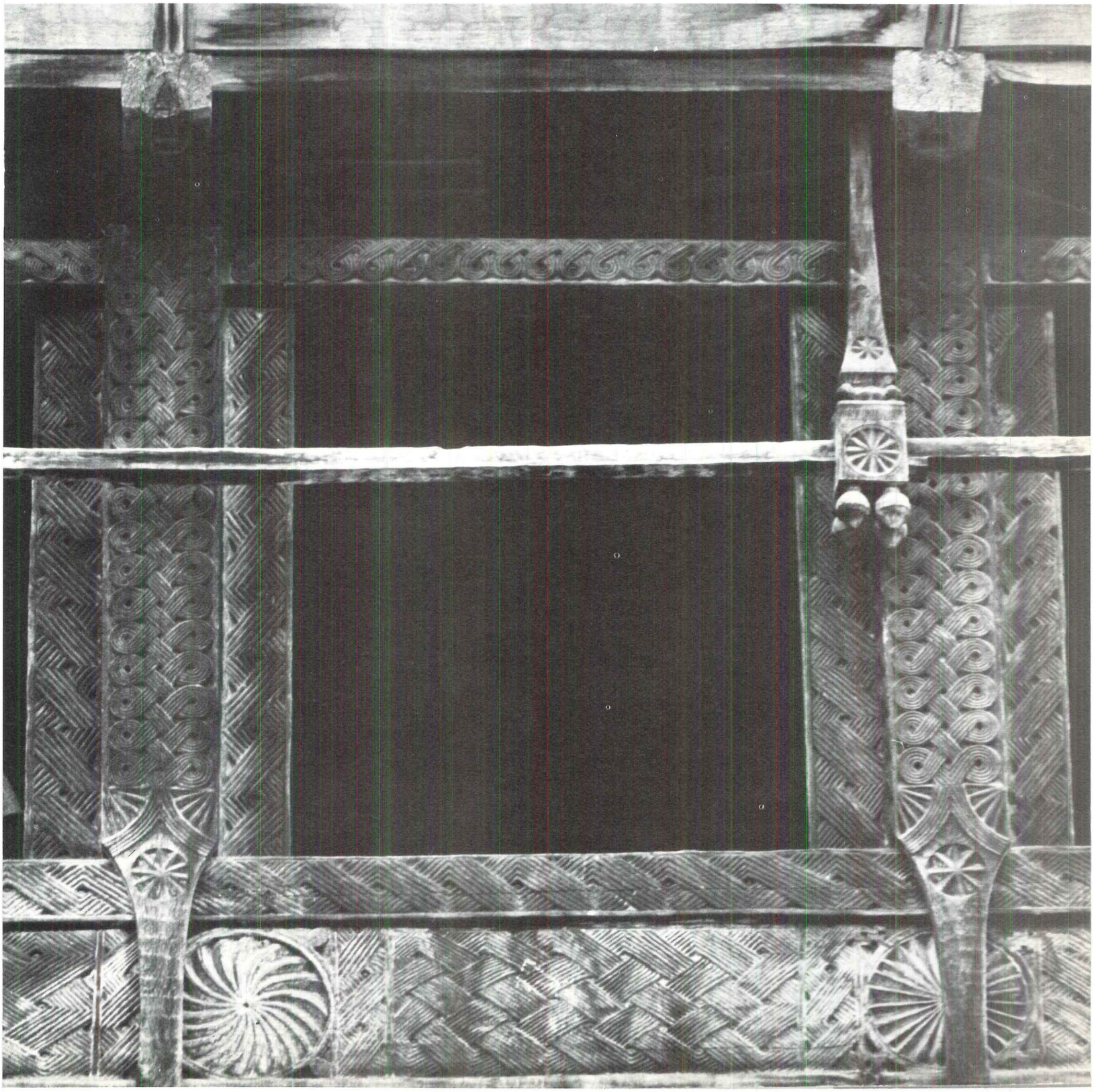
The elements of construction are tied together by the decoration to strengthen the visual effect. The regular horizontal rhythms of dark hewn wood alternating with the mud covered stone provide a strong sense of continuity throughout the village. The slender vertical columns and diagonal ladderways twisting up to lifted porches and entrances create everchanging patterns as one moves through the village. In Nuristan the challenging site conditions, the unique working out of family and community priorities, the unity of construction and the well-integrated decoration have resulted in a tradition of folk building unmatched elsewhere in Afghanistan. The entire community seems to take pride in its accomplishments and the quality of their crafts is kept high. Even today when you ask a man from this part of Afghanistan who he is, he answers, "I am a Nuristani."



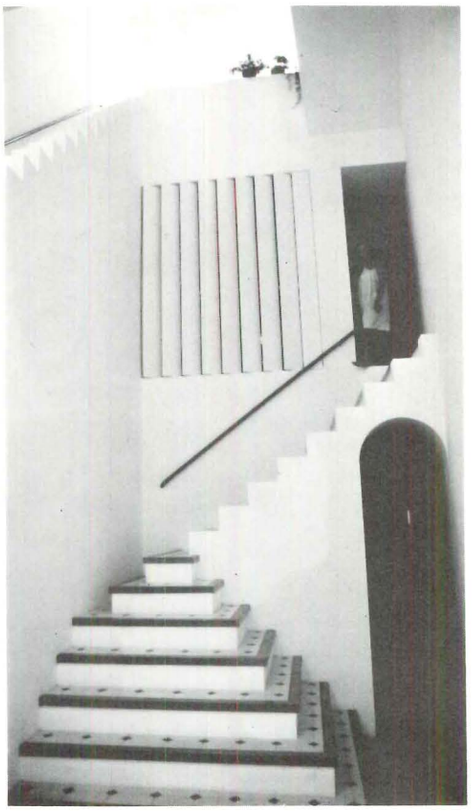


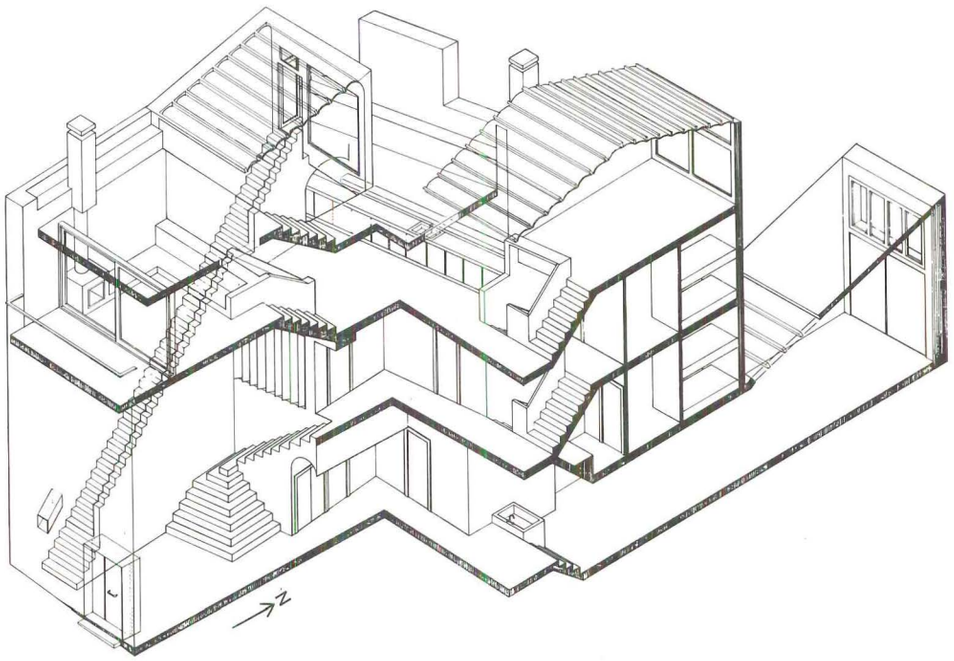


Mosques in Nuristan are built using similar techniques to houses. But since they are larger, they have a more complicated internal structure, usually richly decorated (left). Decorations on houses make use of the same geometric patterns as the mosques, especially on the walls and posts surrounding the porch (below). A drawing of the same house in Kamdesh (bottom left) shows the carvings on one of the panels used to enclose the porch. All drawings in this article are by Professor Hallet's students at the University of Kabul.



Spanish steps





The renovated house fits into the streetscape so well that it is difficult to spot (above). The other illustrations emphasize how the design of the staircases shaped the rest of the house. Theo Crosby is the relaxed fellow enjoying the view (opposite).

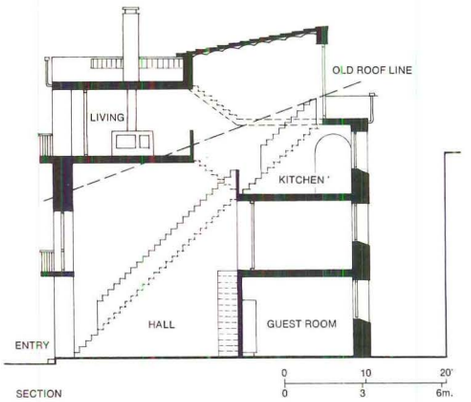
When Ivan Chermayeff, one of the founders of Cambridge Seven and now practicing in New York, and his wife Sara found this house in Cadaques, a fishing village north of Barcelona on the Costa Brava, it was virtually a ruin and had not been lived in for more than sixty years.

They were visiting Spain as guests of Peter Harnden, an American architect who had been practicing in Barcelona and summering in Cadaques for twenty years. Four days after arriving they went with the bartender of a busy local tavern to the place where he stored some of his booze. Also a real estate agent, he had suggested that his warehouse might be suitable for restoration as a house. On an impulse they bought it. That was in 1969. After three years of international construction adventure, the Chermayeffs have a splendid house in a remarkable little town.

Like most Spanish towns on the Mediterranean, Cadaques has become a booming resort in the past few years. The ancient stone house which the Chermayeffs bought four years ago for $15,000 would cost more than three times that today. And renovation costs would be proportionately higher now as well. The house is on a steep, cobblestone street just above the town square and harbor. Although the population swells from 2,000 in the winter to 20,000 during August, the town has only eighty parking spaces—and these are served by extremely narrow roads. Thus the garage in the renovated house would bring almost as much rent as the rest of the house says Chermayeff.

He speaks of Cadaques as dense and active, "a town that is five minutes' walk wide." Since the entire place is a Spanish national monument, all exterior changes to houses must be approved by the Town Architect and by the mayor, who is also the biggest contractor there. The Chermayeffs wisely expedited the work by choosing the mayor to do it but even then it took three years to complete.

The staircases controlled the design of the house. As in any small, multi-level building, the stairs with their uncompromising proportions must be fitted in first. Working from New York with Franco Bombelli, partner of Peter Harnden (who has since died), Chermayeff and his colleague John Grady decided to place along the west wall, which over-leaned eighteen inches and had to be furred out at the bottom, a continuous



Activities at the top of the house, where views and breeze are the best, revolve around the kitchen (below). A counter with sink and range runs along one wall and the oven and refrigerator are tucked into convenient niches. Without breaking the stairs' rhythm, the solid baluster opens to allow access to it from the kitchen (bottom). The dominance of the continuous stairway is clear in the section (left), which also shows the traditional Catalan arches used to build the house's new roofs. The original balcony, now inaccessible, and the tiny window punched through the stone wall at the bottom of the stair are two whimsical features of the facade (opposite and cover).

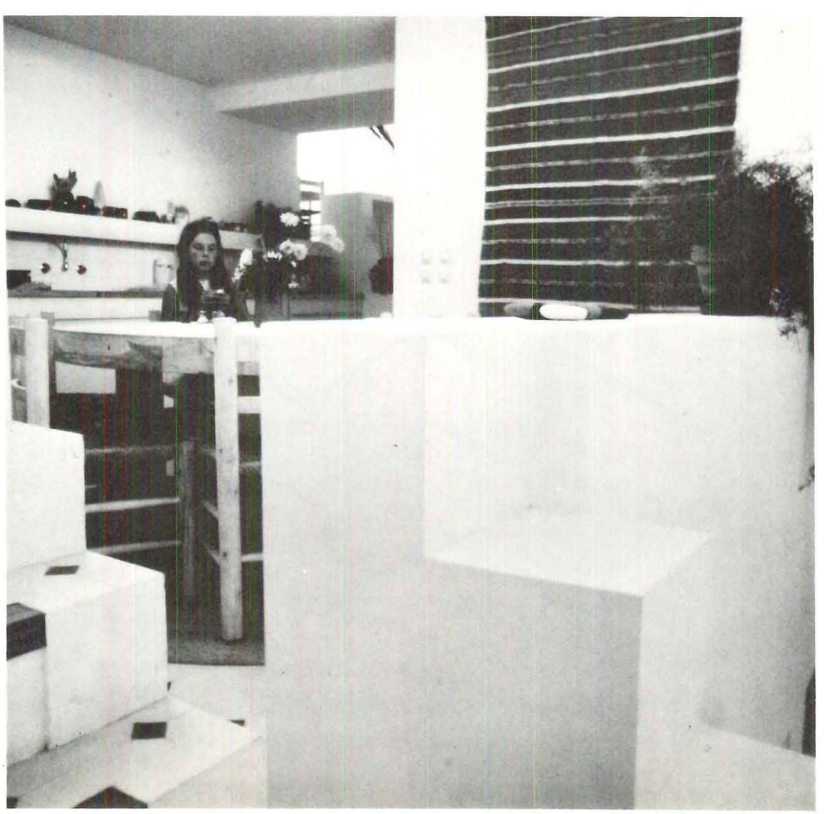
three-story stair that would serve as a reference element for the rest of the house. Chermayeff sees its diagonal shaft as a space from which the tiny rooms on all the floors can draw to augment their own volume. The steep and uninterrupted stair (section above) is a frightening, even surreal concept but one which boldly shapes and orders the rambling interior of the house. A second stair system, discontinuous and gentle, cascades down from one level to the next, ending as a mestaba-like pile in the entry.

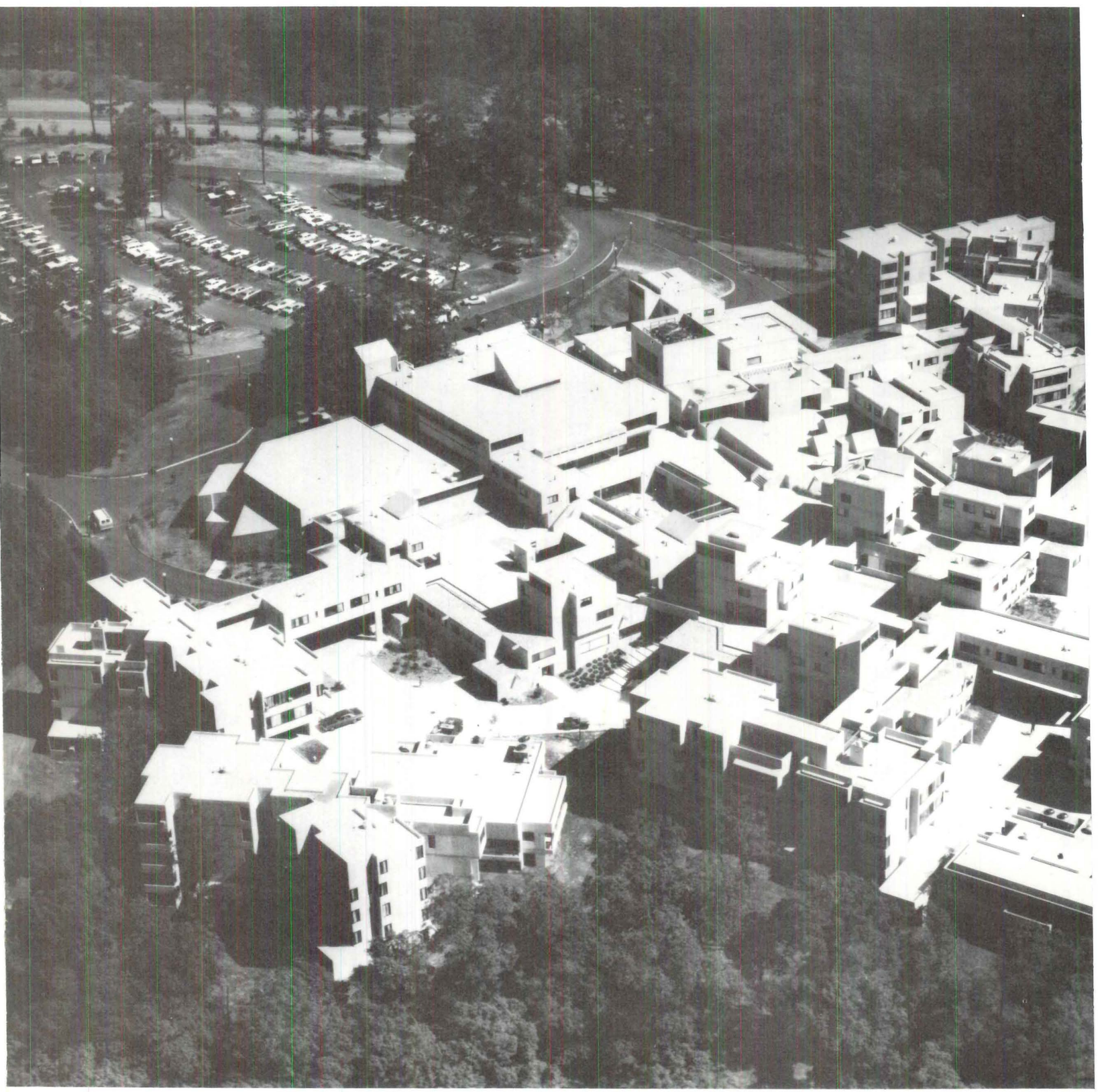
The skewed tile patterns on the floor give visitors an immediate clue to the geometry of the remainder of the house. None of the existing stone walls are at right angles to each other or even plumb. Into this man-made canyon, from which the original floors and roof were removed, the architects built a series of platforms for eating, cooking and living rooms that share the open space with the entry. The kitchen (right) is in fact the center of things. A tiny dumbwaiter has been tucked into one corner of the house, mainly to bring food, bottled water and the other liquids so necessary for summer living to the kitchen level.

The master bedroom and bath are immediately below the kitchen and below them on the ground floor are the guest bedroom and bath. In the wing along the east side of the house a studio and garage connect it with the street to the rear. This long room can be locked and used for storage when the Chermayeffs rent the house to others. Above it are two levels of bedrooms for children and at the top, a dining room. From this level there are sweeping views across the rooftops of the town to the sea.

When the practical matters of internal commodity were resolved, the designers turned their attention to the street facade of the house, slightly more than twelve feet wide. Restricted here by considerations of historical preservation, they decided to retain the existing second floor balcony even though removal of an existing floor above the entry made it inaccessible. Atop that, well above the pedestrian's gaze on the narrow street, a new balcony off the living room and a small window at the bottom of the stairs was allowed, by town officials.

Facts and Figures
Chermayeff residence, Cadaques, Spain. Designers: Ivan Chermayeff and John Grady. Associated Architect: Franco Bombelli of Harnden & Bombelli, Barcelona. Building area (net): 2,400 sq. ft.

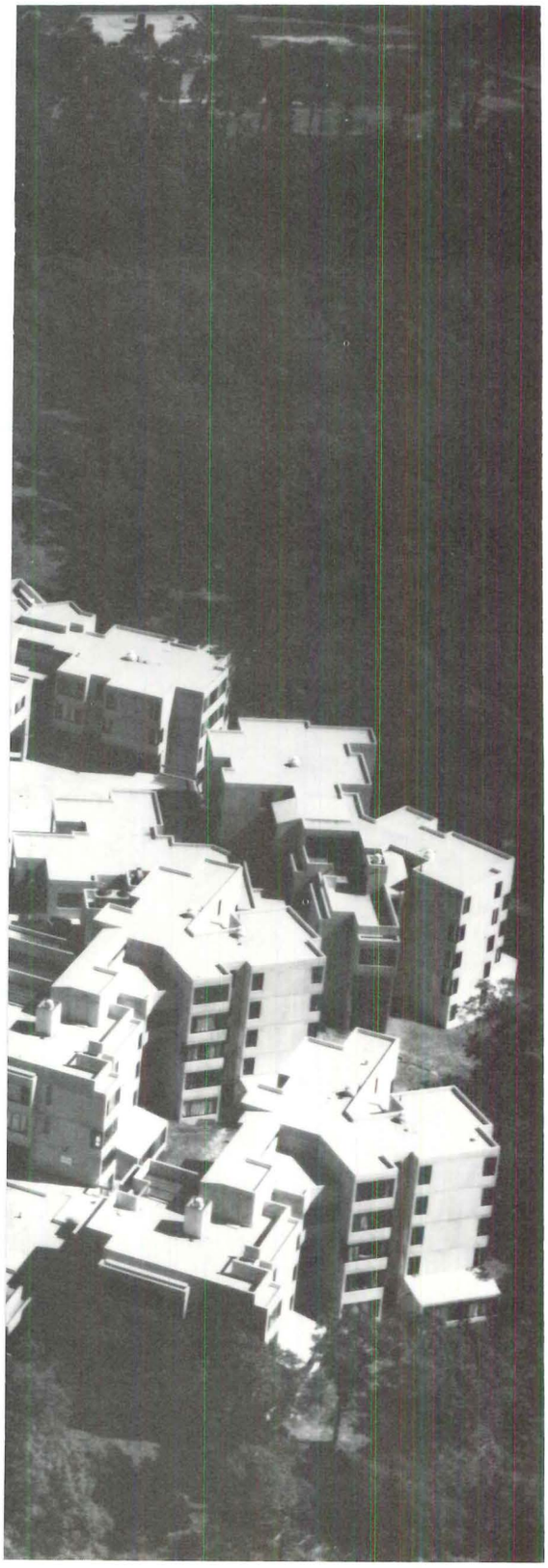


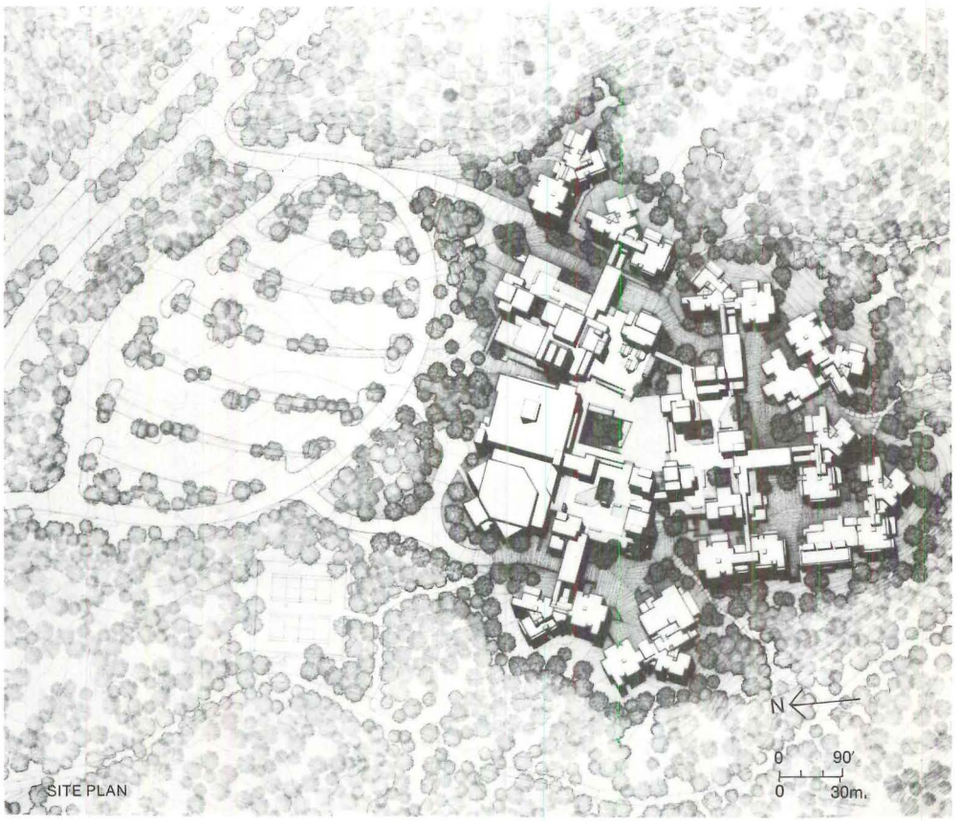


Hill town on Long Island

A new college campus in Old Westbury

By Stanley Abercrombie



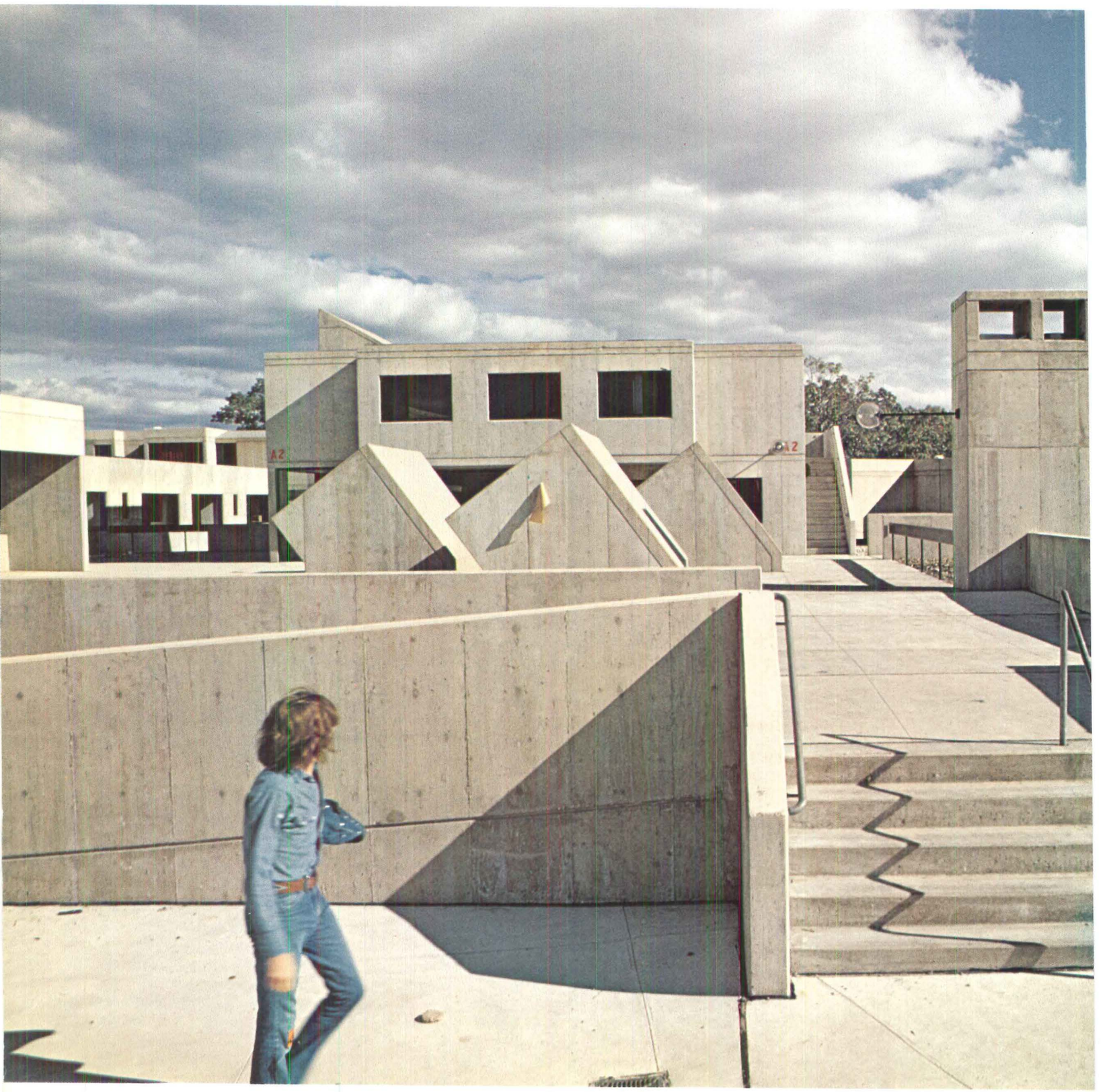


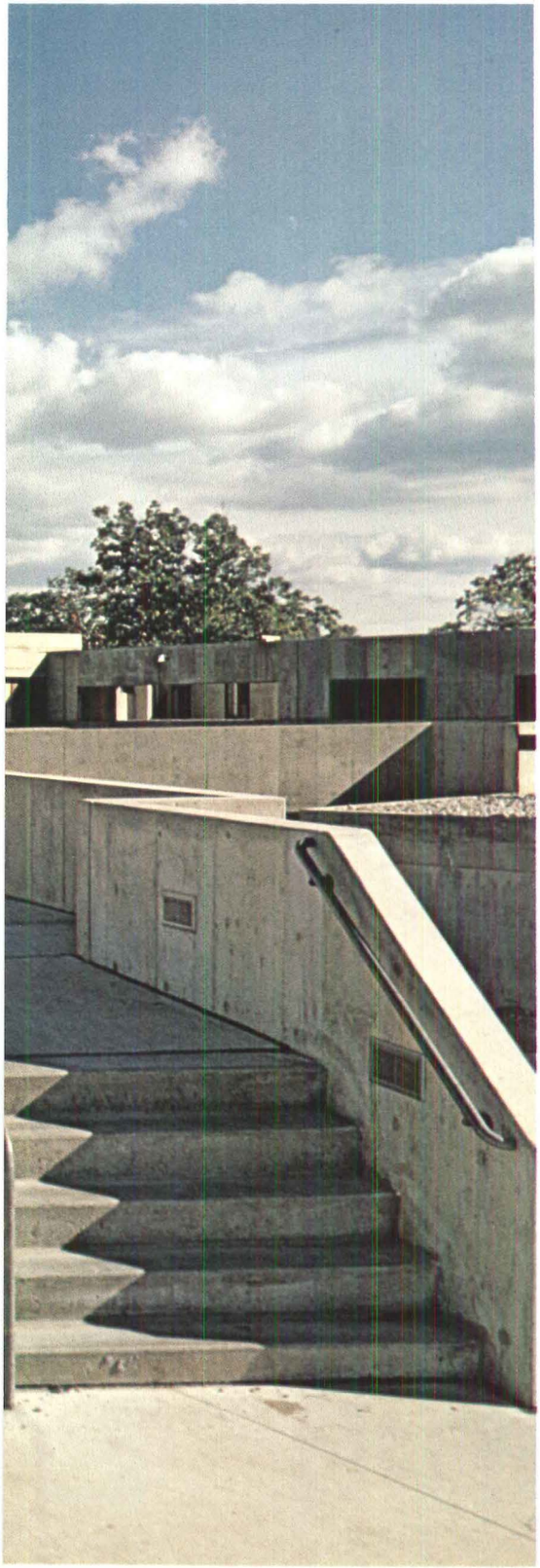
SITE PLAN

A pervasive idea among architects in the last decade has been that the modern movement fostered sterile buildings and that our reaction must be a return to the free, the loose, and the picturesque—an idea not only pervasive but dangerous, as is demonstrated as seldom before in a new college campus by Victor Christ-Janer, John Johansen and Alexander Kouzmanoff. These architects deserve our appreciation for having provided us with such an uncompromising realization of the picturesque idea. And now that we have seen it, perhaps we should admit that the idea is faulty, that Mediterranean hill towns, beautiful as they are, do not travel well, and that we should at once confiscate from Messrs. Christ-Janer, Johansen and Kouzmanoff their copies of Camillo Sitte. It is one thing to admire medieval town plans; it is quite something else to reproduce them on Long Island.

The school's full name is State University of New York College at Old Westbury. It is forty minutes from Manhattan, two minutes from the Long Island Expressway, and no time at all from the comfortable suburb of Old Westbury, New York. The site is the former Ambrose Clark estate, 600 acres forested with 75-foot-high oaks. In the mid-1960s the State University of New York acquired this site for its expansion, and also another one in Purchase, New York (for which Edward Larrabee Barnes has designed a campus characterized by symmetry, dignity and clarity—a campus, in short, exactly the opposite of Old Westbury). In 1965 Christ-Janer, Johansen and Kouzmanoff were asked to form a joint venture for the design of the Old Westbury campus. Together with the staffs of the University and of the State University Construction Fund, the architects began work on a campus master plan in 1965; the result called for five "cluster colleges" dispersed around the edges of the site, with some shared facilities in a central core. In 1966 the master plan was accepted, and the architects turned to the design of the present campus, intended as the first of the proposed "cluster colleges."

A view from the edge of the central plaza. The three angled concrete forms contain skylights for an art studio below, and beyond them is the top of the tower housing the Communicative and Creative Arts division. Opposite page, another view of the concrete roof decks, the central plaza at the right.



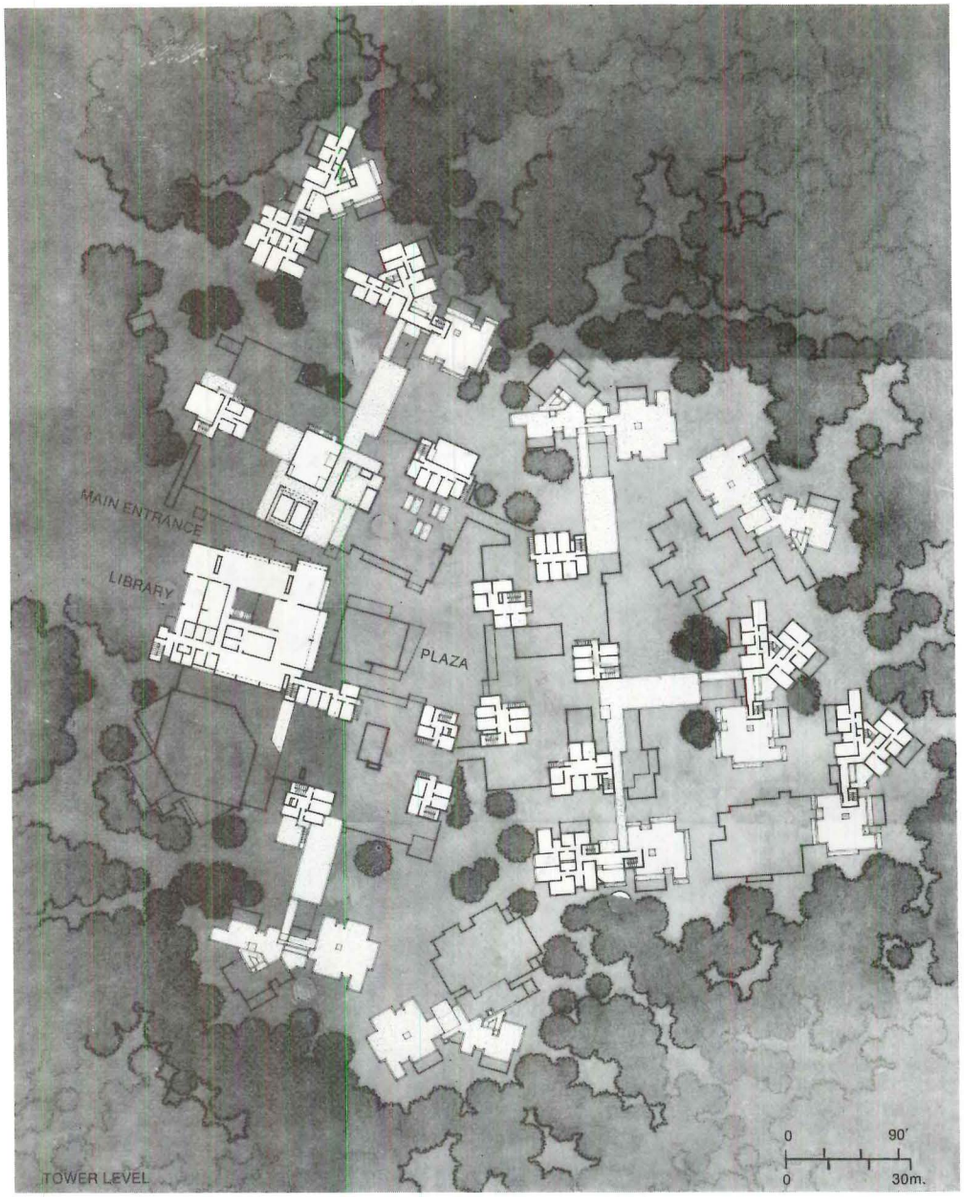


Design suggestions also came at this time from Dr. Harris Wofford, chosen to be the first president of Old Westbury. Described by a faculty member as "a liberal in the grand tradition," Wofford enlisted the advice of radical student planners who were fiercely anti-establishment. Experimental pilot programs of teaching were begun in the staid grandeur of the Clark mansion, and, when (perhaps from the sheer humiliation of it all) it burned to the ground in 1968, the programs were moved to a group of geodesic domes at a state-owned arboretum north of the campus.

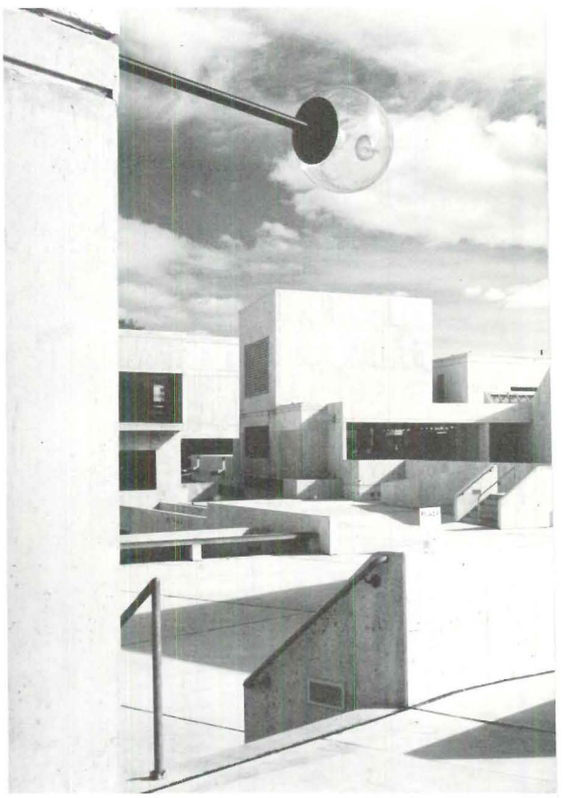
In this heady atmosphere, Christ-Janer, Johansen, and Kouzmanoff, weighted with the ballast of a somewhat more conservative State University administration, designed Old Westbury. Construction began in July, 1969, and was sufficiently completed for occupancy in October, 1972. But by 1970 the ballast had come to outweigh the ebullience: after a flurry of sit-ins, demonstrations and general confusion, Wofford resigned and was replaced by the current president, John Maguire. The experimental pilot programs stopped. Whereas the key word during the Wofford administration was "revolution," the key phrase under Maguire (who has a Doctor of Divinity degree) is "human justice."

Because of this modification of goals, and because of a student body that is not what was originally expected (there are fewer students than anticipated who live on campus, more who commute from urban ghetto areas), the school's function is different from that for which it was so painstakingly designed.

Although Old Westbury already has a full complement of over a thousand students, the campus housing is far from being fully occupied. The original plan for student dining was one central cafeteria supplemented by three smaller ones close to the housing; one of these smaller ones has become a student-operated rathskellar, another has become a book store. Old Westbury also finds that it needs fewer small classrooms than planned, but more large



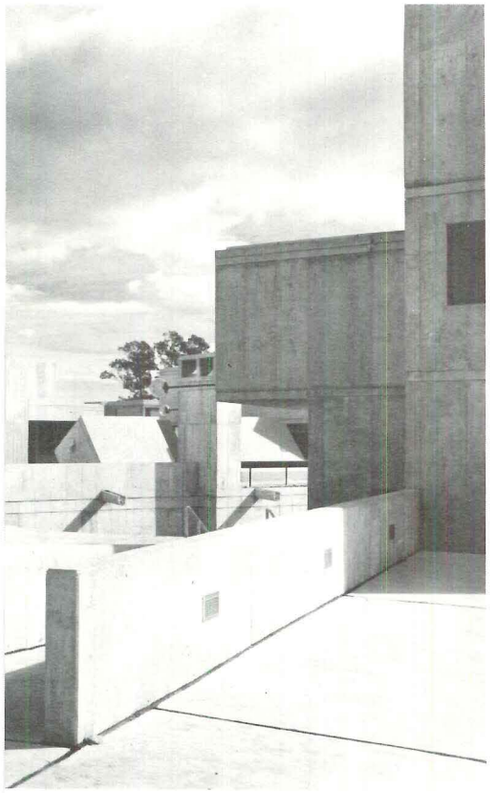
The roofs of the campus buildings are paved decks accessible for circulation, and these upper levels are animated with unexpected juxtapositions of the concrete building elements. Top left, a view toward the central cafeteria. Top right, a pedestrian bridge spans one of the stairs meandering down to the "village street." Below left, the central plaza with the library beyond. Below right, two academic towers (for American Studies and for Politics, Economics, and Society) are seen over the three art studio skylights.

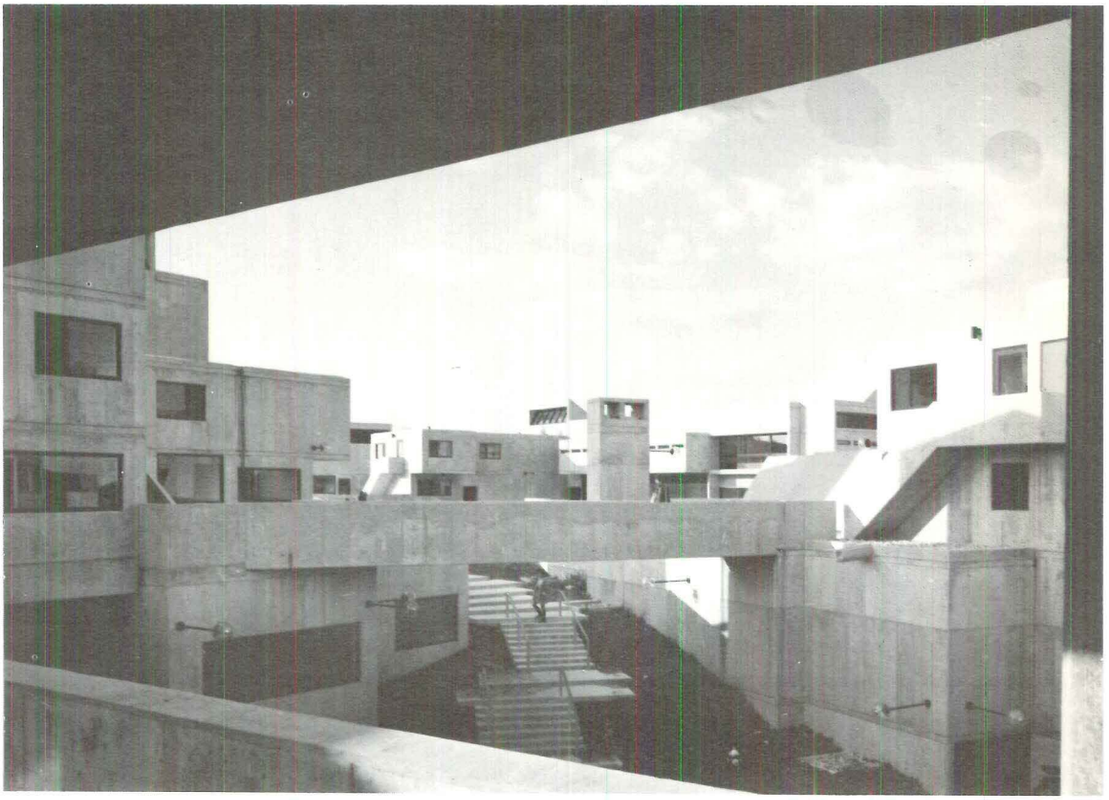


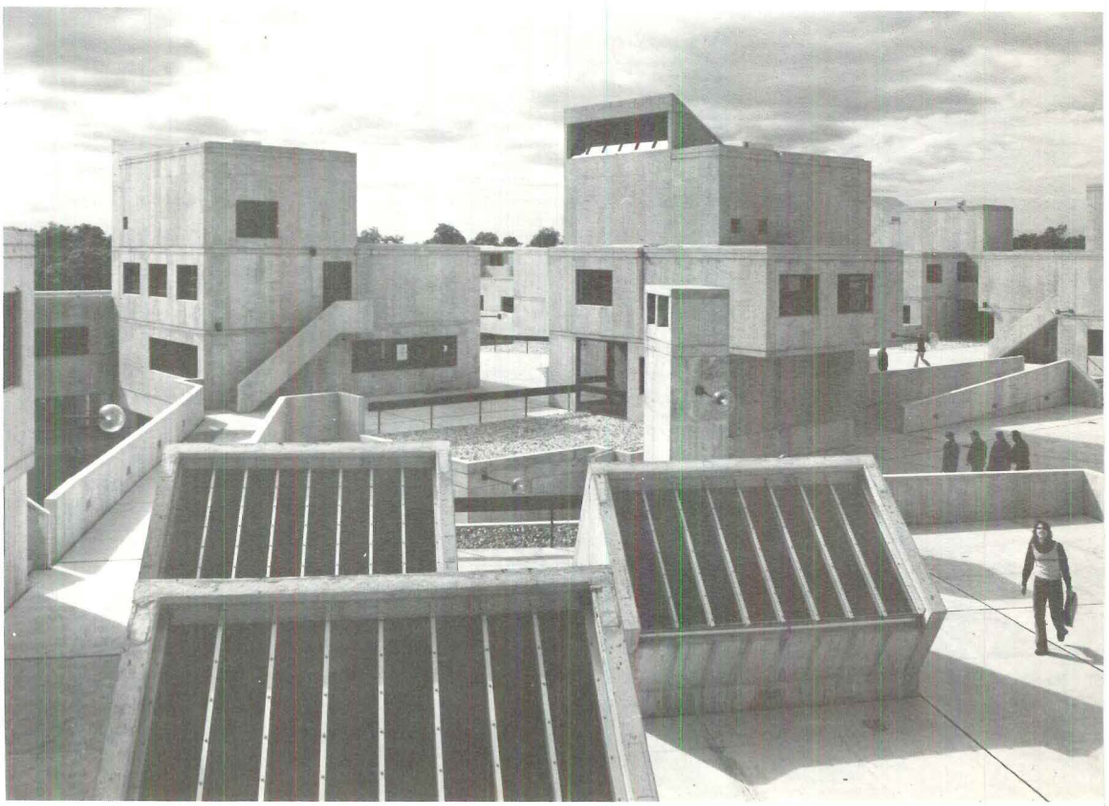
ones; this difficulty may soon be overcome because seating is now finally being installed in two large lecture halls. The original idea of dividing the college into distinct educational disciplines (an idea reflected in the presence of several vertically stacked "institutes," with faculty offices and conference rooms at the top, classrooms below) has been largely replaced by an effort to make studies as interdisciplinary as possible. On the whole, the Old Westbury campus seems to have accommodated these changes very well. President Maguire says that the design reflects its time's "rebellion against anonymity," whereas we now seek "recovery of community." But, for the most part, he is enthusiastic about the campus. "A thoroughly fresh notion," he says.

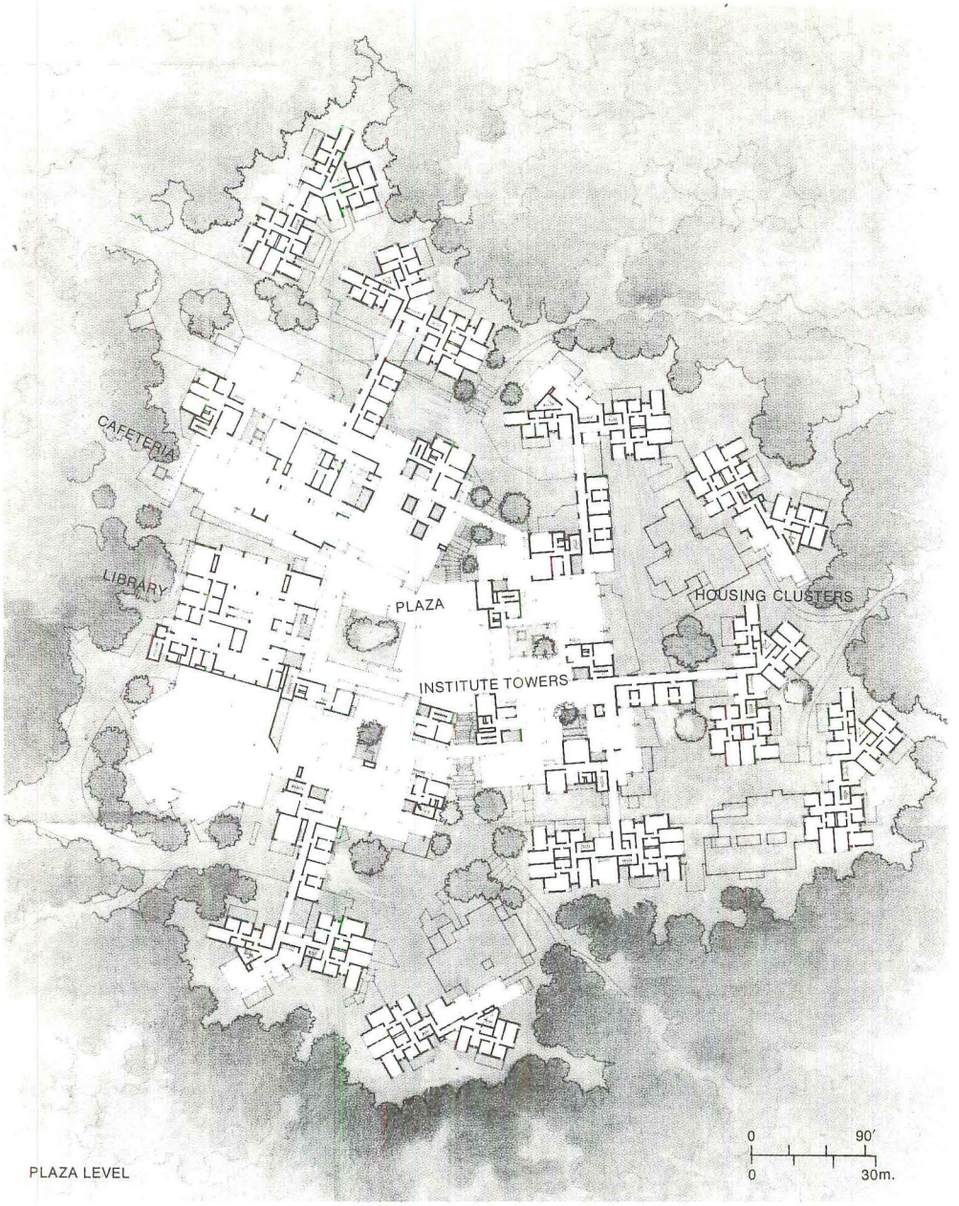
Changes, and accommodations, can be expected to continue. Minor construction work is still in progress, and some is still in the future—not yet provided, for example, are any signs, and there never was a campus that needed them more. Meanwhile, work beyond this first "cluster college" is moving ahead, with the three collaborating architects now working separately. Construction of the first building of the central core, by Kouzmanoff, has just been begun. And other architects are being brought in; a group of service buildings near the campus entrance is by James Stewart Polshek, and a Polshek-designed gym is soon to be built.

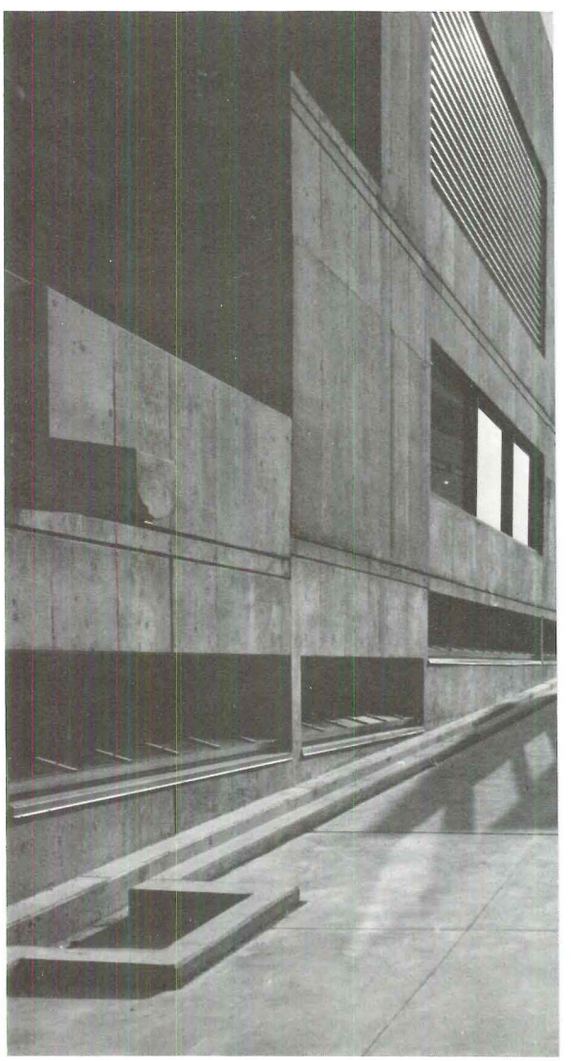
But our story has postponed as long as possible a look at the product already built. Inside the ring of beautiful oaks is another ring; these perimeter buildings are the campus housing. They form a highly irregular but quite continuous wall through which, from the inside, there are occasional glimpses of the woods. But this is a "look, don't touch" experience—actual access through the housing to the woods is hard to find. One student, asked about the campus, said it was "like a compound, man." Although many students are delighted with Old Westbury, this one did seem to have a point. Inside the ring of housing is a ring of pavement. Described in a college bro-











chure as a "village street," it is also a driveway for service vehicles and the campus security patrol. Overhead, there are concrete bridges from the housing to the inner campus, some bridges narrow and some wide enough for a row of dormitory rooms along one side.

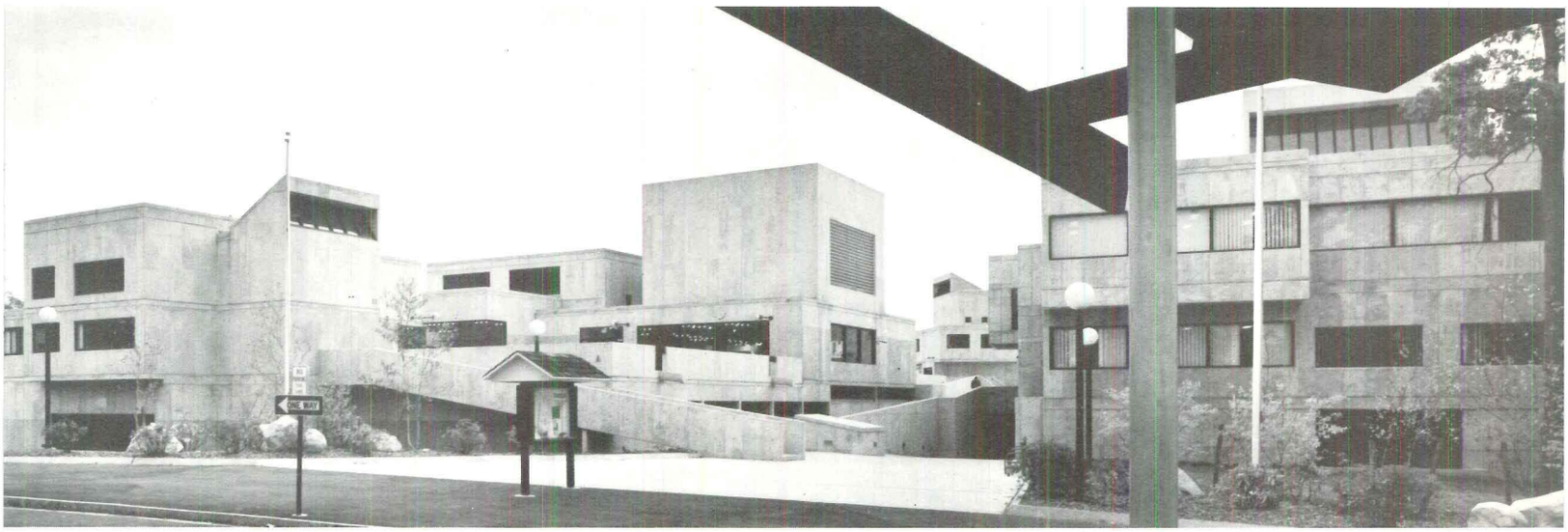
Bounded by the wandering path of this village street is the heart of the campus, a cluster of the vertical "institutes" already mentioned and the great concrete mass these "institutes" penetrate. The roof of this mass, on many different levels, is accessible from a variety of ramps, stairs, bridges and towers, and can accommodate, in good weather, any number of student comings and goings.

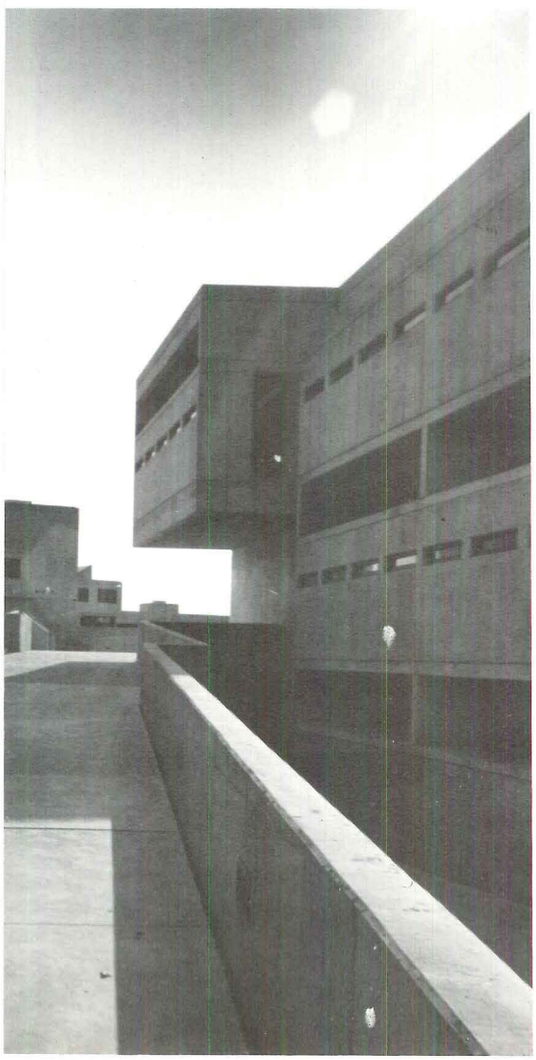
The central and most important of these roof decks has an opening to the level below, the main circulation level in bad weather. As a focus for the campus, the upper level seems bleak and amorphous, the sunken portion rather small and mean. Down below, borrowing light from this sunken area, are entrances to the central cafeteria, the large lecture rooms and the library, which has the most dramatic interior space of all. Dramatic spaces, however, are a dime a dozen on this campus; at every turn—and there are a great many turns—there is a surprise. These are not surprises that come from the accretion, through time, of changing uses, nor are they the natural consequences of function. Just surprises.

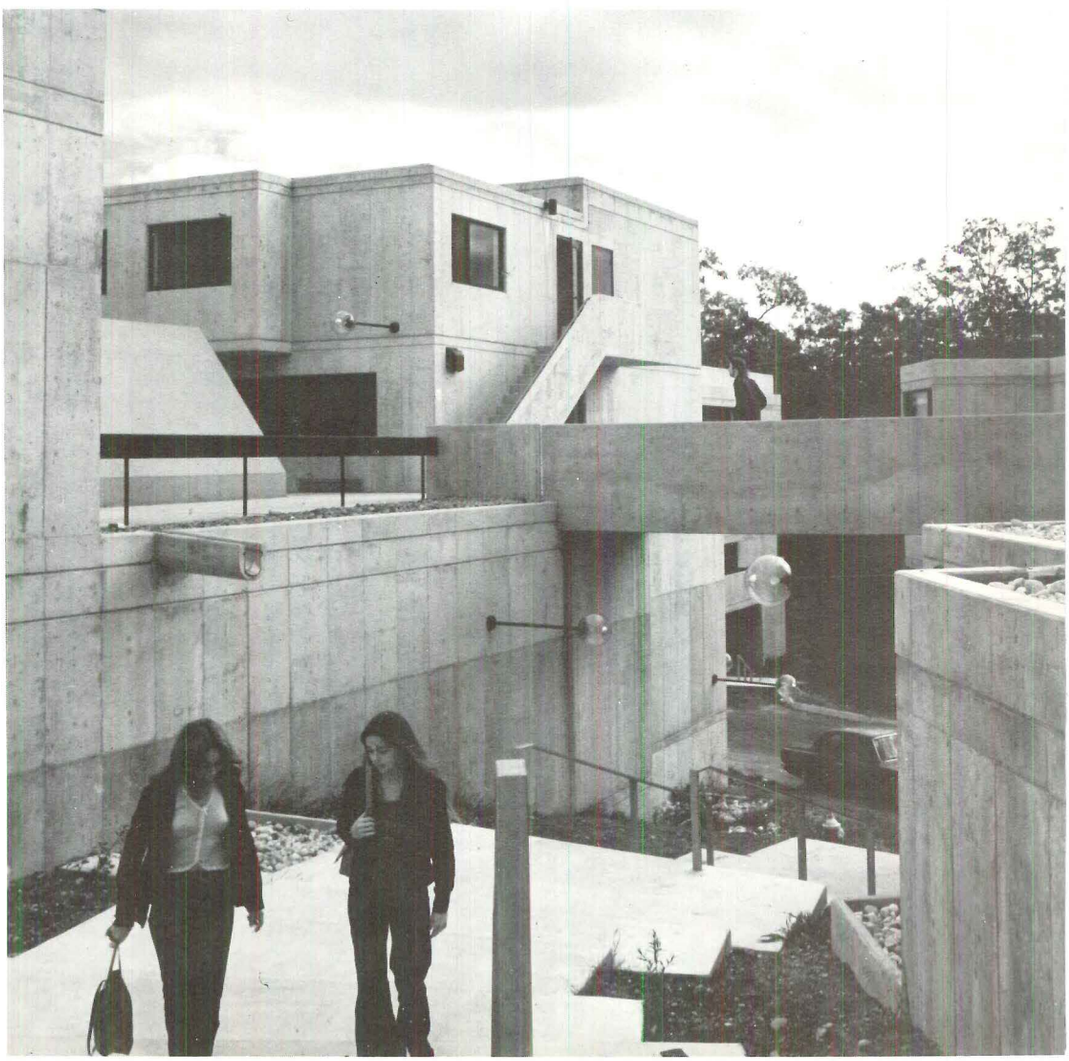
And everywhere there is concrete—36,000 cubic yards, we are told, and we believe it. The architects initially intended that the exterior paving be brick, which would have been a welcome change of color and texture, but, in an economy measure, the brick was eliminated.

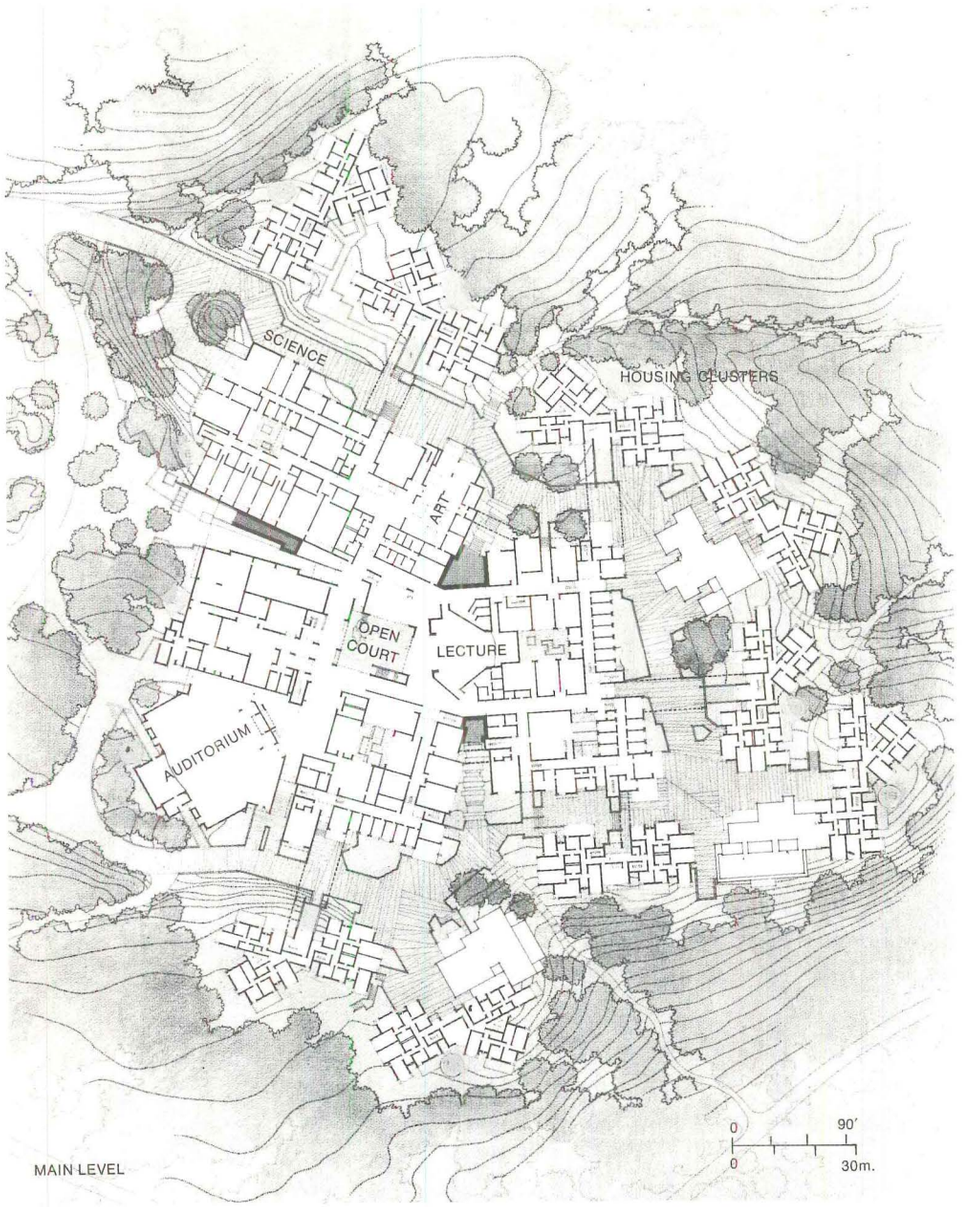
Although this article, at its beginning, suggested that Westbury had value as a completely built example of a current taste for the picturesque, it is clear that Christ-Janer, Johansen and Kouzmanoff have had a more serious intention than just giving us that. They intended a response to a complex educational program, of course,

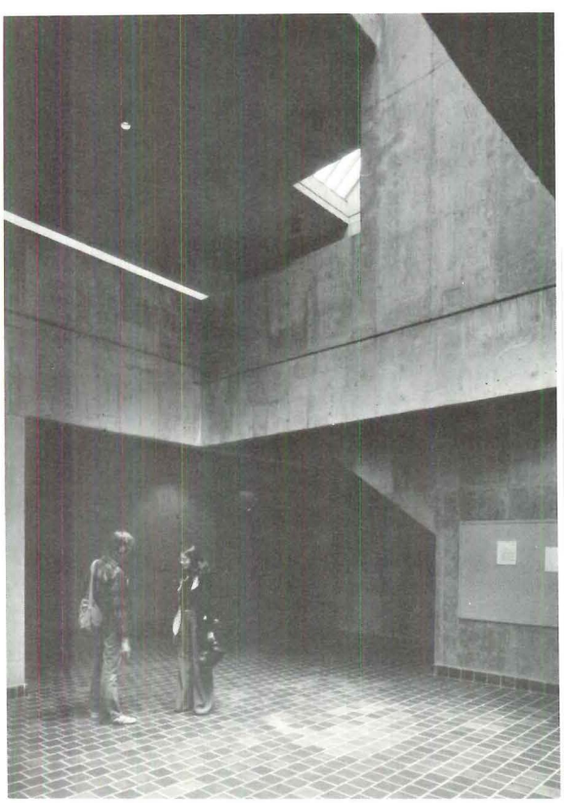
Top, the approach to the campus from the parking area. The sculpture partly seen on the right is by student Ernie Smith, and the entrance ramp is seen directly beyond it. Below left, the entrance ramp as it approaches the plaza level. The central cafeteria is on the left, the library building on the right. Below right, one of the stairs down from the plaza, by the Communicative and Creative Arts building.









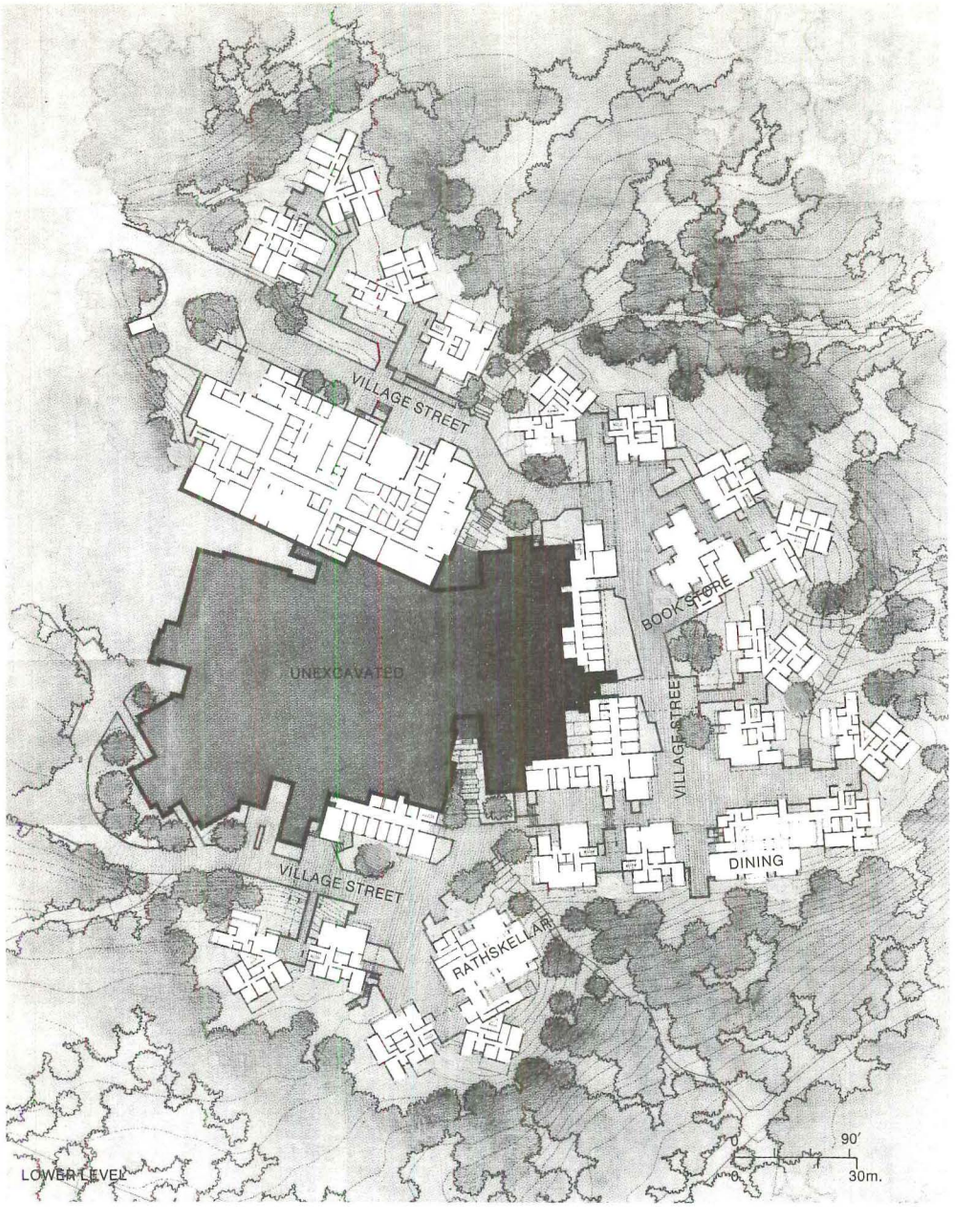


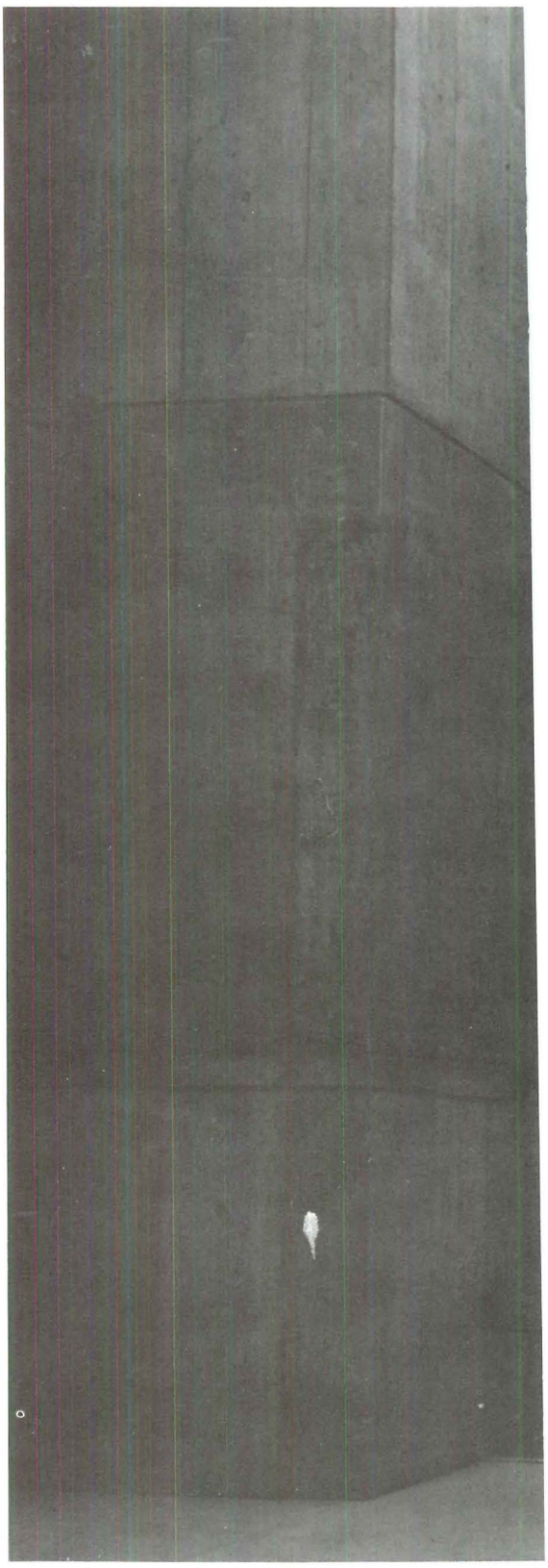
and to the rebellious spirit of the '60s. We may infer a further intention from the context of their other buildings and writings, particularly those of Johansen, for, of the three, he has been the most flamboyantly experimental. His 1969 Goddard Library at Clark University, for example, was an absolutely stupefying assemblage of diverse brick and concrete elements, with an intentionally complicated façade which has something in common with Old Westbury's intentionally complicated plan. Two years later he carried the use of unexpected juxtapositions even further in his delightfully happy tinkertoy, the Mummers Theater in Oklahoma City.

Johansen has also been an impressively articulate theoretician, and his theory is that such messiness is not only medieval but also very modern. In the summer of 1966, just when Old Westbury was being designed, he wrote an article for *The American Scholar* titled "An Architecture for the Electronic Age." He observed that "a rigid deterministic world has given over to one of contingency and organic incompleteness and probability," and that "the images of the electronic world are continuous, simultaneous." He called for architecture sympathetic to, and influenced by, these scientific developments, architecture, "direct, . . . unedited, unrehearsed."

Johansen knows, of course, that buildings are far too cumbersome and tedious of accomplishment ever to be built "unrehearsed," and that only the most carefully edited building can be made to seem "unedited." What is more important is that Johansen considered unedited, chaotic effects desirable in 1966 partly because they would be attuned to what the physicists were learning about nature. The disagreeable part of this scientism is that it ignores man, who is, after all, part of nature and a rather important part. What has always characterized man—and not only back in the dull old days when Newton's time flowed "equably, without regard to anything external"—is his ability to discern, appreciate, and create order. An architec-

Opposite page, two views from the main level interiors into the central sunken courtyard, and one of the dramatic (but sometimes puzzling) spaces of the circulation system. On this page, a view into the school's most handsome and impressive space, the central well of the library building.





ture of disorder may be picturesquely photogenic (as it is, for the most part, at Old Westbury), and it may even be a witty allusion to the dance of the electrons, but, carried to its extreme, it is inhuman.

One of the two authorities most often quoted in Johansen's *American Scholar* article was Norbert Wiener; the other was Marshall McLuhan. Wiener, at least, can also serve as a witness for the prosecution. So let us close with a long quotation (our own italics) from his book, *The Human Use of Human Beings: Cybernetics and Society* (Doubleday, 1954):

"The first great revolution of twentieth century physics . . . has had the effect that physics now no longer claims to deal with what will always happen, but rather with what will happen with an overwhelming probability. . . .

"This random element, this organic incompleteness, is one . . . we may consider evil; the negative evil which St. Augustine characterizes as incompleteness. . . .

"The universe, and all closed systems in the universe, tend naturally to deteriorate . . . from a state of organization . . . to a state of chaos. . . . Order is least probable, chaos most probable. *But while the universe as a whole, if indeed there is a whole universe, tends to run down, there are local enclaves whose direction seems opposed to that of the universe at large and in which there is a limited and temporary tendency for organization to increase. Life finds its home in some of these enclaves."*

And so does architecture.

Facts and Figures

Academic Village "A," State University of New York College at Old Westbury, Old Westbury, N.Y. Architects: Christ-Janer, Johansen, Kouzmanoff, Architects (Kelton C. Painchaud, project manager). Engineers: Pfisterer and Tor Associates (structural); Segner and Dalton (mechanical and electrical). Landscape architect: Currier, Andersen & Geda. General contractor: Lasker-Goldman Corp. Building area: 367,660 sq. ft. Construction cost: $13,560,000. Photographs: John Veltri. Aerial by Skyviews Survey, Inc. Building suppliers listed on p. 77.

Under one of the bridges linking the perimeter ring of dormitories to the central cluster, a view of the "village street" circling the campus, and of more housing units beyond.

news+

continued from page 15

Beach bugs

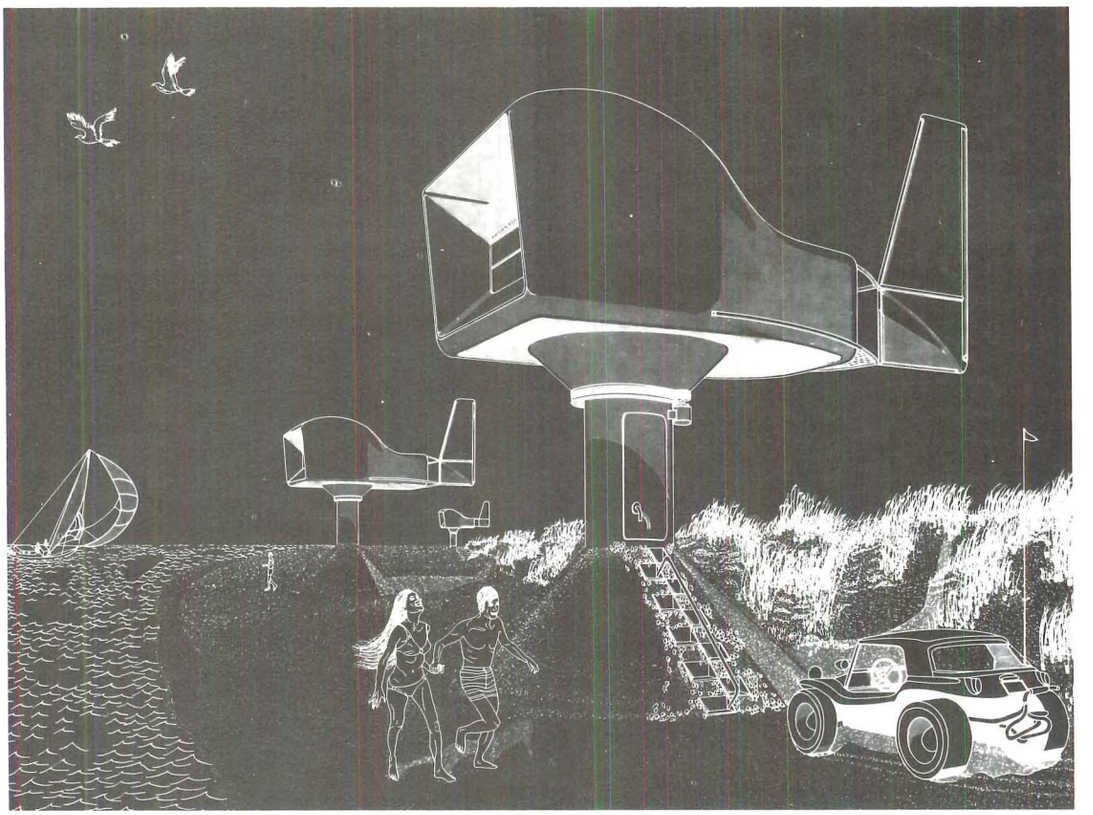
"American beaches are usually dull, drab and tawdry," says Charles Colbert, the New Orleans architect. Why do we have to turn our seashores into slums, he asked —and proceeded to do something about it. The "Beach Flight House" shown here in Colbert's detailed drawings and model photos is the result.

It owes something to the beauty of sailboats, the shapes of kites, and the technology of mobile homes. But, most importantly, it will be a fun house. It will sit on a 4 ft. diameter steel pipe, which is to contain bathroom facilities at the lowest level, and an entrance level and spiral stair above that. All the fixtures and fittings will be nautical in character.

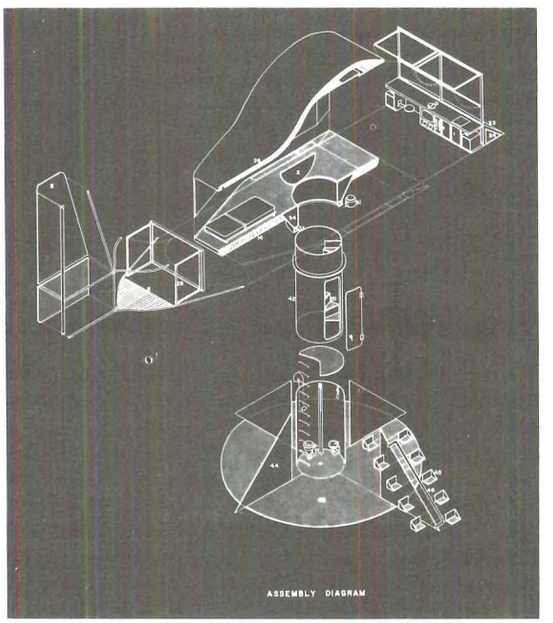
The "House" itself will be literally airborne on top of the pipe. It will be framed in cypress and sheathed in plywood, with all weathering surfaces finished in brightly colored fiber glass. Interior surfaces are to be of pegboard, and the various window openings and related gadgetry will be straight out of automobile and marine technology.

The "Beach Flight House" looks like a great, big weather vane; and, like a weather vane, it will turn in the wind. (There will be a rotation control motor to regulate that motion.) Initial plans call for 22 units to be built on an isolated beach on the Gulf of Mexico, near Biloxi, Mississippi, and they will cost about $10,000 each to fabricate. Colbert has designed the units for different foundation conditions, and different heights. For remote locations, the "Beach Flight House" can be equipped with a wind charger and storage batteries so as to make the units independent of local power lines.

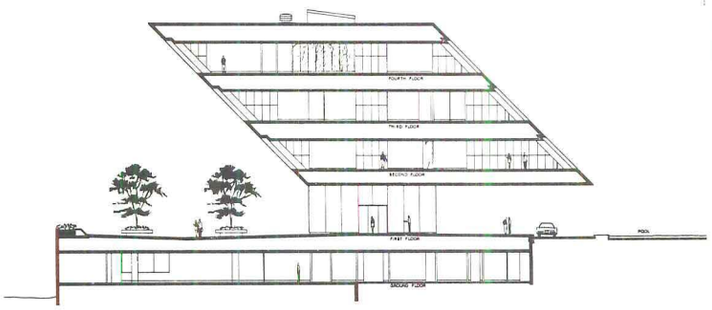
The project is not only ingenious in terms of technology, but cheerfully innovative in the lifestyles it suggests. Most of today's conventional beach houses are suburban residences transplanted to the dunes; the "Beach Flight House" suggests a beautiful sailboat, temporarily tied up to the shore, and thoroughly at home in its natural environment.



Like some giant, live-in weather vane, the Flight House turns at the caprice of the breeze



Tilted mirror glass facade facing north



SECTION

A clever answer, but what was the question?

On a hill between the North Carolina cities of Durham and Chapel Hill, the architectural firm of Odell Associates, Inc. has provided Blue Cross and Blue Shield with a new headquarters building that is a striking *tour de force*. Its three upper floors, 500 feet long, are lifted into the air, supported only by six service cores.

The building is sited with its long sides facing almost directly north and south, and its section has been tilted into a startling parallelogram. Its south and west faces, entirely of mirror glass curtain wall, pitch out towards the top at 45 degrees, avoiding the Carolina sun, and the north and east faces, also glass, pitch *in* towards the top to catch more sun. The resultant protection of the glass from solar radiation, the architects suggest, will result in air-conditioning savings as dramatic as the building's shape. While marveling at their ingenious solution, just one question nags us: why did the southern and western walls have to be all glass in the first place?—S.A.

Women's Archive announced

An Archive of the work of women in all aspects of the architectural profession has been announced, with the hope that exhibitions, lectures, audiovisual presentations, publications on the achievements of women in architecture will grow out of this resource center. The purpose of the Archive is to create a public awareness of the scope and contributions made by women in all realms of the profession.

Women's recent awareness of their position in the architectural profession began in 1971 with an independent proposal for an exhibit of women's work. Regi Goldberg, a New York architect, invited some 200 women to join in an exhibit "to educate ourselves, our male colleagues, the media, the universities, architectural historians and critics, of the contributions and capabilities of the female architect." Although an exhibition was not realized at that time, the following year saw the development of an educational service organization, the Alliance of Women in Architecture (AWA). The AWA proposed to determine and clarify problems within the profession and to help women transcend or eradicate these problems. The basic issues initially discussed in workshops and open meetings were discrimination, the profession and its potential for change, architectural education and women, and the role of women in this profession.

As an understanding of the problems of women in the profession grew, and as the problems began to be discussed in a broader context (in offices, schools, conventions), the need for a unified center of information became a pressing priority. A committee comprised of Susanna Torre, coordinator, Phyllis Birkby, Regi Goldberg, Marjorie Hoog, Dimon Liu, Mimi Lobell and Marita O'Hare has recently established the Archive of Women in Architecture to satisfy this need.

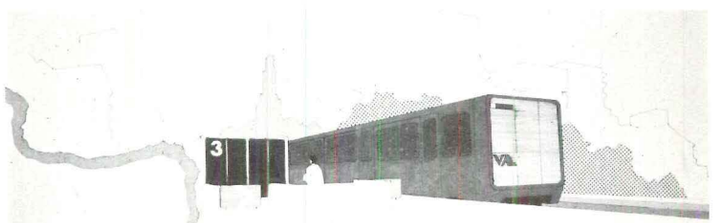
The first phase of the Archive will include a national survey of projects by women covering the entire spectrum of the profession and related areas. The Archive will also contain professional and biographical data. More than 1,200 women across the country have already been contacted, and encouraged to submit work done on either an individual or team basis. This information will be available for general research and reference to interested individuals and institutions. The committee plans to microfilm the contents of the Archive in order to insure its availability and permanence. Hopefully, too, the Archive will be expanded to include international representation.

Although an initial December deadline was established for submissions, the Archive is actually an on-going project and submissions can be made at any time.

The Archive was initiated by a grant from the Architectural League of New York, under its J. Clawson Mill's Fund. For further information, and for submission forms, write to Archive of Women in Architecture, The Architectural League of New York, 41 E. 65 St., New York, N.Y. 10021.

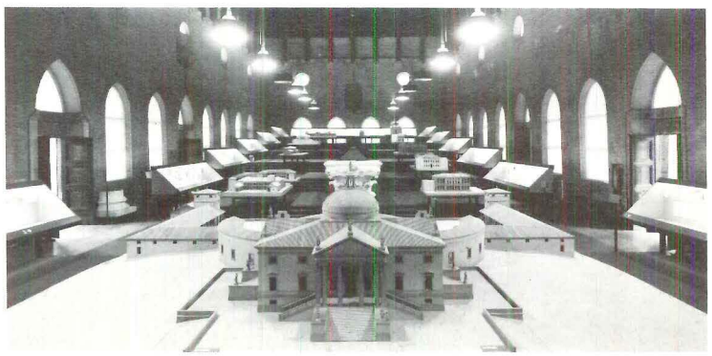
Fast transit

The French New Town of Lille-Est will be located on land belonging to two existing towns: Lille and Villeneuve d'Asq. To connect the New Town to the existing ones, a new high-speed railroad link is being built between the old station at Lille, and the new university in Lille-Est. On that railroad link will move a train known as VAL (shown in the rendering reproduced here). VAL is totally automated, and was created jointly by CIMT, by the Compagnie Electro-Mécanique, and Matra. It was designed by Guy Chevallier, Bernard Fric, and Edouard Maurel of the Group Volume. The trip from Lille to the new university will take all of 7 minutes.—G. de B.



Palladio's Year

In 1570, Andrea Palladio published what is probably the most influential group of architecture books ever written, his *Quattro libri dell'architettura*. The City Council of Vicenza, the Italian town most rich in Palladio's buildings, declared 1973 The Year of Palladio, and is just ending an elaborate series of events and exhibitions dedicated to him. In its first ten weeks, the celebration attracted 30,000 visitors. And no wonder, for the scope of the exhibition seems to have been truly worthy of the master: held in Palladio's own Basilica, the major building of Vicenza's Piazza dei Signori, it featured architectural fragments, a collection of 600 photographs, over a hundred drawings, and a dozen spectacular models. The exhibition was designed by Milanese architects Franco Albini, Franca Helg, and Antonio Piva.—V.B.



Anno Palladiano exhibit; in the foreground, model of the Villa Trissino

Buenos Aires

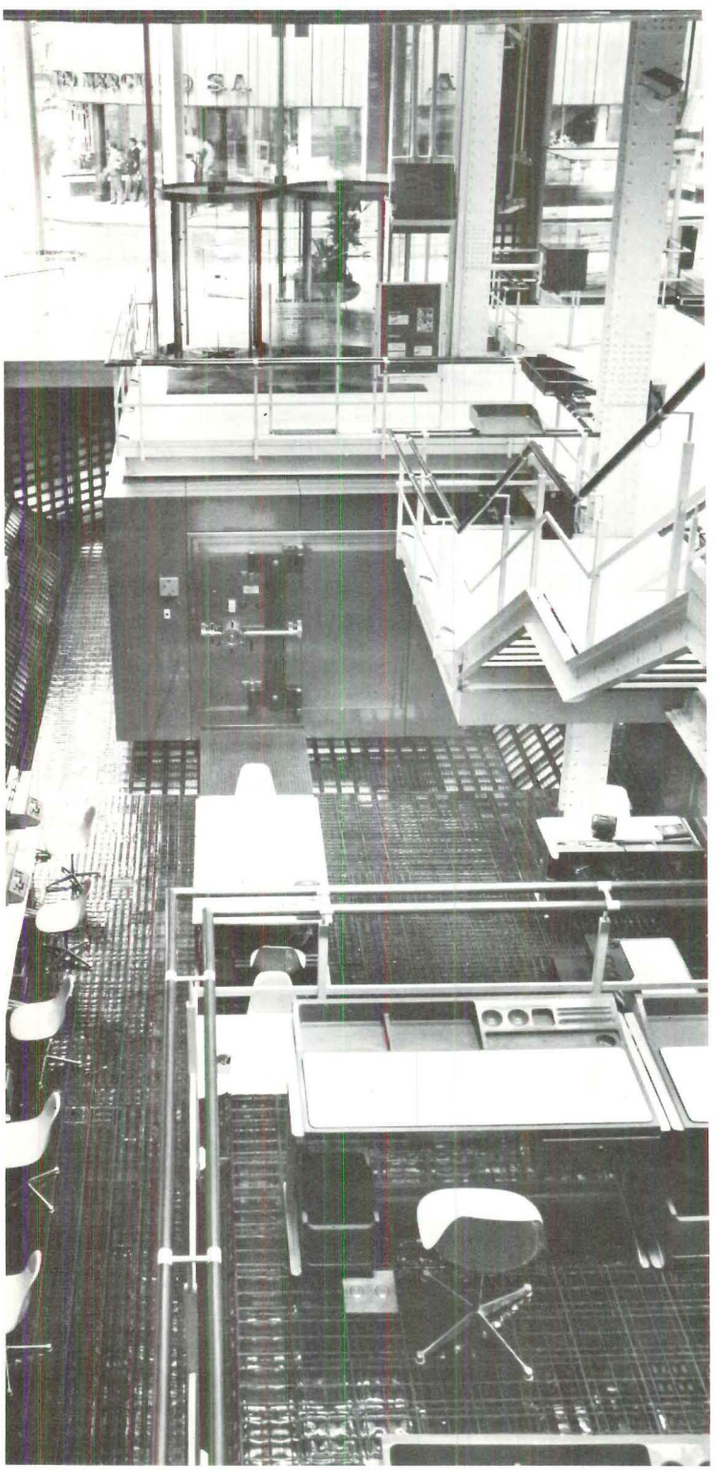
The architectural office of Flora Manteola, the late Ignacio Petchersky, Javier Sanchez Gomez, Josefina Santos, Justo Solsona and Rafael Vinoly (and numerous other collaborators) was formed between 1960 and 1967. It is today one of the most dynamic and prolific studios in Argentina, and one of the best.

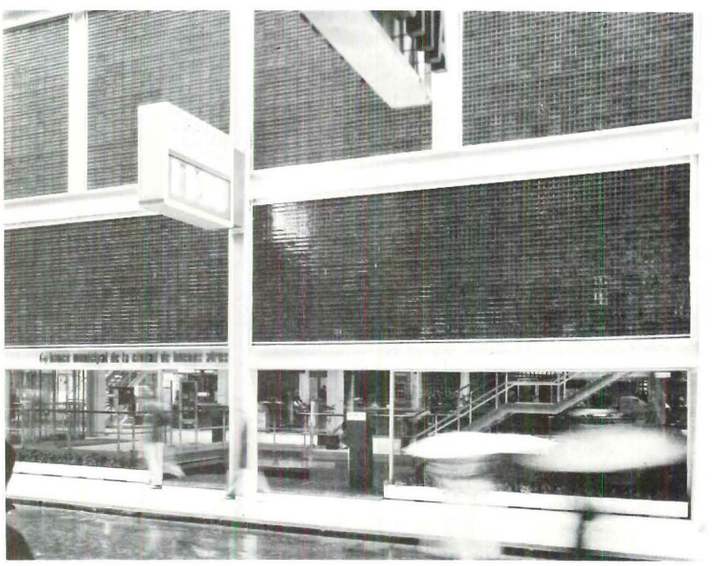
Perhaps the most striking jobs completed by this firm to date are the headquarters of the Bank of the City of Buenos Aires (below), and the Condor Branch of that same institution (opposite). Toward the end of 1967, the Board of Directors of the bank decided to relocate the headquarters offices to a choice (but unusual) site at the corner of Florida and Sarmiento streets, on a pedestrian mall *par excellence*. The idea was to celebrate the bank's 90th anniversary in a new building that would express a new image for the institution.

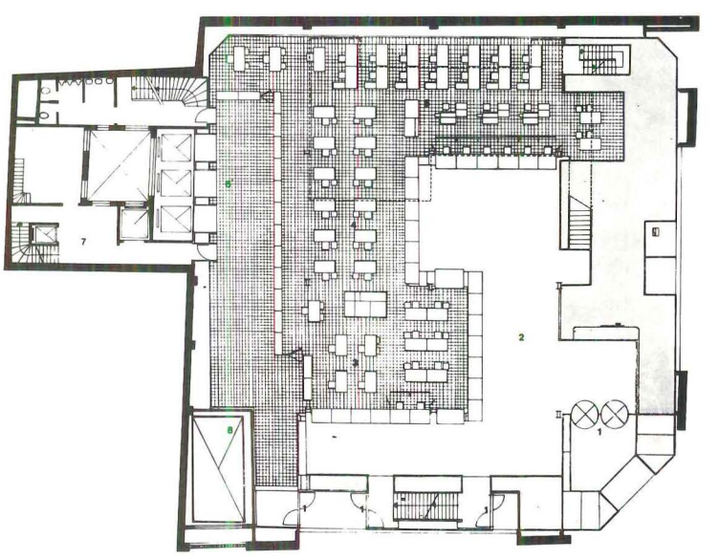
The total time available for this project was only six months. So the Board looked for a team with the professional and technical ability to proceed at a very fast pace. These architects were selected largely on that basis, and a month later the drawings for the headquarters were completed! Then, on May 23rd, 1968, the (then) *Municipal* Bank of the City of Buenos Aires was able to celebrate its 90th birthday in its new home, exactly as planned.

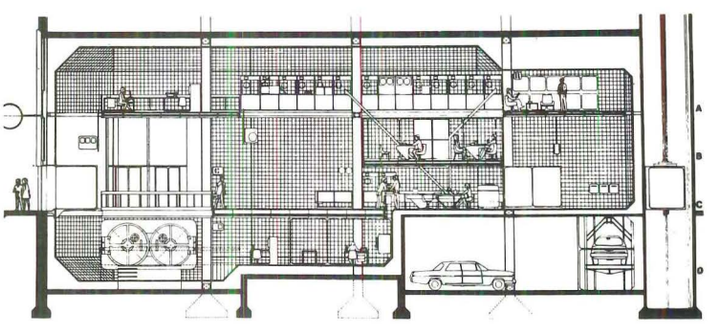
It is not a new building, but the result of remodeling an old store that stood on the corner site. The store had a steel structure, ample open space, good lighting, and its vertical services were located off to one side; so the space lent itself well to the functional requirements of a modern bank.

The concept developed by the architects was to create a central space that would be a kind of "crystal box" made up of glass blocks; mezzanines, glass surfaces, and dramatic lighting produced an integrated volume in which reflections play a decisive role. The con-









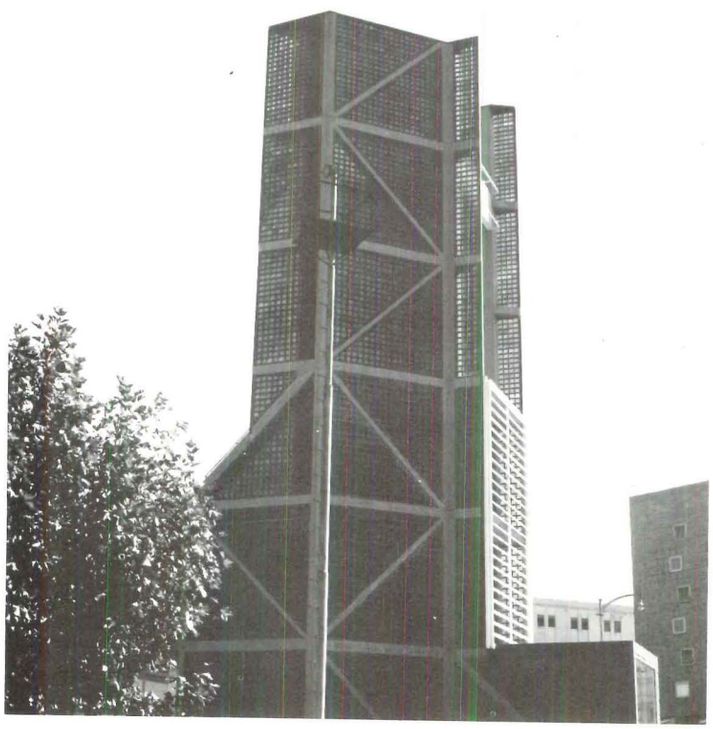
tinuity of walls, floors, and ceilings through the use of glass blocks everywhere resulted in a strong and unified image. The emphasis on steel structure, the steel stairs, the steel-framed mezzanines, and the airy furniture (also designed by the architects) all contributed to the unity of the volume. The glassiness of the space, and its openness to the pedestrian mall, relate well to the movement of people inside the bank as well as on the street.

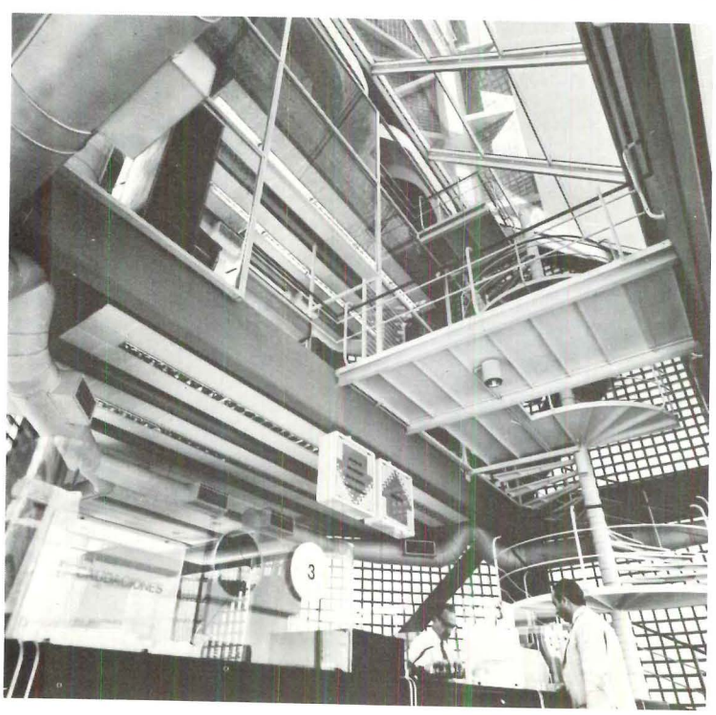
Functionally, the levels of the bank are zoned as follows: the lowest level contains the vaults; the next three levels contain all those operations that require direct contact with the public; above that are three floors containing management offices; and above *that* are the offices of the president of the Bank, dining rooms, an auditorium, and mechanical services.

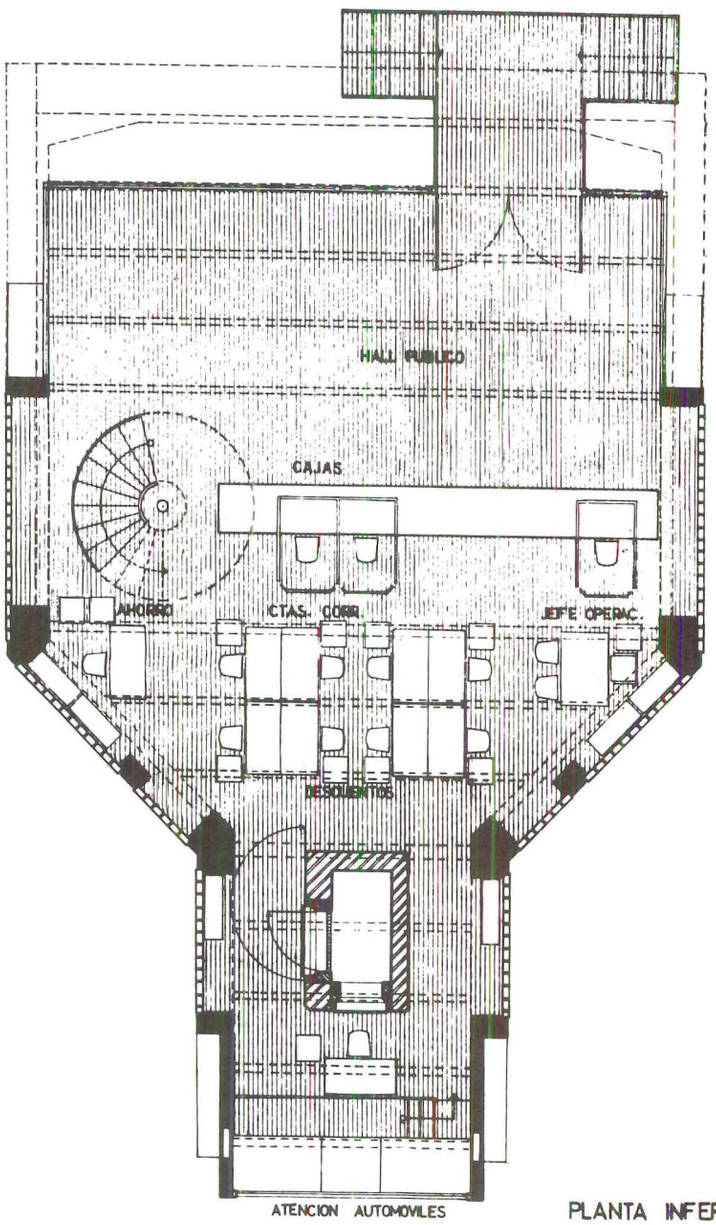
The extremely rapid development of the project was initially charted by the Critical Path Method—which indicated that there simply wasn't enough time to complete the job. The CPM was proved wrong. The project was carried out in three consecutive shifts —two dedicated to construction proper, and the third one to cleaning up the areas. In the course of almost 200 uninterrupted days, the different building trades worked almost as one. A total of 1,000 workmen completed 603,000 hours of work to get the job done. The architects and the furniture manufacturers maintained a similar level of activity throughout.

Out of this accomplishment came the Condor Branch of the bank. Here the site was near the waterfront, in an area of wide avenues, populated with important and tall public buildings spaced widely apart. The architects, in this situation, tried to create a sculptural form of glass blocks, steel and concrete reminiscent of the vocabulary used in the headquarters offices. The form is dominated by two towers or screens of glass blocks and concrete, rising to a height of almost 100 ft. The towers are there for effect only, to compete with the tall, surrounding buildings, and the broad base contains public spaces. The latter are again treated in a highly constructivist manner, with structural steel elements emphasized and filled in with glass blocks; and mechanical services—ducts, pipes, conduits—are exposed and brightly painted.

These details, in conjunction with the elegance of the interiors (the furniture was again designed by the architects), the boldness of structure, materials, color and lighting, have made the Condor Branch an outstanding new building on the cityscape.—L. A.







PLANTA INFERIOR

Facing page: new headquarters of the Bank of the City of Buenos Aires showing the remodeled exterior of the former department store and a view of the main banking hall with its interlocking levels. The motif of the design is exposed steel filled in with glass blocks on all floors and ceilings, creating a kind of crystal box. The plan is of the main level of the bank and the section was taken through the banking hall. This page: The Condor Branch of the same bank which followed the steel and glass block motif of the headquarters building. This building is relatively small but the superstructure of two fake towers was added to bring it into scale with the tall buildings surrounding it. The plan is of the main floor and the interior view shows the exposed mechanical service as well as the different mezzanines.

People

• Dr. Peter C. Goldmark, former head of the Columbia Broadcasting System's Laboratory Division (until he retired after 35 years of drudgery), persuaded the U.S. Department of Housing and Urban Development (HUD) to let him have not one but *two* $362,000 research grants to investigate, in effect, whether electronic communications might not make cities obsolete. "The New Rural Society is not something we will create,"

Dr. Goldmark (who is Hungarian-born) explained. "It will form itself automatically." Existing technology, according to Dr. G., can be imaginatively used to allow people to move to small country towns linked electronically to entertainment, business, medical and governmental centers. So much for Aristotle and Western Civilization. (Seriously, though, this seems to us a concept as challenging and challengeable as any of the past 60 years.)

• Guillermo Jullian de la Fuente, the Chilean architect who worked with Le Corbusier in the latter's final years, was this year's lecturer to deliver the annual Oration in the Melbourne Architectural Papers series a couple of months ago. He spoke of his work in Le Corbusier's studio, and of several continuing commissions carried out by that studio—especially the Hospital of Venice, and the French Embassy in Brasilia. Jullian was the fifth speaker in a series that has become a prestigious, annual event in Australia; the four previous speakers were J. M. Richards (U.K.), Peter Blake (U.S.), Giancarlo de Carlo (Italy), and Kiyonori Kikutake (Japan).—N.C.

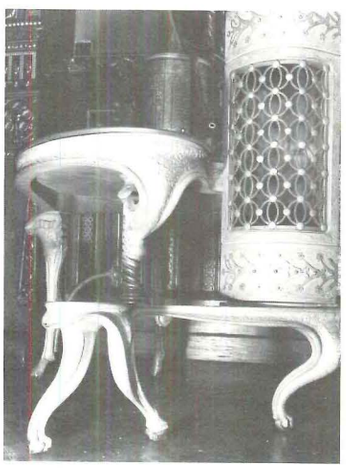
• Vito Battista, the Brooklyn architect and teacher who has frequently (and sometimes successfully) run for public office on arch-conservative platforms, announced that his "Institute of Design and Construction" would concentrate this month on the design of a "Juvenile Residential Detention Facility."

• Russell E. Train, the Administrator of the U.S. Environmental Protection Agency, announced in October that it would cost $60.7 *billion* to build all the municipal waste water-treatment facilities needed in the country by 1990—or about $300 for every man, woman, and child, which should make the U.S. the most thoroughly sanitized nation on earth.

• Balint Szent-Miklosy Jr., a Hungarian-born City Planner now residing in New York, acquired three parcels of land in Queens, N.Y., for $25 each at last month's surplus land auction conducted by the authorities. The parcels measure 1 ft. by 46 ft., 1 ft. by 62 ft., and 2 ft. by 10 ft., respectively; and it will be interesting to see what, precisely, City Planner Balint Szent-Miklosy Jr. has in mind.

• Sir Clough Williams-Ellis, the romantic Welsh architect of the lovely town of Portmeirion, Merioneth, was greatly saddened to hear that Llangoed Castle, in Breconshire, a grand country house he designed in 1912, was about to be torn down because its owner could no longer afford to maintain it. Sir Clough, now 90 years old, had built the place in pale, brown stone, and included two long galleries, 20 bedrooms, stables, a tower and a 17th Century porch. "It was rather advanced for its time," he said last month.

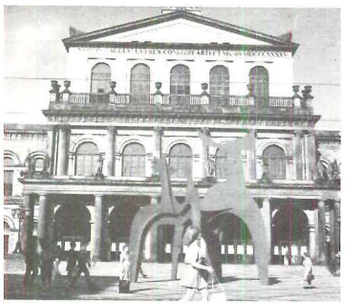
• Antoni Gaudí, the Barcelona architect who died almost 50 years ago, was honored at Manhattan's Spanish Institute for his often forgotten genius as a designer of some of the most surrealist furniture of the Art Nouveau (below).



• Philip Cummings, the Assistant Counsel of the U.S. Senate Committee on Public Works, announced that Americans abandon approximately 1.35 million automobiles, annually, as junk on their country's roads and highways. Between 4 and 6 million unrecovered cars currently litter the U.S. countryside, he said.

• Hans Jochen Vogel, West Germany's Minister of Town Planning, pointed out that real estate values in his country have increased by roughly 650 *billion* DM since 1950, and that "the profits on half of this fall practically tax-free into the laps of a small number of large real estate-owners, without their having to make any effort. This state of affairs," Vogel said in advocating drastic reform of land ownership laws, "is a mockery of all those who have to earn their living by hard work."

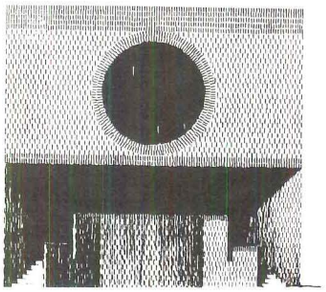
• Alexander Calder, the American sculptor who spends most of his time in France, completed a huge steel stabile for the City of Hanover, in West Germany, to be placed smack in the center of the *Platz* in front of the city's neo-classical Opera House. The sculpture (below) resembles an abstract horse, an image common in Hanover's tradition of public sculpture.



• Claes Oldenburg, the Swedish-born pop sculptor who operates out of Manhattan, discussed one of his latest works: "The steel is just yellow now, but it will turn a deep red-brown rust color like leather." The sculpture is not only oxydizing steel (to simulate leather), but it also contains crumpled lead (to simulate velvet), and laminated wood. What is it? A 12 ft. tall, 5,800 pound first baseman's mitt, of course, and it now stands on the lawn in front of a nice, Greenwich, Connecticut residence. The name of the sculpture is "Standing Mitt With Ball"—the ball being the laminated wood component—and Oldenburg thinks it is a success. "Right now it looks like an intrusion into the environment, but we hope it will weather and blend in about 8 months." Next? "I've always wanted to make a bedroom lamp," the artist said.

• Patricia Boyd, widow of Australia's late, lamented architect and critic, Robin Boyd, was appointed Melbourne Field Editor for *Architecture PLUS,* to assist this magazine's Neil Clerehan in covering an increasingly important area of the Pacific.

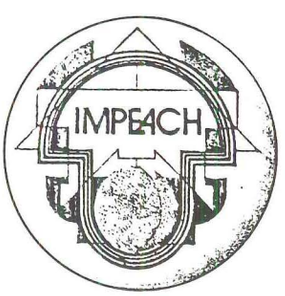
From Rome to Byzantium



In Central Falls, Rhode Island, a former Roman Catholic church, gutted by fire, is being transformed by Bahri and Associates of Peekskill, New York, into a Byzantine church of the Eastern Melkite rite. Bahri's design is intended to suggest the Byzantine church tradition by means of devices such as the new entrance extension shown here; the large circular opening will frame a gesso-on-plaster icon of St. Basil the Great. Kozar, Mosher and Waring, of Pawtucket, Rhode Island, are associated architects and engineers. Construction is expected to begin in February.

Fashion note

In button-happy U.S.A., there has recently been a rash of buttons suggesting what might be done to or with various public officials in the land. One of the more tasteful ones is reproduced here: it comes in peach-colors and, in fact, includes what appears to be a peach in its elaborate graphic patterns. It also makes a rather special, typographical point of the first three letters of the word IMPEACH, which has led some observers to suspect (correctly, it turns out) that the button is the product of some fertile mind employed in the drafting rooms of a famous New York architectural office, that goes under the name of its most illustrious senior partner, whose initials are, indeed, I.M.P. Like much contemporary art, this work has an aura of mystery: it doesn't quite spell out *who* is to be impeached.



Christmas stocking

Those of our readers who do their Christmas shopping at the very last minute (or who want to exchange some of the gifts their loved ones have inflicted upon them for something more useful) might like to know that this year the following items are available to anyone interested in the man-made environment:

• At F.A.O. Schwarz, in Manhattan, a 7 ft. by 7 ft. by 3½ ft. doll house—a scaled down replica of King Ludwig of Bavaria's Schloss Herrenchiemsee. The doll house contains, among other amenities, a Hall of Mirrors, a Pink Bedroom, a Yellow Dining Room, a Lilac Study, and a Green Salon. There is also a great central staircase, moving figurines, and a replica of the Imperial Carriage once garaged at the Schoenbrunn Palais in Vienna. The whole shebang took two years to build (Rudolph and Maria Szalasi were the inspired couple that did the job), and the price is right: $12,000.

• At Neiman-Marcus of Dallas, The Egg—"a contemplative environment totally your own." Define your own private paradise, and Associated Space Design, Inc. of Atlanta will design and build for you a private world.

Within your soundproofed egg-world (entry is gained by the insertion of a notched sterling silver identity card into the entry slot) you relax in an atmosphere psychologically fitted to help you accomplish peak mental and personal potential.

The dimensions are 12 ft. by 15 ft., with sliding panels to permit a one-way view of the room your egg is in; or your garden if your egg is outside; or superimposed film, setting you instantly in Paris, in a forest, or looking down from a mountain-top, wherever you meditate best.

The Egg is a shell structural system made of fiber glass or some other durable material, depending upon whether it is to be indoors or outdoors. The inside is all soft and sensuous and biscuit-tufted: everything is designed to encourage relaxation and meditation. The seating element revolves to bring within lazy reach, bar, desk, communications module, hi fi, Playboy. This central "pad" (the yolk?) is either a lounge, chair, couch, recliner, waterbed or cushions, and it vibrates, undulates, rotates—the ultimate in the design of personal space.

The Egg was designed by William Pulgram, president of ASDI, and his chief architect, Richard Stonis. The price: from $80,000.

• At a shop in the Ritz Carlton Hotel in Boston, a "must" for your favorite American history buff—a sterling silver tea caddy. Those tumbled cubes you see on the lid are not sugar lumps but miniature tea chests floating in Boston Harbor, where they were thrown, as every child learns, by the American Colonists, disguised as Indians, protesting high tea taxes imposed by the British Crown. Only $850, and hurry, because this is a limited edition of 200. Curiously, the tea box is made in England, where bygones are presumably bygones.

• At Architecture PLUS offices in New York, a wonderful bargain—a year's subscription to the magazine for your favorite client. It costs less than taking him to dinner, and will remind him of you once a month, twelve times a year. The Christmas special: $14, if he is in the building industry ($18, if he is not). See subscription card insert in this issue, or write to us at 1345 Sixth Avenue, New York, New York 10019.

• On display at the Museum of Contemporary Crafts in New York at their current "Portable World" show, just in time for Xmas, are: a sauna bodysuit heated by a hair-dryer; a delightful and useful ash-tray in a bracelet; and, for the camper who has everything and is willing to accept more, a hand-woven sleeping bag.

Among the other 200 portable objects in the show (all of which collapse, fold, unhinge, deflate or stack) are a gas-powered pogo stick and a car with people legs in place of wheels (see page 74).

• At your local bookstore, an entire Early American Village tack-out-and-assemble kit for $2.95. This is essentially a history book for children, and contains an excellent text on the life of the Pilgrims and their progress, especially their architectural progress. At the end of the text are eight colorful pages of heavy-paper tack-outs, enough to construct an entire village. According to some town charters of the period, no family was allowed to build a house more than one-half mile away from the meeting house which was by law the center, so setting up this village requires a bit of thought. This delightful book, entitled "Build Your Own Early American Village," was written by architect Forrest Wilson. Any child (or adult) who reads this book will be able to spot a salt box at a mile.

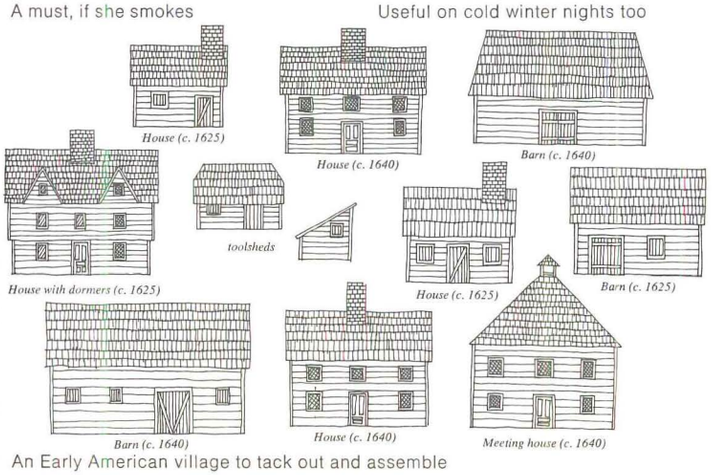
For the carriage trade, a carriage of gilt and a house of chandeliers

An egg to soothe the id

Tea and history

A must, if she smokes

Useful on cold winter nights too

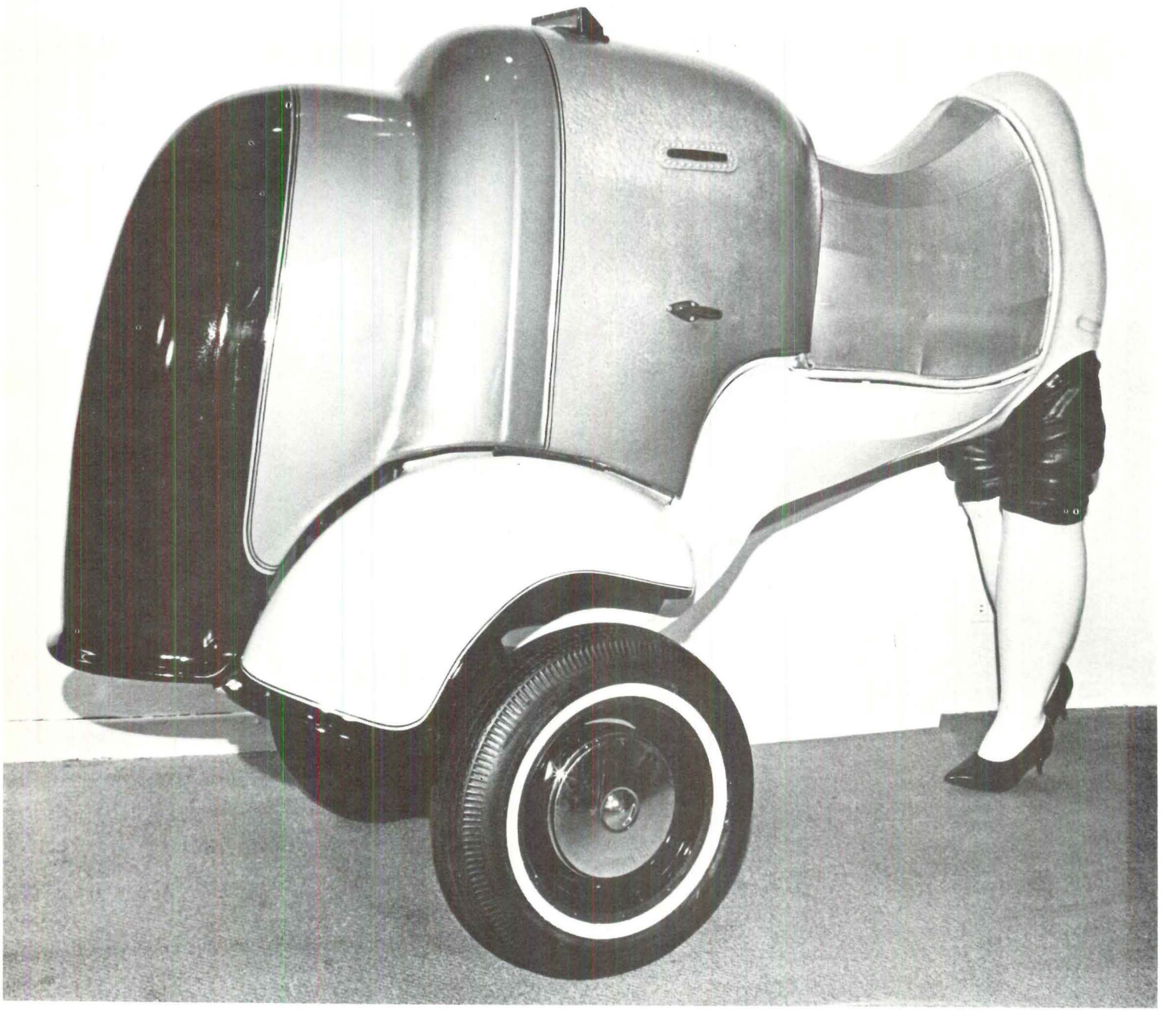


An Early American village to tack out and assemble

Photographs: Page 13 National Gallery of Art. Page 14 (left) David Hirsch. Page 15 (top right) Alex Ozolins. Page 69 (top left) Gordon H. Schenck, Jr. (bottom right) Aldo Ballo. Page 70 Ricardo Sanso. Page 73 (bracelet) Little Bobby Hanson.

Footnote

If you have never seen a "Madison Park Stroller," you may be forgiven for not knowing, instantly, what this particular piece of transportation hardware is supposed to do, or be. It is, of course, a fantasy vehicle with its own protective environment, designed for taking a leisure walk in the park. It was designed by Clair Colquitt, of Seattle, and consists of steel, fiber glass, automobile parts, canvas, wire, and a lawn mower engine. It also measures 6 ft. by 3 ft. by 5 ft., roughly, and was recently shown in an exhibition called "Portable World" at New York's Museum of Contemporary Crafts. Photo: Little Bobby Hanson.



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Letters

continued from page 7

be broken down to pipe pieces of "V" shape (the floor parts) and "U" shape (the top parts).

The chair as described could be bought in Denmark in the beginning of the '50s and I myself bought two of them which have travelled with me to South Pacific, Alaska and East Africa.

After 20 years of use my two chairs are with the second set of canvas and at the floor the pipe bendings (which are perfect in shape) are worn through to the voids, but apparently they will still be good for at least another 20.

VETLE JORGENSEN
Architect, Nairobi, Kenya

"We"

Mr. Martin Price writes in a recent letter (October issue) about his personal reaction to your published reaction to the so-called Opera House in Sydney (August issue).

I would comment not upon the content of the letter, which seems not so much to invite discussion as to serve as a vehicle of release for emotional energy long contained, but upon the English language and the writer's use of what I will call the presumptive "we."

"We" is generally used by a group to describe the joint doing, thinking, believing of the group. The editorial "we" suggests the policy of a publication, or preserves an anonymity of expression to permit an idea rather than the personality of the writer to remain at issue. The royal "we" reflects the view that the king is us, the embodiment of his people, a view not entirely discredited in some circles. The Bishop of Rome traditionally speaks to his flock with the plural "we" in humility, suggesting the collegiality of the Holy Church and intimating the assistance of inexplicable bodies in the governing process.

Mr. Price's use of "we" surely fits none of the above. The letter is not presented as a product of group action, nor is the editorial policy of Architecture PLUS therein set forth. While one could read in some indications that the royal "we" was operative, Mr. Price's use of "for goodness sake" rules out that commitment of belief necessary for the Papal "we."

The presumptive "we" is in force here, used when the writer has built on less than firm emotional, factual, or logical ground and must summon unnamed others to support his structure of argument. This is a favorite device of reactionaries of the Right and Left, of the quadrennial candidates, and, in this case, it appears of Mr. Price.

I, for myself, am, at present, at a loss trying to sort out the manifold intellectual and esthetic complexities raised by the Sydney building. But *I* am also very tired of being told what *I*, as a part of "we," need. "We" is strong when it is made up of strong "I" 's, as in "We hold these truths to be self evident." But it is a weak mask indeed when used to cover the attempt to convert a set of opinions into a manifesto.

FRANCIS BOOTH
Architect, New York, New York

Suggestions

I would like to urge you to shift some of your emphasis from paying homage to the superstars of the profession to becoming more of a working tool for thinkers and practitioners in the environmental design professions.

I would like to see PLUS initiate an open forum facilitating access to new types of work opportunities that don't necessarily come packaged as fee-paying clients, to ideas about various alternative forms of practice, to people interested in the same, to information and resource pools, to sources of funding work on ideas and experiments.

LAJOS S. HEDER
Cambridge, Massachusetts

OK, we'll try.—ED.

Olivetti

The Olivetti story in your September issue makes Architecture PLUS a magazine that few architects and designers will discard!

Olivetti and PLUS have much in common: a concern for technique, materials and practicality along with a dedication to human values and creativity. But this combination, to survive, needs the support of customers and readers who will buy and respond. My only contribution is to keep my product information requests coming in to let the advertisers know I care and hope they do likewise. Each of us has many ways of expressing this support which, in essence, is a vote for good design and integrity.

JOHN W. GRIFALCONI
Architect and Planner
Wakefield, R.I.

The Watergate Game

Please cancel my subscription—I do not feel a "trade journal" is the proper place for a political comment such as Footnote in the July issue.

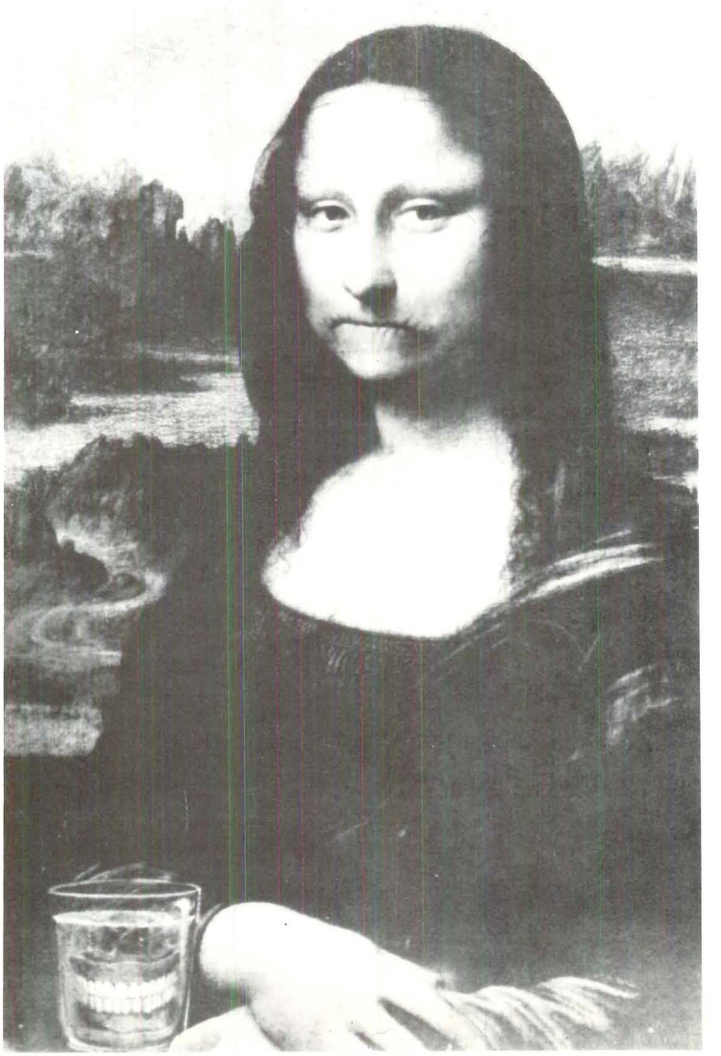
UNSIGNED

Sorry, our computer can't cancel a subscription without proper identification (including zip code).—ED.

Masterpieces

The "Fakes, Forgeries, and Other Deceptions" currently on exhibition at the Minneapolis Institute of Arts (and reported in your news section in September) did not include what is surely the most entertaining fake "Mona Lisa" produced in recent times. It is the work of "Notabil—Industria Argentina" and should give pause to all seekers of beauty, past, present and future—and seekers of reality as well.

CONSTANCE STICKLER
Buenos Aires, Argentina



Building Suppliers

ACADEMIC VILLAGE "A"
Architects: Christ-Janer, Johansen, Kouzmanoff. (Materials and manufacturers as submitted by the architects.) *Concrete & Cement:* Atlas Cement, Certified Industries. *Brick, Block & Stone:* Smithtown Block. *Structural Steel:* Eastern Fireproofing Products, Rebar. *Roof Materials & Thermal Insulation:* Owens-Corning Fiberglas. *Acoustical Materials:* Armstrong Ceramaguard. *Fenestration:* Howmet Corp. *Glass:* PPG. *Interior Partitions:* U.S. Gypsum. *Elevators:* Williamsburg Cabs, Burlington Elevator. *Doors:* Pioneer Fireproof Door Co., Georgia-Pacific Corp. *Hardware:* Sargent. *Interior Materials:* Robertson, Wilson Art. *Prefinished Paneling:* U.S. Plywood. *Paint:* Debevoise Paint Co., Qualiware Paint System. *Electrical Equip:* Lincoln Electrical Products Co. *Standby Emergency Power:* Onan Eastern Corp. *Lighting Fixtures:* Lightolier, Sterner. *Plumbing Fixtures:* American Standard. *Fire Alarm:* Simplex Time Recorder Co. *Heating Exchangers:* Yula Corp. *Unit Heaters, Unit Ventilators, Radiators, Convectors:* Trane. *Heating Valves, Piping, Controls:* Combustion Engineering Associates. *Air Conditioning Compressor, Fan Unit:* Trane. *Water Coolers:* Halsey Taylor. *Kitchen, Laundry, Laboratory Equip:* NII Lab Furniture. *Finish Flooring & Carpeting:* GAF, Mohawk, Dennis Rubon, Biordi Products. *Chalkboards:* Korok, Inc. *Toilet Partitions:* Flushmetal. *Rubber Mats:* Pawling.

MOUNT VERNON COLLEGE DORMITORY
Architects: Hartman-Cox Architects. (Materials and manufacturers as submitted by the architects.) *Brick, Block & Stone:* Cushwa Calvert Rose. *Floor & Deck Systems:* Stresscon Industries. *Roof Materials:* Follansbee. *Thermal Insulation:* Owens-Corning Fiberglas. *Fenestration:* Hopes Windows. *Glass:* PPG. *Hardware:* Corbin. *Interior Materials:* American Olean. *Paint:* Benjamin Moore. *Electrical Ducts, Wiring, & Equip:* Square D. *Lighting Fixtures:* Gitlin, Lighting Services. *Plumbing Fixtures:* American Standard. *Heating Boilers, Unit Heaters, Unit Ventilators, Radiators, Convectors, Heating Valves, Piping, Controls, Air Conditioning Compressor, Fan Unit:* Trane. *Finish Flooring & Carpeting:* Kentile. *Upholstery & Drapery Fabrics:* Frank Schumacher.

AMRO COMPUTER CENTRUM
Architects: Archtectengemeenschap van den Broek en Bakema. (Materials and manufacturers as submitted by the architects.) *Concrete & Cement:* Schokindustrie, C.Z.G.B. *Brick, Block & Stone:* Bredero. *Structural Steel:* Van Der Cammen. *Floor & Deck Systems:* Seco. *Roof Materials:* Olasfa. *Fenestration:* Widam. *Glass:* V.H.R. *Interior Partitions:* Interwand. *Elevators & Electric Stairways:* Schindler, Westduk, Jong Poerink. *Doors:* Interwand, B.A.M., Marcus. *Hardware:* Wuntjes. *Exterior Tiles:* Porceleyne Fles. *Paint:* Vettewinkel. *Electrical Ducts & Wiring:* Van Geel, Van Swaay. *Standby Emergency Power:* Heemaf. *Lighting Fixtures:* Philips. *Plumbing Fixtures:* Stokvis. *Heating, Air Conditioning:* Geveke. *Audio Visual Equipment:* Siemens, Grundig, Philips. *Fire Protection Equipment:* Saval. *Blinds & Shades:* Alco, Fabr. Hüppe. *Laboratory Equipment:* Verheyen. *Flooring:* Krommenie.

The education of women architects

continued from page 35

"Without a knowledge of how things are put together good design is impossible and cannot be put into execution." H. A. Frost

the critical one for the School.

With affiliation in mind, Frost wrote to President William Neilson of Smith College in 1928, asking his opinion of a collaborative affiliation with several women's colleges. Neilson replied that he was not very hopeful over the possibilities of a collaborative scheme. Nevertheless, he was very interested in having the Cambridge School as an affiliate of Smith College. The arrangements progressed slowly, while the Cambridge School tried to clear its constant debt; the Trustees of Smith College voting affirmatively on the affiliation in the spring of 1932.

The Cambridge School—its assets and liabilities—thus became part of Smith College. In 1938 the books of the Cambridge School were closed, and Smith became the official owner of the School. From that time, the School was known as "Smith College, Graduate School of Architecture and Landscape Architecture, Formerly The Cambridge School." Part of this agreement allowed the continuing location of the School in Cambridge, Massachusetts, and, naturally, Henry Frost remained its Director and driving force.

With this affiliation and eventual ownership by Smith College, the Cambridge School gained the power to grant official degrees. Two types were awarded: Certificates in Architecture or Landscape Architecture to women who completed the three-and-a-half-year program but who did not already hold Bachelor of Arts or Science degrees from accredited colleges; and graduate degrees of Bachelor of Architecture or Landscape Architecture to women who had completed the same program and had already earned Bachelor of Arts or Science degrees at four-year colleges. The School also awarded the degrees of Master of Architecture or Landscape Architecture to those students who had completed an additional one to one-and-a-half-year course after earning the Bachelor of Architecture or Landscape Architecture. The B. Arch., BLA, M. Arch., and MLA were similar to the type of degrees then being offered at the Harvard Graduate School of Design and other graduate architectural schools.

But the happy and sympathetic relationship between Frost and Neilson was soon to end. President Neilson retired in the spring of 1939. Little did anyone realize that with the retirement of Neilson, the very life of the Cambridge School was to be affected. It was Neilson and his ideal of making Smith College a university that had resulted in acquisition of the Cambridge School; it was his sympathy and understanding that encouraged Frost in future plans for the School and supported him through numerous economic crises. Without Neilson, the relation between Smith College and the Cambridge School changed, and only three years later the Cambridge School closed.

This change in relations with Smith College can be seen during the twenty-fifth year celebration of the Cambridge School for women. Frost, of course, invited the Acting President of Smith, Mrs. D. W. Morrow, and explained that they were "staging an exhibition on Houses and Housing which is quite the most ambitious thing we have attempted. It will be at the Hotel Somerset from March first through March fourth." Henry Frost received an answer not from Mrs. Morrow but from her secretary, saying that "she wishes me to express to you her appreciation of the invitation and her regret at having to miss what promises to be a pleasant occasion." Perhaps to call "the most ambitious thing we have attempted" only a "pleasant occasion" was the fault of the secretary and not of the Acting President, but this discrepancy of view was symbolic of the events to follow.

The Exhibition of Houses and Housing covered the large Princess Ballroom at the Hotel Somerset in Boston. Aside from the main exhibit, the architectural instructors at the School showed their own work. Included was the work of G. Holmes Perkins, Walter Bogner, Marc Peter, and Hugh Stubbins. The exhibit was organized by the Museum of Modern Art of New York, and during the four days of this exhibit, there were also lectures by Mrs. Walter Gropius and Miss Cynthia Wiley. It was a great success, with 825 persons visiting the exhibition in four days. The twenty-five-year celebration and exhibition was successful in every aspect except the financial. Not only was little money raised for the School, but extra money had to be spent on the celebration.

In September 1940 Herbert J. Davis took over the presidency of Smith College. Only one year passed before President Davis clearly and strongly warned Henry Frost of the tenuous position for the future life of the Cambridge School. And he quite frankly reported the Trustees' disinterest in continuing the School with any additional cost to Smith College:

I am much afraid that unless we can substantially reduce the present deficit the Trustees will decide to give up the school at the earliest possible moment, and I think you ought to know of this danger and take it into account in connection with all proposals for added expense.

Gone were the days of sympathetic support

from President Neilson; gone, too, were the days of his constant begging for funds for his graduate schools. The Trustees wanted balanced budgets, facts, and figures—not the grander dreams of Frost and Neilson. They were ready to abandon the School "at the earliest possible moment," and this was exactly what they did just two months later.

In the winter of 1941, conditions were indeed precarious for the United States. The country was at war, and the thoughts and energies of the American people were necessarily turned towards this calamity. Each day more young men were leaving their work and their studies for the front. It was not the time for the Smith College Trustees to have sympathy for visions like those of the Cambridge School with its budgetary liabilities.

War conditions also had their direct impact on Harvard's Graduate School of Design. It was dependent upon young men to fill its enrollment, and these young men were leaving for war. According to Henry Frost, in a letter to President Davis, "President Conant [of Harvard] has told Mr. Hudnut that he is willing to propose the admission of women to the School of Design." Women were to be allowed to study architecture and landscape architecture at the Harvard Graduate School of Design. But even this acceptance was not wholehearted, Frost noted, as "Dean Hudnut, while he believes that once women are admitted to the School of Design, the arrangement will be permanent, will of course announce it as for the period of the war." Even "Mr. Gropius, who has been, of course, the chief instigator of the admission of women to the Harvard School, suggested tentatively that they be admitted as special students and not as candidates for the Harvard degree."

Throughout these negotiations, Henry Frost, as usual, thought first of the welfare of his students. The idea that the students should not be candidates for degrees at Harvard was "not to be thought of," Frost wrote to Davis, "and if his [Mr. Gropius'] suggestion should be accepted—as I have no reason to believe it would be—it would become necessary for us here to advise our students to go elsewhere than to Harvard." In the end, Harvard did accept women as candidates for degrees. The plans were finalized and the announcement was made to the Cambridge School women on February 4, 1942. The official reason for closing the Cambridge School was "to avoid wherever possible unnecessary duplication in educational programs." Of course, this arrangement, which was "for the duration of the war," was in reality forever.

The Cambridge School closed, but its enthusiastic students continued their education at Harvard with the extremely large registration of twenty-eight women. Henry Frost continued to teach architecture at Harvard and could follow the progress of his former students. This progress he noted in his newsletter, "The Cambridge School at Harvard," to alumnae and friends. Frost was an optimist and wanted to believe that "the final transition this spring from a collaboration of interests to a unity of effort, [was] an entirely natural step." In 1942, with twenty-eight women enrolled in architecture, it was impossible to see the future, to see that only ten years later the enrollment of women would be cut in half. Frost in 1943 could "look back one year to the time when the School of Design announced the admission of women, and to remember some of the scathing comments of Harvard alumni. What was then considered a special concession . . . has become in twelve short months a general policy for undergraduate courses . . ." As the war effort increased, the number of men decreased, and Harvard began to look more and more like a school for women. The former Cambridge School students were quite capable of doing the work assigned to them, and Frost proudly noted the high grades achieved by these women. They not only helped Harvard to survive the war years and fulfilled the academic standards of this institution, but they were equally successful in "upholding the Cambridge School tradition valiantly."

But the Cambridge School of Architecture and Landscape Architecture was dead, killed by unbalanced budgets, war, changing times, and the needs of Harvard's architectural school to fill its ranks. Left behind were the cries of those who mourned its passing. To Frost and many of the alumnae, "the peremptory closing of the School in Cambridge was in the nature of a tragedy." Letters, petitions, and telegrams of protest filled the office of the President of Smith College. "We face the end of a period. For some of us it means possibly a farewell to the best part of our lives, to a period of fine adventure . . ." The "fine adventure" had ended, the Cambridge School was gone.

But why mourn the passing of this institution? Harvard University had accepted women, and now other architectural schools as well were accepting them. What need was there for a women's school? "The time had come in our civilization when universities must be co-educational at the graduate school level. Women must have the same rights as men . . ." As it has turned out, however, the fears of women concerning their educational opportunities were more than justified.

Women were indeed admitted to universities and, at least at Harvard, there were few policies of discrimination. But where are the women architects who continue the proud and brave traditions of the Cambridge School women? There are shockingly few women architects practicing in this country today or studying in its professional schools. The end of the Cambridge School marked "the end of an era." It was to be greatly mourned, and rightfully so because as an institution it not only educated women but encouraged them, prodded them, pulled from them their dormant potential.

It is obvious, too, that the closing of the Cambridge School blunted the sword of one of the few champions of women architects, Henry Frost. Without him the School might never have survived as long as it did. Frost liked teaching women; he believed in their ability; he thought only of their interests. No group, institution, or person has replaced Henry Frost; there is no champion for women architects today.

The idea of a school of architecture solely for women is perhaps out of date, nor was it the final aim of the Cambridge School. But the School's aim of encouraging women in architecture is still an issue, and a dream that has not been fulfilled. Henry Atherton Frost's words still apply thirty years later. In January 1942 he wrote, to President Davis: "One thing this School has stood for in its twenty-five years is to break down discrimination against women in education. It seems necessary to continue to do so."

Book Review

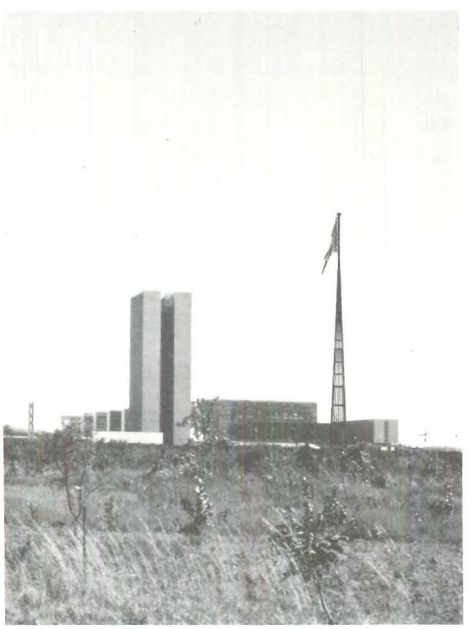
continued from page 6

residence there of the Portuguese royal family from 1808 to 1821 (exiled by Napoleon's armies), gave Rio the first substantial impetus to make itself a proper capital city. From then on, artists, architects and planners imported from Europe worked to impose an urban order upon the natural opulence of the settlement surrounding Guanabara Bay. They did not exactly fail, for vestiges of their efforts can still be seen. But the qualities which make Rio memorable have little to do with the qualities of other cities that architects and planners might praise.

The first chapter of the book, "God is Brazilian," faces the matter squarely. Rio, to the natives, known as *Cariocas*, is Paradise. There are only three things that they care about: samba music, *futebol* and the beach. The Copacabana is in fact the key to understanding what life in Rio is all about. It is the place where everyone in Rio wishes he could live and by 1970, almost 240,000 people had crammed themselves into the 2.8 square mile strip of buildable land between the mountains and the legendary beach. The congestion and noise serve only to make it a throbbing magnet for a people who literally worship at the beach —a popular sect devotes itself to a goddess of the sea to whom, notes the author, "one may bring problems, the nature of which one might hesitate to broach to the Blessed Virgin."

If one will accept that the well-to-do Cariocas will tolerate crowding and shoddy construction in order to be near the beach, it is an easy step to understanding that for the poor, the favela or community of illegally erected shacks on either public or private land is an equally feasible solution. Favelas are of course not found only in Rio or Brazil but it is there, especially in those sited atop the mountains above the Copacabana and other beaches, that the romantic qualities of life in Rio seem the most obvious. The many attempts made to mitigate the problems of health and social welfare in the favelas are catalogued in the book, but there is little likelihood that they will be replaced by the government: "The favelas continue to survive and grow, because at present no practical alternative exists." And between those two extremes, the majority of the citizens live their lives. It is a vibrant city, so crammed with automobiles that fumes hang in the air in many streets even late at night.

Laid against that is the reality of Brasilia. Do not ask if Brasilia will succeed. That question has been answered by political leadership that finds the orderliness of a new city, well removed from Rio's sensuality, very useful for governing. The question is when will it become a city for the people. Maybe capital cities, ironically, are not meant to have humanity. But the history of Brasilia, long before it became an architectural rallying point in the late '50s, is remarkable. A new capital city in the interior has been a concept deeply imbedded in Brazilian political thought for almost two centuries. It was first proposed that this city be called Brasilia in 1822. Eighty years ago, in fact, a scientific survey team went into the very basin which is today the Federal District and came back to recommend it as the place for the capital. Other studies which zeroed in on the same area (including one using aerial photography) were made before 1955 when Juscelino Kubitschek became president.



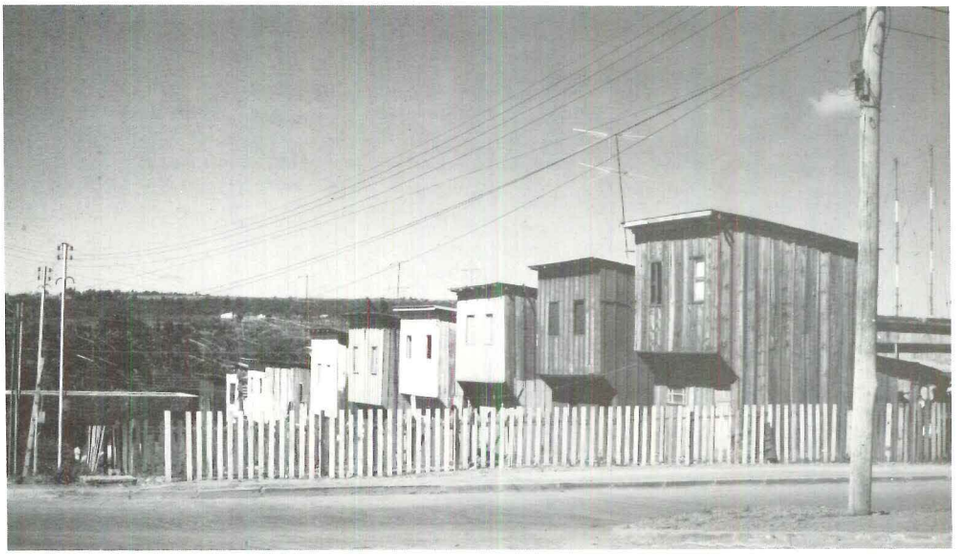
Brasilia, thirteen years after it was substantially completed, is a city of growing contrasts. The official sector seems unchanged except for a mammoth flagpole behind the legislative towers (bottom). Housing for the thousands of simple people who have flocked to Brasilia is in separate, sterile "satellite cities" outside the city (top).

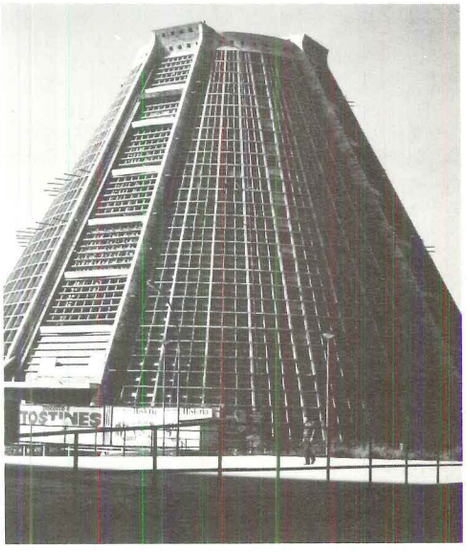
The narrative of events during his five-year term that led to realization of the long-held dream of a new capital city for Brazil is breathtaking. Anyone who will have read Professor Evenson's account of its creation before going to Brasilia will stand before the little house that Kubitschek used on his first visits there, now a museum, with a full sense of the achievement. And for people who have been following the course of Brasilia's development since the competition for its design in 1956, the book provides a substantive examination of the five schemes that were seriously considered by the jury in addition to Lucio Costa's entry. As happened in the Sydney jury (August issue), Costa's submission was not only the most vague but also the most poetic. It was the only one with potential to truly be a capital city, said the jury.

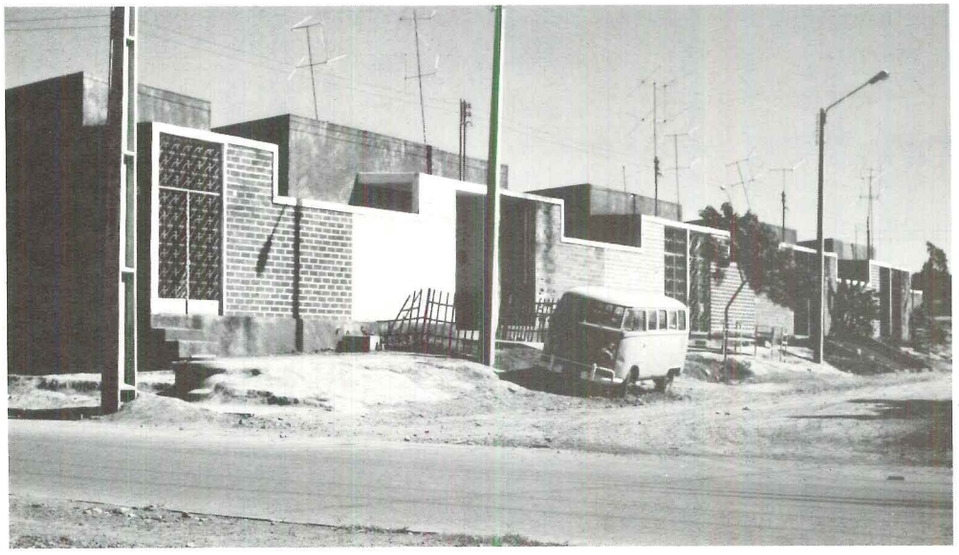
His sketches and intentions have been followed with remarkable fidelity, given the pressures under which the city was built. The Monumental Axis, in its somewhat sterile majesty, is almost exactly what Costa and Oscar Niemeyer intended. There is one little-known addition. Behind the legislative towers which formally terminate the Axis on the East, the present regime has erected an enormous flagpole designed by Sergio Bernardes who appears to serve the present government much as Niemeyer served Kubitschek. The ambivalent relationship between flag and legislature speaks volumes about Brazilian politics today.

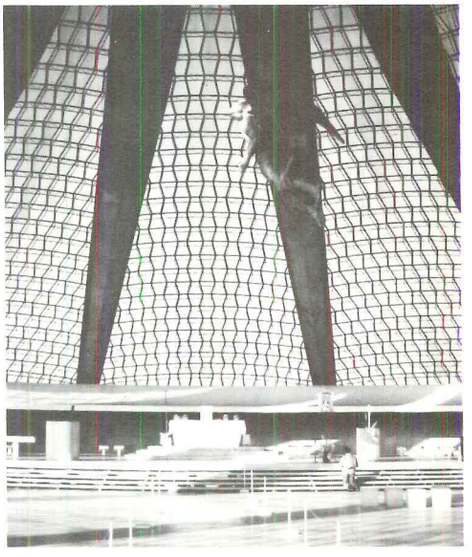
If the government sector of Brasilia seems a bit unreal even now, the quality of life in the superquadras, the neighborhoods along the north-south axis, is surprisingly pleasant. Rapidly growing entourage has given them a settled ambiance in less than a dozen years. Unexpectedly vigorous commercial development on the W-3, a street which parallels the main north-south highway behind the superblocks, provides these neighborhoods with dense activity that reminds one of Rio at least a little bit. For that read "too many cars." As a result however, the central district around the bus station has developed very little. Aside from one building containing many shops on several floors, the only activity in that area is on

Nucleo Bandierante, the community for the first laborers who came to build Brasilia, has been partially torn down. The original houses (below) and their replacements (bottom) stand on either side of the main street. An enormous new conical concrete cathedral being built in Rio (top right) makes an interesting comparison to the famous one at Brasilia by Oscar Niemeyer, now enclosed and accented with huge, baroque flying angels.









the bus platforms themselves where vendors have set up temporary stands. The city will not really come alive until that neighborhood is given more attention. But since it is mostly the poor who use the busses there, it is not likely that much will be done for a long time.

And speaking of the poor, there is another side of Brasilia that is examined in the book. There are now several "satellite cities" around the official city or what is known as the Pilot Plan Area. These are the semi-favelas that Lucio Costa had hoped would not be necessary in this city. The original settlement for workers, formerly called the Free City and now the Pioneer Nucleus, was partly destroyed in 1960 when the main building effort was completed. But the peasants who had flocked to the new capital wanted to have the houses that would be vacated and as a result, on one side of the main street, once a bustling town, there are the original wood houses, looking strangely ancient although only fifteen years old, and on the other, new masonry ones replacing those taken. Rather than allow true favelas to get started, the government has built enormous tracts of small masonry houses set out in endless rows. They are so antithetical to the style of life in the older Brazilian communities that it is not surprising that the poor resist the efforts beng made to resettle them. The only sign of life in most of these places is the rambling markets where the office workers of Brasilia rub shoulders with the peasants as they look for bargains.

The strength of Professor Evenson's book is that it recognizes the effect of Brazil's problems upon its urbanization without ignoring social forces. It therefore puts the development of the two capital cities into more effective perspective than if it dealt only with esthetic or technical considerations. It is a scholarly study with the delightful ability to make the reader smile, here and there, with an ironic comment on the implications of certain urban forms and patterns. Perhaps its only weakness is that the many illustrations, unavoidably a bit out of date with such a fast-moving topic as Brasilia, are separated from the text.

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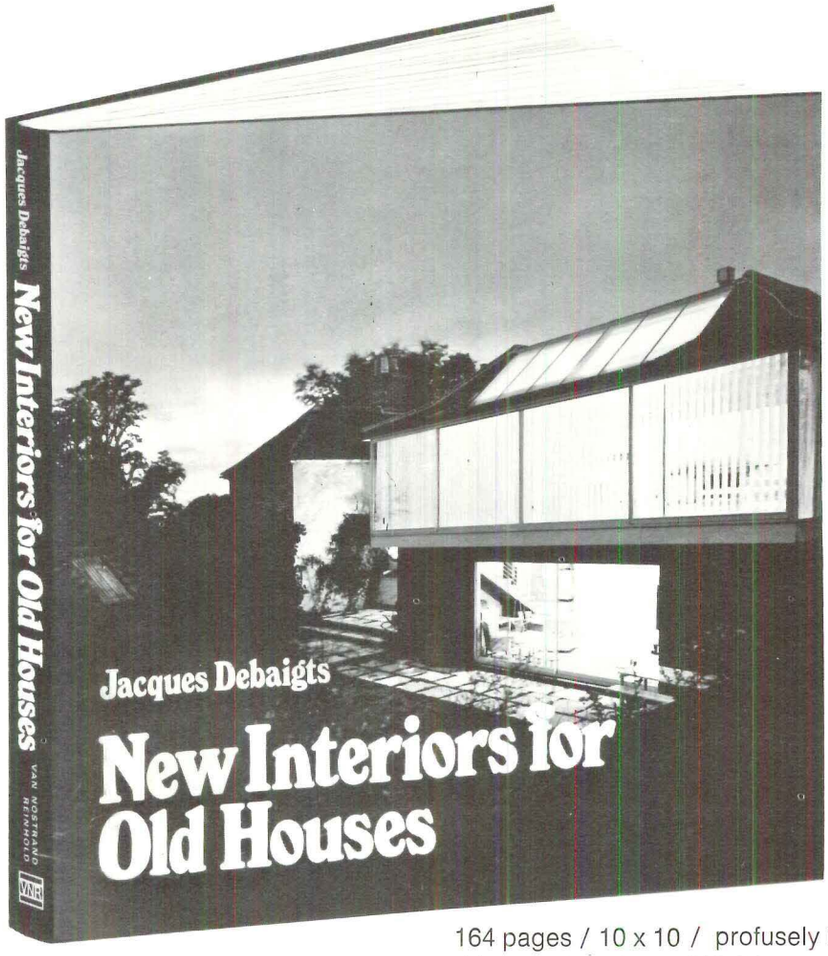

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