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ARCHITECTURAL RECORD

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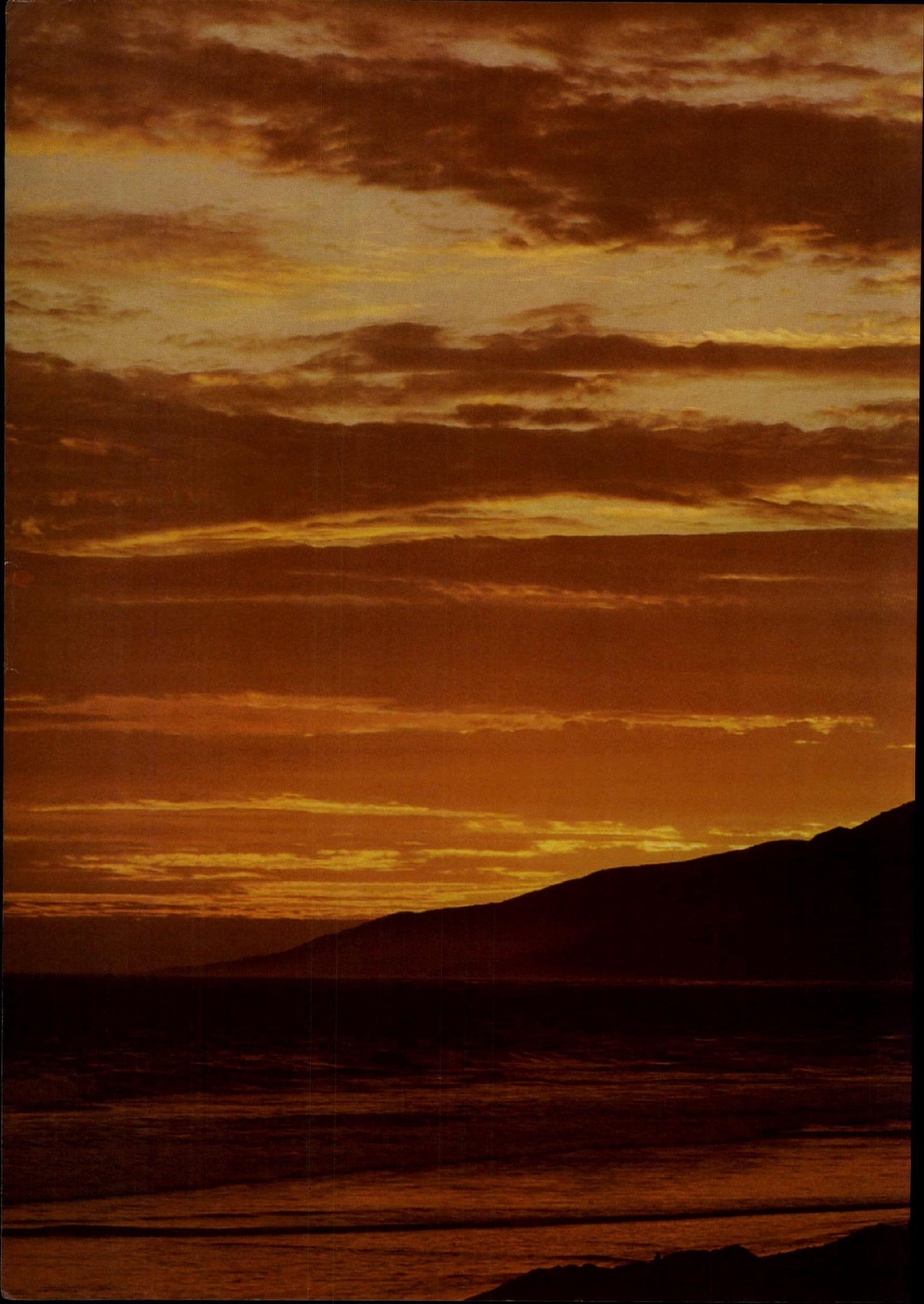

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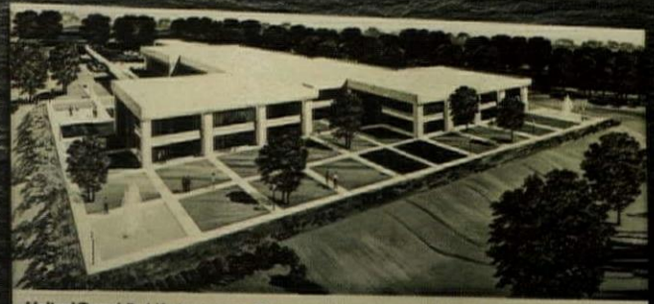

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MARCH 1975 ARCHITECTURAL RECORD

FEATURES

BUILDING TYPES STUDY 472

Norman McGrath

ARCHITECTURAL ENGINEERING

NEXT MONTH IN RECORD

Building Types Study: Stores and Shops

Attracting customers is easy in a booming economy. In an economic slowdown, things are different—for the customer and for the store. The April Building Types Study includes, besides a variety of stores and shops, a fully illustrated description of a comprehensive interior system designed for a Tennessee store, but widely applicable and adaptable.

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The balloon is up! The IAF invites entries for the Great International Design Competition

It's been a long haul, but the program has been written, the money for prizes and jury expenses has been raised, most (though not all) of the operating funds are in hand, a distinguished jury has been chosen, and . . .

The international design competition for the urban environment of developing countries will be held. The International Architectural Foundation has announced that registration for architects around the world is now open.

Briefly, as described in an announcement squeezed into the February issue (pages 48B and C) almost the minute the presses started up, and repeated in this issue (pages 106 and 107), "A one-page international architectural competition for the design of a self-help housing community in a developing nation [specifically, a renewal site in the heart of Manila] has been announced by The International Architectural Foundation, a nonprofit corporation conceived by ARCHITECTURAL RECORD and L'ARCHITECTURE D'AUJOURD'HUI. The Foundation is working in close collaboration with the United Nations Environment Programme, and the competition is a project conceived in conjunction with Habitat '76, the major UN Conference Exposition on Human Settlements to be held in Vancouver, May 31-June 11, 1976."

The design problem will be to design housing and community facilities for a neighborhood of between 3,500 and 5,000 people—a small proportion of the inhabitants of a huge squatters settlement close to the redevelopment site. The competition program describes in complete and accurate terms the resettlement site and the abilities for self-help of the people involved—who are to an extraordinary degree literate and, happily, capable of a high degree of self-help. Most importantly. . .

. . . The big news is that the winning design will be built

The Philippine government—in addition to making available to Gutheim/Seelig/Erickson, the professional advisors, an extraordinary body of data on the site and on the people affected for the competition program, and in addition to guaranteeing a considerable portion of the prizes and certain other competition expenses—has signified its intention to commission the winning architect to complete his design and to build that design on the site. Beyond that, there is a possibility (though no guarantee) that additional entrants may be commissioned, because the competition site will ultimately be developed into neighborhoods for between 100,000 and 140,000 people.

The prize schedule should attract submissions from around the world

The first award is $35,000 (plus the commission to complete the prototype design in accordance with Philippine law); the second award is $15,000; the third award is $10,000; and the jury has an additional $10,000 to award at its discretion—perhaps for an extraordinary planning or technical idea within a non-premiated design solution. But perhaps most importantly:

All of the best ideas submitted will be available for study around the world . . .

. . . because the competition site, and the competition entries, are intended to be prototypical. The competition is designed to search for planning and design and social ideas that address the world-wide problem of housing around the cities of all developing countries—solutions that will be widely applicable. Thus, as the announcement (again, on page 106) says: "The competitors must resolve the highly practical aspects of a specific problem and a particular location; but the competition deals with the entire question of human habitat and its future. . . ."

To disseminate the thinking developed by the competition, the premiated designs and many other entries will be widely publicized throughout the world—and both RECORD and L'ARCHITECTURE D'AUJOURD'HUI have agreed to publish the competition results. Further, a book presenting many of the designs and commenting on the ideas developed will almost surely be published. And the best ideas will be exhibited in Vancouver during Habitat '76; where they will be seen by official representatives and technical experts from the UN member states in attendance.

How do you enter? Fill out the registration application on page 107 promptly . . .

. . . and send it with $25 (U.S.) payable to The International Architectural Foundation, Inc., to Gutheim /Seelig/Erickson, the professional advisor. You will without further correspondence receive complete competition documents, including, of course, the very complete program. The last date for registration is May 15th. The

first date on which documents were mailed to entrants who saw the February notice was March 1st. The last date for design submissions is postmark October 15th, 1975. Anyone qualified to practice architecture in his own country can enter as an individual or as a member of a design team which may include students. The competition will be conducted under the regulations of the International Union of Architects.

The judging will take place in December of this year in Vancouver, by a distinguished and international jury. Its members: Balkrishna Vithaldas Doshi of India; Eric Lyons of Great Britain; Moshe Safdie of Canada and Israel; Mildred F. Schmertz of the U.S.A. (and a senior editor of RECORD); plus a representative of the Philippines still to be named. Reserve jurors are Takamasa Yoshizaka of Japan and William Whitfield of Great Britain. The professional advisor is Arthur Erickson, FRAIC, of Vancouver, British Columbia; and much of the work on the competition program and arrangements has been done by his partners Fritz Gutheim and Michael Seelig.

An extraordinary effort has gone into setting up this competition—into making it an important and valid one, and making it worth the time and effort that hundreds of competitors and competitive teams will put into winning.

Our hope is, very simply, that this competition can be an important part of a major world-wide effort to improve the conditions of living for the poor around the world.

As we said in the first editorial on this subject, nearly a year ago (RECORD, April 1974): "We are not so naive as to believe that architecture is the solution to all the problems of the world; that good planning and design is a substitute for jobs that don't exist, or for food that doesn't exist or is too dear. But housing and a sense of community are basic human needs—and that is the part of the problem that we know most about and can best do something about. So let us try." —*Walter F. Wagner, Jr.*

A grateful postscript of thanks to those who gave IAF the money to hold the Competition

As noted before on this page, the staffs of RECORD and L'ARCHITECTURE D'AUJOURD'HUI undertook to raise the money for the IAF to hold the competition. Though he would deny it, 99 44/100s per cent of this effort has been made by RECORD publisher Blake Hughes, whose commitment to this project has been deep and continuous. Of the $180,000 budget, some $163,000 has been committed—by a special grant of The Government of the Philippines; by grants from Graham Foundation, Johns-Manville, International Development Research Centre (Canada), The Asia Foundation, The George P. McNear, Jr. Foundation, PPG Industries Foundation, CP Air, Arthur Sworn Goldman & Associates; and to the special pleasure of the editors by The Austin Company; The Architects Collaborative; Skidmore, Owings & Merrill; Smith, Hinchman & Grylls Associates; E. Hendrick Grolle, RAIC; Dalton·Dalton·Little·Newport Inc.; Gruzen and Partners; Harrison & Abramovitz; and the staff (including the secretaries) of RECORD.

With just $17,000 to go, I'm emboldened to renew a plea made in the October issue: If despite the stomach-churning conditions prevailing these days, you *can* consider a contribution to the IAF, please do so. If 100 firms could contribute $200; or 200 firms contribute $100 (or 34 firms contribute $500) (or 17 firms contribute $1000) the IAF would be over the top. Please think about it if you possibly can. Checks should be made payable to The International Architectural Foundation, Inc., 1221 Avenue of the Americas, New York, New York 10020. If you have any questions, please call me at 212/997-4565; or Blake Hughes at 212/997-4685. —*W.W.*

Down in the doldrums, government and construction can help each other out

Rising above almost any discussion of the construction industry crisis today is first and foremost a call for the Federal government to come to the aid of this foundering segment of the economy. Indeed release of impounded construction funds and legislation easing the money market would clearly have an immediate restorative effect.

However, in these discussions, a second theme is being sounded. The construction industry itself is beginning to recognize that it is high time to put a halt to construction industry cycling, and at the same time give government a tool to prime or to steady the economy.

When the economy is healthy, the construction industry is, as one economist put it, euphoric, creating a grossly inaccurate image of just how good things are. In poor times, the construction industry dips into the extreme danger zone, as evidenced now by a general unemployment rate in construction more than twice the national level.

In short, the construction industry in its enormous "peaks-and-valleys" cycling is horribly ineffective as a bellwether of the national economy, and this is cause for concern on both the industry and Federal government sides. The construction industry does not, however, lack the means or the incentive to establish some sort of equilibrium and play a precise role in the economic affairs of the nation.

Many observers see the construction industry as a tool for heating up or cooling off the economy. Certainly the governor of Illinois subscribes to this view. At this writing, the Illinois legislature is sitting in joint session to deal especially with the construction industry. Illinois legislators are considering—and are said to favor—a $4.1 billion accelerated building program proposed by Governor Dan Walker, to provide jobs in the private sector over the next two years. Said Governor Walker, "By putting money into the hands of workers . . . and at the same time improving and building facilities throughout the state, we can have a substantial positive impact on the Illinois economy."

In a position to help each other, the construction industry and government now have the greatest opportunity and the greatest need to do so. For a start, the industry is attempting to unify its various parts, many of them traditional adversaries. Only last month delegates from the AIA met with the AFL-CIO Building and Construction Trades Department to urge a common goal: an investment of public funds to stimulate construction across the country. AIA President William Marshall Jr. and Building Trades President Robert A. Georgine further agreed to a broad combined effort to implement a seven-point plan including lobbying at the national and local levels.

Of possible importance to strengthening a fragmented industry is a move by the Associated General Contractors of America to form a building and construction federation of all industry segments, culminating in the establishment within the Commerce Department of a new Office of Construction. They argue that this is the best way to establish industry presence, sorely needed with the present Administration for starters.

Speaking before the annual convention of the National Association of Home Builders recently, Harvard economist Howard H. Stevenson said the Federal government has failed to recognize that the housing industry is just that, an industry, with many companies doing over $10 million in sales each year. It is an industry no longer comprised of carpenters who have graduated to home building, and who—in poor times—can go back to being carpenters. Home builders are large corporations with middle management and all the trappings of other big businesses. If you dismantle the industry structure through too stringent credit or other means, so that these companies cannot survive, they are not going to reappear full-blown when the money situation eases up. This is a warning that should apply to the entire construction industry, which has long ceased being a cottage industry.

Does Washington know this? Does local government understand that unlike the automotive industry, construction cannot start up overnight? As the New York State Association of Architects is pointing out to its legislators personally, construction in 1976 requires design work in 1975, and delaying start of design work until 1977 means a delay in the start of construction until 1978 or 1979.

As a postscript, the organizations participating in the one-voice movement mentioned earlier have formed the National Construction Industry Council, electing American Society of Civil Engineers past-president Charles Yoder as chairman. As a spokesman said, the Office of Construction at the Federal level is perhaps a long way off, but it is also something solid to aim for at last.—*Charles E. Hamlin*

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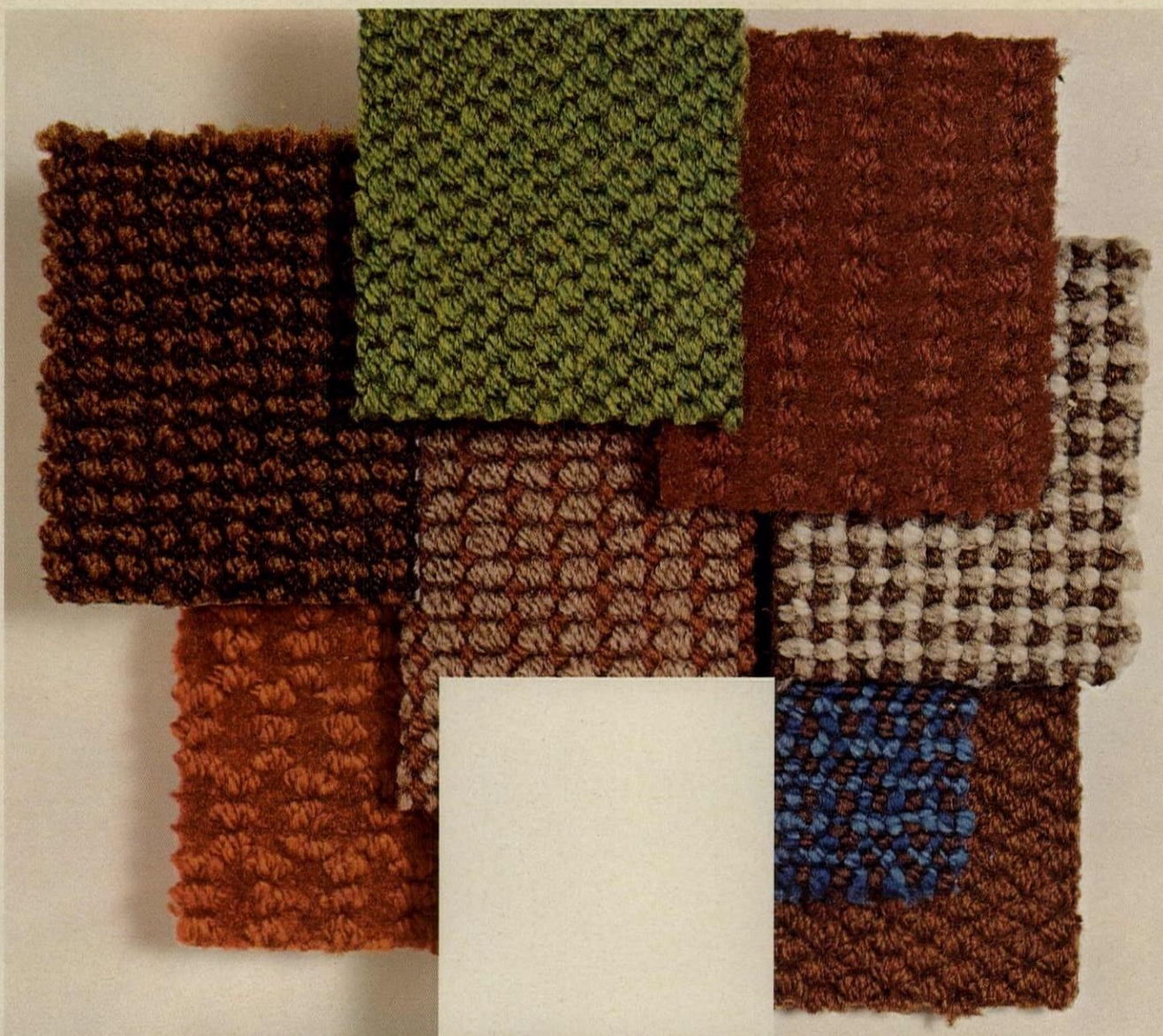

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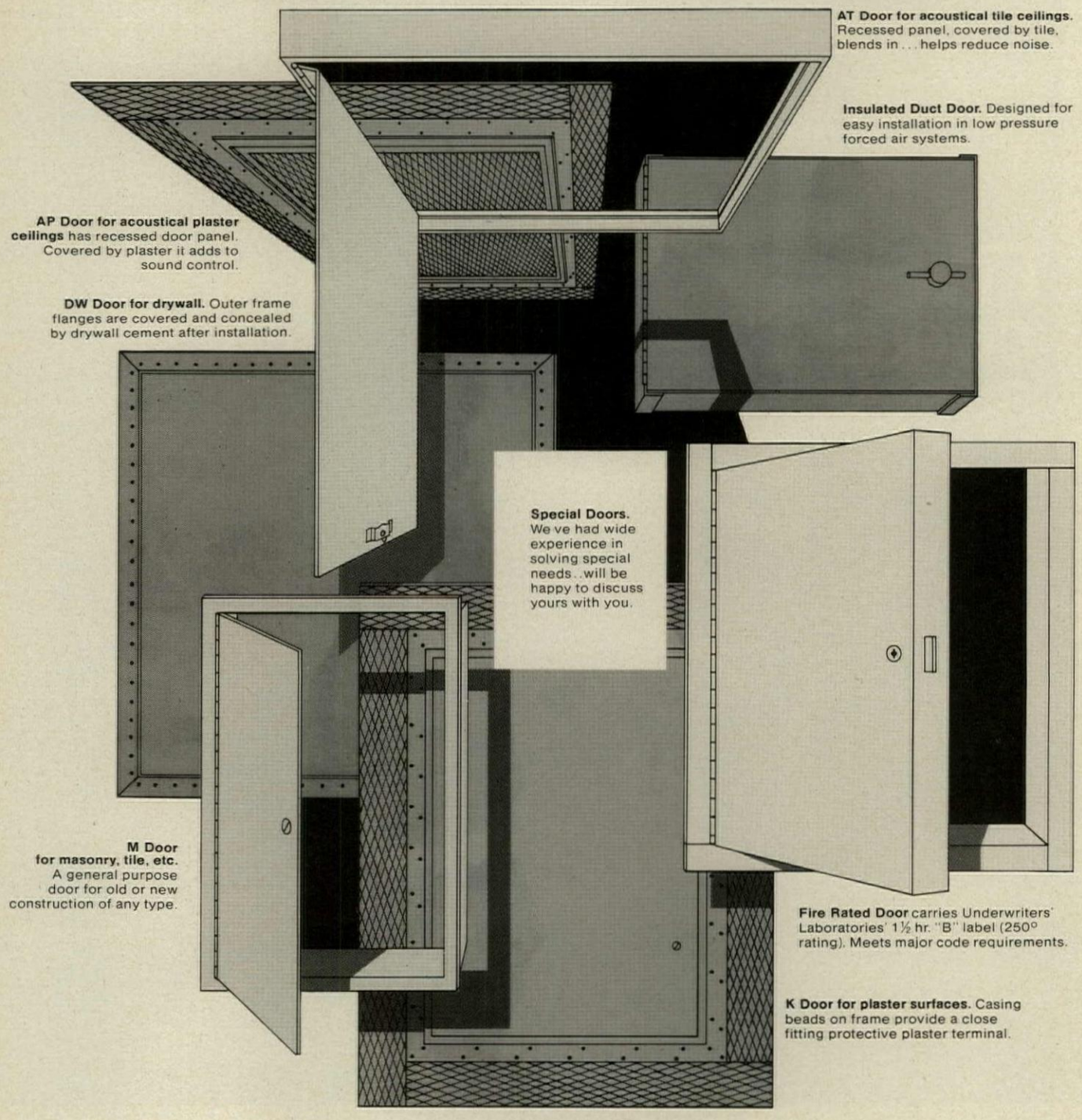

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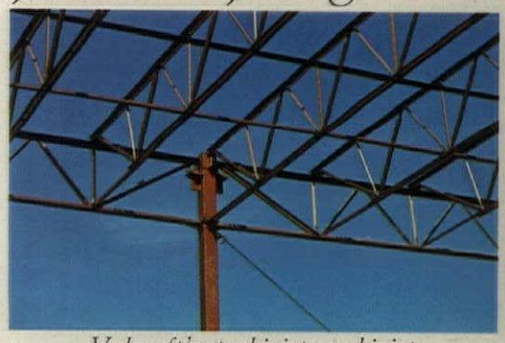

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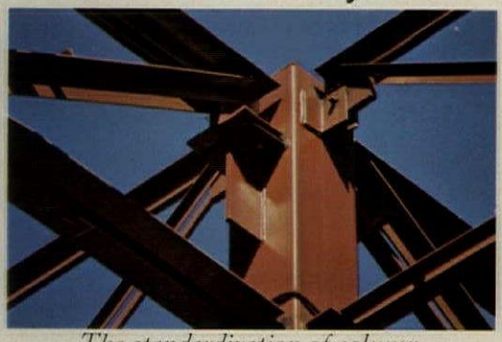

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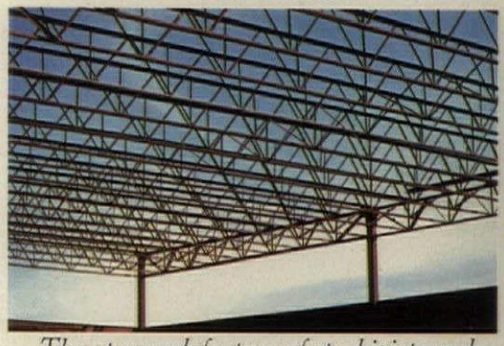

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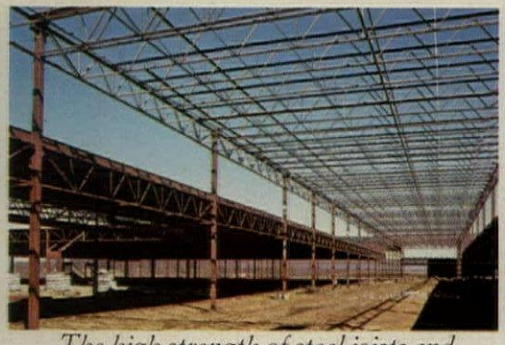

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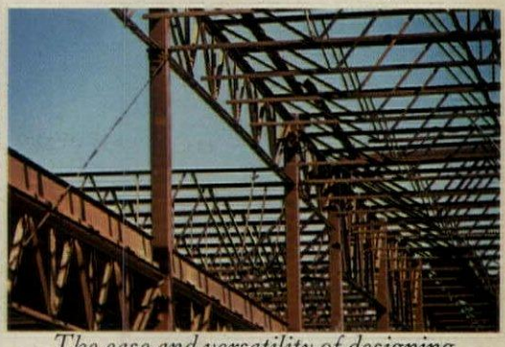

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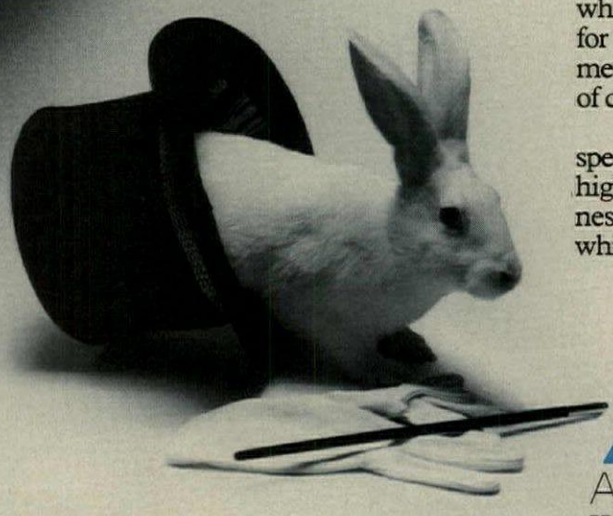

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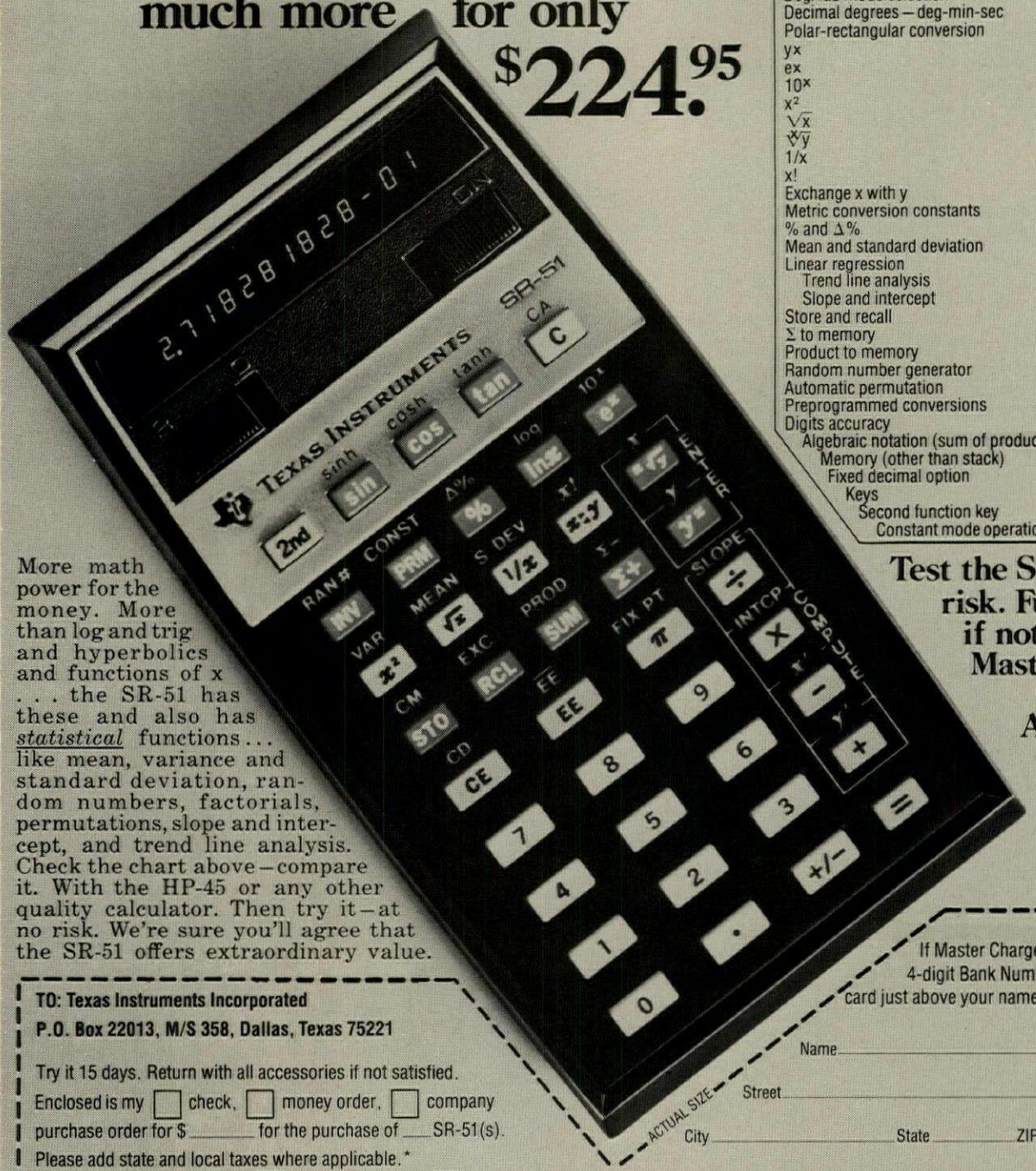
FUNCTION	SR-51	HP-45
Log, ln	yes	yes
Trig (sin, cos, tan, Inv)	yes	yes
Hyperbolic (sinh, cosh, tanh, Inv)	yes	no
Degree-radian conversion	yes	yes
Deg/rad mode selection	yes	yes
Decimal degrees – deg-min-sec	yes	yes
Polar-rectangular conversion	yes	yes
y^x	yes	yes
e^x	yes	yes
10^x	yes	yes
x^2	yes	yes
$\sqrt{x}$	yes	yes
$\sqrt[x]{y}$	yes	no
1/x	yes	yes
x!	yes	yes
Exchange x with y	yes	yes
Metric conversion constants	13	3
% and Δ%	yes	yes
Mean and standard deviation	yes	yes
Linear regression	yes	no
Trend line analysis	yes	no
Slope and intercept	yes	no
Store and recall	yes	yes
Σ to memory	yes	yes
Product to memory	yes	yes
Random number generator	yes	no
Automatic permutation	yes	no
Preprogrammed conversions	20	7
Digits accuracy	13	10
Algebraic notation (sum of products)	yes	no
Memory (other than stack)	3	9
Fixed decimal option	yes	yes
Keys	40	35
Second function key	yes	yes
Constant mode operation	yes	no



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THE RECORD REPORTS

President Ford has asked Congress to appropriate $5.9 billion for HUD programs in fiscal year 1976, which begins July 1, 1975. This would be $700 million more than the $5.2 billion available in the current year, and most of the increase would be evenly divided between housing assistance payments and community development funding. The two largest items in the appropriations request are $2.24 billion for housing assistance payments, and $2.55 billion for community development grants. Over $5 billion of community development funds would be available to states and localities during fiscal years 1975 and 1976, distributed primarily through formula grants that recognize population and housing needs, as well as relative extent of poverty.

Carla Anderson Hills, 41, is expected to be confirmed as the new Secretary of Housing and Urban Development, even though Senate hearings have not begun at this writing. Washington sources report that there is little Congressional opposition to her nomination by President Ford, but construction industry groups are urging reconsideration by the President. AIA, NAHB and the National Housing Conference have issued statements expressing concern that Mrs. Hills, a lawyer and Assistant Attorney General, lacks qualifications for the job. If confirmed, she would succeed James T. Lynn, who now directs the Office of Management and Budget.

New Secretaries of Transportation and Labor have been nominated by President Ford. Hearings are underway, at this writing, on confirmation of William T. Coleman to head the Department of Transportation, and President Ford has also nominated John T. Dunlop as Secretary of Labor. Both men are expected to be confirmed.

The AIA and the AFL-CIO Building and Construction Trades Department are urging release of public funds, amounting to $13 billion, to stimulate public and private construction. Meeting February 12 in Bal Harbour, Fla., the two organizations joined in supporting a seven-point program to revive the economy. Key points involve a release of public construction funds impounded by the Administration; special emphasis on reviving the country's housing industry; and initiation of a broad public works program.

The Department of Housing and Urban Development has shut down its new towns program. HUD has notified developers that it will not accept new applications for construction loan guarantees or other Federal assistance. The new towns already in various stages of development will continue to receive Federal aid, but many are said to be in trouble. There is strong Congressional disapproval of the HUD action. Details on page 34.

The John F. Kennedy Library Corporation has dropped plans for a presidential museum at Harvard Square. Faced with strong opposition from the community, (RECORD, December 1974, page 98), the museum backers gave up a 10-year-old plan for honoring the late President Kennedy, even though a recent environmental impact study concluded no significant problems would result from the project. Stephen E. Smith, president of the corporation, said the Kennedy archives might remain at Harvard, but the entire complex might be moved elsewhere. So far, two designs for the complex have been prepared by I. M. Pei and Partners.

Preservationist leaders have formed a new national lobbying organization called Preservation Action. With headquarters in Washington, D.C., the group hopes to direct much of its efforts to preserving and renovating low-income and middle-income inner city neighborhoods. Details on page 35.

J. S. Norman, Jr. a Houston builder, lawyer and engineer was elected president of NAHB, by the board of directors in Dallas on January 22. He succeeds Lewis Cenker of Atlanta. Other officers of the National Association of Homebuilders, elected in Dallas, are: John C. Hart, first vice president; Robert Arquilla, vice president and treasurer; and Ernest A. Becker, vice president and secretary. The builders were gathered for the 31st annual convention. Although the convention was held in the midst of the worst recession to hit the housing industry in 30 years, the gathering was cheered by a message from President Ford that pledged "an all-out effort to assist the building industry in providing homes Americans need and demand." This pledge, coming after the President's failure to deal with the housing crisis in his State of the Union address, prompted NAHB to expect specific Administration proposals later.

Carnegie-Mellon University has awarded the 1974 Dickson Prize to David Geiger, structural engineer and partner in the New York consulting engineering firm of Geiger Berger Associates. The $10,000 prize is awarded annually to persons who have, in the University's opinion, "done the most outstanding scientific or engineering work in the United States in the year." Dr. Geiger is being cited for his innovations in the design of air-supported structures; his research led to his being commissioned as the structural engineer for the U.S. Pavilion at EXPO'70 in Osaka, Japan, the first major cable-stiffened, air-supported roof structure. The building was designed by Davis, Brody & Associates.

Nod to construction in State of the Union talk

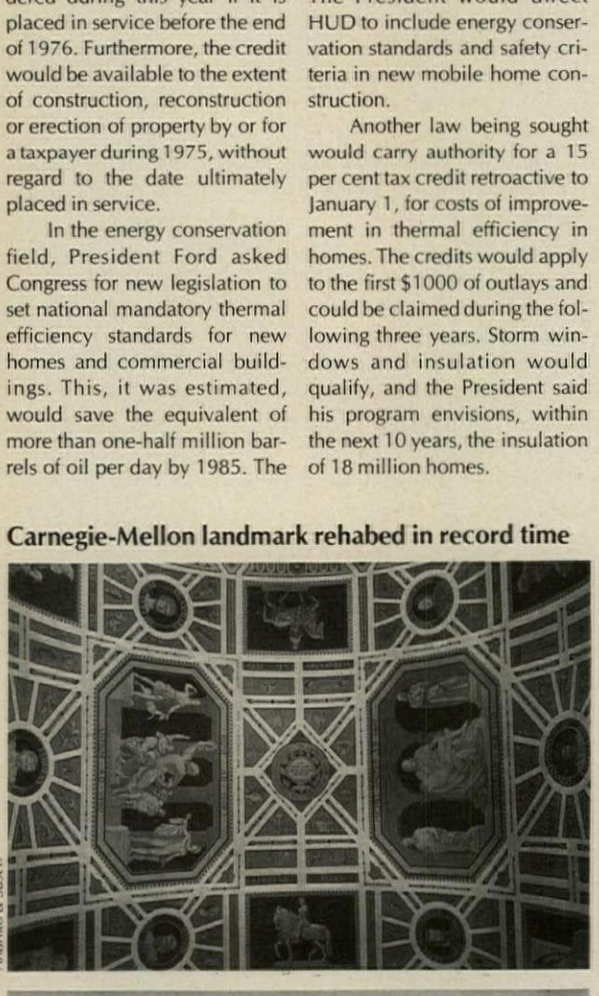
President Ford's proposals for a temporary increase in investment tax credit for business and his planned moves in the energy conservation area were subjects of importance to the construction industry, included in his State of the Union address in January.

The Treasury Department figures that this increase in the tax credit would provide benefits of $4 billion in 1975 to immediately stimulate job-creating investment. This liberalized credit would apply to property placed in service during 1975. It could also be used in figuring tax payments on property ordered during this year if it is placed in service before the end of 1976. Furthermore, the credit would be available to the extent of construction, reconstruction or erection of property by or for a taxpayer during 1975, without regard to the date ultimately placed in service.

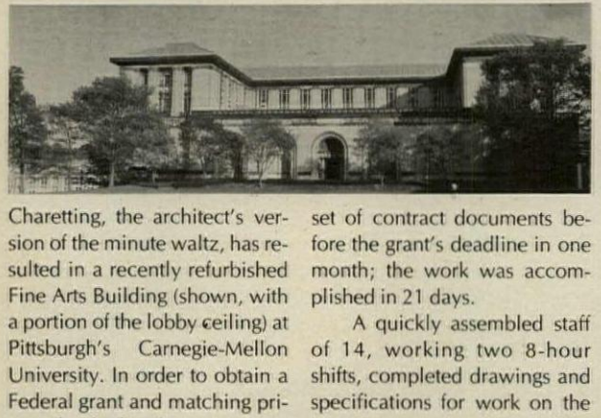
In the energy conservation field, President Ford asked Congress for new legislation to set national mandatory thermal efficiency standards for new homes and commercial buildings. This, it was estimated, would save the equivalent of more than one-half million barrels of oil per day by 1985. The White House said that if it is given this authority: 1) The HUD Secretary will consult with engineering, architectural, consumer, labor, industry, and government representatives to seek advice on development of the efficiency standards. 2) Thermal standards for one- and two-family dwellings would be developed and implemented within a year. New standards for commercial and larger residential buildings would be developed and implemented as soon thereafter as possible. 3) Standards would be implemented by state and local governments through local building codes. 4) The President would direct HUD to include energy conservation standards and safety criteria in new mobile home construction.

Another law being sought would carry authority for a 15 per cent tax credit retroactive to January 1, for costs of improvement in thermal efficiency in homes. The credits would apply to the first $1000 of outlays and could be claimed during the following three years. Storm windows and insulation would qualify, and the President said his program envisions, within the next 10 years, the insulation of 18 million homes.

Carnegie-Mellon landmark rehabed in record time



Andriko & Susco



Charetting, the architect's version of the minute waltz, has resulted in a recently refurbished Fine Arts Building (shown, with a portion of the lobby ceiling) at Pittsburgh's Carnegie-Mellon University. In order to obtain a Federal grant and matching private funds for the restoration and renovation work, the University called upon Decade Architectural Associates, Pittsburgh, to produce a complete set of contract documents before the grant's deadline in one month; the work was accomplished in 21 days.

A quickly assembled staff of 14, working two 8-hour shifts, completed drawings and specifications for work on the historic structure, designed by Henry Hornbostle in 1895. A separate contract for the restoration of the building's theater was under Robert Taylor.

Dennis Clark photos

Weekend charette devoted to Detroit housing

As the result of an unusual weekend charette this month in Detroit, 18 Victorian homes located in a decaying neighborhood of the city will see new life as multi-family dwellings. Designated a Bicentennial project by Detroit, the Woodward East project enlisted the aid of 17 local and out-of-town architects who, for expenses only, donated a weekend to do schematic designs and suggest site improvements for homes once occupied by the elite, and now slated to provide the nucleus of a proposed downtown development including 150 new townhouses.

The unique project is the brainchild of a black community group, Woodward East Projects Inc., formed following Detroit's 1967 racial riots. With the assistance of a 300-member, all-volunteer group called Professional Skills Alliance, the community group four years ago began acquiring property on the site and pursuing grant money for site development. Woodward East Projects already owns and successfully manages some 400 rehabilitated rental units located near Detroit's downtown.

Faced with an inadequate budget of $18,000 for schematic design work, architectural consultant to the community group, William Kessler, conceived the all-expenses-paid weekend design retreat. In preparation for the event, Chambers & Chambers, Akron, Ohio, donated rectified photographs of the 18 Victorian homes; Lawrence Institute of Technology School of Architecture students did floor-plan drawings of each of the houses; and Kessler associate Edward Francis did a building code analysis.

Detroit architects who participated were William Kessler, Edward Francis, Harold Varner, Howard Sims, William Lyman Jr., Louis (Gino) Rossetti, and Donald Scheible. Out-of-town participants were Giorgio Cavaglieri, Nicholas Holmes Jr., Ernest Allen Connally, J. Henry Chambers, Hugh Newell Jacobsen, Ralph Rapson, Jeh Johnson, W. Hamilton Morton, Don M. Hisaka, and Daniel U. Kiley. Dearborn, Michigan restoration architect Andrew Craig Morrison supervised the student work. Woodward East's consultant is Michael Johnson, RIBA.

HUD discontinues new towns program

Former HUD secretary, James T. Lynn, as one of his last official acts before assuming directorship of the Office of Management and Budget, announced that HUD's New Communities Administration would henceforth concentrate on assisting the 14 projects in its program and take no new applications for guaranty assistance; HUD has stopped forthwith processing all applications on hand.

HUD will continue to try to bail out the projects already under the NCA wing but many of these are experiencing grave financial difficulties and are said by HUD to be "substantially behind schedule." The Federal government's commitment to these 14 projects totals $336.5 million.

HUD is expected to complete its own study evaluating the new communities effort after 10 months of close investigation. Along with the General Accounting Office, a Congressional arm, the Department has raised significant questions about its own procedures and standards applied to the program.

Now, Congressional committees responsible for housing legislation are expressing concern over the downward direction of the new towns effort and are planning probes of their own to look more closely at the whole experiment. Many members of the House and Senate reportedly were upset when they learned that HUD had decided to discontinue processing applications, chiefly because they were not notified of the action and have received no justification for abandoning the program, they said. Maladministration of the program details by HUD has been charged both in and out of Congress.

Controversy flares over Toronto density

The city of Toronto is contin
ing its efforts to limit the densi
of downtown development b
means of "holding bylaws
until its master developme
plan is published in Septembe

The city received a setba
last December when the O
tario Municipal Board, a no
elected body with authority
authorize or reject any byla
passed by any Ontario munic
pality, rejected the existi
holding bylaw limiting th
height of buildings to 45 fe
and their area to 40,000 squa
feet. The city immediately a
pealed the OMB ruling to th
Cabinet of the Provincial Go
ernment, asking that it be r
versed until February 28.

At the same time the c
announced its intention to intr
duce a new holding bylaw (i
terim criteria) to be in force fro
February 28 until Septembe
when an extensive review
building downtown (desig
guidelines for the Toronto co
area) is expected to be ma
public.

The Cabinet has not at th
writing ruled on the city's a
peal against the OMB's reje
tion of its original holdi
bylaw, and the city has not y
drafted its proposed interim c
teria. It is intended that the c
teria will limit downtown buil
ings to a floor area of a ma
mum five-and-a-half times la
area, but permit a mix of co
mercial and residential un
that could allow up to eigh
and-a-half times coverage.

For the benefit of the c
teria the city is divided into
separate planning areas, each
which will be permitted d
ferent degrees of density. Th
over-all effect will be to cut th
density of many downtow
areas by two-thirds. Though th
interim criteria have not y
been written, they are in effe
on the basis of Toronto Ci
Council's announced intentio
of enacting them.

While the legality of th
holding bylaw is being mulle
and prior to the enactment
the interim criteria, major buil
ing in Toronto's core area h
come to a virtual standsti
Three projects which exceed
ther the 45-feet bylaw or th
density criteria have been a
proved in the interim but co
struction of only one, the Eato
Centre, has begun. The oth
two have been held up by ec
nomic considerations.

At the time the heig
bylaw was over-ruled, the city
planning staff said it had 9
projects on hand that could b
built if the 45-foot restrictio

was lifted, which would add an estimated 20 million square feet of commercial space to the downtown core and increase office space by some 40 per cent.

The Toronto Chapter of the Ontario Association of Architects is split on the issue. Its executive body, which supported the 45-foot bylaw resigned en masse December 31 when its intended recommendations were voted down by the membership. Sources close to the executive body say the meeting called to discuss the recommendations was weighted heavily in favor of members from the larger architectural firms in the city, which were against the bylaw.

At the same meeting, it was decided by vote that the executive would not be permitted to comment on the interim criteria. Stephen McLaughlin, chairman at the time and co-author of the "Design Guidelines" study says the decision of the executive to resign was taken because it was felt it no longer represented the full spectrum of architectural interests in the city of Toronto.

New preservation lobby formed

Local preservationist leaders have banded together to form a new national lobbying organization called Preservation Action. The group, which held its first meeting in Washington in January, plans to push for passage of legislation and adequate funding for programs designed to preserve and enhance the man-made environment in cities and small towns throughout the country. It is the first national lobbying group related to urban preservation. Other existing historical preservation organizations such as the National Trust are barred from lobbying.

Preservation Action's officers are volunteers, and its board members range from presidents of local preservation societies and urban planners to city mayors and the executive director of the United Indians of All Tribes Foundation. Its membership is expected to be made up mainly of local preservation interest groups.

Preservation Action plans to direct much of its efforts to preserving and renovating low- to middle-income inner city neighborhoods.

Upcoming legislation which Preservation Action plans to back includes bills for increased funding for historic preservation, the environmental protection tax bill, and land use policy and planning.

MIT team will lead major solar study

A team headed by the Massachusetts Institute of Technology has been selected to conduct a design study for an experimental solar energy project on Citicorp Center, a 56-story skyscraper (shown) under construction in New York City. The National Science Foundation, which announced the project, has awarded MIT's Energy Laboratory $186,000 for the 12-month study.

Citicorp Center was designed by Hugh Stubbins and Associates, Inc., with Emery Roth & Sons as associate architects. Mechanical and electrical engineering design was performed by Joseph R. Loring and Associates, Inc. These firms will also lend their support to the study.

Specifically, the MIT researchers will seek to provide a technical and economic evaluation of solar energy dehumidification systems when used on a large scale in an urban environment. The researchers also will try to provide the operational data and analysis necessary for applying the system to existing and proposed structures. After completion of the design study, a proposal will be made for a full-scale experiment at Citicorp Center.

The project is based on a technique of removing moisture from the incoming air at or near the outside temperature by passing the air through a spray of concentrated liquid which strongly absorbs water. The dilute liquid can then be dried and reconcentrated by heating it to temperatures readily available from solar energy collectors. Components already developed and available will be used.

Preliminary studies of the system envision a full-scale experiment using heat from a solar collector mounted on the south-facing 45-degree sloping roof of the building.

Democrats in Congress announce own programs

While President Ford concentrated his proposed solutions (see State of the Union) to the economic woes on tax rebates and energy conservation, the Democrats in Congress have stressed in addition lower interest rates, an emergency housing program and wage and price stability.

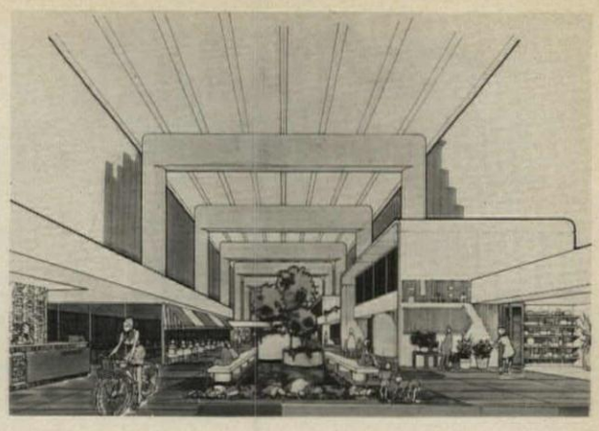
Their "platform" would put the Federal Reserve System policies on a road toward steady and stable economic growth, bringing a gradual but determined reduction of interest rates to a livable level. This, coupled with a credit allocation plan, would channel money away from speculative and inflationary uses, into housing, power generation and other productive capital investments.

The House Democratic study group, author of the plan, included details of a proposed public works acceleration program and an emergency housing scheme. The former urged legislation to fund already approved civil works projects, pollution abatement, highways, public mass transit and other construction now suffering "unconscionable delays" in administrative processing of grant applications.

The group was even more specific in its emergency housing proposals. Calling shelter probably the most seriously depressed sector just now, the paper set out these alternatives as measures to be considered by Congress: 1) Increasing the ability of savings and loan and thrift institutions to attract adequate capital. 2) Interest rate subsidies for low- and medium-priced housing for the near term until concerted effort succeeds in reducing interest rates to an acceptable level. 3) Incentives for the preservation and rehabilitation of older existing housing, including multi-family dwellings. 4) Short-term assistance to homeowners having difficulty making mortgage payments because of unemployment or a significant drop in income.

The report, said the authors, recognized the complexities of the housing market and the mortgage market which fuels it, but expected the banking committees to report specific recommendations to the Congress early in the session.

The group paper also called for low interest and long-term loans for home insulation improvements and an all-out "crash" program looking toward energy self-sufficiency. A Trust Fund dedicated to the latter was one possibility.



Miami architect urges malls under expressways

Among under-utilized urban spaces is that which exists under expressway overpasses, according to Miami architect Irvin Korach, of Smith, Korach, Hayet and Haynie.

Shown is his concept of how this space may be used for commercial and residential purposes. "Malls are a great asset to a community," Mr. Korach states, and use of the spaces under expressways would extend the arcade and plaza principle that characterizes many European cities.

What Korach envisions are malls of boutiques, restaurants and even housing under the concrete overpasses. In some downtown Miami areas, the land beneath expressways is being used for metered parking, but in other areas only haphazard parking is taking place. The whole idea of using this space could also lead to new expressway designs, adds Korach.

Washington's Willard Hotel saved from wrecker

Linda Strompf

Washington, D.C.'s historic Willard Hotel of 1901, a "sitting duck" endangered by the careful aim of an owner out to maim it (RECORD, December 1974, page 136), was rescued in January, with stunning symbolism, by the descendents of Sitting Bull.

Without a bow and arrow in sight, just $7 million, the 10-story structure, now an official landmark, was bought by the National American Indian Council, which represents the interests of some 800,000 Indians across the country through 1500 local and regional groups.

There are sitting ducks, all over the country, ready for renovation and restoration, and of serious value in housing the needs of our time. With the Willard, designed by Henry Hardenbergh (who did the venerable Plaza Hotel and the converted Dakota Apartment House in New York), the very first Americans, by proposing preservation instead of annihilation, are sending a signal to the society which displaced them, and closing the cultural circle with winning irony.

The hotel, a grande dame of the Belle Epoque, occupies a key corner on Pennsylvania Avenue, near the White House and Treasury and will remain a hotel. A leading chain will be taken on to handle management. The first non-Indian tenant signed up is the International Cultural and Trade Center, chaired by the noted oriental art dealer, Simon Kiriger. The building's voluptuous spatial volumes will be restored and updated to house meetings and conventions, and other public functions.

The Council's action also reinforces the Pennsylvania Avenue Plan which, refined last year and submitted to Congress, proposed saving the Willard to maintain the identity of the Avenue and kindle economic and social vitality in an area which has been bereft of everything but daytime bureaucrats. The December 1974 decision by a three-judge panel, allowing then-owner Charles Benenson, a New York realtor, to strip the Willard of all but its barebone structure, was a slap in the face of urban and cultural sensibility—a slap which Mr. Benenson, to his credit, has made up for by going through with this deal.—*William Marlin*

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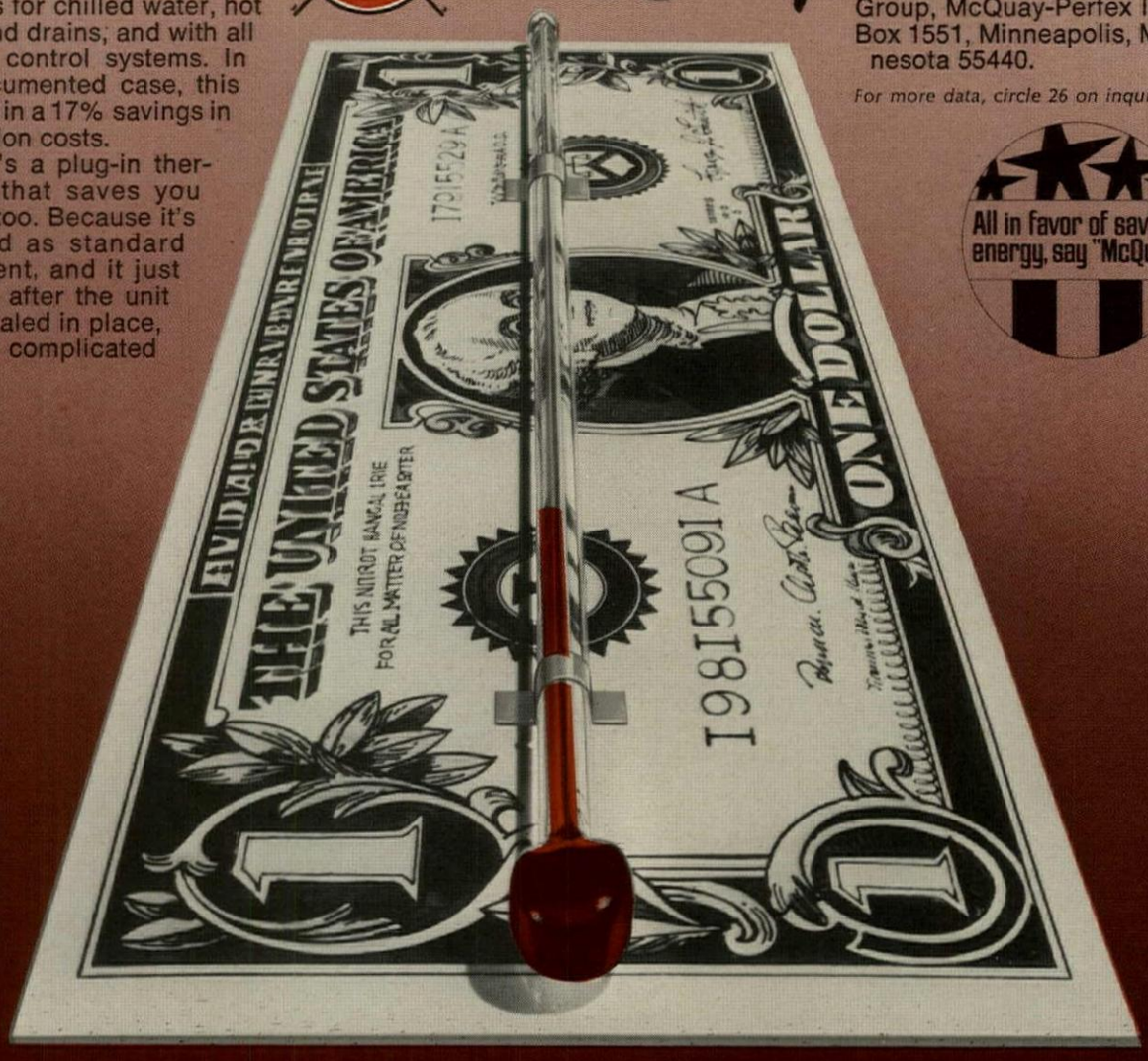
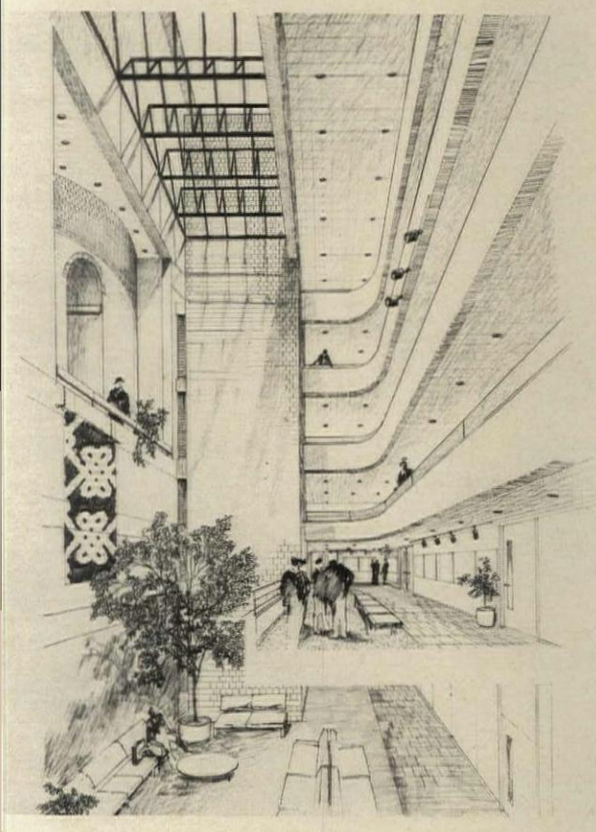
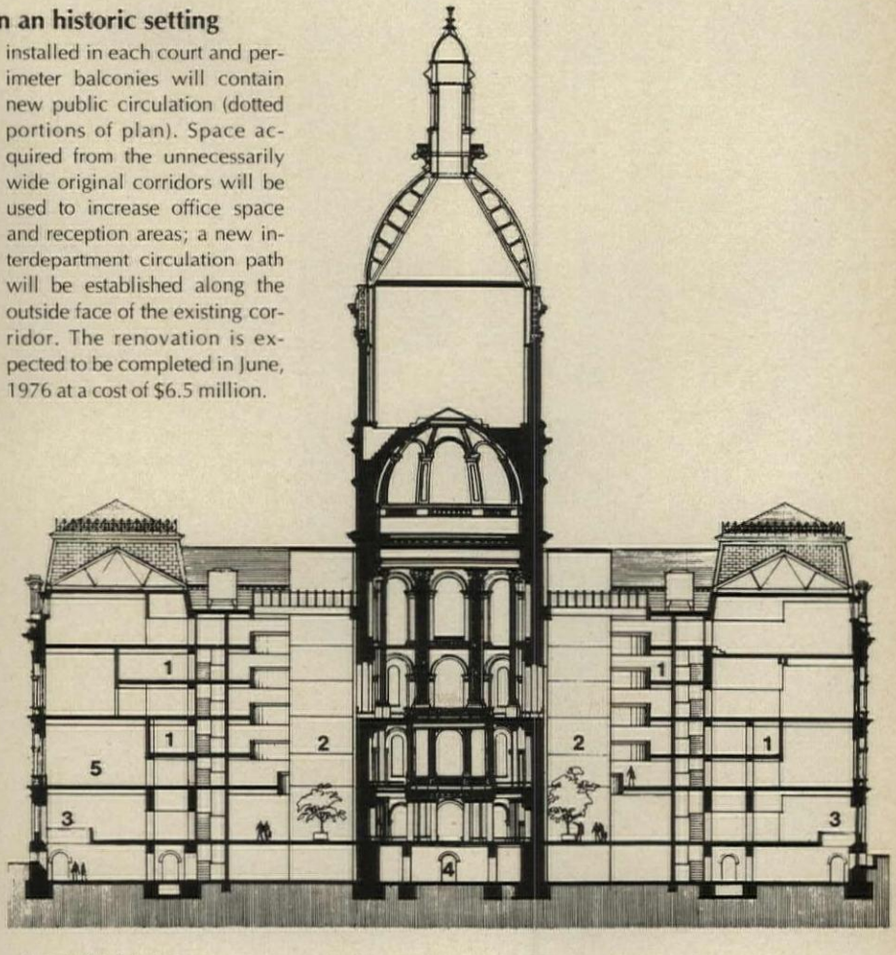


All in favor of saving energy, say "McQuay."

Baltimore's 19th century City Hall: double the space in an historic setting

Baltimore's City Hall, completed in 1875, was designed by George A. Fredericks in the Second Empire style said to imitate the "show stopping" contemporary buildings of Paris. Still Baltimore's municipal headquarters, the City Hall is now being renovated according to the design of a joint venture, Architectural Heritage-Baltimore Inc./Meyers and D'Aleo Inc., whose concept will reinstate the historical character of the building's ceremonial spaces, notably the Rotunda and two courtyards flanking it. In the process of changing existing circulation patterns, and creating new contemporary interiors, the architects will increase the usable area from 53,000 square feet to 98,000 square feet. In the new plan, the courtyards are to be cleared of existing structure, and opened from the first floor to the skylighted roof (see rendering). New elevators will be installed in each court and perimeter balconies will contain new public circulation (dotted portions of plan). Space acquired from the unnecessarily wide original corridors will be used to increase office space and reception areas; a new interdepartment circulation path will be established along the outside face of the existing corridor. The renovation is expected to be completed in June, 1976 at a cost of $6.5 million.

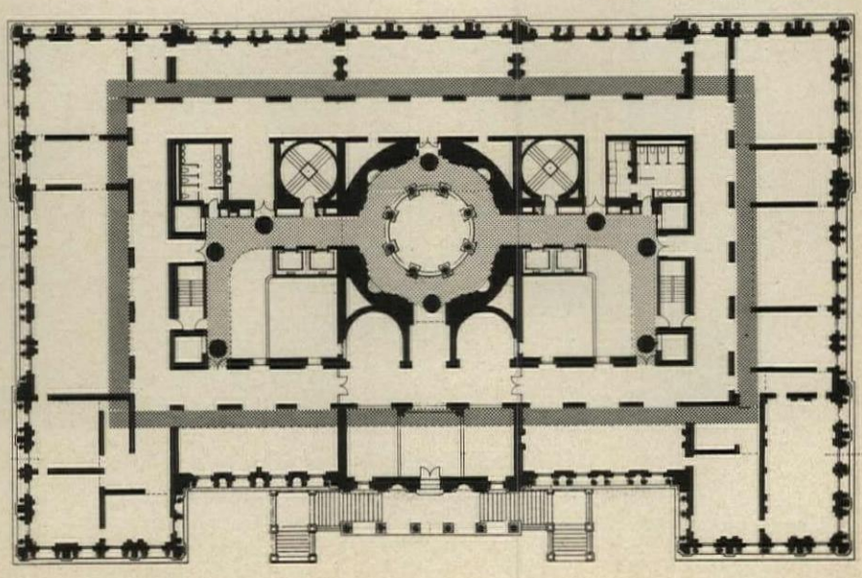


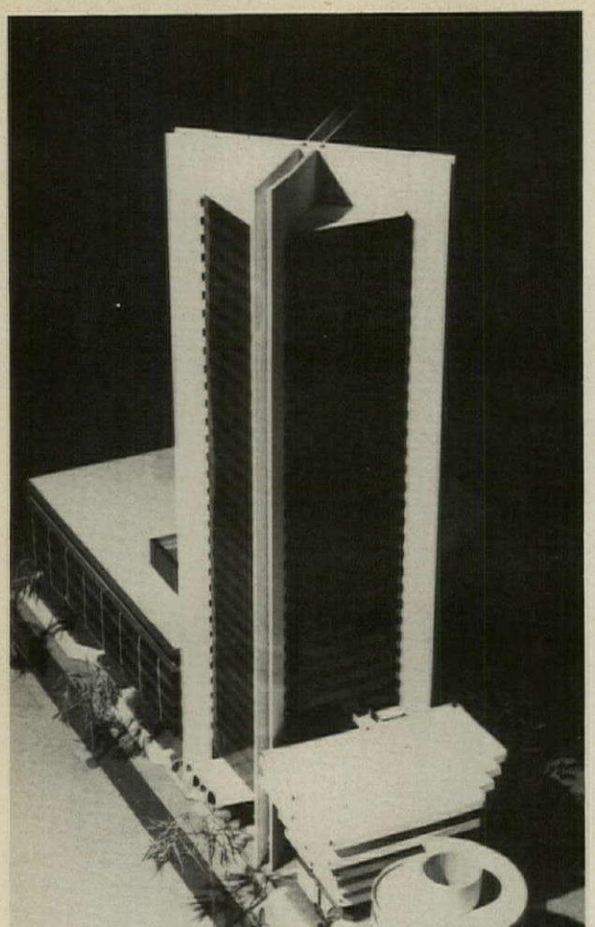


Longitudinal section

1. Mezzanine
2. Courtyard
3. Spaces open to lower level
4. Exhibition area
5. Board of Estimate's room

Public circulation
Department entrances
Interdepartment circulation



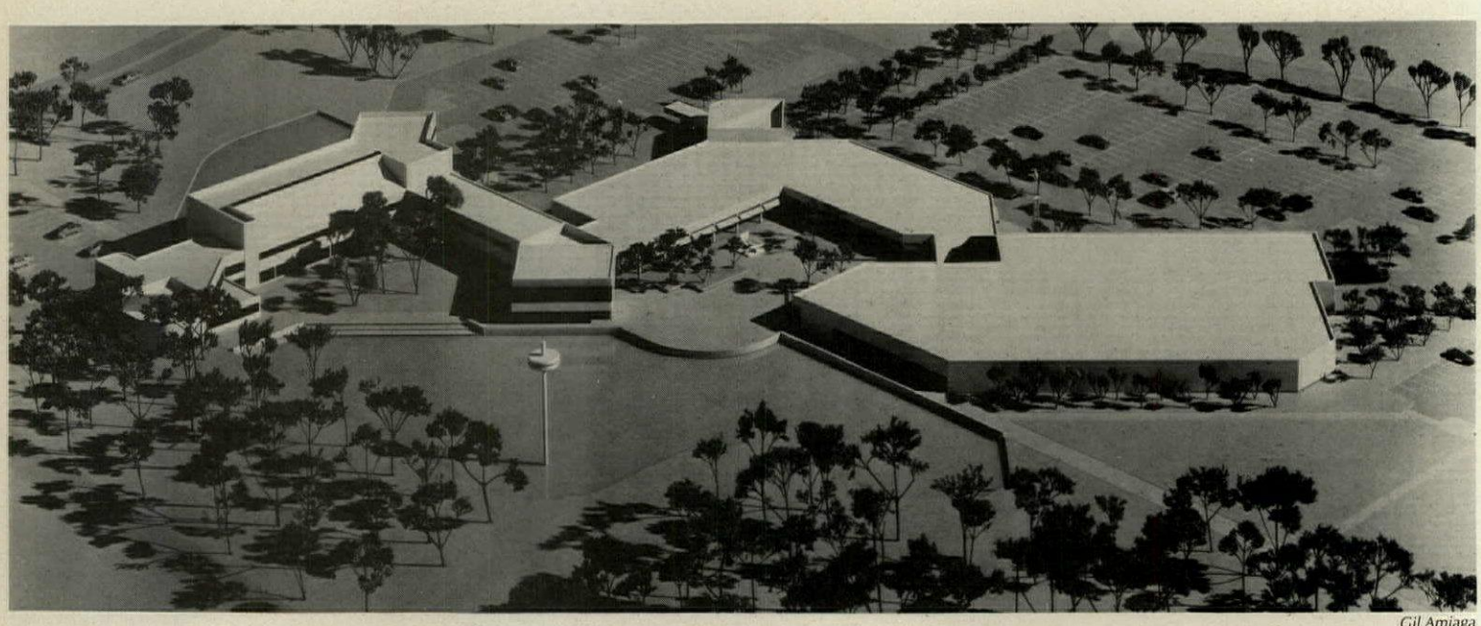


Jakarta's tallest tower under construction

Sih Timothy Seow & Partners, Singapore, designed this office tower-bank building, said to be the tallest building in Jakarta, Indonesia. The 34-story tower will be flanked by a six-story bank and parking garage accessed by a circular ramp, and the entire project will rise from a landscaped site in Medeka Square in the city's civic district. Structurally, four massive corner cores with a central service core form the vertical members of the building, and floors are prestressed concrete. The cores are to be slip-formed to the full height of the building. Curtain-wall sheathing is planned.

Federal Reserve Bank underway in Philadelphia

Designed by Ewing Cole, Erdman Rizzio Cherry Parsky, this eight-story building on Independence Mall comprises 800,000 square feet and is scheduled for completion in 1976. The red granite and glass facade, use of plantings and glass-enclosed courts are all designed to minimize the building's mass and relate it to the longitudinal character of the Mall. Pietro Belluschi served as architectural consultant to the Bank.



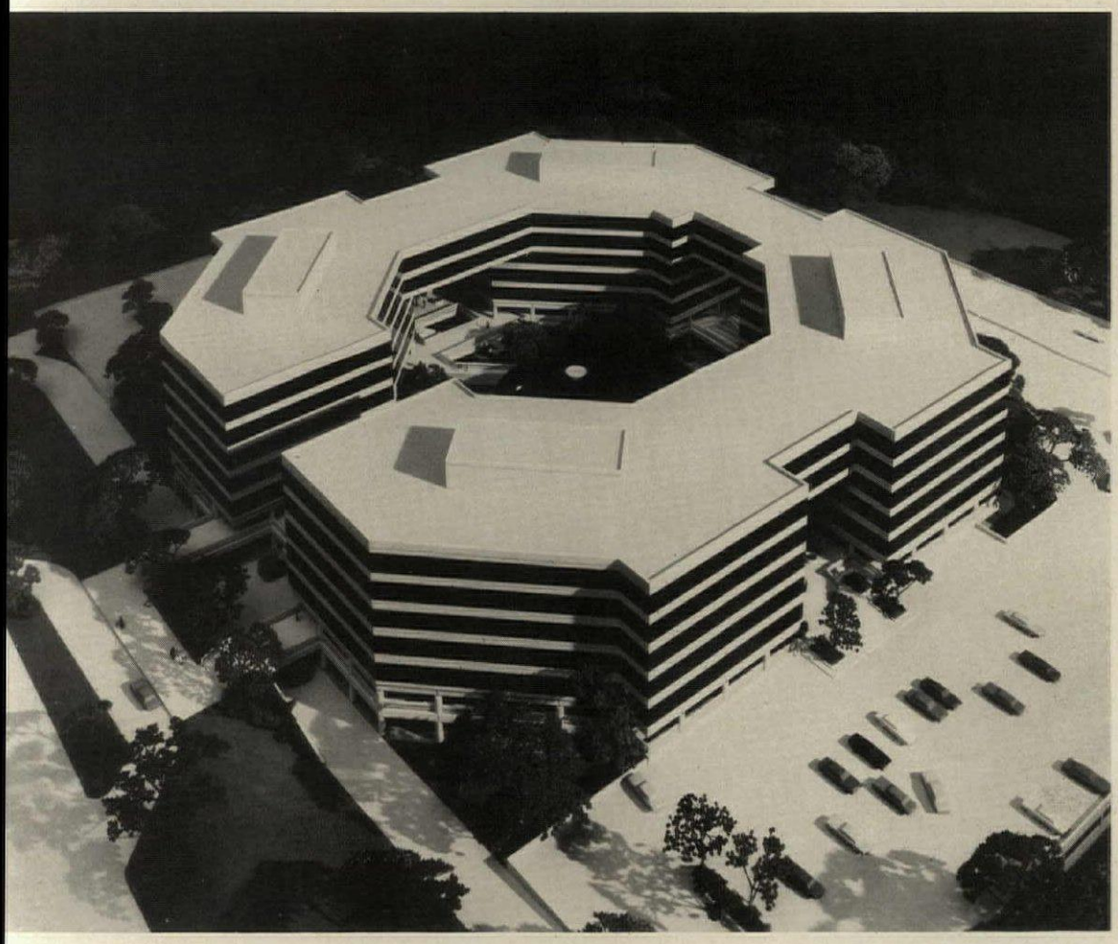
Gil Amiaga

Groundbreaking set for first stage of town center for new community

A spring construction date has been set for the first stage of the "Town Center" for the new community of Audubon in Amherst, New York. The town center is to contain a 36,000-square-foot office building, a visitors' center and a 72,000-square-foot retail center. The architect of the project is Richard R. Moger, and the client is the New York State Urban Development Corporation. The configuration of the visitors' center-office building defines a courtyard (center) flanked by a new flood control lake and pedestrian promenade.

edmont Center, in uptown Atlanta, progresses; phase one opens this summer

is office park is the concept of anta architects Cooper, Carry Associates who designed the 0 million project as a series of ur seven-story buildings, con- cted to make one 524,000- uare-foot structure with a o-story domed restaurant in the center. Each building quadrant has its own core of elevators, restrooms and services, but bridges will link upper and lower levels. A covered walkway around both sides of the first floor and balconies around both sides of the second floor make them practical for leasing as either offices or retail shops. The concrete frame building is banded by continuous floor-to-ceiling bronze-tinted insulating glass. The entire project will be complete in 1976. Phase I will be occupied this summer.

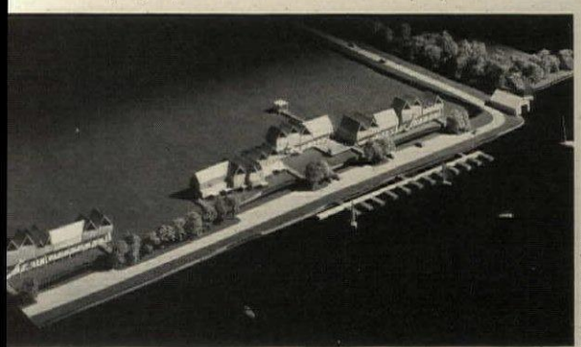


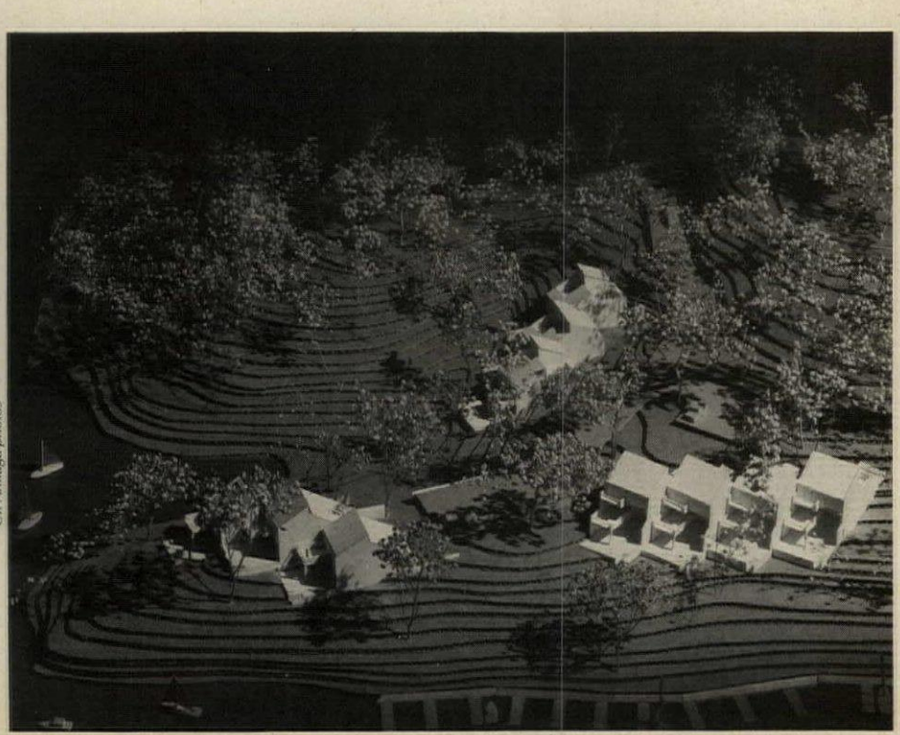
Forty-story neighbor for Boston landmark

Under construction in Boston is Sixty State Street, adjacent to Boston City Hall and Faneuil Hall (left foreground). The property is within the Waterfront and Government Center urban renewal area containing many historic sites, which the new building seeks to accommodate as much as possible. Its corners, for example, will be chamfered to restore the line of sight between the Old State House and Faneuil Hall, which was obstructed by buildings previously on the site. Nearly 60 per cent of the site will be for pedestrian use. The eleven-sided granite-faced building was designed by Skidmore, Owings and Merrill, Chicago.

lew York firm designs Carolina condominiums

he Black River condominiums elow), at Georgetown, South arolina, and the Tega-Cay on oint Wylie (right), Charlotte, orth Carolina are two current ousing projects in the office of opelin, Lee and Chen. In the lack River project, 200 units will be built on posts above canals and rice fields, with abundant views in two directions. The 175 Tega-Cay townhouses feature terraces and decks, with individual docking spaces. Construction is to begin soon on that project.





Cil Amiaga photos

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Controversy continues over Jerusalem's growth

This article is Part II of a report on the International Conference on Housing for the Emerging Nations, (RECORD, February 1975, page 43) held in Tel Aviv, Israel, December 17-20, 1974. The reporter, Samuel R. Mozes, AIP, describes here a special session dealing with a scheme for future development of the area facing the Western Wall in Jerusalem's Old City.

The International Conference on Housing for the Emerging Nations was preceded by the inaugural session in Jerusalem of the newly organized International Advisory Committee for the Planning of Jerusalem. The committee was set up by the International Technical Cooperation Centre on request of Teddy Kollek, the city's Mayor.

The Advisory Committee is a successor to the townplanning sub-committee of the Jerusalem Committee, Mayor Kollek's previous advisory body, now discontinued. Several of its members, served also on the former committee, while others have been added to enlarge the scope of international and interprofessional participation. It was the townplanning subcommittee which, in December 1971, rejected the original version of the Jerusalem Master Plan prepared by consultants to the municipality. Since that time, the master plan has been substantially revised, eliminating much of its early massive superhighway system and other physical development proposals which were found to be potentially detrimental to the functioning and appearance of the unique city, sacred to three religions.

A major feature of the Jerusalem inaugural session was the presentation of a development scheme for the area facing the Western Wall, in Jerusalem's Old City, prepared by Moshe Safdie. The area, a part of the Old City "Jewish Quarter" (the so-called various quarters of the Old City date back to the ethnic/religious distribution of local population under the Ottoman Empire prior to World War I), was a densely populated Arab slum until the Six-Day War of 1967. After Israel recaptured the Old City in 1967, the slum dwellings in that part of the city were demolished and a vast but unorganized open area was created in front of the Western Wall, the remnant of the outer walls of the ancient Temple of the Jews.

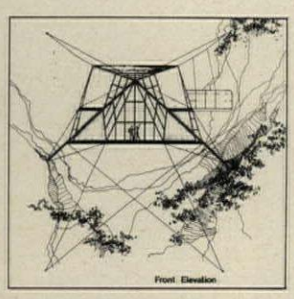
Mr. Safdie now proposes an ingenious series of receding terraces providing several levels of mass assembly spaces which can be used jointly or separately depending on the number of people present. Under the terraces would be located quarters for various educational and public facilities.

The scheme has caused a minor storm of criticism by Israel architects and planners, and by the local newspapers. When questioned during the committee session about the validity of his proposal, Mr. Safdie asserted that he intended the scheme to be as subdued as possible. He also invoked the name of the prestigious Israeli archaeologist Benjamin Mazar, who directs excavations at the Western Wall. The scheme, Mr. Safdie said, is really a joint solution of the problem worked out by Professor Mazar and himself.

Llewelyn-Davies will plan Teheran new town

The Mayor of Teheran, Gholam Reza Nikpay has announced that the Teheran municipality has signed a $3 billion contract with Llewelyn-Davies International, London, for planning of Shahestan Pahlavi, an ultramodern new town to be built on a 5.3-million-square-meter site within the capital of Iran.

According to Mayor Nikpay, the project will provide housing for 50,000 persons and would include a large civic center/government complex as well as commercial buildings. The Mayor said that plans would be ready within 13 months, and construction would begin immediately.



Patent granted on suspended dwellings

A patent has been granted to New York architect Richard W. Snibbe, for a structural system that permits economical construction of homes and apartments on currently unusable terrain.

"The system is environmentally sound in that there is minimum permanent defacement of the terrain," said Snibbe. "Ideally, the system is designed for satellite towns of some 10,000 acres, housing 60,000 persons in 18,000 homes and apartments."

The patent, granted by the U.S. Patent and Trademark Office, embraces a suspended structural system of steel cables and pipe secured to the mountainside by rock anchors at six small points. Two levels of living space can be created within the structure.

Lev Zetlin Associates Inc., structural engineers, has analyzed the system and reports that houses built with the procedure can withstand erosion, hurricane, and earthquakes.

"The basic materials to be used include pre-cut steel, aluminum, and plastic," Snibbe said, adding that, "The master plan envisions an essentially automobile-free transportation system with cable cars that convert to commuter trains serving as the prime transit mode. We plan only one major road through each town and cars will be stored under the town itself."

Prices to buyers, the architect noted, will be roughly comparable to conventional dwelling units.

[*Ed. note:* A feature discussion of this project will appear in the Architectural Engineering section of an early issue of RECORD.]

Growth limits: $10,000 prize for your thoughts

Declining fertility, increasing resource prices, and shifts in social preferences are among forces that may bring marked reductions in demographic and material growth to many nations by the year 2000. The transition to a steady-state, sustainable society can offer many opportunities for constructive social development, if appropriate foresight is exercised to avoid the problems inherent in any profound social change.

So state the authors of The Mitchell Prize, which has been established in collaboration with The Club of Rome to encourage international analysis and solution of problems that may result from reduced material and population growth rates.

The first such awards will be made at the international conference, "Limits to Growth '75: First Biennial Assessment of Alternatives to Growth," which will be held at The Woodlands, Texas, October 19-23, 1975. The Conference is being sponsored by The Club of Rome, the University of Houston, and Mitchell Energy & Development Corp. The awards are being sponsored by George and Cynthia Mitchell of Houston, Texas.

The forthcoming biennial Mitchell Prizes have been created to stimulate creative, constructive thinking about the problems and the opportunities inherent in the transition from growth to equilibrium, and the competition has been designed to attract individuals representing many different nationalities, professions, ideologies, and socio-economic backgrounds. The prizes are part of a program comprised of publications, symposia, and research efforts that will be conducted over the next decade.

Five basic assumptions underly the total program on alternatives to growth: 1) Some form of material equilibrium may become a desirable, even necessary, alternative to further growth in significant regions of the globe over the next several decades. 2) The conditions of material equilibrium are perfectly consistent with a wide variety of alternative political, economic, and social systems. 3) A great deal of earnest and creative thought is necessary if mankind is to negotiate an orderly transition to material equilibrium. 4) It is possible now to anticipate many aspects of any future end to material growth, and possible to initiate constructive responses to any problems it may portend. 5) The sooner a society can exercise foresight in thinking through the implications of a transition to equilibrium, the more likely is it to evolve a system that is consistent with the limits of a finite earth and the universal goals of personal liberty, self fulfillment and equity.

The Mitchell Prize has been initiated to recognize authors who best meet the challenge implied in the above five beliefs. Cash prizes totalling $20,000, with a $10,000 First Prize, will be awarded for papers in any appropriate prose format: short story, humorous first person narrative, scientific paper, or other. The focus of each paper may be on a specific individual, cultural group, institution, region or nation, or the global society as a whole.

The judges will weigh the above five areas equally while assigning importance to the clarity of the exposition and the practical significance of the recommendations implicit in the text. Summaries of entries must arrive at 5645 South Woodlawn, Chicago, Illinois 60637, no later than April 20, 1975. Individuals wishing to participate in the competition must file an application. The application filing date has been extended to March 31, 1975.

It is anticipated that the finalists' papers will be published in book form and released in several languages in conjunction with the October meeting, and an honorarium will be paid to all authors whose papers are included in that volume. For further information, write: John Naisbitt, Limits to Growth '75, 5645 Woodlawn Avenue, Chicago, Illinois 60637.

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Yale Math competition revisited

THE YALE MATHEMATICS BUILDING COMPETITION: ARCHITECTURE FOR A TIME OF QUESTIONING, *edited by Charles W. Moore and Nicholas Pyle; New Haven and London. Yale University Press, 1974, 117 pages, illustrations. $15.00.*

Reviewed by Paul Goldberger

That the *Chicago Tribune*'s competition for a new skyscraper headquarters in 1922 has been remembered as a major event in American architecture is probably due not so much to the winning design it yielded—although that building, by John Mead Howells and Raymond Hood is indeed distinguished—as it is to the book which was published shortly after the competition ended to serve as a chronicle of the event. Included are every one of the entries, and they are an invaluable document of the design thought of the time. There is Eliel Saarinen's Hugh Ferriss-like second-place winner, Gropius' and Lonberg-Holm's two essays in modernism, a slew of eclectic buildings, and even a bit of what we would today call Pop.

A few years ago, when the idea of recording the Yale Mathematics Building competition as a similar volume was first proposed, it was hoped that the book could, in time, become the same sort of classic the *Chicago Tribune* book is. The book is now upon us and, sad to say, it is nothing of the kind.

The Yale competition has been surrounded by controversy for years now—the winning design of the 468 entries, by Venturi and Rauch, has inspired little love on the part of many architects, and even a few unfortunate charges of impropriety in the handling of the competition have come from some less than gracious losers. As if to compound the jinx, the Yale administration, which has been steady in its support of the Venturi design, has been unable to build it due to the University's financial troubles. Now, four-and-one-half years after the competition's end there is still no sign of the building's being started, although the University still calls it a "high priority."

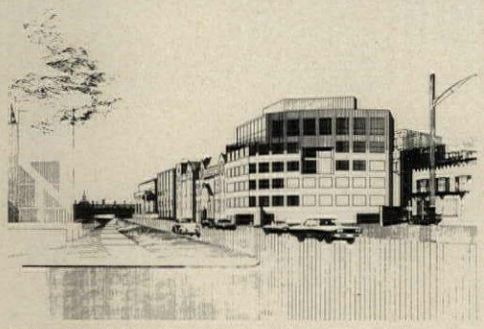
The book project has been hardly any luckier. An enormous number of entries were destroyed long ago, with only 26 retained for publication, thus obviating at the start any possibility that the book could be the comprehensive document the *Chicago Tribune* book is.

The putting together of *The Yale Mathematics Building Competition: Architecture for a Time of Questioning* has been further troubled by disputes over the text. At one point Colin Rowe, a critic not known for his sympathies toward the Venturi camp, was asked to contribute, and he produced an essay so critical of the winning scheme that the scheme's supporters, led by Vincent Scully, refused to participate in the book. The Rowe essay was eventually withdrawn, but was not replaced by much of anything, and as a result the final product is really rather meager: it consists of a thoughtful introduction by Charles W. Moore, who was the competition's professional adviser and is the book's editor with Nicholas Pyle; a discussion of the program by E. E. Rickart, the chairman of Yale's mathematics department and in effect the building's client; illustrations of 26 entries, and descriptions of the winning Venturi and Rauch scheme. All of this material is interesting, but it is far too sparse to serve as the "illuminating look at the state of American architecture 50 years after the start of the Modern Movement," as the book's jacket promises.

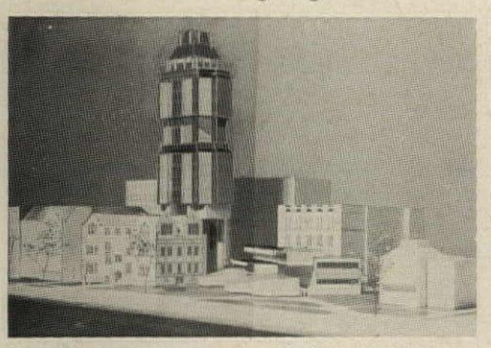
Mr. Moore's introduction and review of the history of the competition is sensitive but not particularly revealing of the difficult tensions that were involved here, and while his review of the entries (written with Mr. Pyle) is an interesting description, it does not take us much farther, either. (And since we don't know much about the 442 entries that were not published, it is not easy to make much of a judgment about how representative the 26 included ones are.)

Still, the book is not without its value. Any collection of 26 solutions to a difficult architectural problem by architects of any talent at all is bound to have some interest, and while there are a number of entries here that are laughably mediocre, there are others that are more than respectable.

Venturi and Rauch's scheme emerges on top, as it has a right to do in such a book. But it is, in fact, a thoughtful and sensitive solution that would deserve serious attention on architectural grounds, even if it did not serve as the book's *raison d'être.* It is difficult, in fact, to see what all of the messy controversy that this book chooses to skim over was really about—the Venturi and Rauch building is straightforward, well-planned, and appropriate to the program (which, admittedly, was written with a Venturesque building, not a modern "monument," in mind). Perhaps the most revealing part of the book, in the end, is Math Department chairman Rickart's essay of praise for the winner, which stands as a clear indication that the design, if it did nothing else, gave the client exactly what he wanted.



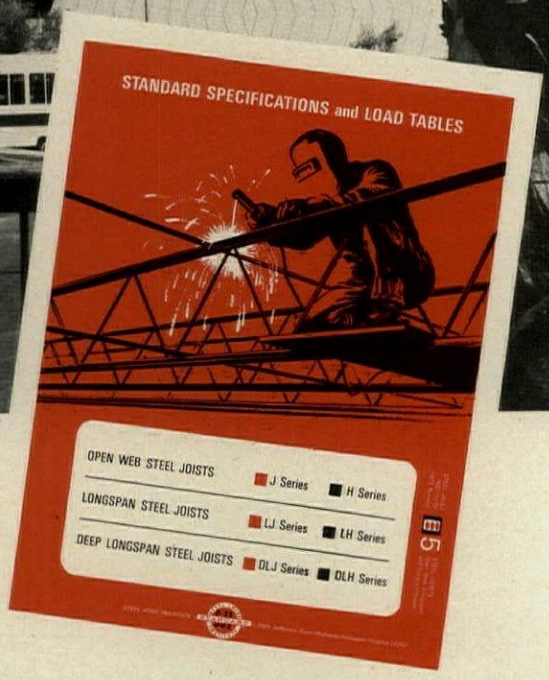
Venturi and Rauch's winning design



Design by James Lamantia, one of 26 varied entries shown in *The Yale Mathematics Building Competition*

Mr. Goldberger is architecture reporter and critic for The New York Times

STEEL JOISTS USED IN NEW LAS VEGAS HOTEL



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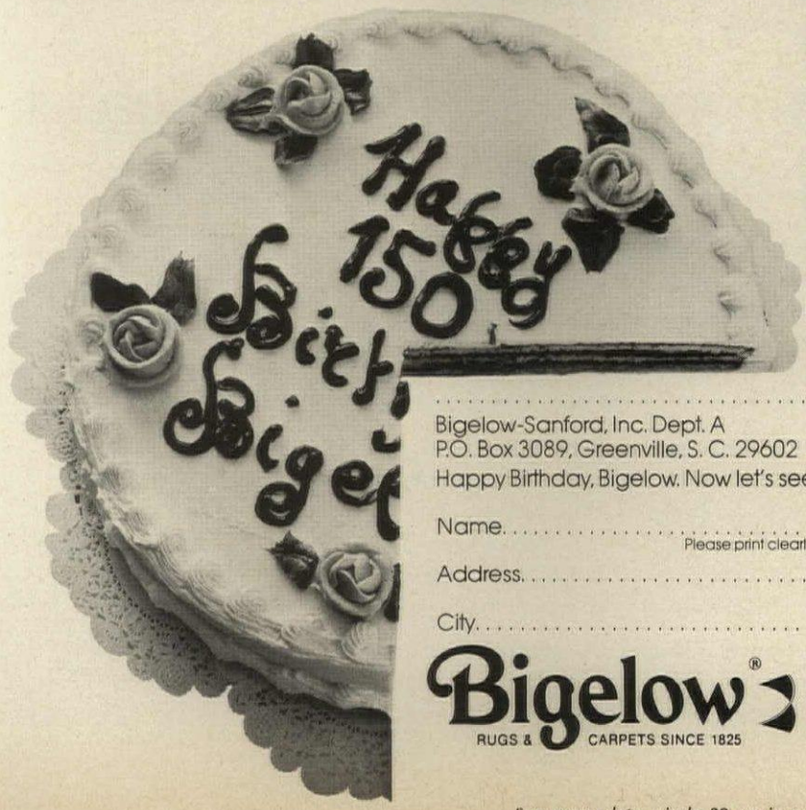

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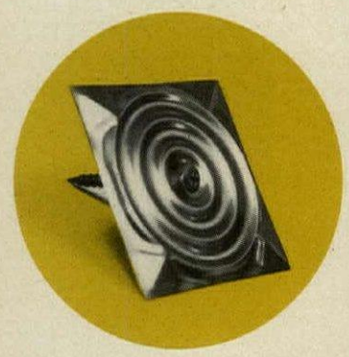

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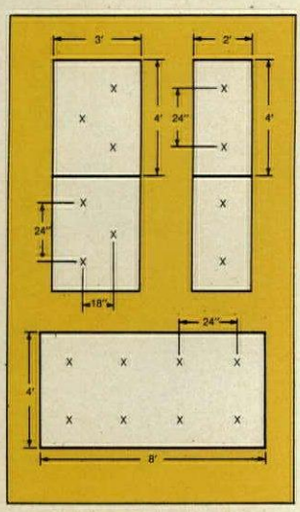

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(b)

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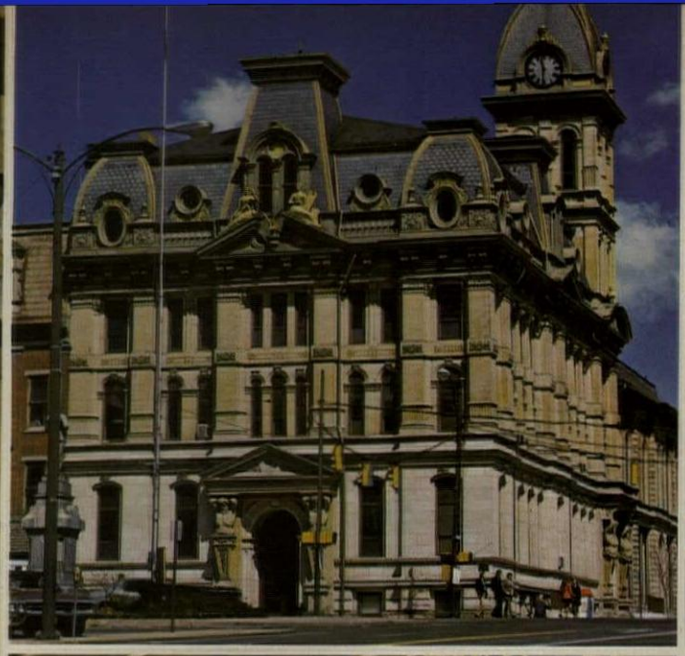

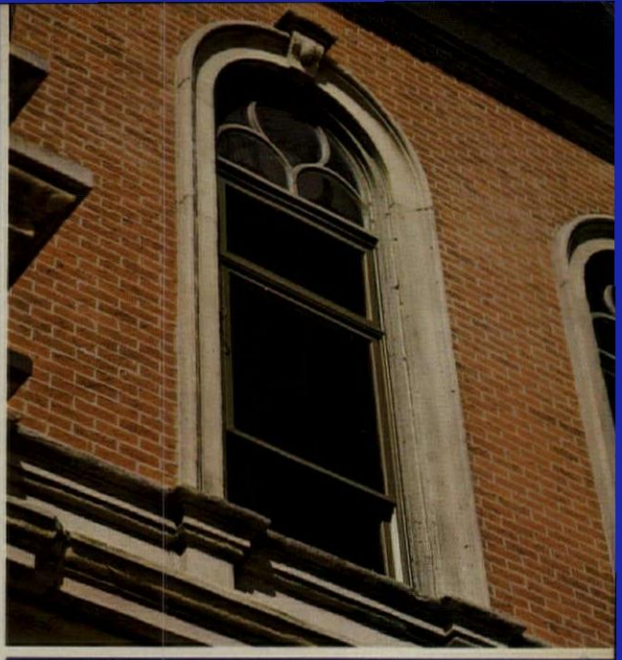

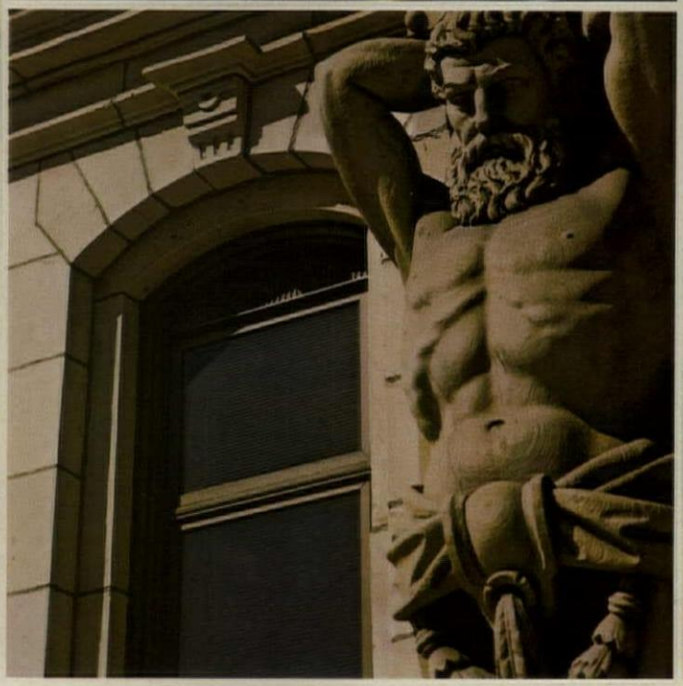

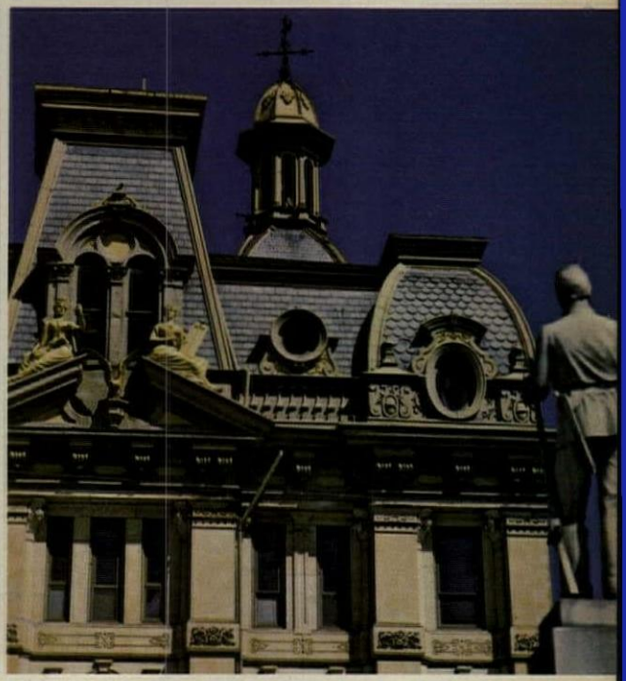

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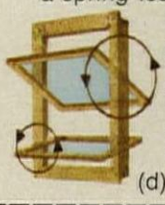

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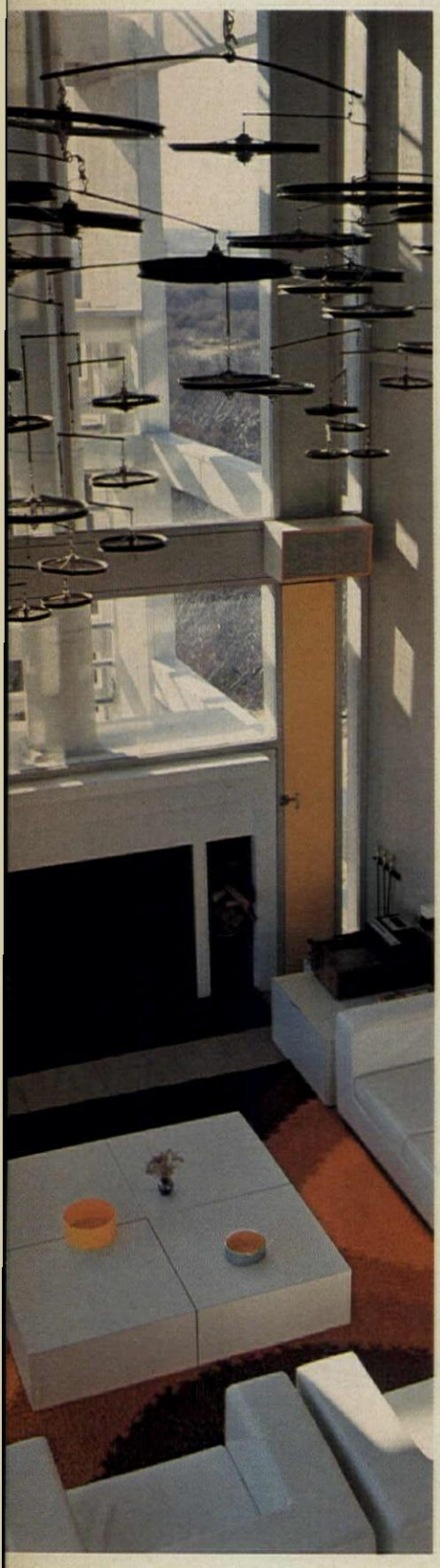

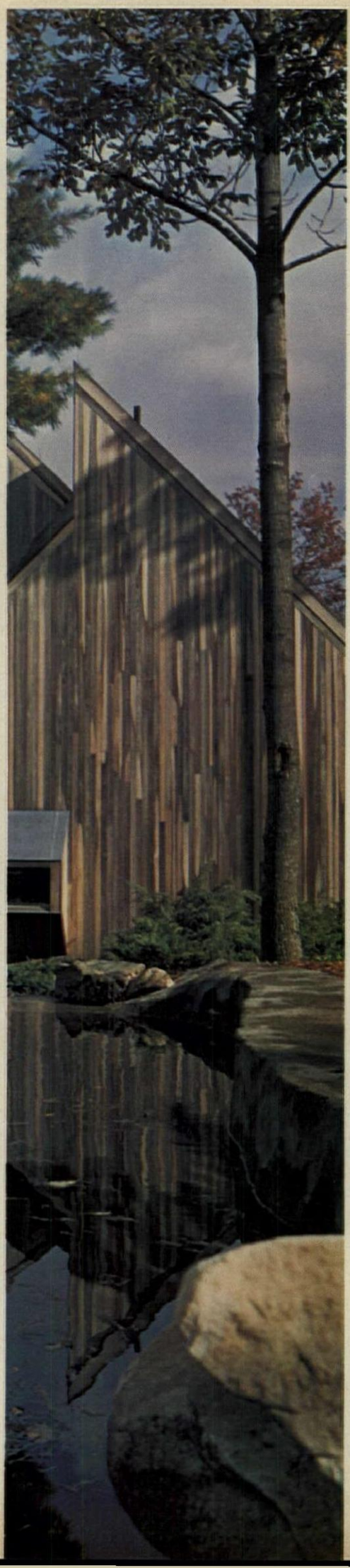

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The future of professional firm management

When Bradford Perkins puts on the pointy hat and gazes into the crystal ball, the readers of this department must have learned by now to pay attention. But the crystal ball business is for everyone—including pundit-type editors—so this time we're taking some advantage of Brad's well-earned stature in management know-how and are slipping some comments of our own, snide and otherwise, into the conclusions of this thoughtful Perkins piece. You're all invited to do the same.—W. F.

In recent years there has been much talk of the potential impact of other industries' new techniques on the design professions. Systems analysis, acquisition strategies, project management, public ownership, computer-aided design, and many other techniques have become buzz words—but are still infrequently used. It would be misleading merely to extrapolate from these techniques to determine the direction of future changes in the design professions. When this has been done in the past, it has resulted in such extravagant predictions as: 1) the small firm is doomed; 2) systems analysis will revolutionize all design; 3) the computer will make the draftsman obsolete. None of these nor any other similarly overdrawn conclusion has come true.

Those changes that are occurring are probably caused more by certain mounting pressures outside the profession's control than by a conscious strategy for change. Accepting the risk inherent in all predictions, this article evaluates the potential impact of current pressures and then makes a brave excursion into the crystal ball business.

Pressure number one:
changes in the market

As is the case in every other industry, one of the most important motivations for procedural change is change in the marketplace. Nowhere is this being felt more than in the design professions. Types of owners and their service requirements are changing radically, and this in turn is causing deep restructuring of professional relationships.

A strong aspect of the changing market is the increasing sophistication of owner demands. Fewer owners are searching for generalists. They are looking more and more for firms or individuals that have special skills necessary to meet their specific needs. Among the areas of demonstrable expertise sought with increasing frequency by owners are:

- Pre-design expertise—specifically, specialized knowledge of such factors as the operation of the completed facility, financing techniques, local approval processes, etc.;
- Specialized inputs at every point in the process—in particular those skills directed toward answering community concerns such as community participation or environmental impact assessment, as well as the more quantified technical skills such as life cycle cost analysis, construction cost management, and project economic analysis;
- Other comprehensive services that encompass more and more of the coordinated specialized inputs required for larger and larger projects of increasing technical and economic complexity.

There is even a basic change taking place among building types requiring design expertise. Part of this can be traced to the fact that construction costs have outpaced many consumer groups' current ability to buy new schools, hospitals, single-family houses, and other new facilities. Still other changes can be attributed to declining birth rates, the energy crisis, and many other long-term trends.

The educational institution, highway, single-family house, office building, and many others will still be major elements in the total market, but their share of the total will continue the decline begun many years ago. On the other hand, remodeling of existing structures, multi-family housing, mass transit, health-related facilities such as clinics (but not general hospitals), leisure-oriented facilities are among those types growing in importance.

In order to find the skills outlined above, owners are showing an increasing willingness to extend the search for the "right" firm. The day seems to be passing when the owner was content to just interview either the local firms or those with national "design" reputations. Both continue to be common criteria for selection, but the desire for new skills has brought about an expanded list of criteria as well as of new firms to be interviewed. As a result, professional firms are becoming increasingly competitive, and increasingly diverse in the services offered.

Pressure number two:
changes in the process

Another of the basic elements in the changing market has been a substantial shift back toward the view of design as one of many parts of a project delivery process. During the centuries when the architect was master builder, the production of a new structure was a single process under one-man control. But with growing complexity came specialization. The master builder's response was to concentrate more and more on a purely design role and to coordinate other phases among a host of new types of firms—construction managers, space planners, urban planners, hospital consultants, etc. This fragmentation has created a whole new set of problems. As a result, especially for large projects, the client-architect universe has borrowed a concept—project management—from the management experience of other industrial and commercial enterprises.

Whether this new coordinating function will be provided routinely by the design professions, by the owner, or by a new group, remains to be seen. Over-all, however, there is a trend toward merging all of the specialist groups back into a single team.

A second aspect of the process which has also continued to change in response to the changes in market demand has been the technology of design and delivery. New materials, industrialized building, computer-aided design, standardized master specifications, performance specifications, fast-track, and many other approaches are being refined to a point where they are finally becoming cost effective.

Pressure number three:
the economic squeeze

A third important factor in the changing environment for design services is the economic squeeze affecting professional practice. Although there are many contributing factors to this problem, its over-all impact has been to bring financial problems of the industry to the surface so forcefully that they can no longer be ignored.

The symptoms of this situation are the decreasing average levels of profitability (from as much as 20 per cent pre-tax profit on gross fees, to less than 8 per cent today), severe cash flow problems, and unusually low personal incomes for both principals and employees. The recent AIA survey reported that average income among architectural firm owners was under $30,000 a year and that of senior staff

positions was often less than $20,000. The latter figure only just matched that of this year's graduates of the better business and law schools. The former is very far below adequate compensation for the time, investment, and personal liability of the firm owner's position.

The trend, however, was already established even during the boom of the 1960's. Underlying this trend is the natural economic streamlining being forced on every industry by increasing competition as well as by cost rising faster than income. Both have resulted in the need for higher productivity or better cost management measures. For example, incredibly low as they still are, the largest operating cost of professional practice—salaries—has risen faster than gross fees per employed professional. Firms that are not taking steps to reverse this trend are facing increasingly severe financial problems.

Pressure number four:
the high-priced specialist

Part of the reason that salaries have risen is that market and economic pressures have forced design firms to add staff from outside the professions—business managers, systems analysts, specialist consultants in such fields as hospital administration, etc.—all of whom command salaries significantly higher than design-firm average. This has only aggravated an already existing employee dissatisfaction with architectural wage scales.

When I graduated from business school, the average starting salary for an MBA was double that for an architectural school graduate. The disparity between architects and such building-tradesmen as journeymen plumbers and electricians is even more startling. The days of the starving artist ethic disappeared when these disparities became too severe. Young architects, engineers, planners, and interior designers are demanding salaries more commensurate with their training and their peers. They are also demanding more rapid advancement to positions of responsibility. Fewer and fewer are content to be draftsmen or even senior specialists such as specification writers or field representatives. This reluctance, combined with the almost total lack of training in these key skills provided by the current educational system, has created serious staff shortages in the non-design areas of every one of the professions—even in this relatively slow economic period.

Pressure number five:
the changing legal climate

Along with the changing market, new economic pressures, and increasing staff dissatisfaction, a serious deterioration in the legal climate has occurred. Unionization, increasing vulnerability to lawsuits, rapidly expanding liability, new types of services, the changing of the ownership structure currently taking place in many firms, and many other factors have multiplied the legal complexity of professional practice. This pressure has had an impact on everything including specification writing, the roster and definition of services provided by design professionals, owner-architect-engineer contracts, and even the creation of new forms of organization for professional practice, as well as new responsibilities and new personnel policies.

Some would argue for
a more general view

There are still other changes, of course, but these seem to be the ones which—singly or in combination—appear to be having the greater impact. In fact, it can be argued—as one of my partners does—that these can only be seen in combination. He argues that there are only three real forces. The first is increased competition requiring greater responsiveness in services, approaches, etc. The second is the need for more efficient use of limited resources causing the change in process, the economic squeeze and the greater emphasis on planning. And third is the increasing understanding of professional services, the nature of the problems to be solved, and the appropriate solutions. This list, he argues, tabulates the driving forces toward integration of professional skills and the increasing application of management skills to project delivery.

I believe that in some cases these combined views are accurate. Nevertheless, it is important to understand the individual factors as well, for many of the changes can be traced to just one of the five pressures for change that are listed above.

Now let's take the plunge
into the crystal ball

With the above preamble, I will stick my neck out and actually make a few predictions. *(And I will put in my two cents worth of comment in italics.*—W. F.)

1. The trend toward more sophisticated, more demanding and project-manager-oriented owners will continue and will eventually dominate the major *(multi-building)* owner groups.
2. The project delivery process—particularly *(in consultation services)* at the front end—will become increasingly complex requiring more kinds of specialized skills.
3. Rather than continuing to expand into new areas, design firms will become increasingly specialized. *(Except for those who continue to practice architecture?)*
4. One of the major specialties will be project management. *(The latter-day master builder, mentioned above?)*
5. Construction managers are here to stay and will continue to expand their share of the total project fees available. *(Yes, but if they earn their share, won't the architects' profit margins improve?)*
6. The design/build approach—like it or not—will grow in influence in such previously sacrosanct areas as hospitals. *(See the new AIA "Design-Build-Bid Task Force Report.")*
7. More design professionals will choose the strategies of becoming their own clients, offering complete design/build services, or participating in teams offering finance and management as well as design. *(Wish fulfillment, Atlanta style?)*
8. There will be more large (over 200 employees) firms, and more will acquire or be acquired by firms outside the design professions, but it is unlikely that ownership of design firms by non-professionals will become a dominant factor until design firms become more desirable investments. *(More, but not dominant?)*
9. The small firm will not become extinct. More owners will continue to need and to seek out the more personalized and specialized service which smaller firms seem to be able to provide more consistently than their larger competitors. *(Hear! hear!)*
10. It will be harder to start a successful new firm, and it is tough already. *(Guess I'll start with a smaller, more personal service.)*
11. Design firms will continue the trend toward employing increasing numbers of senior staff from outside the professions.
12. More firms will have business managers. *(More architect-MBA grads?)*
13. Effective management will become an increasingly important prerequisite for survival and success in design as well as financial terms.
14. Things will not get worse for the professions as a whole. This is not because the trends are up, but because if things get worse we will all have to look for jobs in other fields. *(When "things" get worse, imperatives survive.)*
15. More proprietorships and partnerships will become corporations and the ownership base will be expanded to include more senior staff as well as outside investors. Public ownership, however, will not be a major factor except for those firms acquired by public corporations. *(Will the stockholders vote on design solutions?)*
16. Economic pressures will help stimulate more use of technically trained draftsmen rather than professional apprentices at the drawing boards. There will be more mechanical production procedures such as master specifications and standardized details, and more use of pre-engineered construction systems.
17. Computers will be increasingly important aids in engineering design and some specialized aspects of architecture, planning and interior design. But they will not make significant inroads in the graphics areas of current practice anytime in the near future.

All of the above is, of course, mere speculation of the probable response to the current pressures; but one thing is certain: there are forces which have begun a basic restructuring of the design professions.

Moreover, it is certain that a common thread of these changes in what Peter Drucker has defined as a quiet—and long overdue—revolution in his book, *The Practice of Management.* "The emergence of management as an essential, a distinct and a leading institution is a pivotal event in social history. Rarely, if ever, has a new basic institution, a new leading group, emerged as fast as has management since the turn of this century. Rarely in human history has a new institution proven indispensable so quickly; and even less often has a new institution arrived with so little opposition, so little disturbance, so little controversy."

The revolution has been late in coming to the design professions, but before it too passes, its impact will be felt by every firm.

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If the entire office building you're about to carpet were made up of only inner offices, just about any carpet fiber would do. After all, an inner office doesn't demand much of a carpet. It doesn't receive much traffic or excessive soiling, and has no really unique requirements. But the fact is that your office building isn't made up of just inner offices. It houses computer rooms, restaurants, board rooms, executive suites, reception areas, cafeterias and sunlit lobbies. For these areas with their unique carpeting requirements, *not* just any carpet fiber will do. They demand a versatile carpet fiber, one that has the performance features to meet all their requirements. And Acrilan® acrylic fiber by Monsanto *is* such a versatile fiber.

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Acrilan®2000+ carpets meet the low static build-up requirement of computer rooms so now those rooms can have the benefits of carpeting without the risks. Acrilan®2000+ carpets have an extremely low propensity to voltage build-up without using conductive fibers in their face fabric. Their voltage build-up is so low that they only need a conductive system in the backing in order for them to be used around sensitive computers. No other fiber can be used so successfully in a delicate computer environment.

Acrilan®2000+ carpets satisfy the requirements of restaurants and cafeterias. In fact, Acrilan®2000+ carpets are better than any others for areas subject to excessive and stubborn food soiling and staining. The reason is their great cleanability. Acrilan®2000+ carpets are made of solution-dyed fiber and so, are extremely colorfast. As a result, harsh chemicals can be used to clean stubborn stains without destroying the color. When backed with a man-made backing, Acrilan®2000+ carpets aren't even fazed by 100% bleach.

Acrilan®2000+ carpets also have the lightfastness to withstand all the sun a windowed lobby has to give and still come through with glowing colors. Literally. In fact, Acrilan® 2000+ carpets are 35 to 50 times more lightfast than the industry standard.

Take another look at your office building. Then take a look at Acrilan. For restaurants, for board rooms, for sunlit lobbies, for computer areas... Acrilan®acrylic fiber has the versatility to meet their unique requirements. And if it can do all that, think what it can do for an inner office.

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the ability fiber

Acrilan® Plus A+ PLUS ACRILAN Monsanto

ACRILAN Monsanto 2000+

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■ Today, many polymarble models are excelling in practical application. For more information and product test results, contact Haws Drinking Faucet Co., 1441 Fourth Street, Berkeley, CA 94710.

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Value analysis: total project cost perspective

Some call it "value engineering"—others call it "common sense." By any name, it has to be a disciplined and structured process when applied to the disparate cost influences at work in any building project. That's why the value discipline, *applied to* cost control *in depth, is part of the over-all discipline of professional construction management. And that's why Robert Y. Finley of CM Associates calls it value engineering in the workshops and seminars the firm has conducted on this subject. He has submitted the following summary as the fifth installment in an intermittent series that began in September, 1973, with an overview by CMA president Charles B. Thomsen, followed by articles on budgeting, project purchasing and estimating in* RECORD *issues for February, May and October, 1974, respectively.*

Each of the countless decisions and pieces of work by literally hundreds of people involved at every professional and trade level in a large building project has an effect on the over-all cost of the project. And many of these decisions and actions are interrelated options taken at key points in the process. The primary professional responsibility to the owner is more than adept control of an immediate cost ceiling at each key point. It is a broader control that takes into account the value to the owner in terms of all the elements involved in his decision to build. That involves scales of quality, prestige and profit that sometimes transcend first-cost considerations.

The methods of arriving at more or less precise definitions of value are essentially mathematical disciplines—hence value *engineering*. The fact that the process is called "value" and not "cost" engineering is significant, for even though it takes its cue from cost, value engineering is not simply a paring-down process. Armed with well-defined value alternatives, the owner, architect, and construction manager have the opportunity to make design decisions that strike the best balance between product and cost and thereby achieve the optimum building for the least cost.

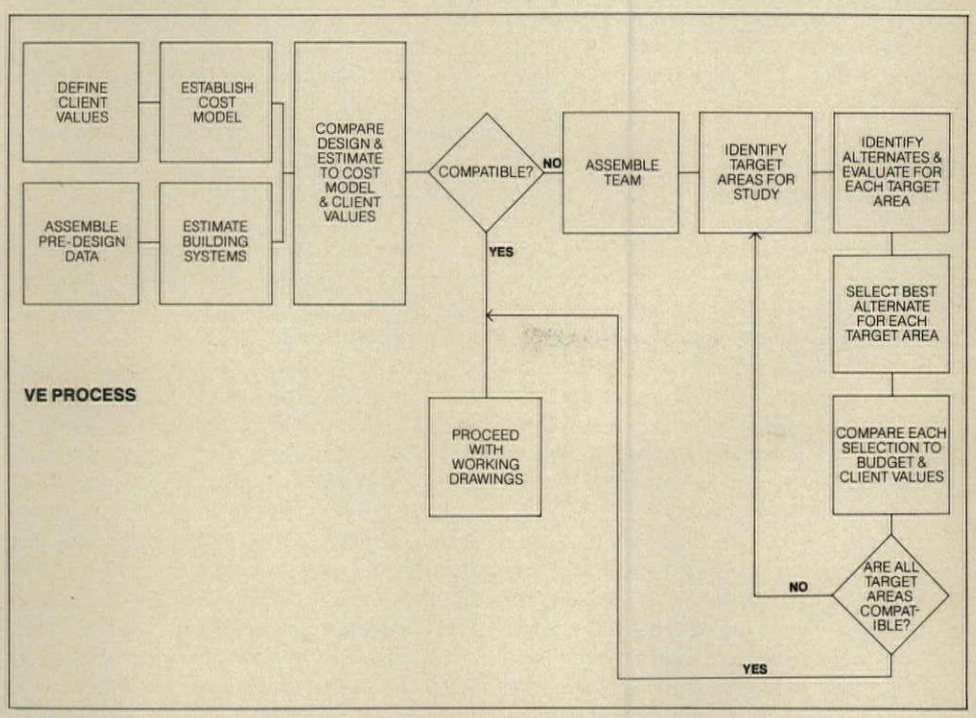

Figure 1. The value engineering process, showing feedback patterns.

Setting up the scales for defining value

The standard method for defining a value alternative is to rate it according to parameters of effect on the building's use, cost, esthetics, environmental impact and ultimate market value. Does the proposed alternative help the building fulfill the functional requirements that generated the need for it? Are the initial and/or long-term costs compatible with the money the client is willing to spend? Does the building contribute positively to the environment? How marketable will it be at the end of its use to the owner?

The client, with the aid of his architect, must rate the importance of these elements. If the client wants economical operating and maintenance costs for the life of the building, then he is going to be concerned with long-term outlay more than initial costs. If he's a developer who's planning to sell his interest in the building in a few years, he's probably looking for low initial expenditures. That same developer, however, may want to put in some extra dollars for those architectural qualities that attract tenants and enhance the building's salability. Value objectives cannot be assumed. They must be given definition by the client at the outset.

Undoubtedly there will have to be tradeoffs. If the *use* value is primary and dictates a building configuration that cannot be adapted easily to the site conditions, then a trade-off will have to be made between function and cost. Esthetics is the value most talked about in a building project. Yet, while it is of utmost importance and tends to create the most emotion, it usually is the first to get tampered with when the budget is threatened. This is a special hazard when owners and/or construction managers blindly equate good design with higher cost. One of the major goals of value engineering should be to permit cost effectiveness that doesn't generate a quality trade-off.

The four basic steps toward realistic values

At CM Associates, value engineering is applied in the early design stages and then at every subsequent stage of the building process—as the design unfolds and right on through the procurement and construction stages (Figure 1). The procedure essentially is a four-phased effort in the following order.

1. The *information phase*, has two separate stages. First, pre-design concepts are documented and reviewed. Then, when drawings, specifications and a program are established, they are reviewed and the owner's values are established.

2. In the *analysis phase,* cost estimates are made for each of the major building disciplines (architectural, structural, etc.), approximating the contracts that will be let. Cost models based on historical cost data are prepared, estimates are run and compared to each of the models, and the study objectives are compiled. Typically, the value engineer analyzes building disciplines, systems, and components from the standpoint of what their function is, what they cost, what could be substituted, what the substitute would cost, and how it would affect the owner's value scale.

3. In what is called the *speculation phase,* an interdisciplinary team of professionals is chosen. This includes representatives of the client, architect, engineering firms, and the construction manager's value engineering specialists. Scope parameters and values are defined, and functions are analyzed. Ideas are presented, recorded, evaluated, and numerically rated against a list of value objectives. A concensus is reached on the best solution.

4. In the *documentation phase,* a written recommendation based on the concensus of phase three is made to the client and, if approved, becomes a document with the drawings and specifications.

Approaches to a method applying value engineering

During the information and analysis phases, the value engineer is pulling together all the details that will relate the whole project to cost. He has the program data and preliminary drawings and specifications from which an initial budget can be projected. Historical cost data showing what individual costs have been will establish a cost model. When estimates made at the schematic design and subsequent phases are compared to this model, any variances will become obvious.

By now, the value engineer knows where the client is placing his value emphasis. If that emphasis is on low maintenance costs, and the mechanical engineering estimate is higher than normal because of a heat recovery system, then there is some value justification for the mechanical overrun, and the value engineer must decide whether it meets the client's objectives.

To illustrate the value engineering process, let's assume that the schematic design estimate for the exterior wall materials and finishes is well above the cost model.

A team of professionals representing each major discipline is brought together to evaluate the effect of any proposed alternatives on all the other building systems. In this way, the possibility that savings in one system might be eradicated by increased costs in another is not overlooked. Another advantage of having an interdisciplinary group conduct the study is that the initial engineering work required for each design proposal can be accurately assessed early in the project.

This assumed project is a corporate headquarters for which both high architectural quality and low operating and maintenance costs have been stressed by the client. Cost estimates of individual systems reveal that the exterior skin, the roof system and the flooring are higher than normal cost elements. Of these, the marble exterior skin seems to be the outstanding item for value examination.

At this point the scope of examination is narrow: to study the exterior wall material—not the insulation and not the interior finishes. The scope doesn't really have to be all that narrow. The team could have chosen, for instance, to look at the entire exterior wall system. Definition of scope is important, for as the study progresses team members will need to continue to view things from the same perspective. Otherwise, comparative relationships will fall apart.

The study begins with an analysis of the design criteria: why was marble chosen? Well, the client liked it, and it is virtually maintenance free. Once the criteria are established, the team can move to a functional analysis of the specific item.

The functional analysis describes very basically what a particular component or system does. For example, the most obvious and basic function of the marble skin is to enclose the building. It also has esthetic value and, while the functional analysis will recognize esthetics as a primary value in this case, it is also noted as a secondary function. The main concern here is to pinpoint exactly the most fundamental use accomplished by the specific item under study in order to determine what else can do the job.

After the basic and secondary functions have been determined, the team assigns each a dollar value and an original cost and arrives at a cost/worth ratio.

With this done, the team can begin to seek out alternatives. This initially is accomplished with a kind of rapid-fire listing of all the conceivable—including the barely conceivable—materials that can perform the same function. The list may be 10 or 110 items long. Team members are encouraged to offer any and all ideas, however remote, in order to free-up their thinking and get their creativity flowing. Elimination and evaluation follow.

Each idea that makes the cut from the listing to the consideration stage is evaluated. The team on our hypothetical project, for example, might eliminate all but masonry, aluminum panels and pre-cast concrete panels. In the case of brick, advantages include low first cost and low maintenance as well as reasonable esthetic values. Slower assembly is a disadvantage. Pre-cast concrete is less expensive than marble and may create an acceptable if not a similar visual image. Aluminum panels can be assembled rapidly and they are moderate in cost. But they do not provide the visual image that our client has in mind.

As the advantages and disadvantages are weighed by the individual team members, an average rating from 1 to 10 is calculated for each alternate. If this sounds like "design by committee" it should be emphasized that these ratings serve as guidelines for the architect who has the ultimate responsibility for final specification of the material.

The next step is simple: estimate the cost of each material. If our hypothetical headquarters is a 65,000-square-foot building with 26,500 square feet of exterior wall, $12.60 per square foot of marble will run the exterior wall material costs to $333,900. Brick will come in around $90,000; aluminum panels at $79,300, and pre-cast concrete at $180,200.

First cost is not the only criterion

Now the cost picture is clear, and if that were all that mattered, an estimate would have been enough. However, in selecting the best idea, the client's values and the architect's judgment are going to prevail. The value engineering team selects the criteria applicable to the evaluation study with reference, of course, to the client's original value judgments. A sampling of criteria used in this example is shown in the worksheet (below) demonstrating the numerical rating procedure. (In every case, the criteria must relate to the specific area being studied. Obviously, interior flexibility bears little relationship to the exterior wall and therefore would not be a useful criterion in this example.) The team weights each criterion on a scale of 1 to 10 with 10 the best ranking. Similarly, each team member rates the selected alternatives and the specified material according to how they measure up to each evaluative criterion and a score is recorded. The scores are then totalled, giving each idea a "total weighted factor score." These scores, in turn, are divided by the cost of each alternative. The idea with the highest factor/cost ratio is recommended to the owner and architect.

The owner may still elect to go with the original design, but at least he has good information on which to base his decision.

Achieving the best possible building project for a client requires more than sub-systems optimization. It requires optimizing the whole. That is the main contribution of value engineering. It relates all the parts back to the whole. Beyond that, there really is little more to the process than intense discipline and applied common sense.

CM VE idea selection

Project CORPORATE HEADQUARTERS USA
Date 1 JANUARY 1975
Task Team XYZ
Study Area EXTERIOR SKIN

Ideas: 1 ALUMINUM PANELS
2 BRICK
3 PRE-CAST CONCRETE PANELS

Evaluative Criteria	Value Weight (1-10)	Best Alternatives Idea 1	Idea 2	Idea 3	Present
INITIAL COST	5	7 / 35	6 / 30	5 / 25	2 / 10
AESTHETICS	9	4 / 36	8 / 72	8 / 72	9 / 81
DURABILITY	10	6 / 60	9 / 90	9 / 90	8 / 80
LOW MAINTENANCE	10	7 / 70	9 / 90	8 / 80	8 / 80
ASSEMBLY SPEED	4	8 / 32	5 / 20	8 / 32	7 / 28
IMAGE COMPATIBILITY	9	2 / 18	4 / 36	9 / 81	9 / 81
Total Weighted Factors		251	338	380	360
Estimated Cost		$80,800	$90,000	$180,200	$333,900
Worksheet 7 Factor/Cost Ratio		.31	.37	.21	.10

Figure 2. Evaluation worksheet. Note that scores below the diagonals are the products of value weight times the ratings above the diagonals.

This relatively simple but superbly designed bank is a striking example of the manner in which Terne roofing can become an integral part of a total architectural concept.

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Architects-Engineers, Elizabeth, New Jersey
Roofer: J. Strober and Sons, Ringoes, New Jersey
Photographs by Otto Baitz

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OSHA increases building costs

The impact of the Occupational Safety and Health Act of 1971 has been tremendous in its effect on the cost of construction. Indeed, the effect has been so critical in the construction field that there are firms today who specialize in analyzing the cost impact of OSHA requirements on specific projects in the design phase.

Code conflicts and penalties add to confusion and anger

Typical of many examples of the confusion that architects are facing is the fact that the Uniform Building Code, used by many states and municipalities, has a requirement of a minimum ceiling height of 7 ft 5 in. and a 5-in. lettering size on exit signs. OSHA, on the other hand requires 7 ft 6 in. for ceiling heights and a 6-in. lettering size on exit signs. In addition, the act also provided for a nationwide network of inspectors to enforce the provisions of the act and to impose stiff penalties upon violators. The six major categories of the act cover standards for: work places, machines and equipment, materials, employment conditions, power sources, and the construction process.

OSHA is currently facing a severe test in the courts which may affect it's ability to impose penalties. A contractor has challenged the authority of the courts to assess penalties without a trial by jury. Many attorneys believe OSHA's ability to penalize will be upheld and a trial by jury will be deemed unnecessary.

John H. Farley, senior editor
Dodge Building Cost Services

INDEXES: March 1975 — 1941=100.00 (except as noted)

Metropolitan area	Cost differential	Current Indexes non-res.	residential	masonry	steel	% change last 12 months
U.S. Average	8.3	476.1	447.0	467.2	455.8	+ 8.51
Atlanta	7.5	583.5	550.2	572.1	561.2	+ 5.44
Baltimore	8.6	544.9	512.4	533.2	518.7	+12.22
Birmingham	7.2	428.1	398.3	413.5	409.7	+ 4.61
Boston	8.7	470.0	444.1	467.1	453.3	+ 5.52
Buffalo	9.1	526.7	494.7	519.0	504.6	+10.07
Chicago	8.3	538.5	512.1	519.8	512.3	+ 4.02
Cincinnati	8.6	508.1	478.2	496.3	483.8	+ 8.02
Cleveland	9.0	518.1	487.6	506.6	495.0	+10.09
Columbus, Ohio	8.2	501.9	471.4	493.4	480.6	+10.63
Dallas	7.8	483.7	468.4	473.9	465.1	+ 9.36
Denver	8.2	517.1	486.6	507.2	493.6	+10.49
Detroit	9.7	546.1	520.4	556.1	533.2	+ 7.40
Houston	7.1	432.1	405.9	419.1	413.3	+ 8.59
Indianapolis	7.7	431.0	404.9	421.9	412.3	+ 8.20
Kansas City	8.2	452.1	427.3	444.7	431.4	+ 9.48
Los Angeles	8.4	546.0	499.3	532.2	520.5	+ 5.36
Louisville	7.6	471.2	442.6	459.5	450.3	+ 7.68
Memphis	8.3	489.3	459.6	470.8	464.0	+12.59
Miami	7.8	492.8	469.7	477.8	468.2	+ 8.42
Milwaukee	8.2	525.1	493.2	514.7	500.6	+ 9.43
Minneapolis	8.6	495.4	466.2	486.2	477.6	+ 6.99
Newark	8.8	467.1	438.7	459.5	449.0	+11.00
New Orleans	7.2	449.3	424.2	443.6	433.3	+ 5.00
New York	10.0	528.7	491.7	516.3	503.5	+ 6.06
Philadelphia	9.0	525.2	500.9	521.8	505.3	+ 6.76
Phoenix (1947 = 100)	7.8	272.3	253.1	263.0	258.6	+ 7.97
Pittsburgh	8.8	472.2	444.3	467.1	452.8	+ 9.56
St. Louis	8.5	484.4	457.3	479.6	468.4	+ 7.18
San Antonio (1960 = 100)	7.6	185.5	174.3	181.4	177.3	+14.68
San Diego (1960 = 100)	8.4	200.7	188.6	197.4	192.5	+10.32
San Francisco	9.2	688.9	629.9	684.7	661.6	+ 6.35
Seattle	8.4	463.3	414.9	459.0	442.0	+ 5.94
Washington, D.C.	8.2	470.1	441.5	459.9	448.4	+15.34

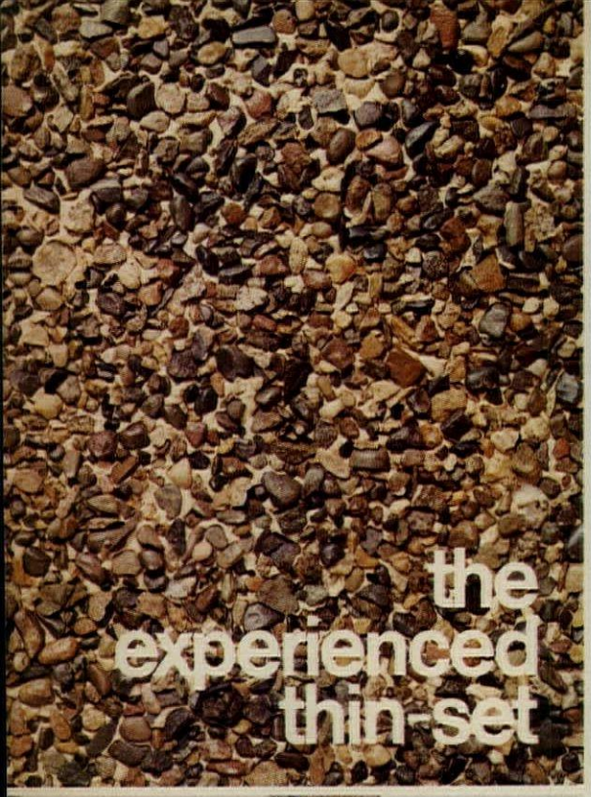
Cost differentials compare current local costs, not indexes, on a scale of 10 based on New York

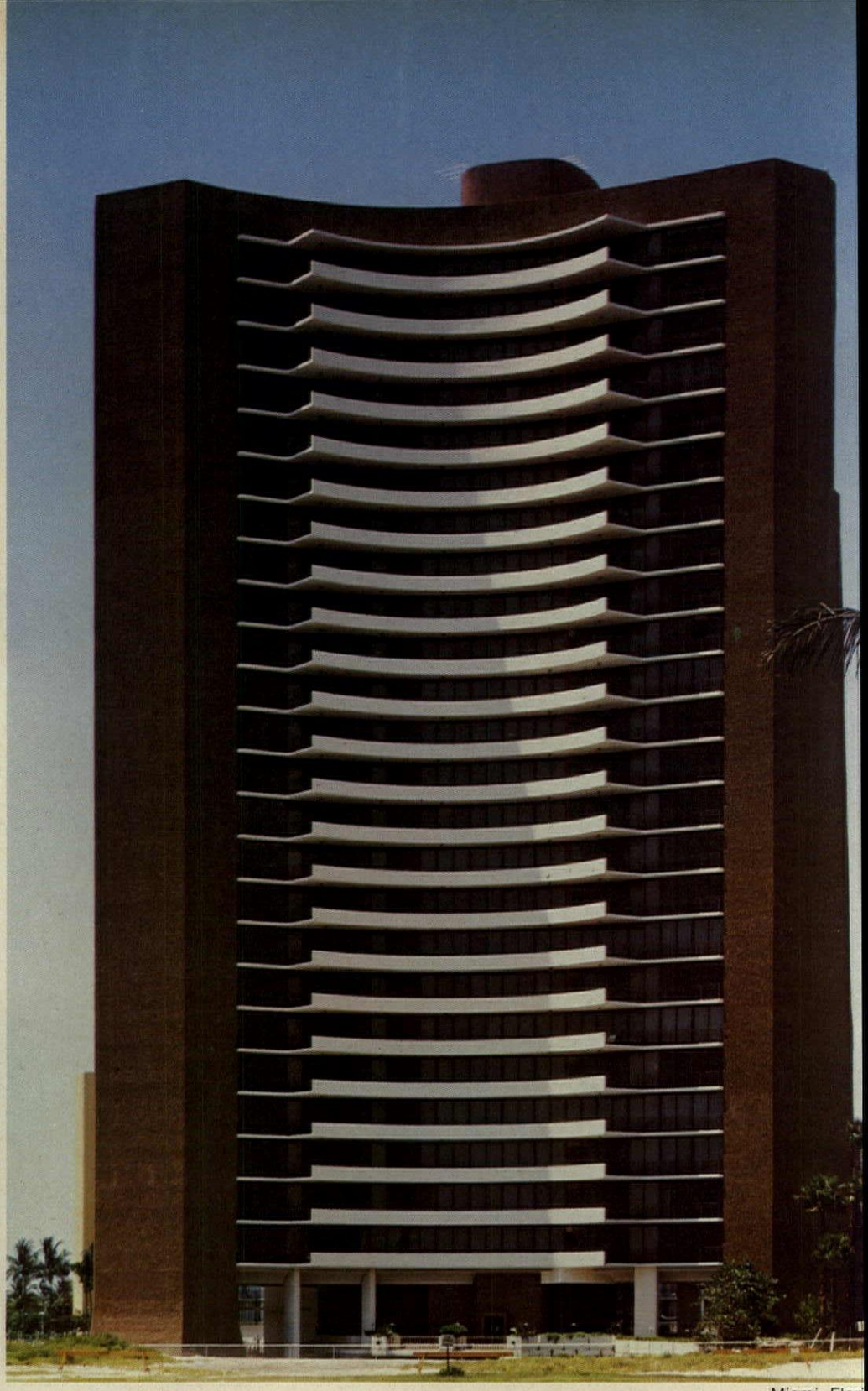
Tables compiled by Dodge Building Cost Services, McGraw-Hill Information Systems Company

HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES — 1941 average for each city = 100.00

Metropolitan area	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973 (Quarterly) 1st	2nd	3rd	4th	1974 (Quarterly) 1st	2nd	3rd	4th
Atlanta	313.7	321.5	329.8	335.7	353.1	384.0	422.4	459.2	497.7	516.4	518.0	543.8	544.8	555.2	556.7	573.5	575.0
Baltimore	280.6	285.7	280.9	295.8	308.7	322.8	348.8	381.7	420.4	441.8	443.6	474.5	475.5	516.3	517.8	532.8	534.3
Birmingham	260.9	265.9	270.7	274.7	284.3	303.4	309.3	331.6	358.3	371.7	373.2	401.1	402.1	405.5	407.0	419.7	421.2
Boston	252.1	257.8	262.0	265.7	277.1	295.0	328.6	362.0	394.4	414.0	415.6	436.8	437.8	455.1	456.6	461.0	462.5
Chicago	306.6	311.7	320.4	328.4	339.5	356.1	386.1	418.8	444.3	465.3	466.9	507.6	508.6	514.2	515.7	528.1	529.6
Cincinnati	269.5	274.0	278.3	288.2	302.6	325.8	348.5	386.1	410.7	430.4	432.0	461.4	462.4	484.5	486.0	498.6	500.1
Cleveland	283.0	292.3	300.7	303.7	331.5	358.3	380.1	415.6	429.3	436.7	438.3	461.2	462.2	490.3	491.8	508,0	509.5
Dallas	256.4	260.8	266.9	270.4	281.7	308.6	327.1	357.9	386.6	407.3	408.9	435.4	436.4	453.7	455.2	476.4	477.9
Denver	287.3	294.0	297.5	305.1	312.5	339.0	368.1	392.9	415.4	429.5	431.1	460.0	461.0	476.1	477.6	508.5	510.0
Detroit	277.7	284.7	296.9	301.2	316.4	352.9	377.4	409.7	433.1	463.4	465.0	500.0	501.0	519.5	521.0	537.2	538.7
Kansas City	250.5	256.4	261.0	264.3	278.0	295.5	315.3	344.7	367.0	387.7	389.3	404.8	405.8	435.6	437.1	443.4	444.9
Los Angeles	288.2	297.1	302.7	310.1	320.1	344.1	361.9	400.9	424.5	453.3	454.9	503.2	504.2	514.3	515.8	531.3	531.8
Miami	274.4	277.5	284.0	286.1	305.3	392.3	353.2	384.7	406.4	419.0	420.6	446.2	447.2	467.6	469.1	484.6	485.5
Minneapolis	282.4	285.0	289.4	300.2	309.4	331.2	361.1	417.1	412.9	430.6	432.2	455.1	456.1	469.7	471.2	487.1	488.6
New Orleans	240.9	256.3	259.8	267.6	274.2	297.5	318.9	341.8	369.7	382.1	383.7	419.5	420.5	437.5	439.0	440.6	442.1
New York	289.4	297.1	304.0	313.6	321.4	344.5	366.0	395.6	423.1	453.5	455.1	484.3	485.3	497.4	498.9	513.8	515.3
Philadelphia	275.2	280.8	286.6	293.7	301.7	321.0	346.5	374.9	419.5	459.3	460.9	484.1	485.1	495.7	497.2	517.0	518.5
Pittsburgh	263.8	267.0	271.1	275.0	293.8	311.0	327.2	362.1	380.3	406.3	407.9	423.4	424.4	443.7	445.2	464.1	465.6
St. Louis	272.1	280.9	288.3	293.2	304.4	324.7	344.4	375.5	402.5	427.8	429.4	443.2	444.2	458.7	460.2	475.2	476.7
San Francisco	365.4	368.6	386.0	390.8	402.9	441.1	465.1	512.3	561.0	606.4	608.0	631.3	632.3	647.1	648.6	671.0	672.5
Seattle	266.6	268.9	275.0	283.5	292.2	317.8	341.8	358.4	371.5	388.4	390.0	423.4	424.4	437.8	439.3	448.7	450.2

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





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Regional activity: where the business is. . .and isn't

For only the second year in twenty years, the total value of new construction declined in 1974—by six per cent, according to F. W. Dodge statistics of the McGraw-Hill Information Systems Company. But totals often conceal underlying trends that sometimes offset one another. This is particularly true in the construction industry where the national total of a year's output is the combined effort of thousands upon thousands of architects, engineers, contractors, and suppliers all working in local or regional markets.

One such offset in 1974 was the divergence between residential and nonresidential building. While housing had its worst year in recent memory, nonresidential building—upon which most architectural business depends—had a record year—the result of fewer projects, but considerably higher cost.

Since circumstances vary from one area to another, you'd expect a certain amount of variation in construction activity around the nation. This month we'll be looking behind the national contracting totals to examine regional differences in construction activity.

As anyone who hasn't been visiting the moon for the past couple of years knows, the residential building market has been a disaster area. Total residential contracts in the U. S. plummeted 25 per cent last year, more than offsetting the gains in nonresidential and nonbuilding construction. Indeed, the Federal government's attempts to WIN through tight monetary policies really hurt the housing market. And this was the case in all major areas of the U. S. Even the smallest declines—20 per cent in the Midwest and West—were still hefty ones. With the exception of Alaska and Hawaii and the New England states, *every* residential building type—one- and two-family houses, apartment buildings and non-housekeeping buildings (hotels, motels, dormitories, etc.)—suffered declines in contract value. New England showed a moderate rise in non-housekeeping construction and Alaska and Hawaii posted gains in that category as well as in apartment building.

Total construction contract value
Per cent change 1974/1973

	U.S.	North-east	Mid-west	South	West
Nonresidential	+ 7	− 1	+13	+10	+ 6
Residential	−25	−29	−21	−29	−20
Nonbuilding	+13	+13	− 2	+23	+18
Total	− 6	− 9	− 5	− 7	− 4

Data: F. W. Dodge Division, McGraw-Hill Information Systems Company

The Northeast and South were hardest hit in the residential category. In both the New England and Mid-Atlantic states one- and two-family home building was off roughly 25 per cent. But the real damage in residential construction in the Northeast was done to apartment building in the Mid-Atlantic states. Two of the five largest cities in the U.S. (New York City and Philadelphia) are located in this region, and apartment building is a major factor in the residential construction market there, accounting for about one-third of total residential contract value. Last year apartment building in these states dropped more than 40 per cent.

In the South, one- and two-family houses posted a "moderate" decline of a little more than 15 per cent. But apartment building fell more than 45 per cent. Even so, the South built around 35 per cent of the nation's apartments in 1974—over 25 per cent in the Carolinas, Georgia, Alabama and Florida alone. But the contract value of hotels, motels and dormitories fell off nearly 60 per cent nationwide, while in the Southeastern states this category was off almost 75 per cent. Gasoline shortages in 1974, the general uncertainty about future fuel supplies and the economic recession wreaked havoc on the vacation industry, upon which Florida is so heavily dependent, with calamitous results for related building types. A slowdown in condominium construction led the decline in apartment contract value. The main reason: over-promotion coupled with a tinge of scandal in the handling of condominium operations.

In the Midwest, the declines in most residential building categories were less than in the Northeast and South. And in the West, a 28 per cent *gain* in contract value in Alaska and Hawaii partially offset the 24 per cent decline in the continental Western states. The result was a more moderate decline for the whole area when compared with the Northeast and South.

As the table shows, gains in the nation's nonresidential and nonbuilding construction partially offset the sharp drop in residential building. Around the country, nonresidential building contract value declined only in the Northeast, and even in that region by only one per cent. The weakening economy has a severe impact on commercial building, particularly in the New England states where contract value fell more than 30 per cent. Over-all, commercial contracting—which accounts for roughly one-third of total nonresidential building in the Northeast, as well as the rest of the nation—fell nearly 15 per cent. Public, religious and other nonresidential work also recorded decreases. A spurt in hospital construction in the Mid-Atlantic states led to the biggest gain among nonresidential building categories in the Northeast—over 25 per cent. Manufacturing, educational and amusement, social and other recreational contracts also posted increases.

In the South, every non-residential building type except commercial showed an increase. Commercial building, which accounted for almost 45 per cent of total nonresidential contracts in 1973, fell more than 13 per cent in 1974, mainly because of a sharp drop in the South Central states. All other categories, led by manufacturing and educational building contracts, racked up sizeable gains. Several large refinery contracts in Texas accounted for nearly 60 per cent of total manufacturing contract value in the Southwest, and pushed manufacturing up over 80 per cent in those states.

Every nonresidential building type in the Midwest showed increases in contract value from 1973 to 1974. Most posted modest gains—around 10 per cent. However, educational building was up substantially, mainly in the Great Lakes states where contract value shot up over 50 per cent.

The West was the area where the over-all six per cent rise in nonresidential contract value hid underlying trends. Educational contracts jumped nearly 40 per cent, while public building was off almost 20 per cent. And when the educational data are refined more, we find that contract value was down almost 25 per cent in Alaska and Hawaii and up 45 per cent in the continental Western states. Commercial contracting increased by three per cent in the West, which hid the 100 per cent rise in Alaska and Hawaii. The continental Western states (which account for more than 95 per cent of total commercial contract value in the West) showed a slight one per cent decrease.

Nonbuilding construction contract value rose in all sections of the U.S. except the Midwest. Substantial gains in street and highway construction as well as sewerage and water disposal systems in the New England states boosted nonbuilding construction in the Northeast more than 13 per cent. South Central states—Mississippi has a $1.3 billion nuclear power plant contract in December—led to a 23 per cent gain in contract value in the South.

—Henry C. F. Arnold

We put a whole lot of

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Altogether, Sylvania supplied the airport with nearly 50,000 lamps in over 60 different types.

The airport's 52 miles of roadway are illuminated by Metalarc lamps. These high-intensity discharge lamps save energy and produce a powerful white light very much like daylight. The uni-

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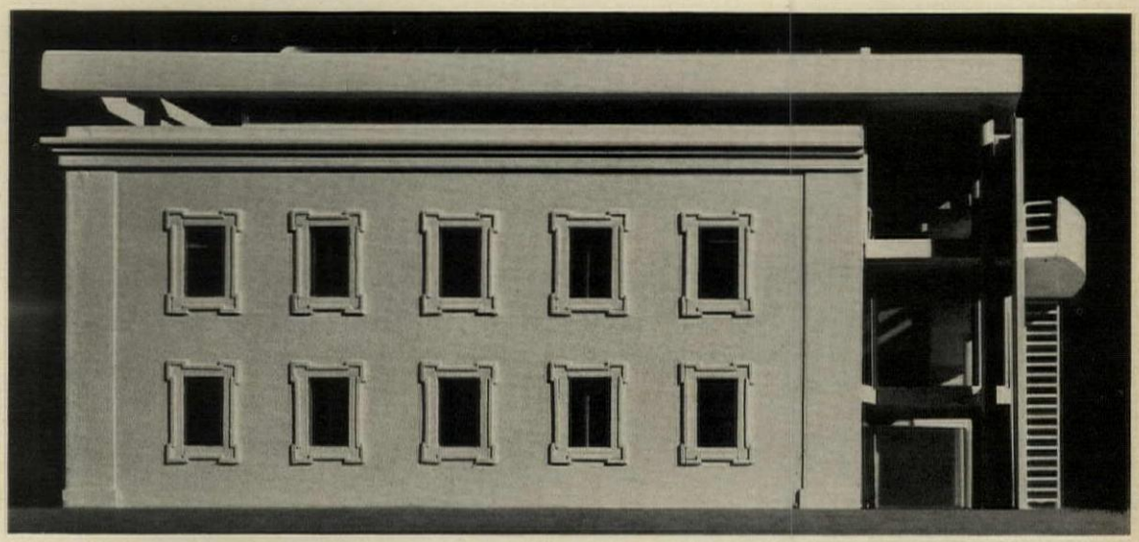
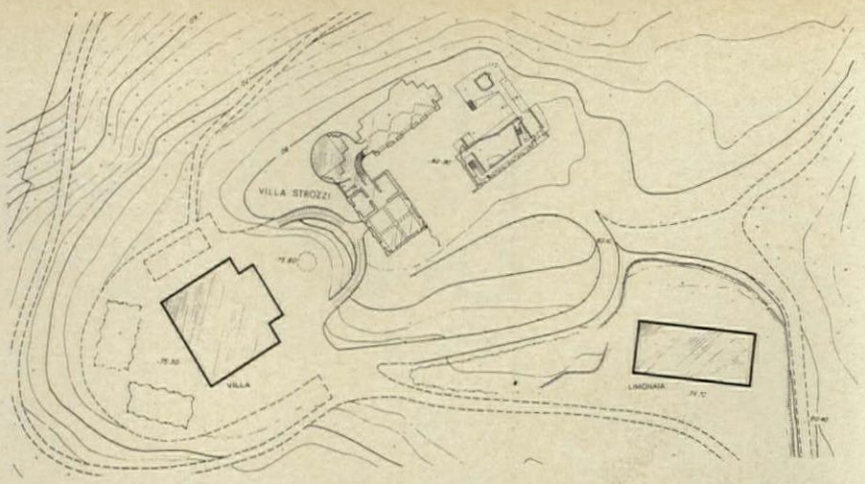
PROJECTS BY RICHARD MEIER: CHANGE AND CONSISTENCY



Less than two years ago (in July 1973), the RECORD published an article that described the consistency with which Richard Meier presently continues to design projects, ranging in size from single-family residences to buildings meant to house many thousands of persons. The consistency lies in a clear-cut expression of a hierarchy of spaces; these gain increasingly finite enclosure as their functions become more specific. The most basic illustration is a house which has a rigid definition of utility areas contained by bearing walls, while the living areas are flexibly defined by the lightest of column-and-beam construction; the definition of circulation areas and bedrooms is somewhere between the extremes. Similarly, the offices of a commercial building are contained in a visually solid mass whose edges define the fluid public spaces of lobbies and courts. Often-noted similarities to the "International School" are more superficial than real: Meier frankly seeks dramatic content in his buildings—as opposed to the impasse of passion found in the "machines for living"; and his means depart from that precedent by mixing many structural systems within one building.

In recent work, he has not much altered his basic disciplines of spatial organization, but—often due to particular circumstances—the visual results are new; the surprising project above utilizes the existing walls of a 19th-century Italian stable—but in a manner of enclosure which does not differ from that of solid walls in the architect's work of all-new fabric. His projects—whether by choice or by the commonly shared chance of the economic times—continue to be diversified in scope and offer a most interesting test of adherence to design principles. *—Charles Hoyt*

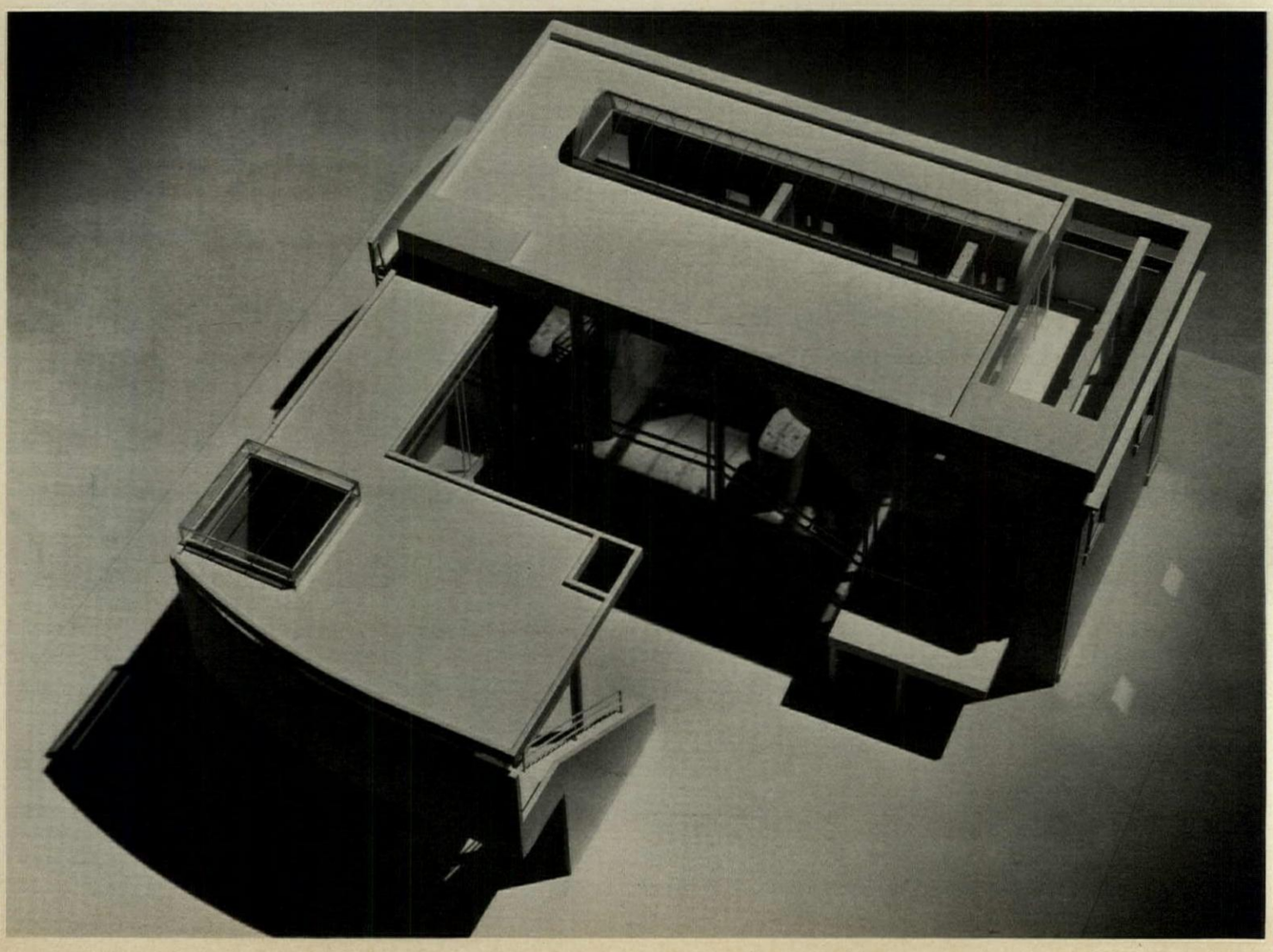


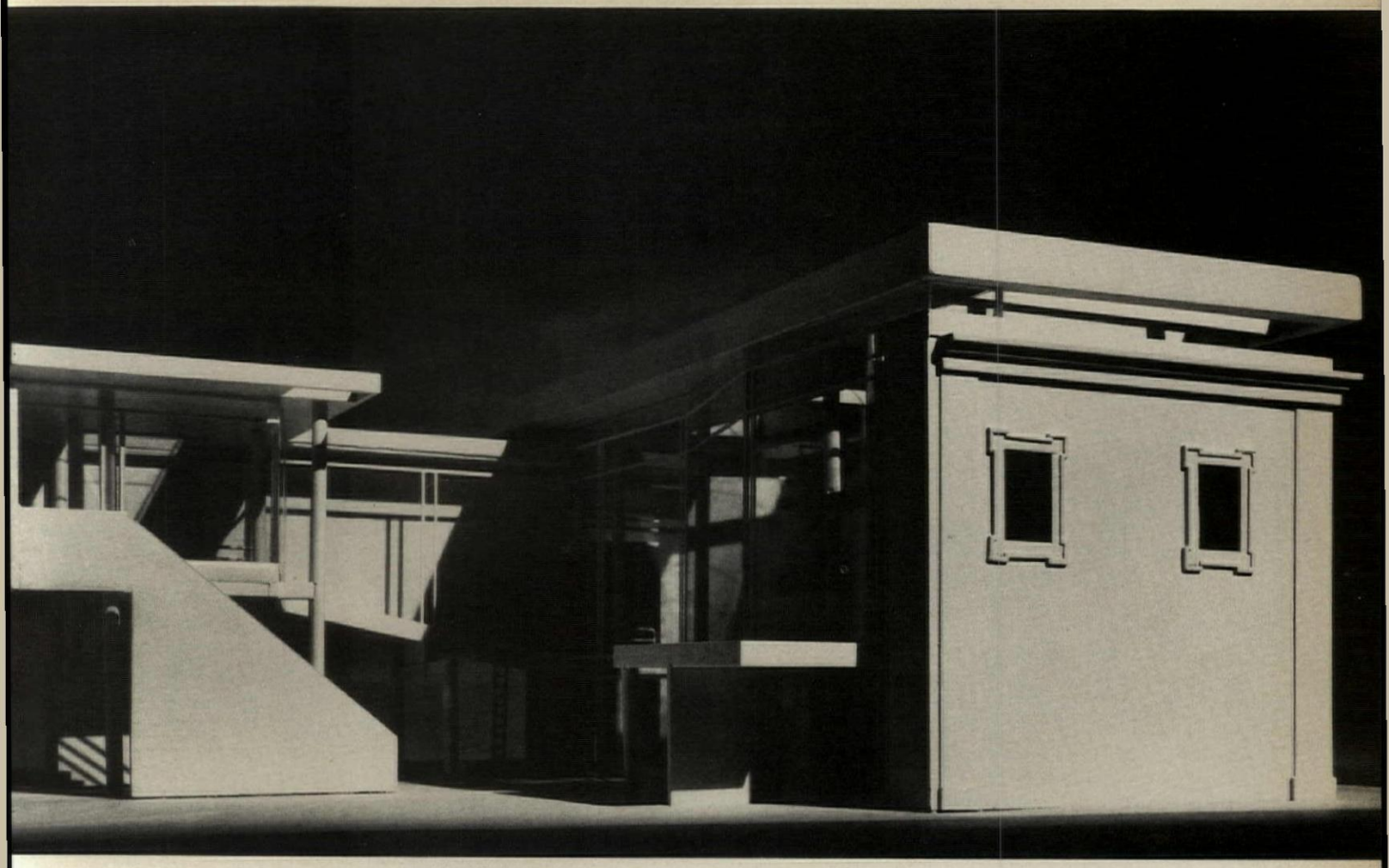
VILLA STROZZI

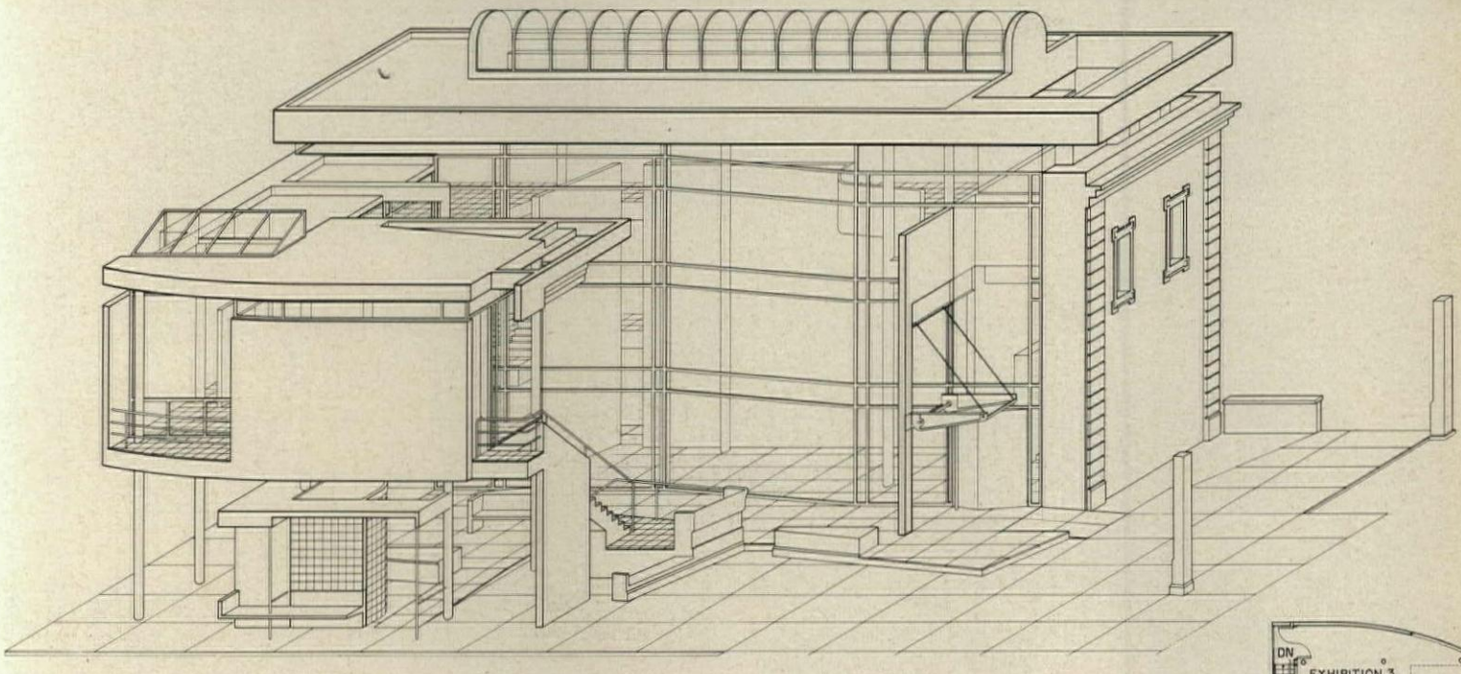
One of the more unusual projects in Richard Meier's (or anyone's) office is this Museum of Modern Art for the City of Florence, Italy. It is planned in a way that may make strict preservationists shudder—but it is completely within the new spirit of building modern facilities that respect the visual richness provided by older buildings. There is to be a whole new architectural entity here, incorporating two existing walls of the stables of the 19th century Villa Strozzi. The old walls will visually tie the new building to a nearby structure, which is being restored by architect Hans Hollein, and will respect the existing relationship of the stable to the courtyard and courtyard-approach views (see site plan above).

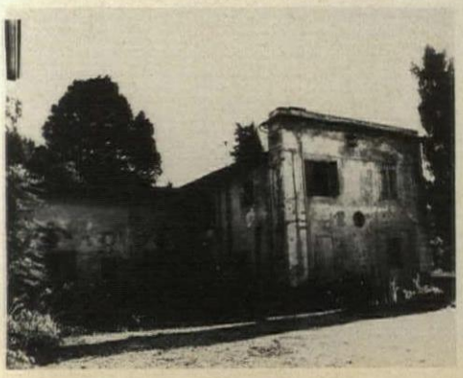
Tradition is respected without fakery—illustrating that the best of the old and new can be integral, when there is something of value left with which to start. As can be seen in the photo of the existing building (opposite page, bottom), the walls to be saved were regarded by Meier as they were by the original Villa architect, Guiseppe Poggi, as an independently important part of the original structure—for Poggi, a screen to hide the lesser building behind. Meier has taken great care to match his new materials to those of the original building, which was constructed of a dark gray stone (and later covered with stucco, which will be removed in the new work).

The Museum is to be a carefully articulated frame for the older walls, which are presented as sculpture. At the same time, the walls provide an anchoring solid mass, against which Meier has always generated his freely flowing public spaces. The heavy wall itself takes the place in the composition of strongly defined spaces in—for instance—the Shamberg Pavilion (overleaf). The visitor passes through (or in this case, around) a confining introduction to the spatial drama beyond. The main room of the museum is to be a multilevel space, connected by ramps (between the second and third levels) to a remote exhibition space (lower left in the photo below). Visitors will be confronted with far more visual interest than the paintings on the walls: alternating solid and transparent wall-planes will provide surprise views of Florence in the distance, as well as of the exhibition hall, all from various elevations and angles. The two separate building volumes will provide additional views toward and into each other.

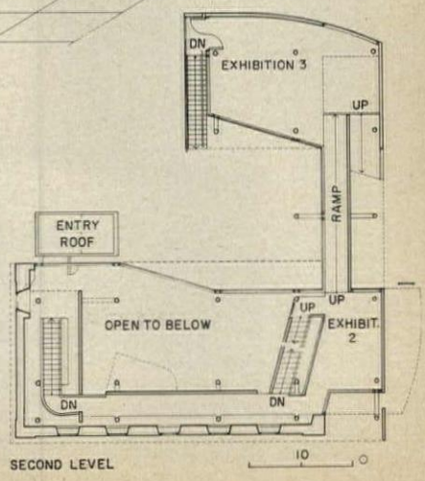




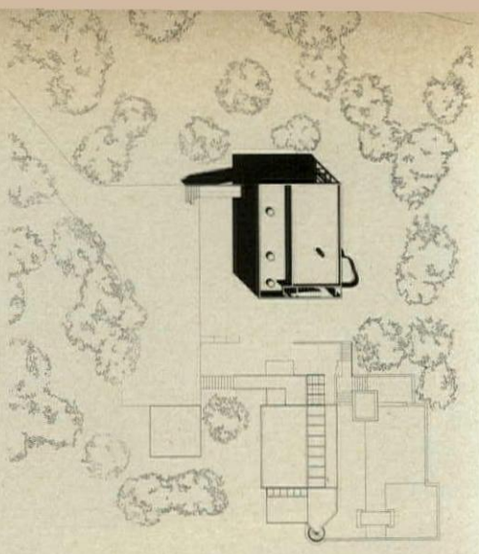




Contained within two existing walls of a stable (left), this new exhibition gallery will have spiraling-loop circulation between the balcony levels in the main hall and the floor of the secondary gallery. The latter is projected from the large building to form an enclosure for the adjacent courtyard (see site plan, opposite page, top). It is reached by a ramp, in a connecting neck, from the second level of the main room. Another sloped ramp, located alongside, leads visitors to the top balcony in the main room and the end of the circuit. Much of the light will be natural, introduced by skylights and the glass walls, most of which face north. The structure is steel with a rectangular grid of round columns that belies the planned visual complexity, and gives a lightweight appearance, in contrast to the visual weight of the existing walls.



SECOND LEVEL

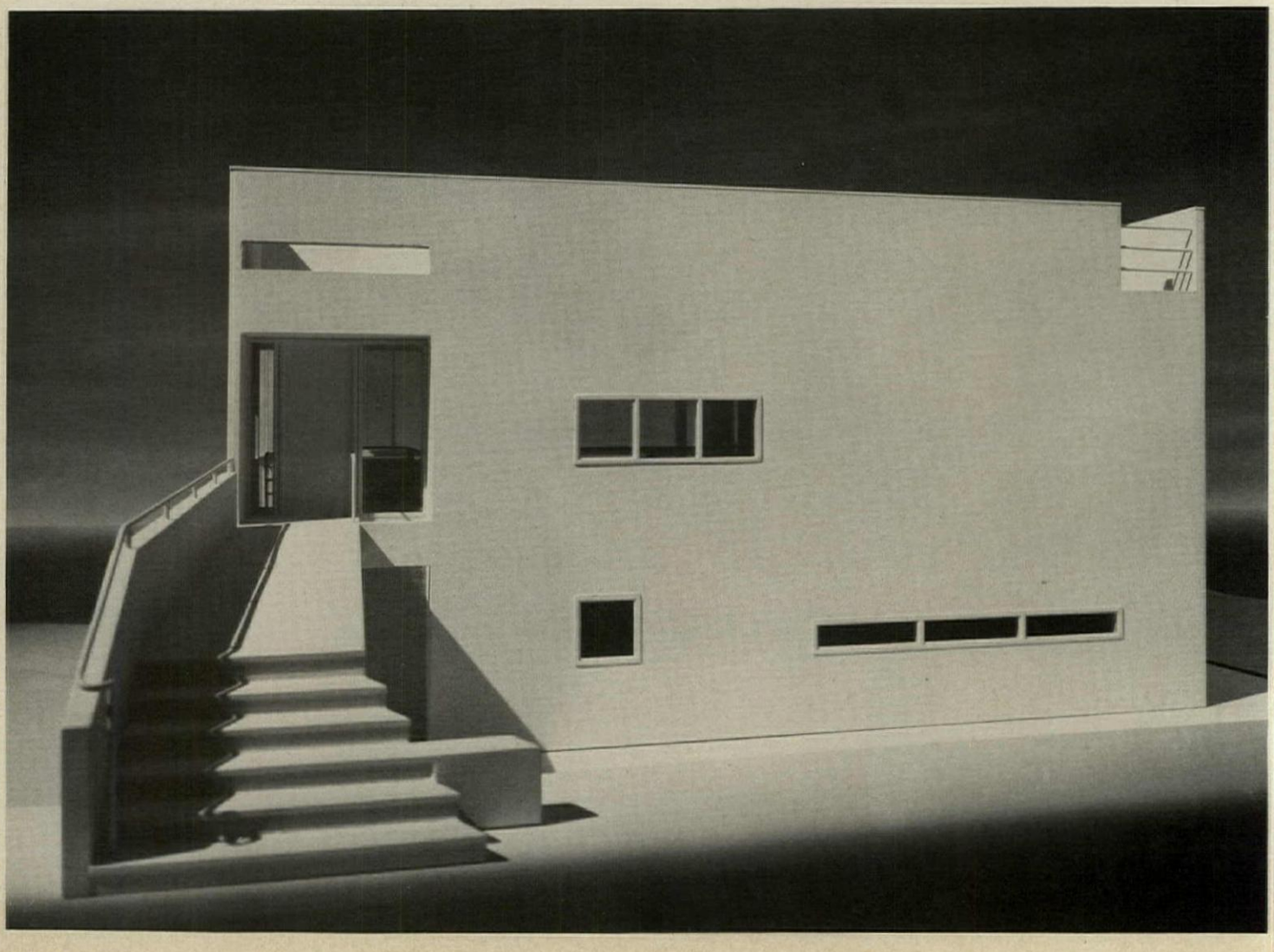


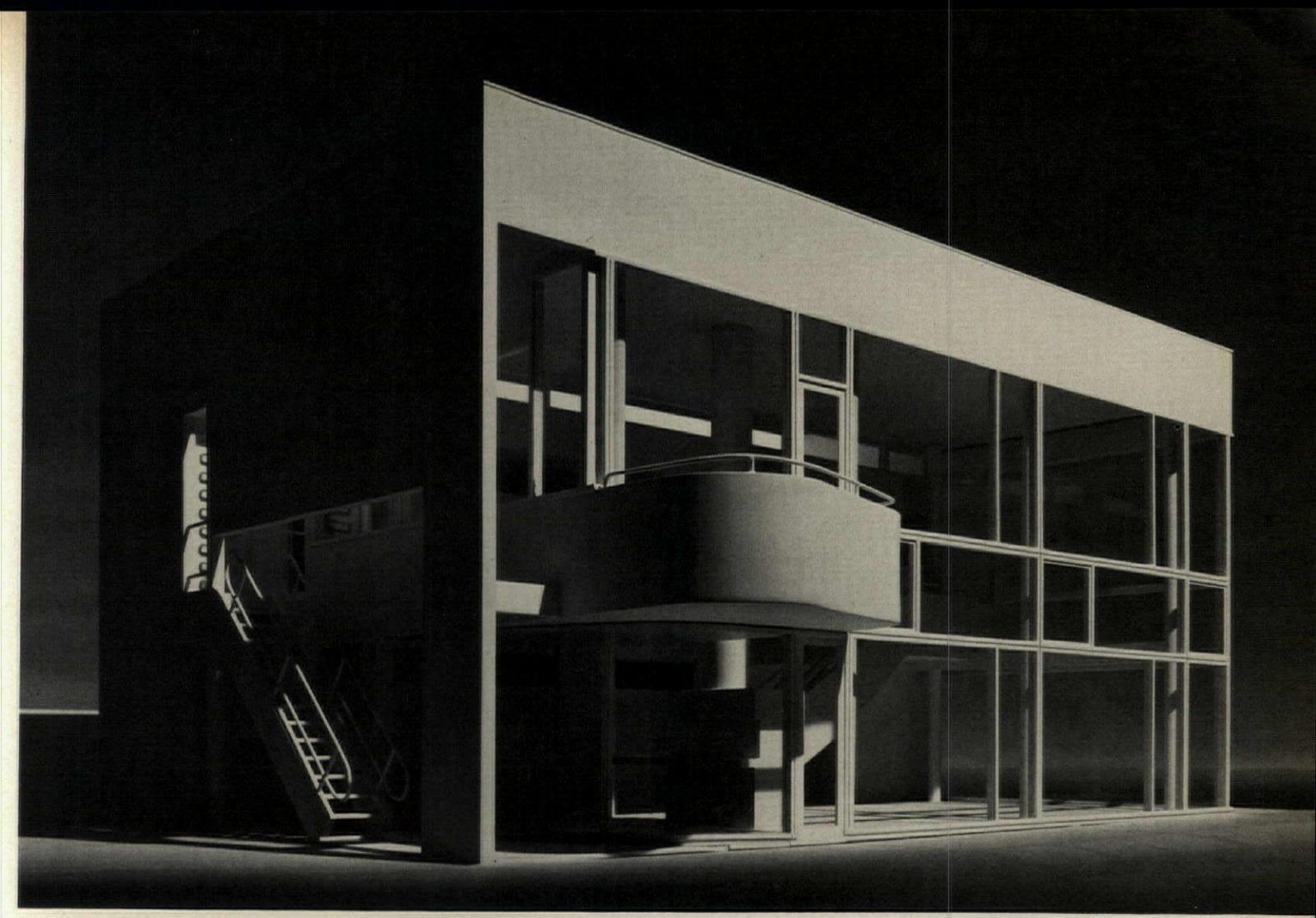
SHAMBERG PAVILION

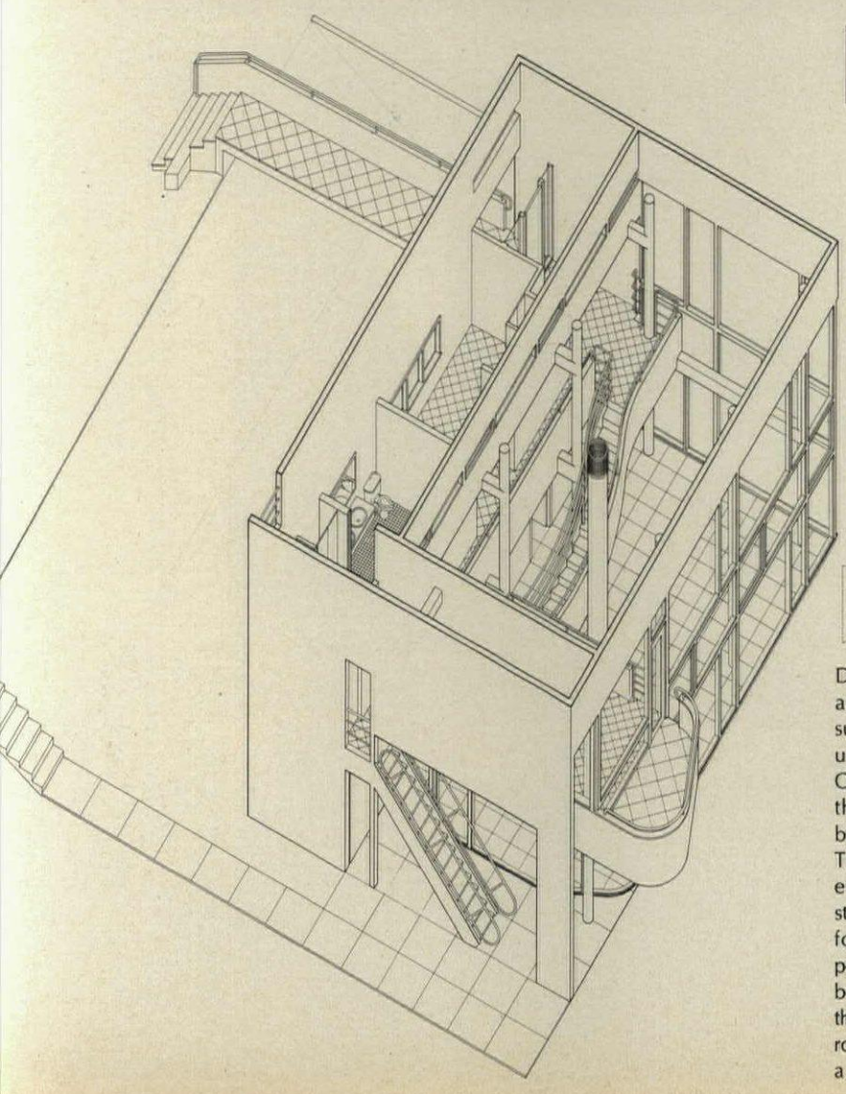
As in the case of other architects whose work is widely discussed, Meier has growing confidence in his description of his design processes. He is willing to stress his own sculptural intent over the more mundane subject of efficient function—which, of course, is evident in the work of all good architects. Compared to previous houses (the most recent is the Douglas House, RECORD, July 1973, page 90), this design for an addition to a suburban house in Chappaqua, New York, is both simpler and more complex. It is simpler in its over-all form, which is unified into a rectangular box by a deep fascia on the open sides, and simpler in its spatial relationships, which are a response to a modest program of providing a refuge for parents. But within the box-like form, there is a complicated variation of the architect's earlier design approaches. The entry side is a characteristically pierced bearing wall, behind which the utilitarian functions are arranged as a solid screen—separating the public from the lightly structured family spaces beyond. But—as in the recent design of the Villa Strozzi Museum (preceding page)—the screen has become an L shape. This restricts views toward the main house at the side, and aims the outlook towards views in the downhill, southwesterly direction.

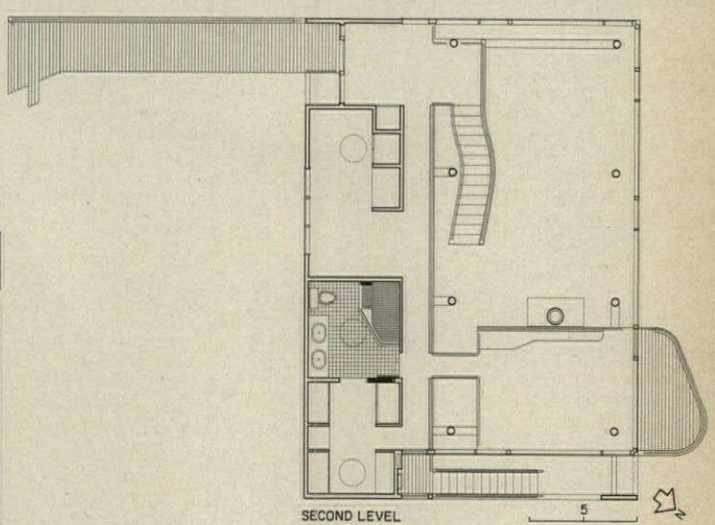
The utilitarian functions are contained by Meier's usual rectilinear inside walls, but these stop short of the ceiling to express the fact that they are not bearing; all of the interior structure of wood joists is carried on the steel pipe columns. The master bedroom is seemingly suspended in the living room at the second level, and expresses the uniquely private function of the whole building.

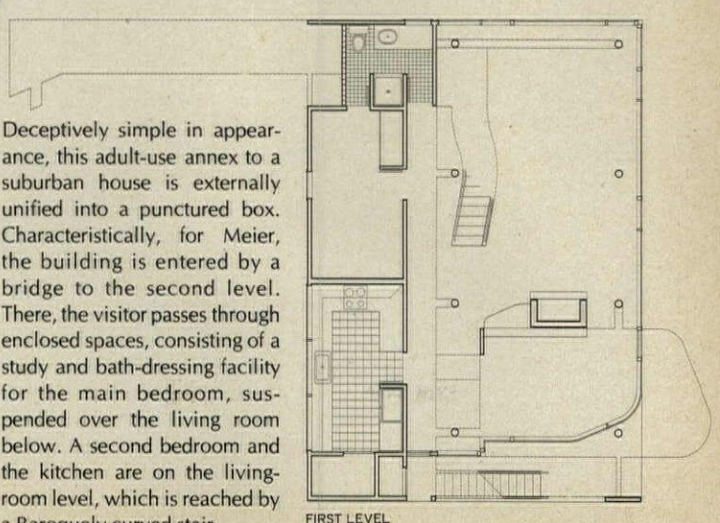
Part of the artistry with which Meier molds the otherwise amorphous open areas of his buildings is the visual suspension of such elements as corridors, balconies and stairs. Discontinuous beams isolate columns from the floor that they carry, as in the case of the upper corridor and bedroom here. Other elements graze visible structural support without real connection, as in the case of the curved interior stair. Railings are alternately opaque or open, by use of stub-walls or horizontal pipes, and the location of each type determines the way in which the viewer will see the suspended part: as a solid or a plane. In such spaces, the seemingly complex variety of experiences is achieved by limited means.











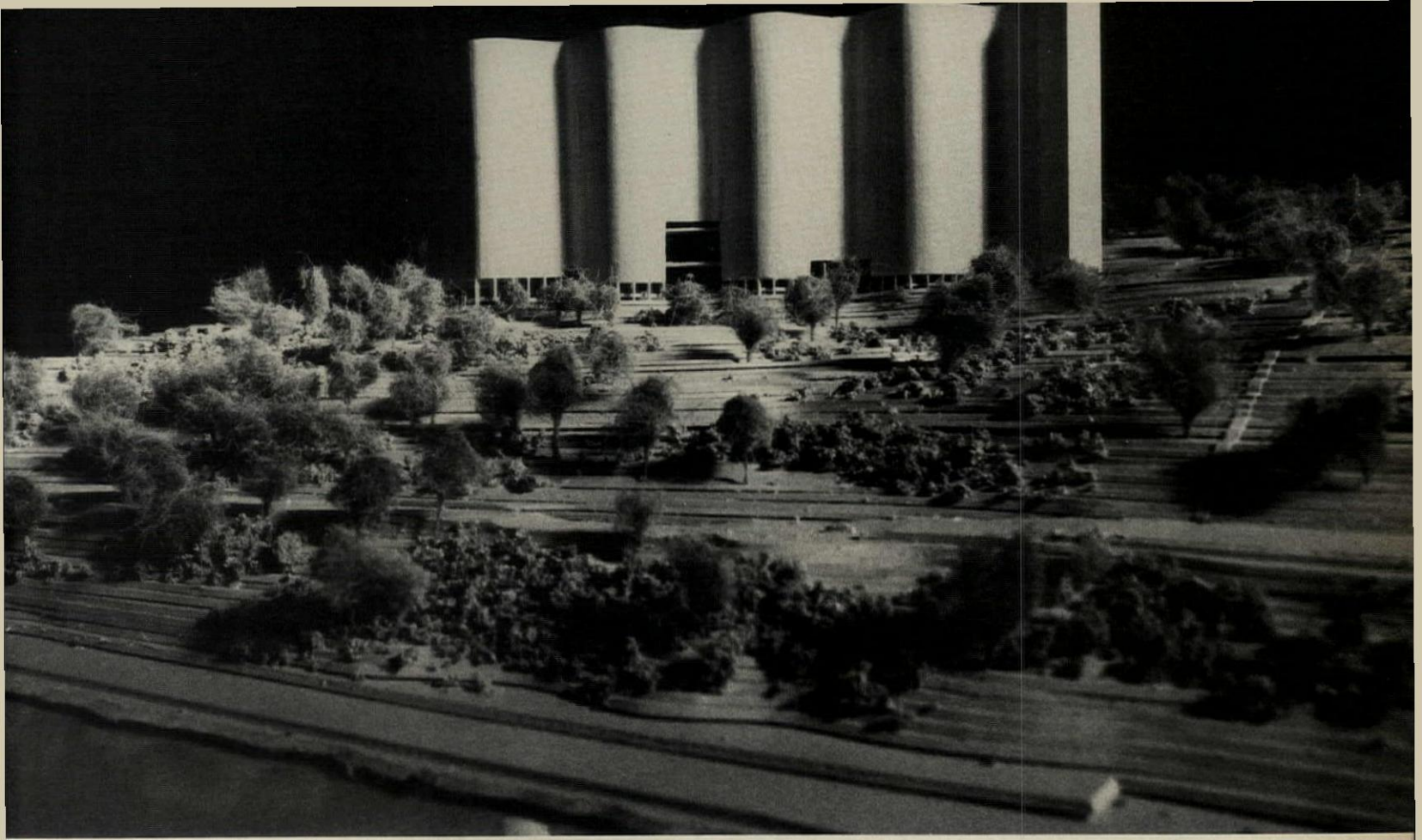
Deceptively simple in appearance, this adult-use annex to a suburban house is externally unified into a punctured box. Characteristically, for Meier, the building is entered by a bridge to the second level. There, the visitor passes through enclosed spaces, consisting of a study and bath-dressing facility for the main bedroom, suspended over the living room below. A second bedroom and the kitchen are on the living-room level, which is reached by a Baroquely curved stair.

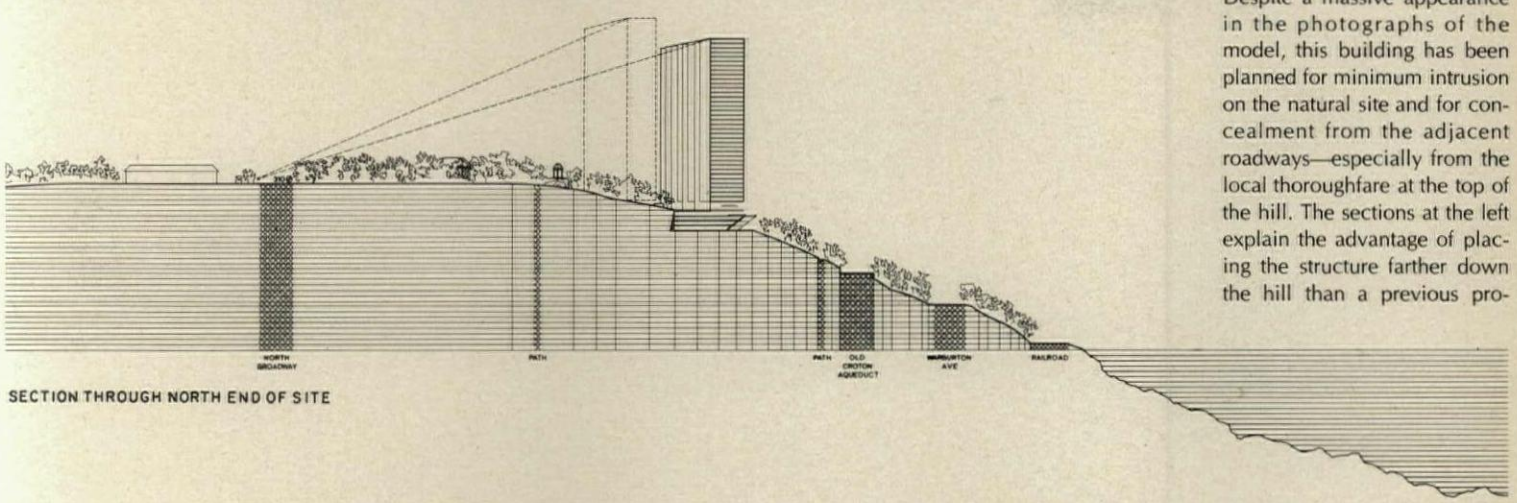
YONKERS CONDOMINIUM

At another end of the spectrum of Meier's current work, this apartment building is designed for a private developer, and includes 1300 units (which range in size from one-bedroom flats to three-bedroom duplexes) on a semi-suburban site near New York City. It can be contrasted to an earlier project, Twin Parks Northeast (RECORD, July 1973, pages 94-98) which was built for some 1500 lower-income tenants in the Bronx. That project carried through Meier's shaping of large-scale spaces, which he developed in his private houses, by surrounding open areas with buildings placed at the edges of the site. It artfully adapted its irregular configuration to a surrounding grid of six-story construction, and was definitely a design solution for a particular area of a city—the antithesis of the solution shown here.

This 38-story tower stands free from surrounding buildings and—as much as possible—from its site, a steeply sloping, naturally forested area of 22 acres. The best view from the site is toward the Hudson River (foreground of photo, right). The curvilinear plan (similar to Meier's dormitories for IBM in RECORD, February 1974, pages 122-3) is designed to avoid large existing trees, and follows the natural contours of the terrain. The bulk of the site is to remain as part of a green belt that follows the river to the north and that terminates on the south at an area of closely spaced, single-family houses. The building will cover only six per cent of the available land, although the whole-site density will be close to 60 units per acre. The planning here offers an interesting contrast to Meier's previous work—and to the effects of the single-family houses close by.

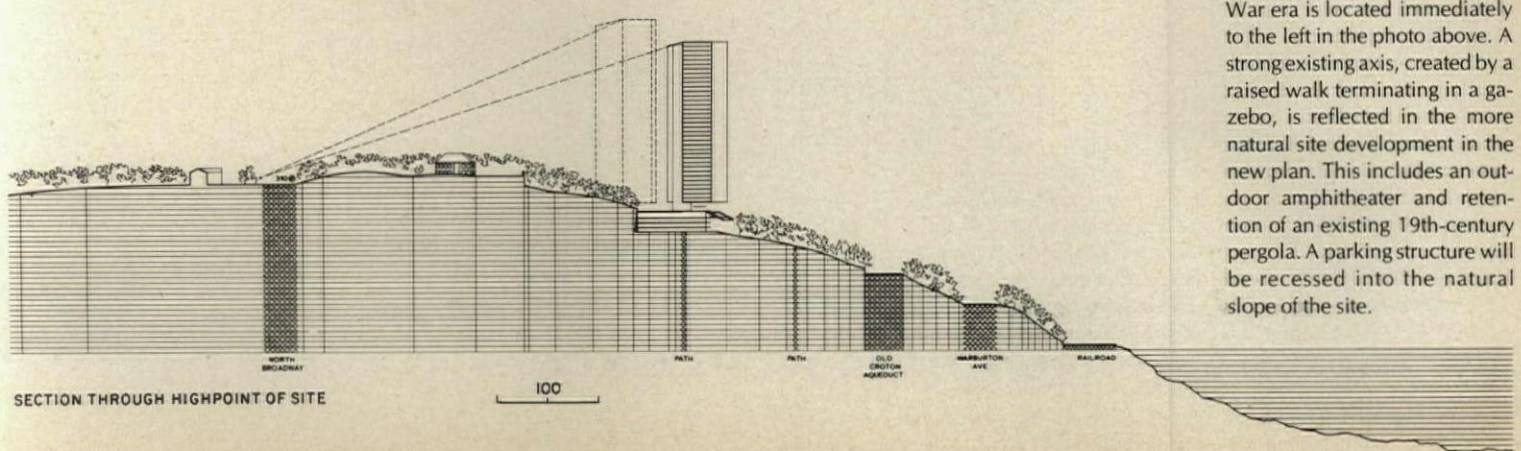
The analogy to a private house—where this architect introduces the viewer to open spaces by means of passage through closed spaces—is not easily found until it is realized that the building itself is the solid screen through which the river view is perceived. A wide range of services are planned for the residents, and will be located on the main floor, which is to be otherwise open through the building. Five vertical transportation cores (projections in photo, above) will each serve a maximum of seven apartments and will connect with the tenant parking spaces in a structure located below the main floor. The partially sub-grade location of the garage can be seen in the section (opposite page, bottom), and eliminates large paved areas.





SECTION THROUGH NORTH END OF SITE

Despite a massive appearance in the photographs of the model, this building has been planned for minimum intrusion on the natural site and for concealment from the adjacent roadways—especially from the local thoroughfare at the top of the hill. The sections at the left explain the advantage of placing the structure farther down the hill than a previous proposal: existing trees, at the upper street level, will totally obscure the building from view. A formal park from the Civil War era is located immediately to the left in the photo above. A strong existing axis, created by a raised walk terminating in a gazebo, is reflected in the more natural site development in the new plan. This includes an outdoor amphitheater and retention of an existing 19th-century pergola. A parking structure will be recessed into the natural slope of the site.

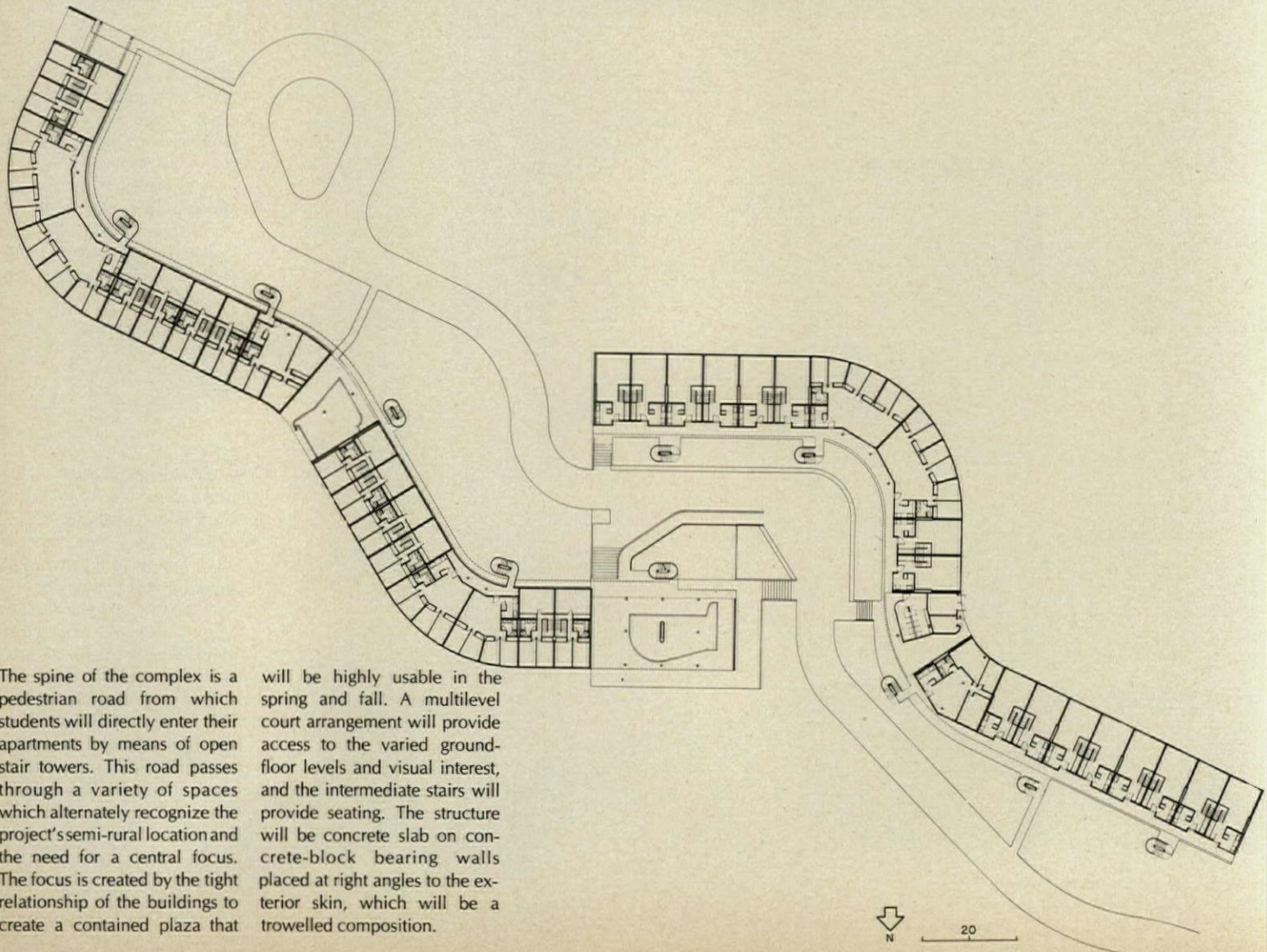


SECTION THROUGH HIGHPOINT OF SITE

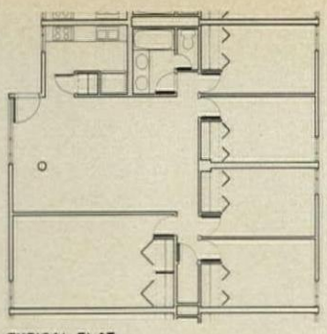
CORNELL UNIVERSITY HOUSING

A seemingly informal grouping of buildings, this student housing typifies Meier's ability to create large-scale spaces by defining them with monolithically housed, relatively utilitarian facilities. On a second look, although the two curved elements form an over-all "free-form," there is a carefully structured relationship for maximum interdependence and dramatic impact. Residents and visitors arrive on a walkway-service road from the site's entrance and from parking areas to the northwest. A curved building-wall leads them into the containment of the central court, which is emphasized by the placement of the commons room as the heart of the complex (see plan below). A gradually opening vista greets the pedestrian proceeding from this point, and recognizes the semi-rural nature of the site. It is in respect to this site, a former golf course, that the four-story buildings take their curved shapes, which follow natural contours and avoid large existing trees. The over-all freedom of the composition is meant to reinforce the location, which is outside the rectangular street-grid of the university and downtown Ithaca. The overlapping relationship at the center produces a focus for the buildings in both a visual and functional sense.

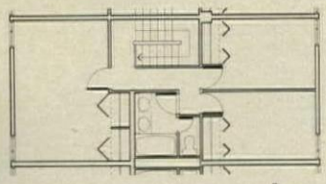
There are 96 apartments here for 497 students, in arrangements recognizing increasing personal freedoms on campuses across the nation. In the straight portions of each building, the bottom two floors are devoted to duplexes, and the upper two are devoted to simplexes. The curves contain simplexes on all floors. Each apartment has three to five bedrooms with common living room, kitchen and bath. Access is gained directly from stair towers, and the only horizontal connection above the ground is an exterior corridor at the third-floor level. The stair towers are placed on the side of each building that relates to the access walk and court. As these circulation routes are open to the weather and enclosed only by pipe railings, it is here that the visual and real activity will occur. The opposite side of each building will form a quiet edge to the complex, and, accordingly, will have a limited variety of fenestration, despite the varied functions behind these outer walls. Meier has relieved all of the exterior skin of structural function, so that openings are not dependent on alignment by bearing requirements. There will be an all-white skin.



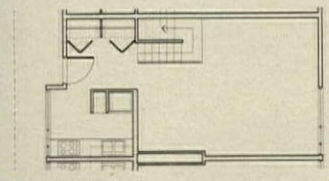
The spine of the complex is a pedestrian road from which students will directly enter their apartments by means of open stair towers. This road passes through a variety of spaces which alternately recognize the project's semi-rural location and the need for a central focus. The focus is created by the tight relationship of the buildings to create a contained plaza that will be highly usable in the spring and fall. A multilevel court arrangement will provide access to the varied ground-floor levels and visual interest, and the intermediate stairs will provide seating. The structure will be concrete slab on concrete-block bearing walls placed at right angles to the exterior skin, which will be a trowelled composition.



TYPICAL FLAT
THIRD & FOURTH LEVELS

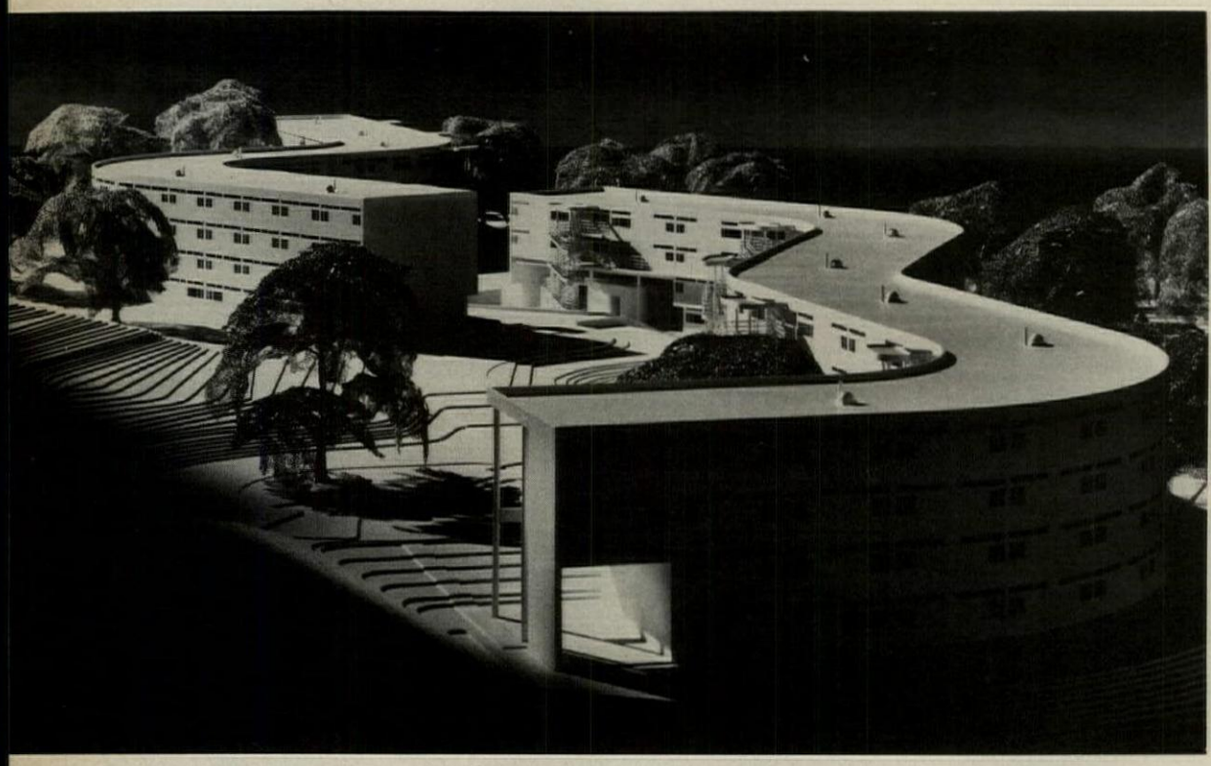


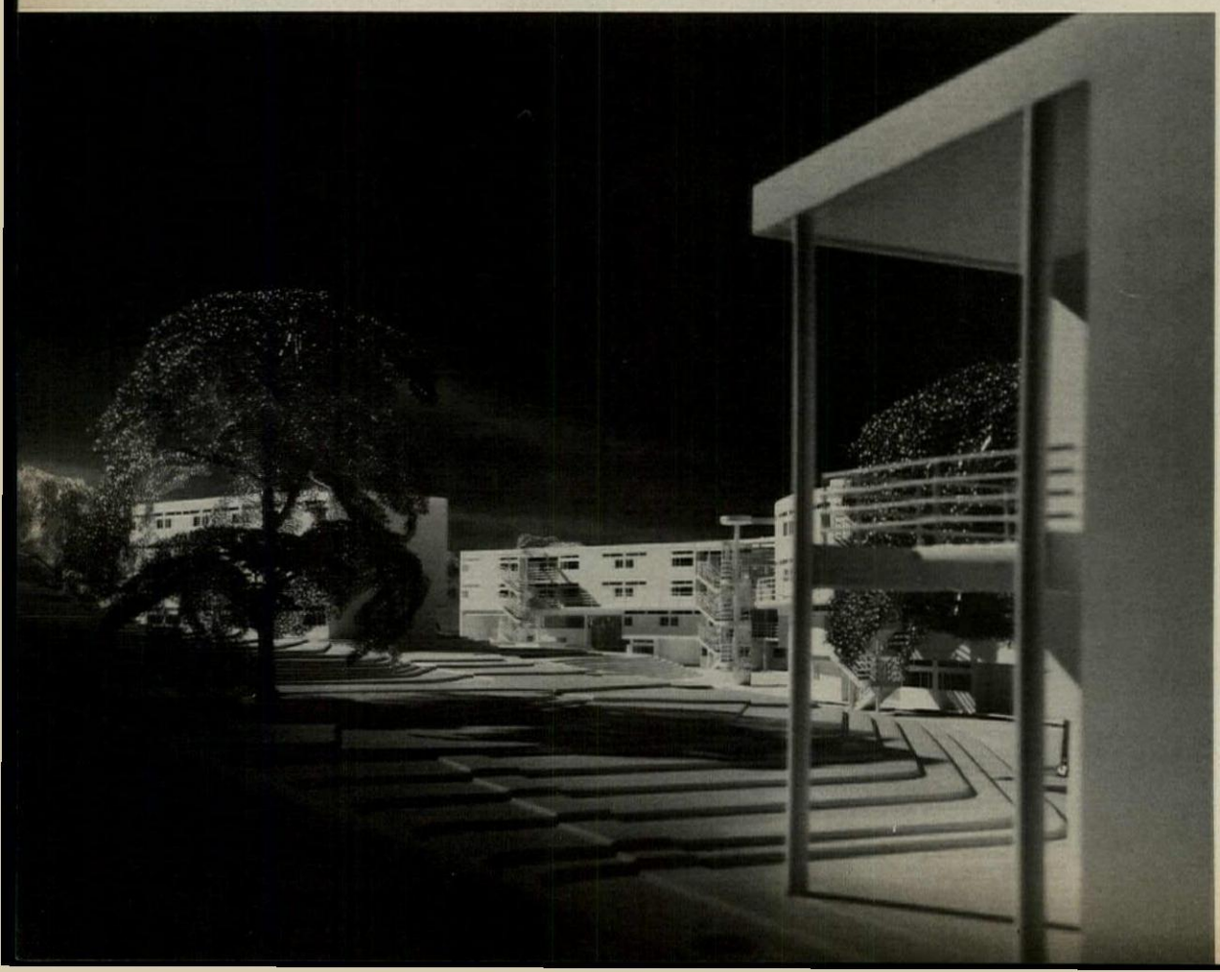
FIRST LEVEL



TYPICAL DUPLEX
GROUND LEVEL

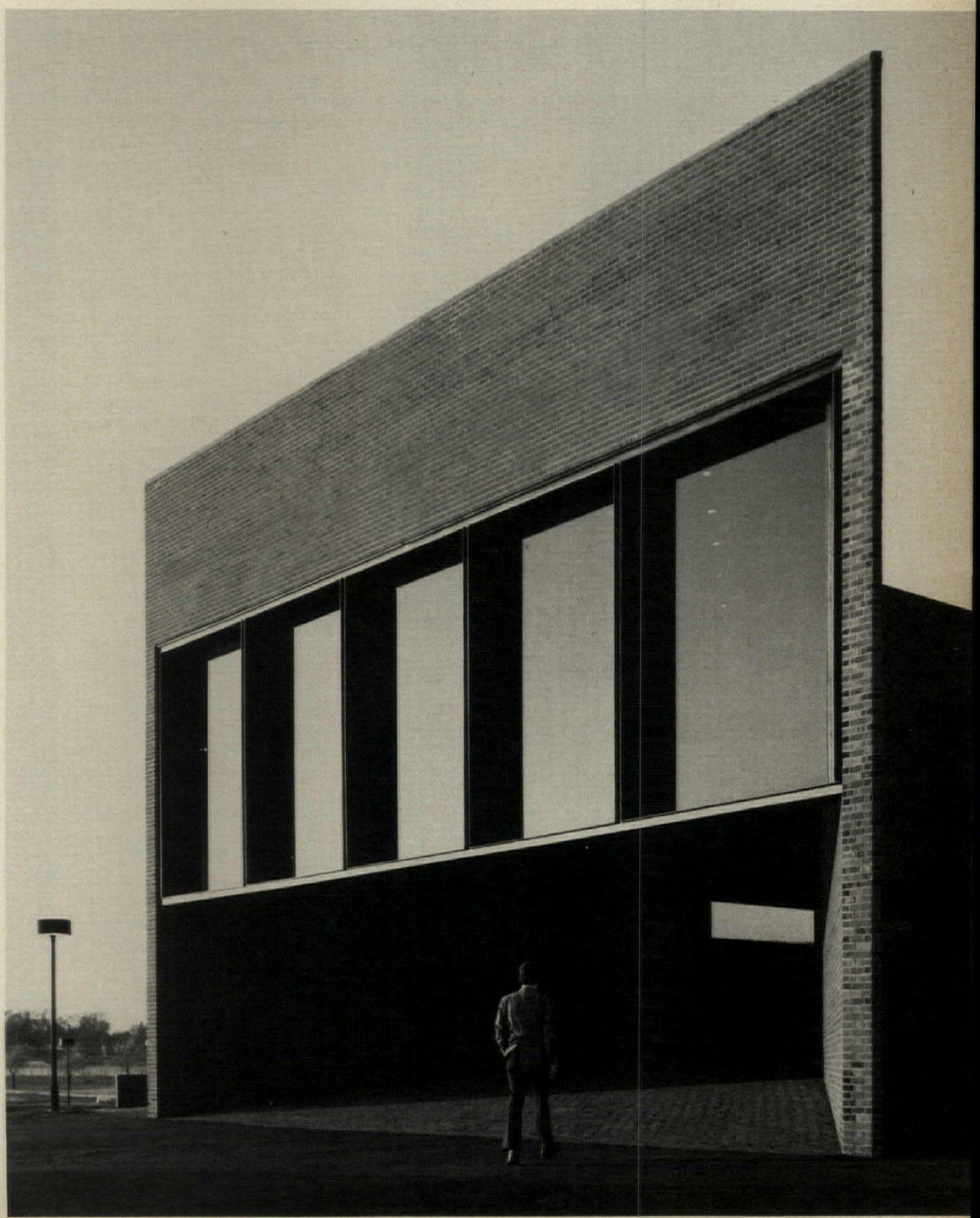
A variety of apartment types offers options for the various sorts of communal living that is programmed. Duplexes occur on the lower two floors of each straight portion of the building, and simplexes are above. As the apartments are mainly reached by vertical access only, the effect on the courtside is to be that of a series of linked houses, although the walls on the opposite sides will have a unified character.

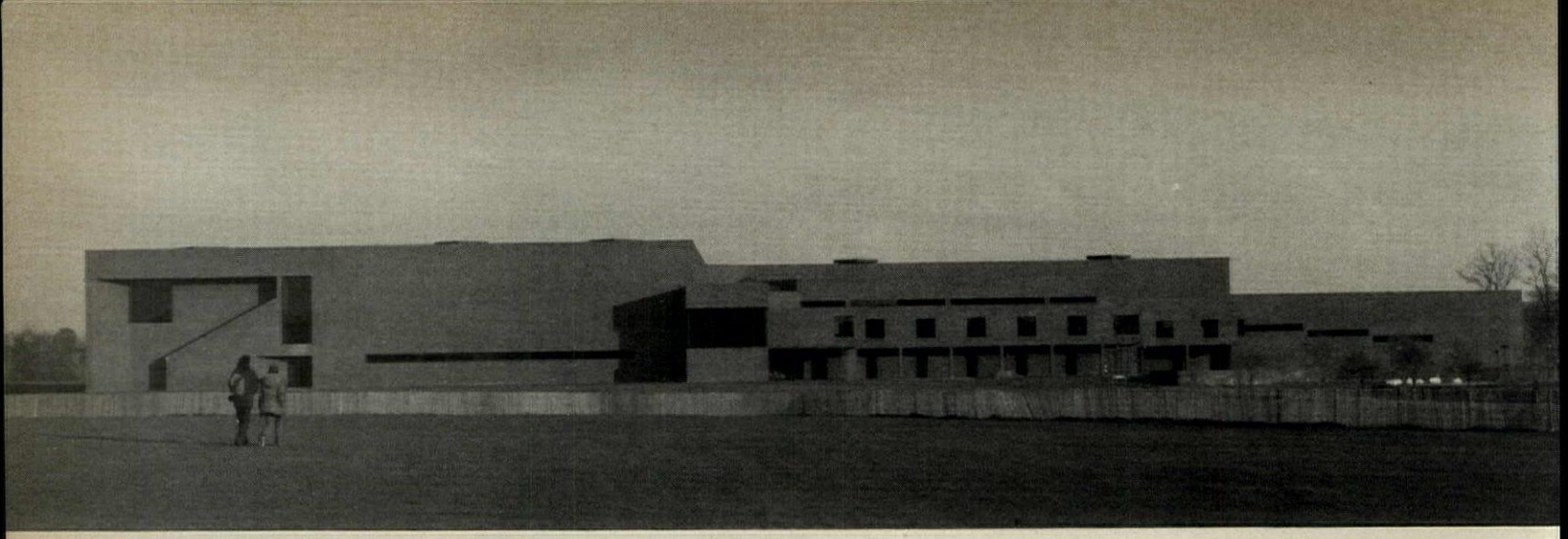


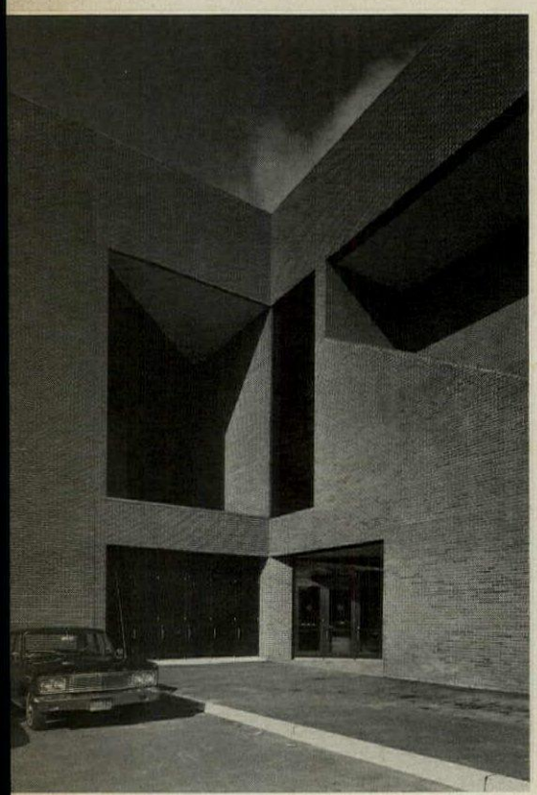


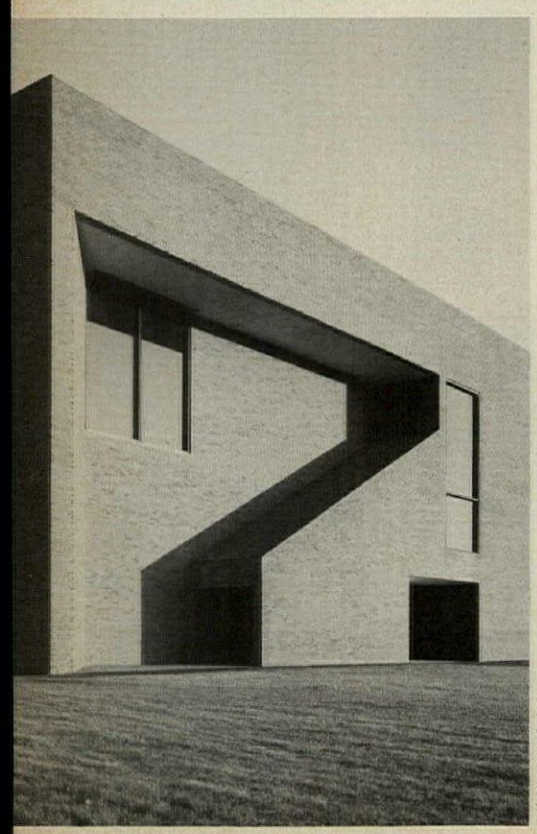
SPORTS FACILITY FOR UPSTATE NEW YORK

When the late Anthony Adinolfi commissioned work for New York's State University Construction Fund, he often by-passed large, established firms in favor of small, design-oriented offices—whether or not such offices had any previous experience whatever in the design of university buildings. In an important sense it was a gamble, but a host of new facilities on campuses across the state now tend to vindicate Adinolfi's judgment. The new athletic building at Potsdam, photo below, by architect Richard Moger, is a recent and persuasive example.









Gil Amiaga photos

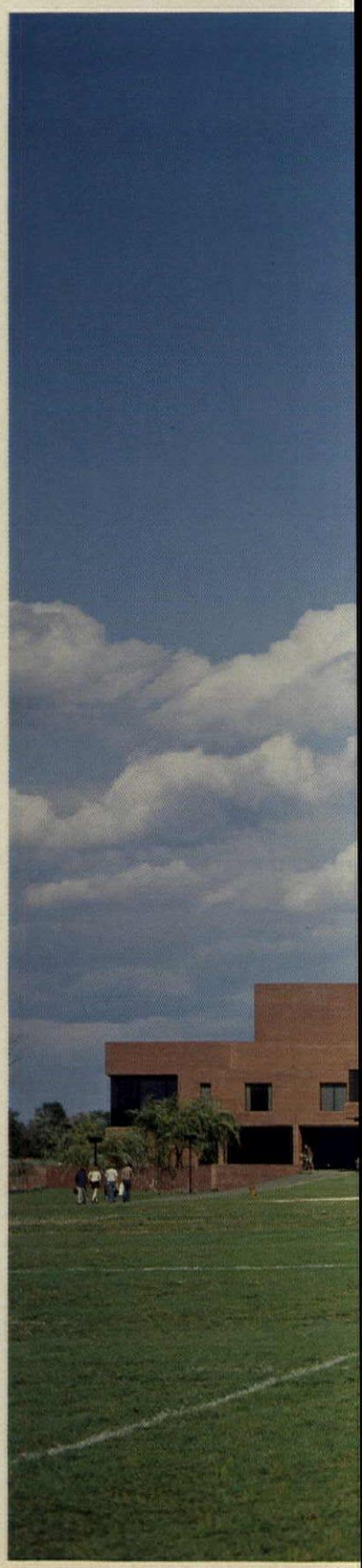
"At sports-minded colleges or universities—where the whole objective of the athletic program is to cut a second-and-a-half off every swimmer's time in the 100-meter free-style—field houses, rinks or gymnasia are built to the designs and specifications of the Director of Athletics. Here, however, at this cold-climate campus in Potsdam," says Richard Moger, "we were commissioned to design a recreation building as well as a competitive sports facility—a place that could be used and enjoyed by community groups and intramural student programs as well as by varsity teams." By way of illustration, Moger points to the band of clerestories that rings portions of the pool and the ice skating rink, and at certain times of day casts a distracting bar of light across the swimming lanes or across the ice. "These windows would be out of the question in some places, but the Construction Fund realized that a casual swimmer likes to look up and see a little blue sky and the casual skater prefers at least the sensation of outdoors to a sealed chamber." This is an important part of the spirit of this place and Moger has worked carefully to enhance it.

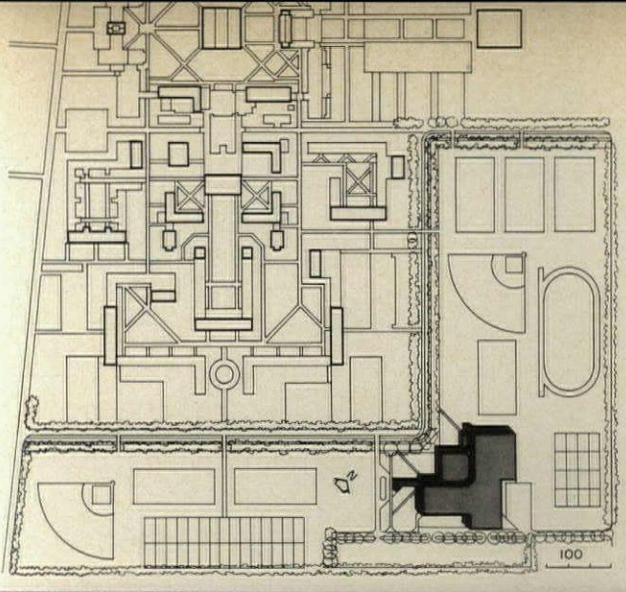
He started by breaking down the scale of the building—which otherwise could have been overwhelming. He articulated its major parts and made the most of sculptural opportunities when they presented themselves—as at the entrance (photo, previous page) where a high water table necessitated a long entry ramp that could protect its users from wind and wind-driven snow. He organized the major circulation into a large "L", which bites deep into the building (see plan next page) and is marked at each end and at the middle by large skylights. He further enhanced this linear space by dressing the floor in slate and providing comfortable seating just off the main pedestrian flow. (All this in contrast to the more familiar blind cinderblock passageways of many gyms where a visitor knows he is approaching the pool only because the air becomes humid).

The major activity spaces in the building are lively and are further animated by the functions they house. The vast expanses of light maple floors, patterned by bright-colored stripes, the pool water, the white brilliance of the ice, the scoreboards with flashing colored lights, the uniforms of the players, and the space frame overhead, unifying everything, provided a powerful palette for interior design. Nothing else was necessary.

The building is open from eight in the morning until midnight and here at Potsdam, where winter comes early and spring comes late, the building gets continual, varied and intensive use.

HEALTH AND PHYSICAL EDUCATION BUILDING, SUNY at Potsdam, New York. Architects: *Richard Moger—George Large, Gustave Rohrs, associates.* Engineers: *Paul Gugliotta* (structural); *William Kaplan* (mechanical/electrical). Landscape architect: *Peter Rolland.* Consultants: *David Mintz* (lighting); *Donald Wolf* (cost); *Edward L. Barnes* (campus architect). Contractor: *Rouse Construction Company.*

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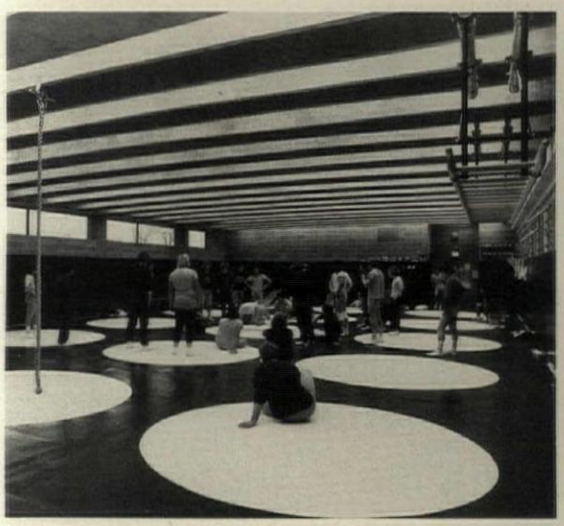
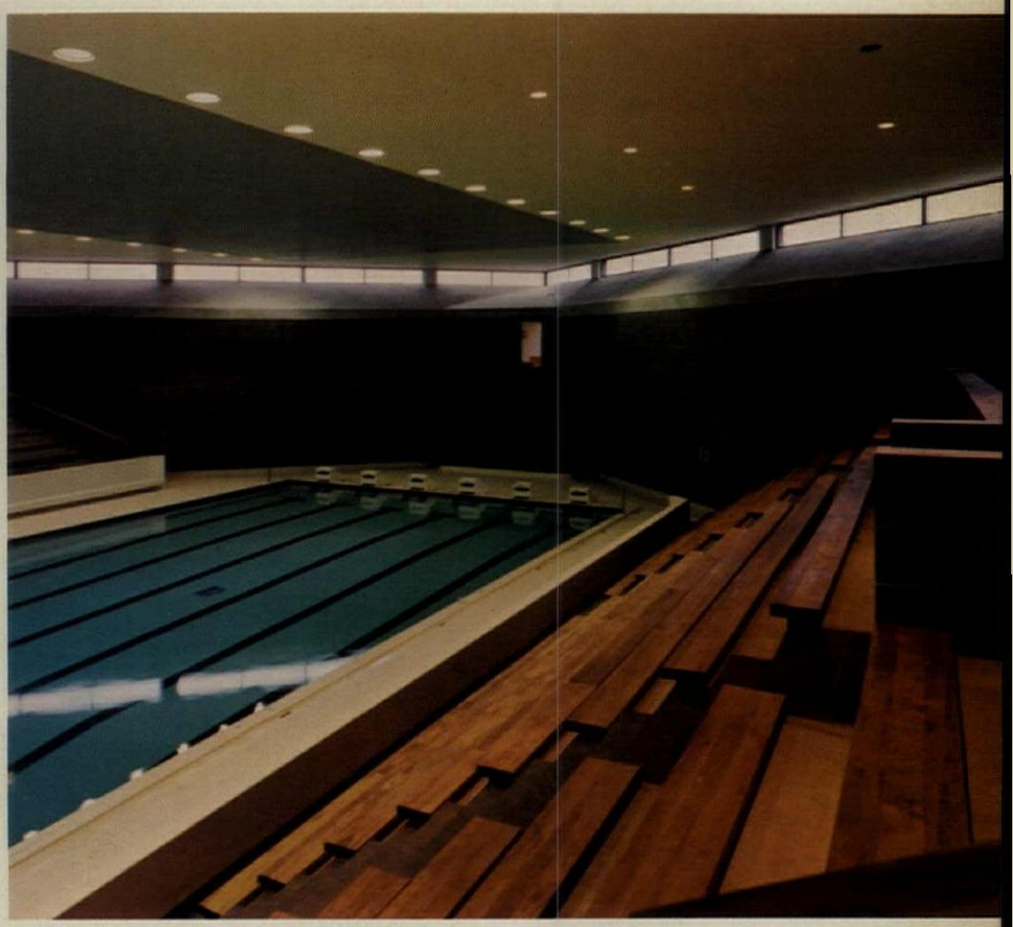
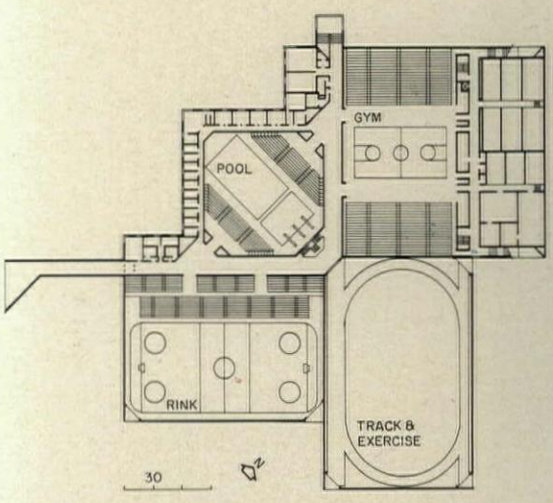
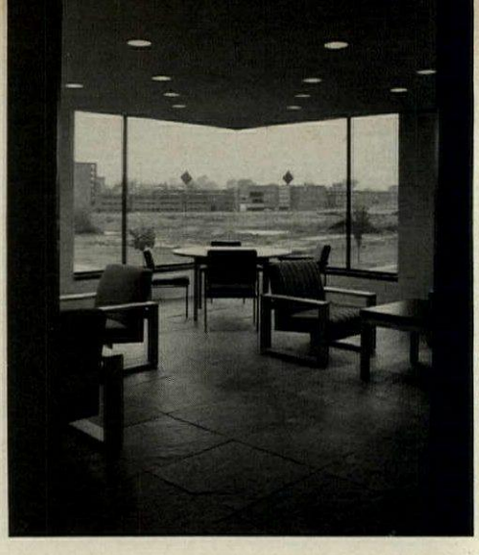




The plan, below, shows not only the facility's four large elements and the circulation links between, but it accurately suggests the dramatic spatial contrasts with which designers of athletic facilities must come to grips. This range extends from tiny offices to huge, clear-span spaces large enough to include running tracks or hockey rinks. Climatic, acoustic and functional contrasts are almost as great and require careful handling. In this building, as the photos clearly demonstrate, they got it.



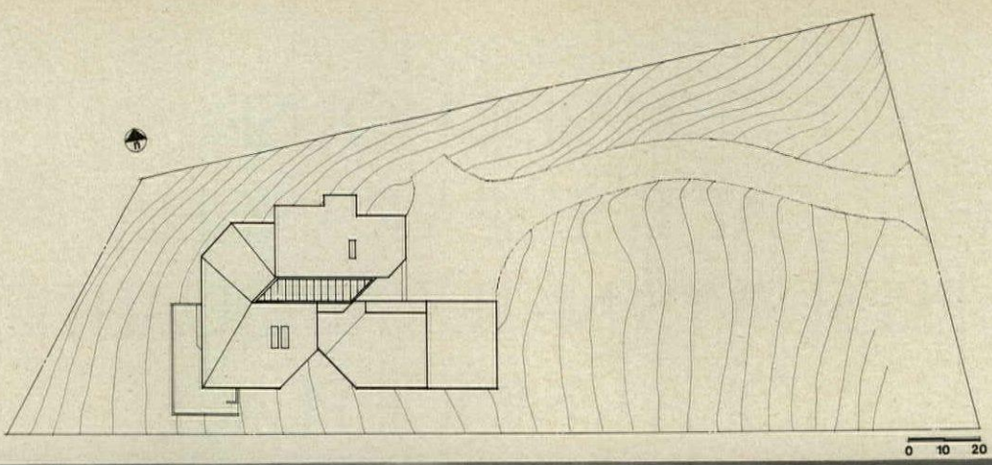


The architects expanded the main circulation spine and provided comfortable seating just off it to encourage random encounters between students and staff. A large skylight set over the bend in the spine brings daylight into the circulation area and signals its importance in the spatial hierarchy. Photo at left shows the patented space frame, which unifies all the main spaces and certain of primary avenues of circulation. The scale of these spaces, as evidenced by the human figure, is never allowed to become overwhelming.

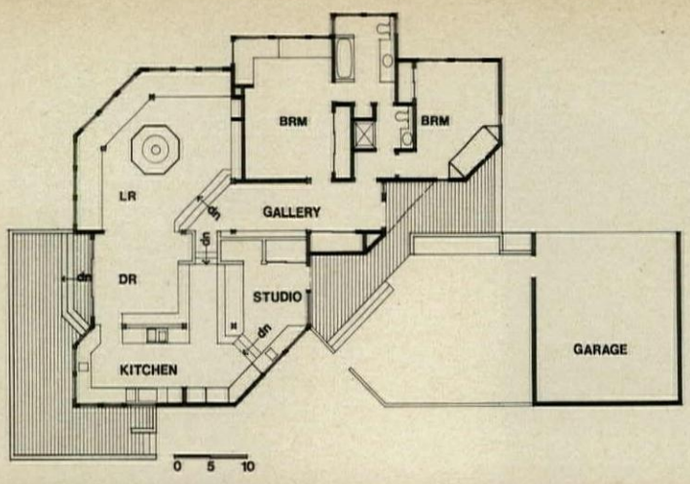
HILLSIDE HOUSE AT THE SEA RANCH PRESERVES NATURAL QUALITIES OF A UNIQUE PLACE

Merg Ross photos

This house is one of the most recent
successful examples of housing at The Sea Ranch.
It is unpretentious, fitting into its site
and capitalizing on the site's amenities
to create an environment that is warm and natural,
filled with light and open to splendid views.

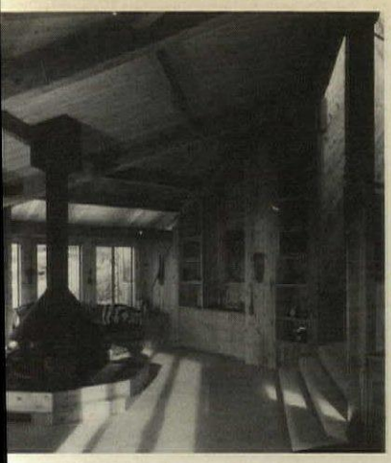


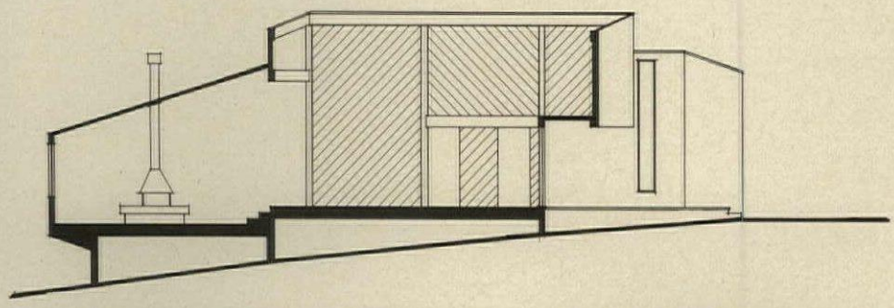
The site is a highly visible, open hillside with magnificent views of the Pacific Ocean and the rugged northern California coast. The house is set on the lower portion of the property to obtain as sweeping a panorama as possible, since trees and large bushes to the north would have obscured part of the view had the house been situated on the upper portion. A row of pines to south and west filters the view in that direction and screens the house. In response to the nature of the place and to minimize intrusion of the house on the site, the profile of the structure is kept low, and the pitch of the roofs visually ties the house to the land. To continue the character set by the first buildings at The Sea Ranch, the house has an almost stark look, to which details—no overhangs, no moldings on any of the openings—as well as the plain board siding contribute. Although deck space is provided on the sunny sides, west and south, the most usable outdoor space is a partially protected courtyard on the east between the studio and garage. The angled courtyard fence, at the southeast corner of the studio, breaks the line of the house on the south side. There was little disturbance of indigenous grasses and plants and the owners have retained the natural landscaping. The use of redwood siding and cedar shingles, left to weather, help to relate the house to its natural surroundings.

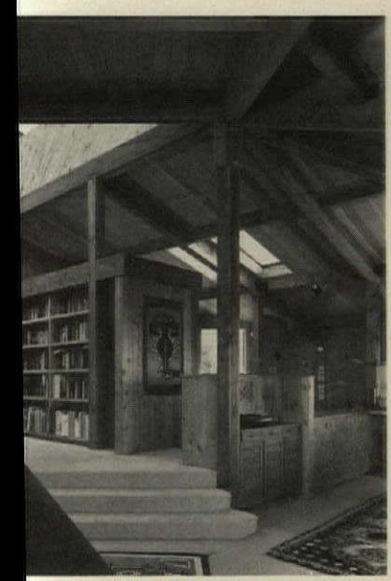


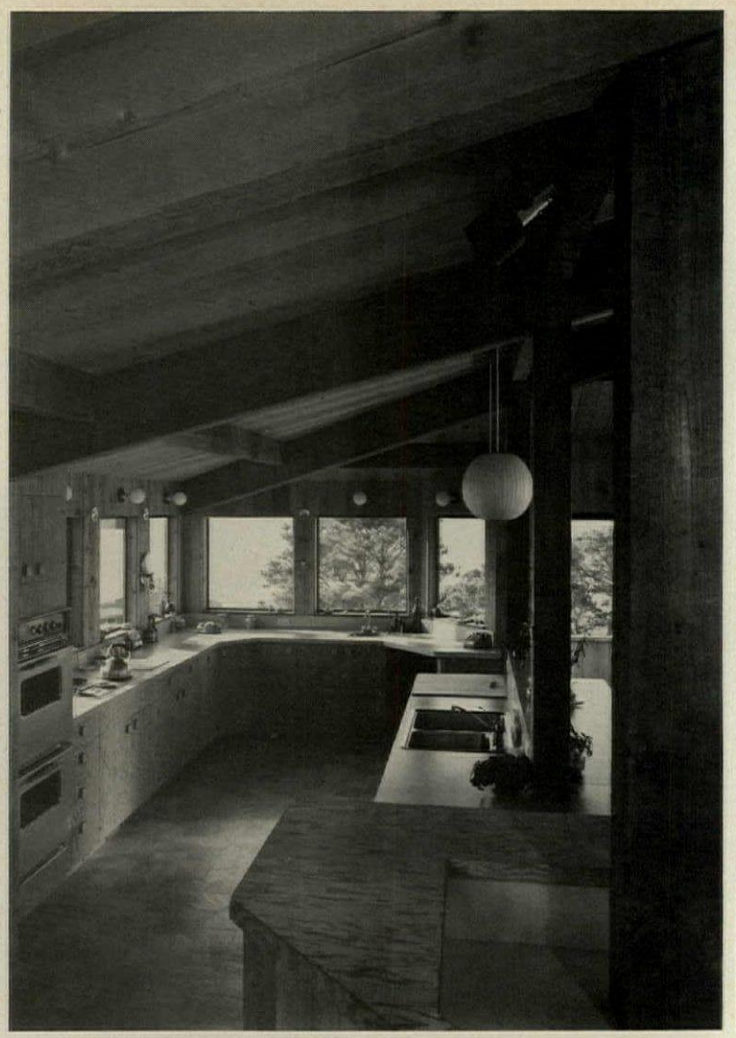
The open plan, variations in ceiling heights, and a change in levels create a feeling of spaciousness in the main living areas. The entrance gallery, bedrooms and a studio for Mrs. Barrell are located on the upper level; and the living room, dining room and kitchen are on a level a few feet lower. The owners wanted "no dark places" in the interiors, so skylights were placed where light was needed most. The largest skylight, running the length of the entrance gallery, allows abundant light to fill the entry hall and provide the "warm welcome" the owners asked for, to flow into the interior of the living room, and to light the walkway between the studio and dining room. The length of the hall affords display space for the owners' rugs and for books. The main living areas are oriented to views on the north, west and south through a band of windows which bring the view "into scale with the individual," a particular request of the owners. Rough sawn red cedar walls and fir ceilings give warmth to the interiors and help relate them to the outside surroundings. Bronze-tinted glass in the main living areas cuts glare.

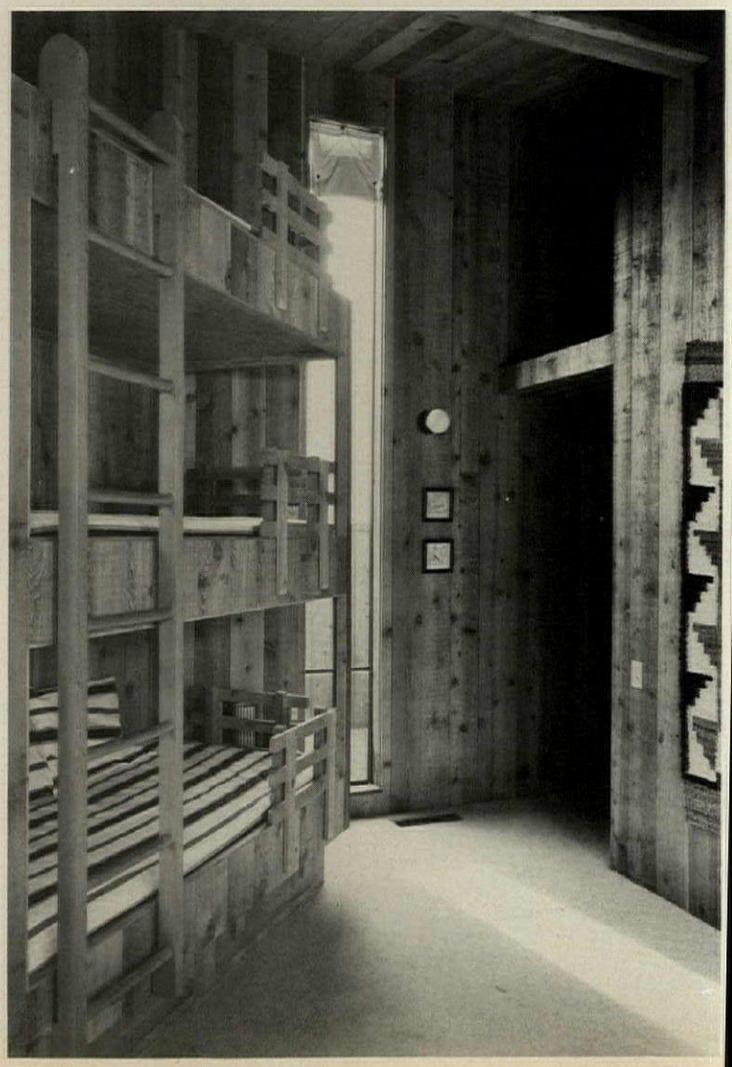
RESIDENCE FOR MR. & MRS. RICHARD BARRELL, The Sea Ranch, California. Architect: *Donald Jacobs*. Structural engineer: *Fook Z. Lee*. General contractor: *Mathew D. Sylvia*.









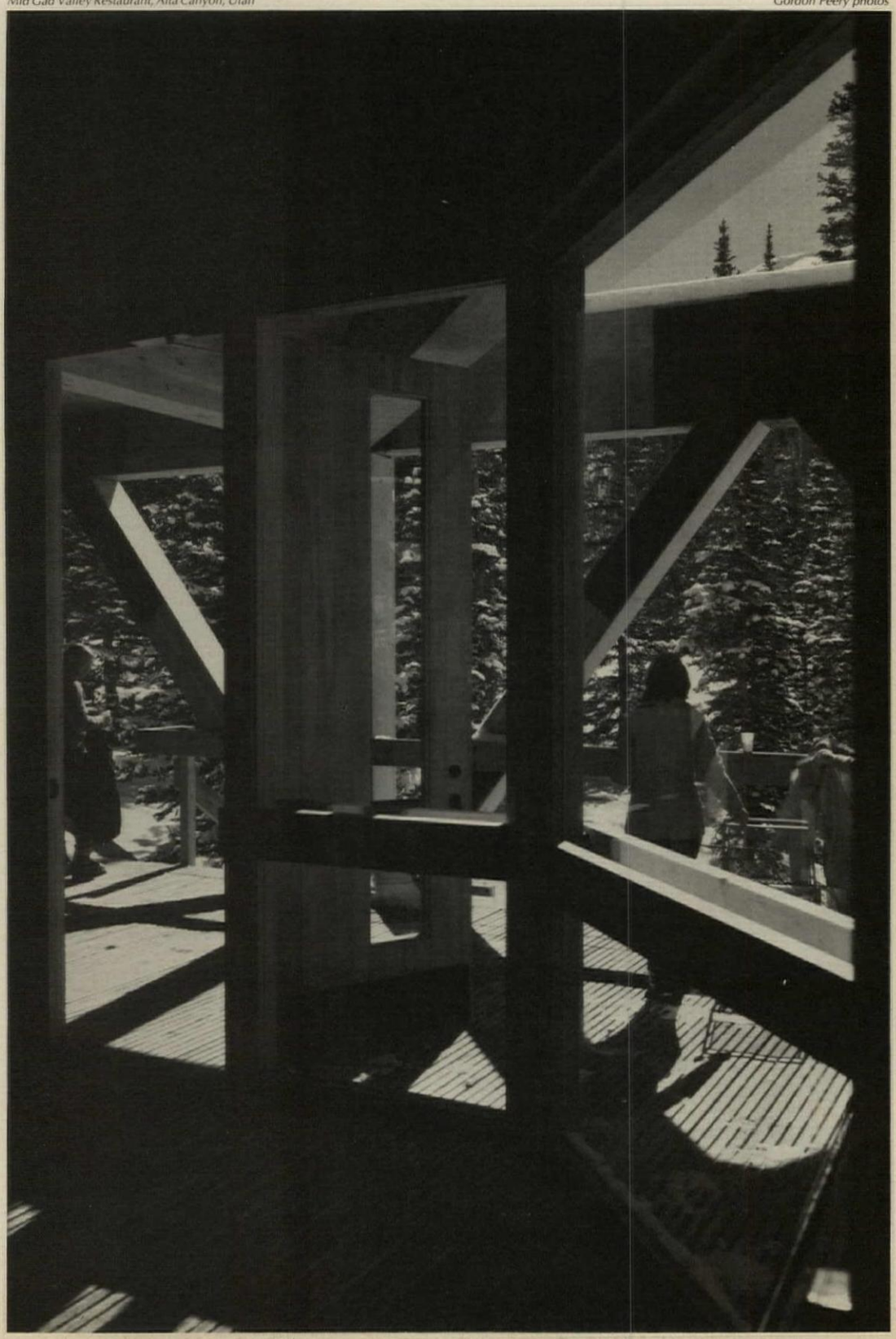


The studio (above) on the upper level separates the work area from the dining room and has a view to the west. There are two skylights, side by side, in this area—one bringing overhead light onto the studio desk, the other allowing light to enter the walkway between dining room and studio. The guest room is small but appears larger because of a high ceiling, two floor-to-ceiling windows and three bunk beds tiered in a built-in frame (right). The kitchen (top) is longer than usual and provides ample counter space to allow both the owners to use it simultaneously.

FOUR RESTAURANTS

Designing a restaurant calls for a special sense of the dramatic—who goes out to dine in an atmosphere just like everyday?—but it also requires a precise knowledge of the economic and operational needs of the restaurant. Here are four restaurants which satisfactorily—and handsomely—meet these requirements.

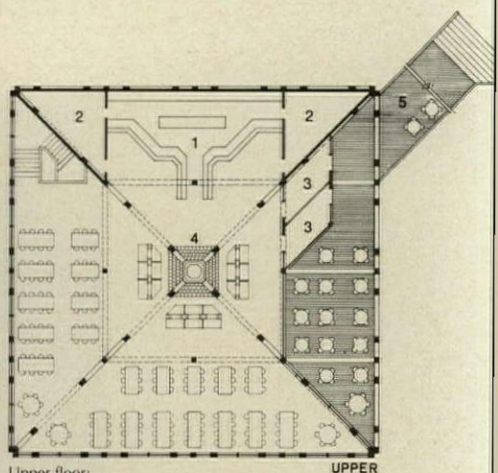
Mid Gad Valley Restaurant, Alta Canyon, Utah *Gordon Peery photos*



BRIDGE-LIKE STRUCTURE ADAPTS A RESTAURANT TO SNOW COUNTRY

The bridge-like structure of this restaurant in the mountains near Salt Lake City makes feasible its location on so isolated a site at the midpoint of a ski trail system. The heavy glue-laminated timber trusses, designed for the severe conditions at the site (winds up to 125 mph, snow loads of 125 psf, possible earthquakes, and a limited, 16 week, building season) and the 6 concrete piers which support them take all stresses. The infill panels are of glass, permitting superb views of the mountains and of the village of Snowbird below. Raising the building on stilts makes it independent of the heavy snowfalls and minimizes snow removal. Snow on the flat roof is blown off by winds from the south. In a severe winter, the building was erected expeditiously.

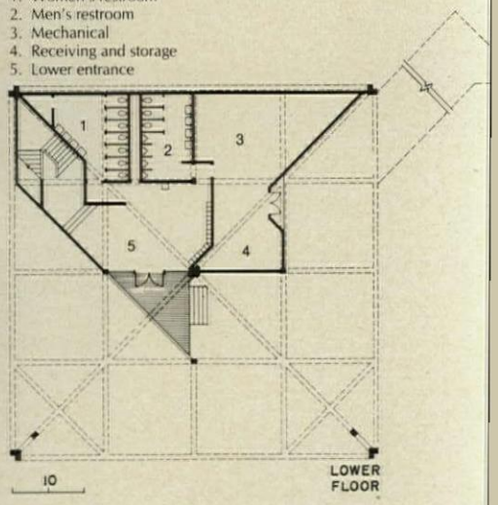
MID GAD VALLEY RESTAURANT, Alta Canyon, Utah. Architects: *Enteleki Architecture, Planning, Research— Franklin T. Ferguson, partner-in-charge.* Engineers: *Edmund Allen* (structural/foundation); *Bridgers & Paxton Consulting Engineers, Inc.* (mechanical); *Nielson Engineering* (electrical). General contractor: *Cannon Construction Company.*



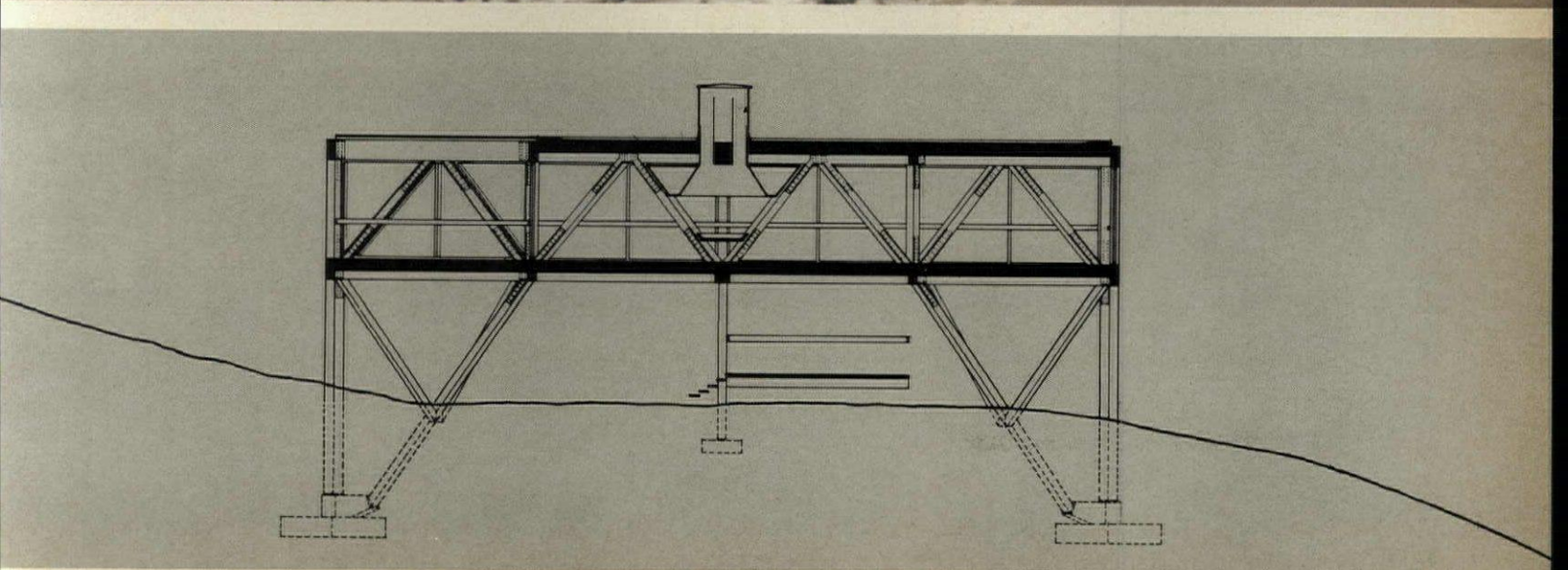
Upper floor:
1. Kitchen
2. Storage
3. Vestibule
4. Fireplace
5. Future bridge

UPPER FLOOR

Lower floor:
1. Women's restroom
2. Men's restroom
3. Mechanical
4. Receiving and storage
5. Lower entrance



LOWER FLOOR

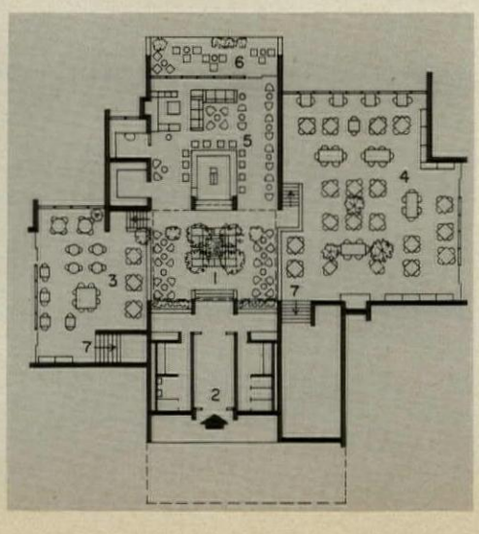


RURAL RESTAURANT CAPITALIZES ON VIEWS AND CHANGING LIGHT

Phases Restaurant is a paradox: a sophisticated dining environment on a rural site in the Berkshire Hills, which looks out over an old orchard to a panoramic view east, south and west. An entrance gallery-lounge-bar element runs through the building as a slate-paved street, with a skylighted courtyard at the center. At a level four feet higher, and separated by a low parapet wall, are two dining rooms which can be separated by low modular panels (designed to double as waiters' stations) to provide private dining space. For further flexibility, the courtyard can be stripped of its furnishings to permit it to be used as a theater.

PHASES, Bernardston, Massachusetts. Architects: *Drummey Rosane Anderson—principal-in-charge: David W. Anderson; project architect: William V. Gillen; design architect: Jack L. Frazier.* Designers and planners: *Ferguson Sorrentino Design Incorporated.* Engineers: *Patrick J. Menehan* (structural); *Robert W. Hall, Inc.* (mechanical/electrical). Consultants: *Ferguson Sorrentino Design Incorporated* (graphics); *Stuart Levin* (restaurant). Contractor: *Vincent & Williams, Inc.*

Vincent D'Addario photos except as noted



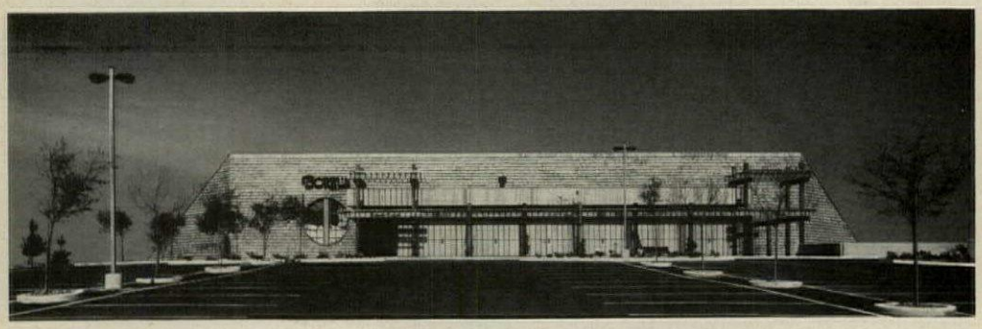
1. Courtyard
2. Entrance
3. East dining room
4. West dining room
5. Bar and lounge
6. Outdoor lounge
7. Kitchen

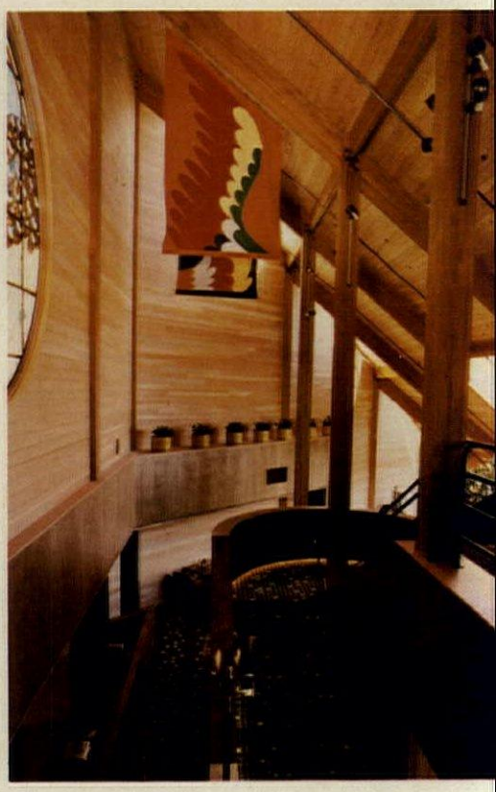
Wayne Soverns

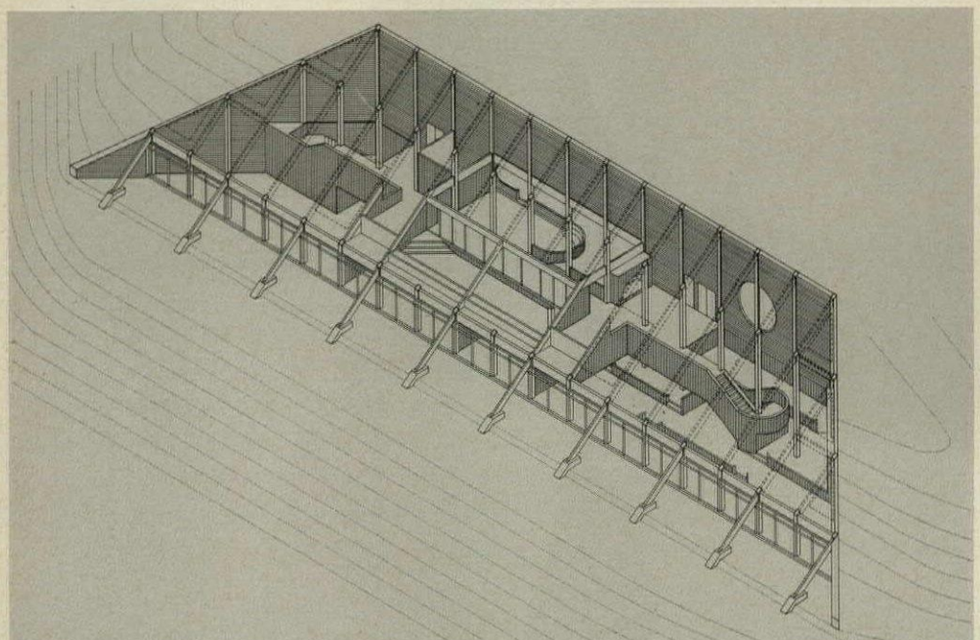
A TRIANGULAR SECTION GIVES AN EYE-CATCHING IDENTITY

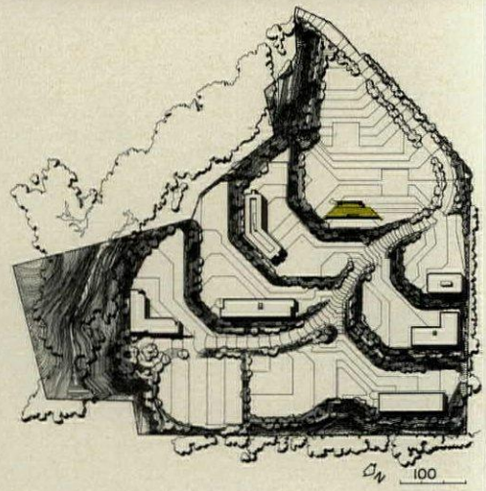
The site for this restaurant is the highest point in an office park, some 30 miles south of San Francisco. The rough texture of cedar shake roof and side walls, and the triangular form of the building set it off from the nearby concrete-framed office buildings, and give it the desirable identity such a business requires. The triangular section also provides interior space of exceptional height—40 feet—in the dining areas. The entrance from the parking area is at the mezzanine level, where bar and lounge are located, and from which a dramatic stairway leads down to dining and cafe rooms. A diversity of woods—Douglas fir glue-laminated beams and columns, left exposed, paneling of stained fir and redwood, and decking of hemlock is used for interior surfaces.

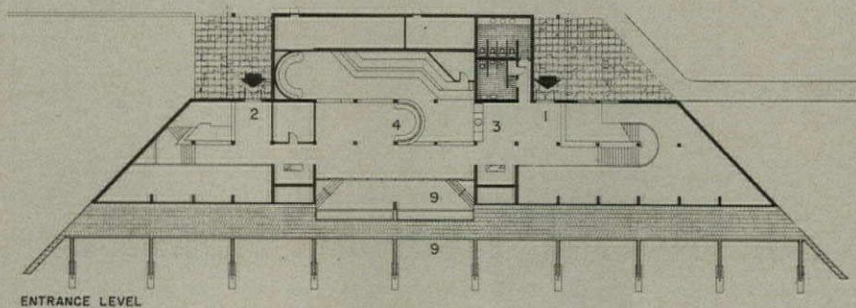
BOREL RESTAURANT, Peninsula Office Park, San Mateo, California. Architects: *Robinson and Mills.* Engineers: *Richard R. Bradshaw Engineers, Inc.* (structural). Consultants: *William Klein Engineers* (lighting); *Lee & Praszker* (soils); *Reis & Manwaring* (graphics); *Donald Campbell* (laser artist). Contractor: *WEBcor Builders, Inc.*

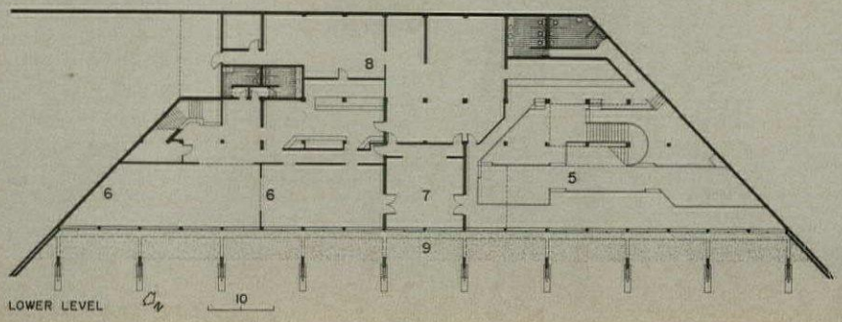




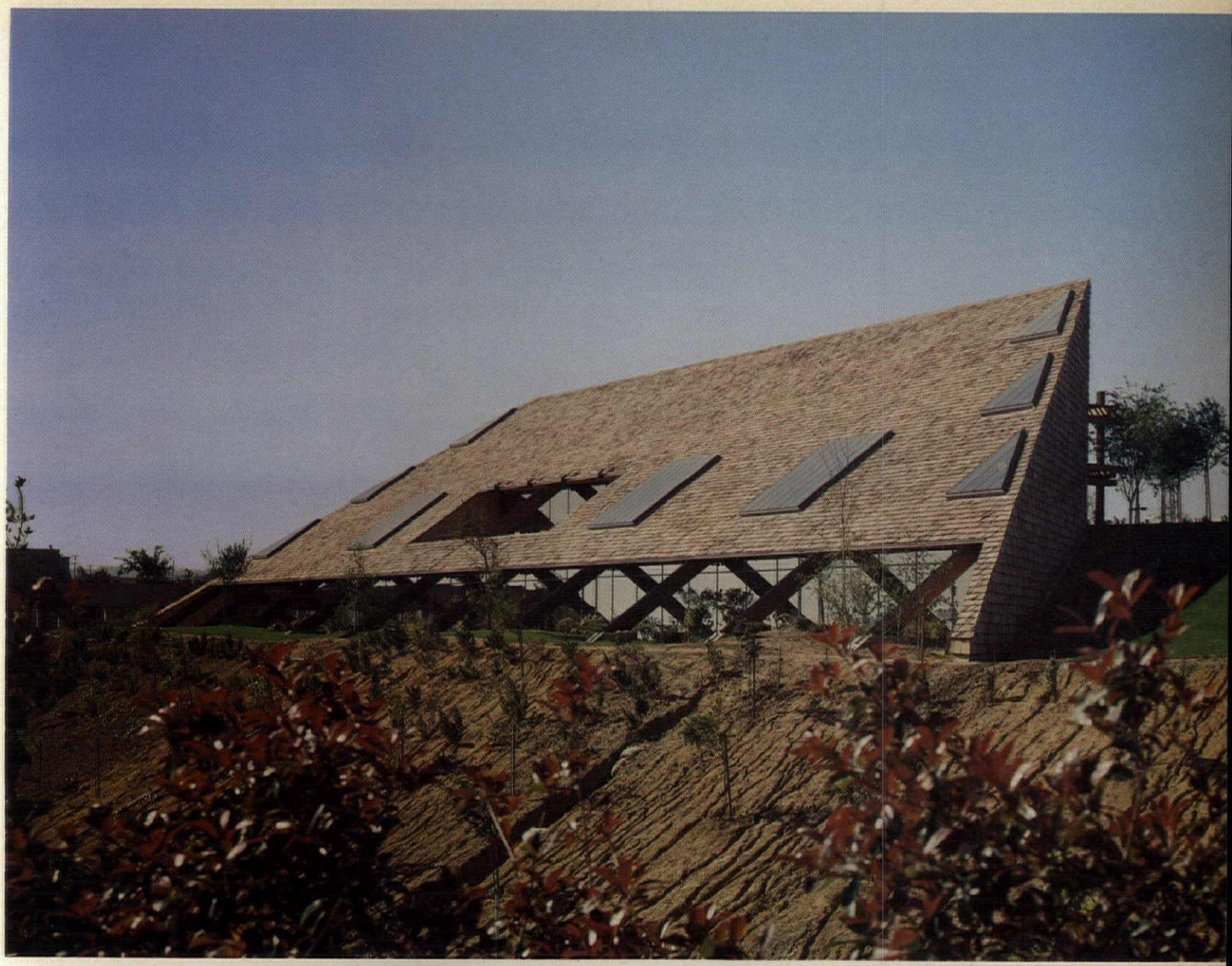








1. Dining entrance
2. Coffee shop entrance
3. Waiting area
4. Bar and lounge
5. Dining room
6. Coffee shop
7. Banquet room
8. Kitchen
9. Outdoor terrace



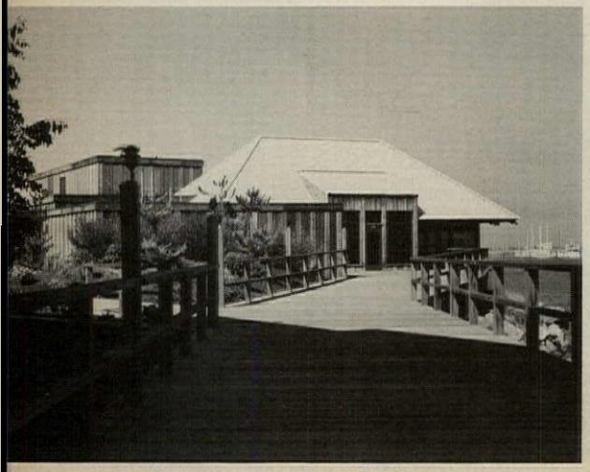
Robert Brandeis photos

SOUTH SEA ATMOSPHERE CREATED WITH CONTEMPORARY SIMPLICITY

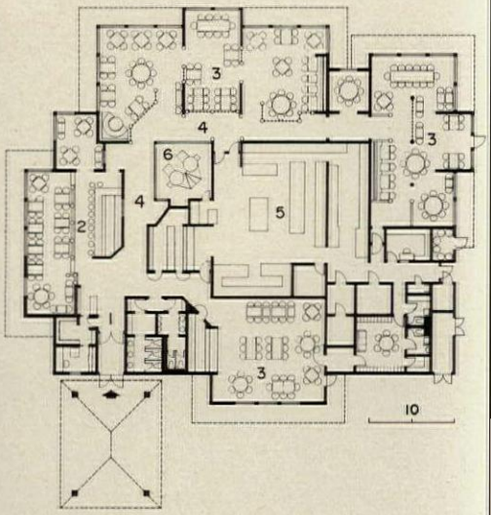
This Trader Vic's restaurant is in a new waterfront commercial-residential development at Emeryville, on the eastern shore of San Francisco Bay. Its site, on the edge of a man-made promontory, has a splendid view of the city across the water. Like other restaurants in this chain, the building is Polynesian in character. Corrugated asbestos cement panels on hipped roofs, redwood board and batten walls, and the look of a collection of shelters rather than of a single building, produce the required effect—but with a pleasantly light touch. Interior details are contemporary and simple, in contrast to the rich display of South Sea objects. Circulation for service to perimeter dining rooms is by a meandering gallery from the centrally located kitchen-service area.

TRADER VIC'S, Emeryville, California. Architects: *Chan/Rader & Associates—Lun Chan, partner-in-charge; Andre Tchikovani, Arthur Dacany, Leonard M. Tivol, staff.* Engineers: *Leong/Razzano & Associates* (structural); *Charles & Braun* (mechanical); *Mazzetti & Parish* (electrical). Contractor: *Lathrop Construction Co.*

Bernard Poinssot photos



Rondal Partridge



1. Entry
2. Bar & lounge
3. Dining
4. Galley
5. Kitchen
6. Chinese ovens

Discrimination in housing design

Houses in Oak Bluffs, Martha's Vineyard

. . . not between black and white, but between "front" and "back," "public" and "private," "ours" and "yours." Rigid general discriminations are a basic part of the process of contemporary housing design—and they could be a basic part of its undoing.

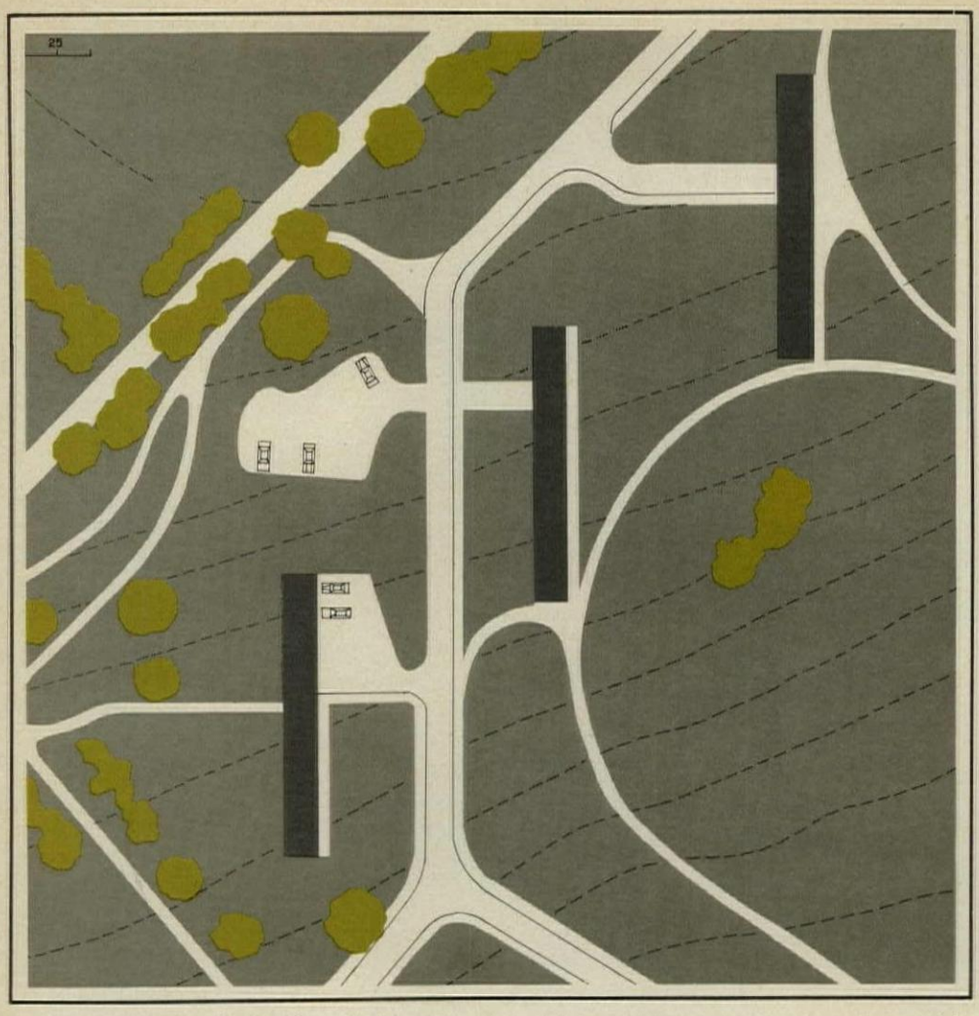
There is a design technique taught in schools, practiced in practice, so well-learned and so familiar that many designers never question the fact that they are using it. It is the technique of *discrimination*—of analyzing and dissecting a design problem into discrete and, it is hoped, essential components. Take the Zip-a-Tone colors of a planner's Land Use Map; they discriminate by consecrating whole areas of a city exclusively to some particular use. The governmental bureaucracies that regulate design also make careful discriminations—between, for instance, circulation space in a building on the one hand, and habitable space on the other (assuming, we might guess, that it is not possible to circulate in a room, or to inhabit a corridor). Architects practice discrimination when they separate out all of the programmatic requirements for a building and assign some amount of square footage to each. Then, with the help of bubble diagrams, or a Functional Relationships Matrix, they analyze and demonstrate how each part relates to all the other parts. They also make broad, general assumptions about public and private zones, and the zones needed for mechanical equipment and for vehicular and pedestrian movement.

What results is a universe made up of individual parts. We learn to assume, first, that all these parts can be identified, and, second, that each of them is only itself (green Zip, say, on the planner's map) and not to some extent some other (red). These assumptions become surprisingly well ingrained, so that a lot of excitement can be generated when architects start talking about contrary notions like "mixed uses" in a building, or a "mixed income" housing development, because these kinds of buildings deny the either/or relationship of parts (either green or red) and substitute a less clearly schematic both/and. When asked what kind of building is that, most of us find it easier to say "offices for multinational corporations," or "housing for the poor"—which is to say that most of us find it easier to cope with essential entities than with essential ambiguities.

Who says designing by discrimination is bad?

Nobody can deny that it makes perfectly good sense to understand a problem by trying to understand its parts. Accordingly, contemporary architectural practice has subjected just about every conceivable part of the design and construction process to analysis and to discriminations. The whole process is seen as a collection of separate, smaller processes (architectural design, structural design, mechanical and electrical design, site planning, etc.), and its sequence is seen as several separate and identifiable stages (programming, schematic design, design development, etc.).

High-style twentieth-century architectural theory, moreover, has made a considerable point of trying to find essential and pure *forms* to express a building's function, and to separate them off from mere and meretricious details. Take as an example the housing blocks designed by London County Council in Roehampton, shown overleaf. They are classic ex-



Roehampton, London County Council's late 50's vision of domestic bliss—beautiful white concrete slabs floating above Richmond Park. Note how the residents' gardens have migrated up onto the terraces.

Gerald Allen photos

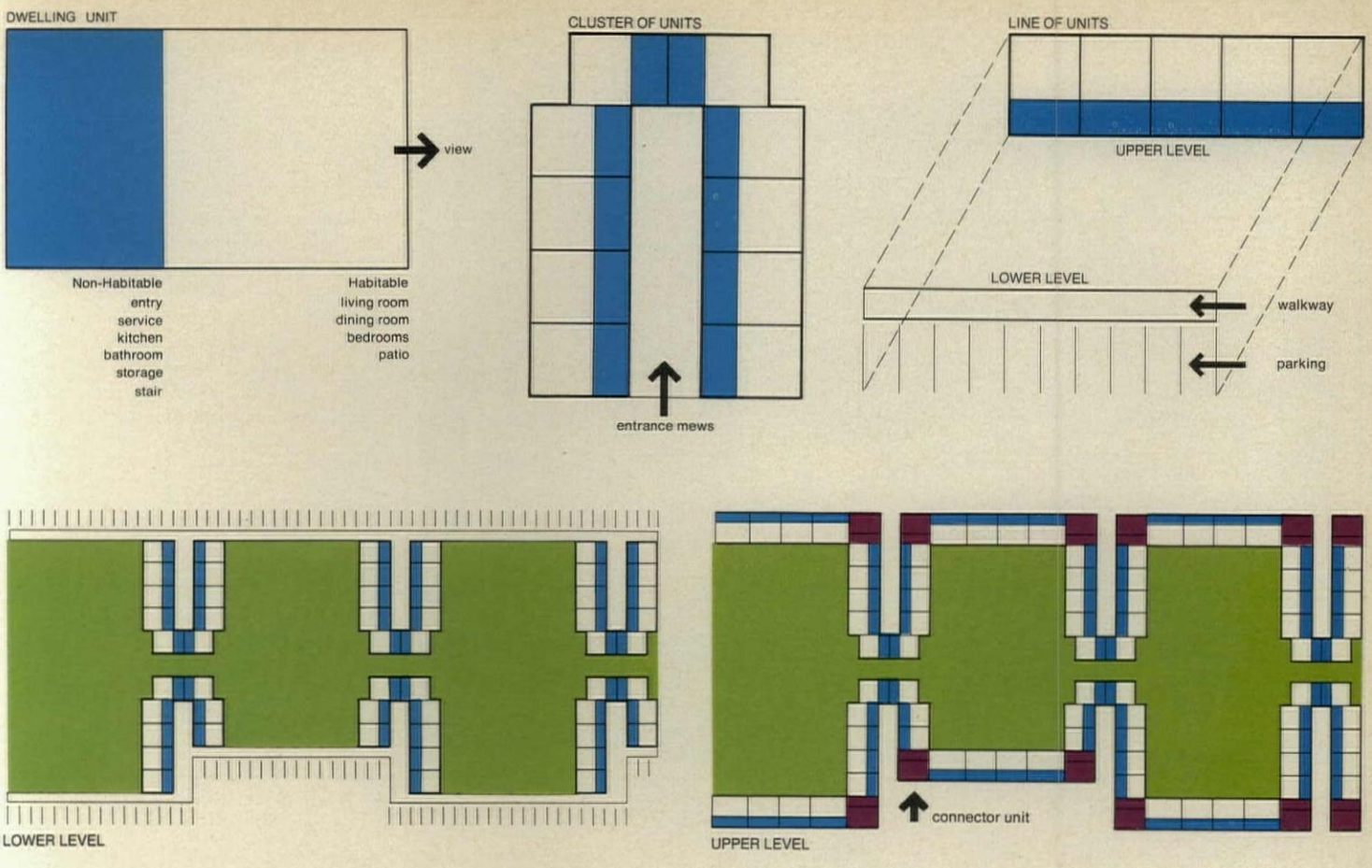
amples of Modern housing design, though their success is probably due as much as anything else to the fact that Richmond Park, where they stand, is so evidently a nice place to live—unlike the sites of other twentieth-century classics, like St. Louis' infamous Pruitt-Igoe (or, for that matter, Marseilles' famous Unité d'habitation).

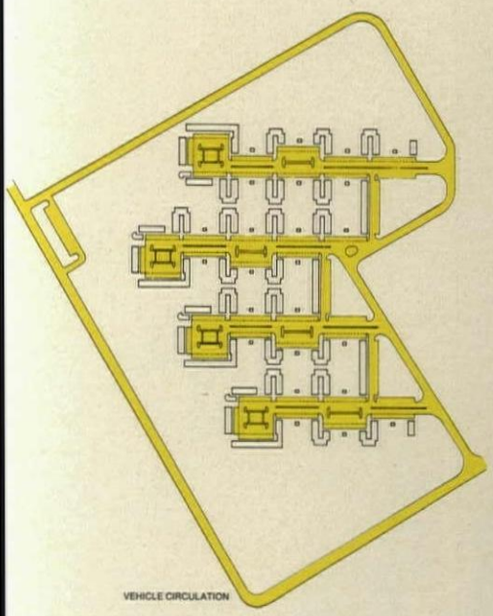
In any case, the design of the Roehampton housing is based on a host of careful discriminations. Two-story apartment units, whose separateness is clearly indicated on the outside, gather together to form giant slabs which not only look different from their natural surroundings (because of their whiteness and their plain forms), but are actually separate from it (by virtue of being raised up off the ground on columns). Notice how easy it is, even without identifying labels, to tell what is what on the site plan: buildings are clearly buildings, roads roads, and footpaths footpaths—all carefully distinct systems floating on a pleasant and undifferentiated greensward.

How the diagnosis can become the cure

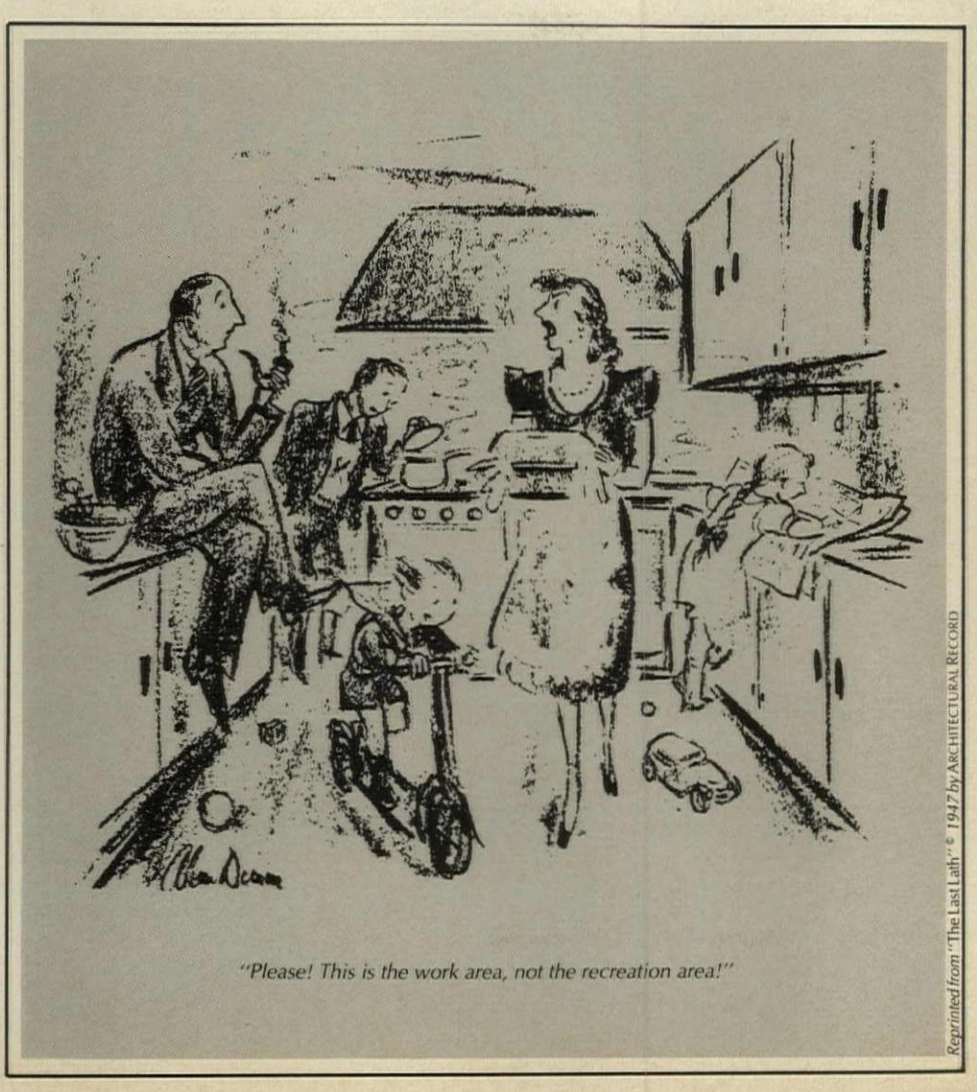
The Roehampton housing—no matter what the real reasons for its success are—probably came about as the result of an elaborate process of discrimination, a process that may well have been something like the one shown on the opposite page. This is for a low-rise, low-density housing development designed by architects Charles Gwathmey and Robert Siegel (and shown more fully in RECORD, July 1974, pages 105-109).

The Gwathmey Siegel diagrams seem conspicuously reasonable—a set of analytical assumptions that seem to march inexorably toward an architectural solution. For this reason, and also because so many architects are used to designing in just this way, these diagrams are a good example of the way an overly exclusive analysis can not only falsify the problem at times, but can also seem so incisive and compelling that it gets mistaken for a solution. (This is not, of course, to say that Gwathmey and Siegel have come up with a bad design; there is no way of telling yet, since their housing is not yet built.) At the outset, the architect's distinction between "habitable" and "non-habitable" spaces in each dwelling unit seems perfectly sensible, and it recalls other more or less similar discriminations, like Kahn's "served" and "servant" spaces, or Venturi's "specific" and "unspecific" spaces—though some people would probably wonder about Gwathmey and Siegel's terminology (shouldn't a kitchen or a stairway be "habitable," just like a living room?). In any case, the point is that a discrimination is being made between two kinds of interior spaces. It may be a very good one, but, once made, it establishes a pattern of further discriminations that may turn out to be much less appropriate. Thus Gwathmey and Siegel's distinction between "habitable" and "non-habitable" spaces seems to require that all of the so-called non-habitable spaces face the entrance side of the dwelling units. Parking naturally goes on this side, and so do the roads for the cars to arrive on. This becomes a kind of "public" side. By contrast, the view goes on the other side,





A logical process revealed—Space in the individual apartment unit (top left) is divided into "habitable" and "non-habitable" (blue) areas. The units are then clustered in one of two ways (top center and right), with the non-habitable areas facing the public zones and the habitable areas facing the view. Next, these clusters are gathered in larger groups, and, with the imposition of the vehicular circulation diagram (above, in yellow), the site plan emerges; it is for the Whitney Road Residential development in Perrinton, New York, by Gwathmey Siegel Architects. By contrast, Alan Dunn's adjacent cartoon offers an appraisal of this kind of design logic.

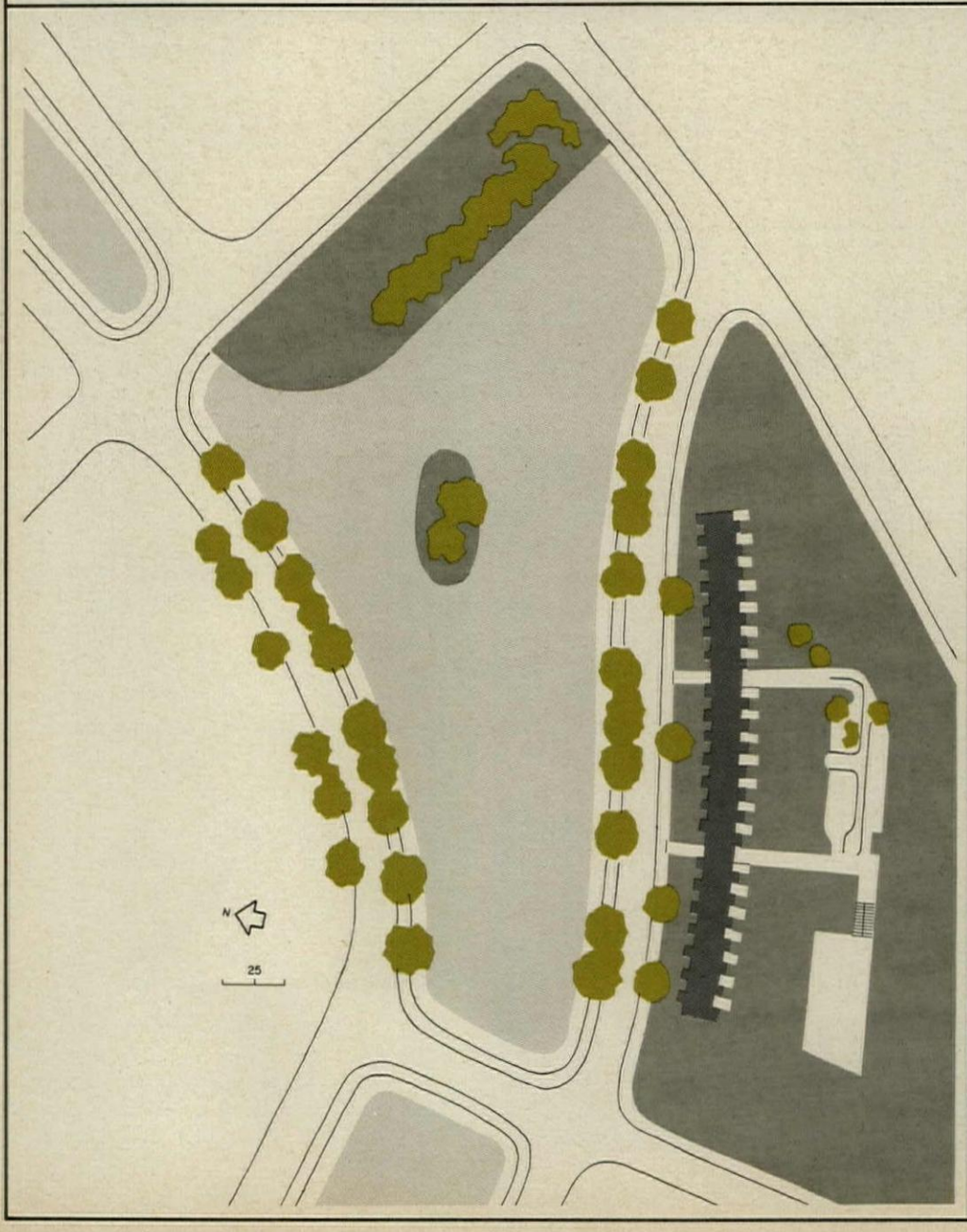


"Please! This is the work area, not the recreation area!"

Reprinted from "The Last Laugh," © 1947 by ARCHITECTURAL RECORD

The Greater London Council Housing in Paddington is designed in a modern vocabulary, but carefully formed around an older neighborhood, known as Little Venice (photo left). Here a canal is surrounded on all sides but one by handsome early nineteenth-century houses. On the final side, and replacing deteriorated buildings, is the new GLC housing. Its architects have tried to make the new building "fit" its older surroundings. The scale of the windows and bays of the older buildings is replicated (photo below), as was their cream painted stucco finish. The bottom floor apartments are studios for the elderly; the units above are three-bedroom duplexes, with large living rooms that look out over the canal.

GREATER LONDON COUNCIL HOUSING, Paddington, London. Architect: *Hubert Bennett—job architect: Sheila Williams.* Engineers: *J. H. Humphreys, GLC Engineer, and The Helical Bar and Engineering Company Ltd.* (structural), *C. A. Belcher, GLC Engineer* (mechanical/electrical). General contractor: *William Willett, Ltd.*



Gerald Allen photos

where it can be seen from the habitable spaces, and this becomes a kind of "private" side. Thus one result of this chain of discriminations—subtle and perhaps unintentional—is that there can get to be a "good" side and a "bad" side. The bad side is the result of separating out elements in the design that are less attractive and more problematical (like the accommodation of parked cars) or potentially dangerous (like the paths vehicles move on), and lumping them together, away from the other, "nice" things. This process, incidentally, which is here described purely in terms of architectural design, is startingly similar to what happens in cases of social discrimination, where those people who are discriminated against end up all together in a ghetto, with the seemingly magical power to gather all the physical and economic and social ills of the society around them. And so it is well worth asking whether or not too ruthless a discrimination by the architect between public and private, for instance, may not inevitably but unintentionally lead to unhealthy discriminations between "yours" and "ours," "dangerous" and "safe," or "bad" and "good."

Parceling out the caring indiscriminately

A sure measure of how successful certain housing is is how well people like it, and how well they like it is surely reflected in how much their care for it shows. The format of the housing itself may provide a vehicle for the caring, as it does in the meticulous gingerbread details traditionally provided on the houses in Oak Bluffs in Martha's Vineyard, Massachusetts (shown on page 141). Or the caring may be expressed in contradiction of the format, like the miniature gardens the residents of Roehampton have made on the terraces of their apartments, contrary to the design "concept," which separates the natural (Richmond Park) from the man-made (the plain concrete slabs).

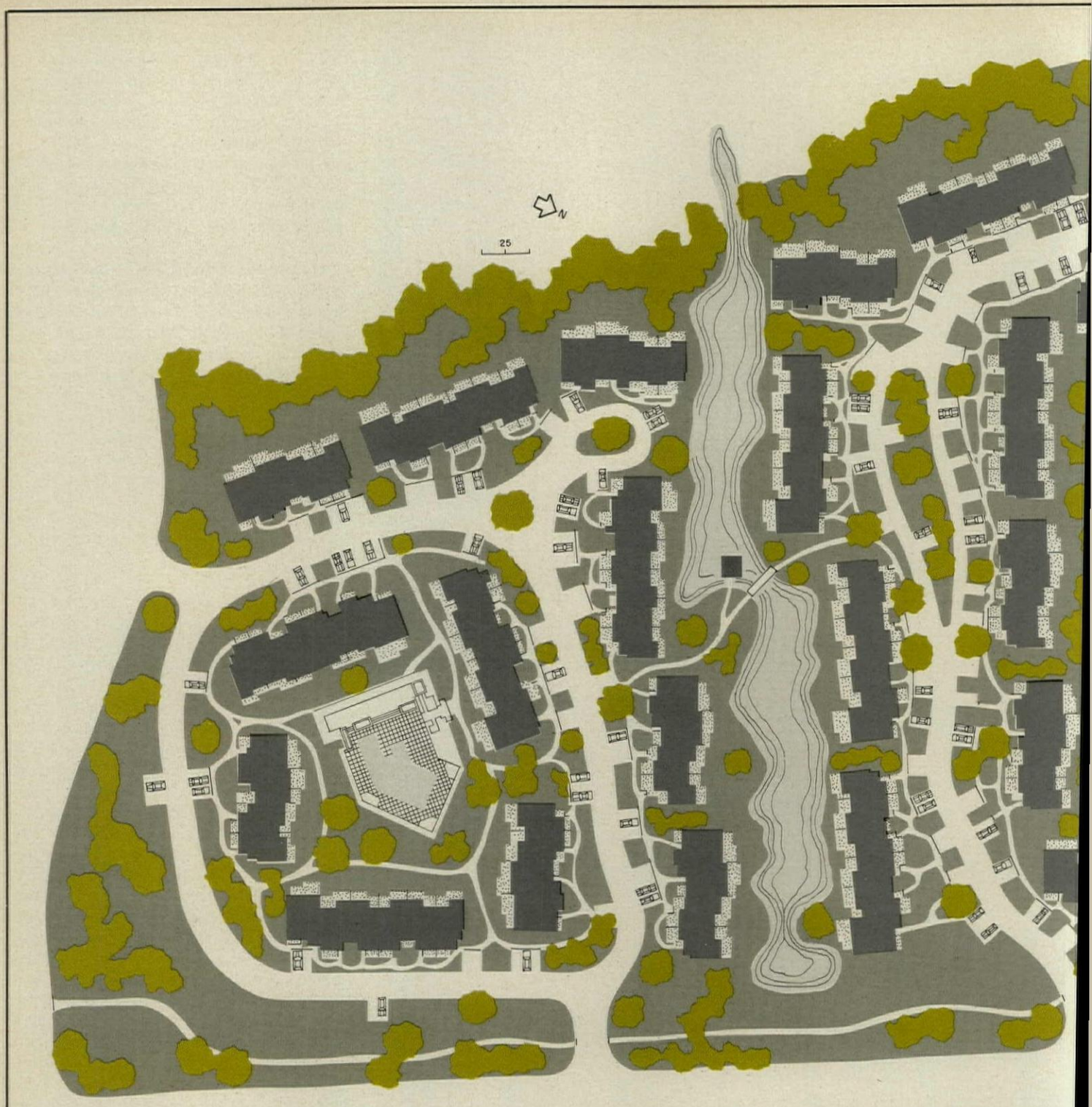
By the same token, the absence of signs of care may well signal bad housing, no matter where it occurs—and people's sense that there is nothing in their general residential environment worth caring about, or that their concern won't make any difference, or that it will be overwhelmed—all this may be a *cause,* not just a result, of bad places to live in. And *its* effect may not be simply the standard ones most Americans have heard about, but not actually seen—violent crime in city streets laden with garbage. Its effect may finally extend to wide suburban streets inhabited mostly by cars, and to houses whose blank facades and open garages clearly say that the caring is out back by the barbeque and the swimming pool.

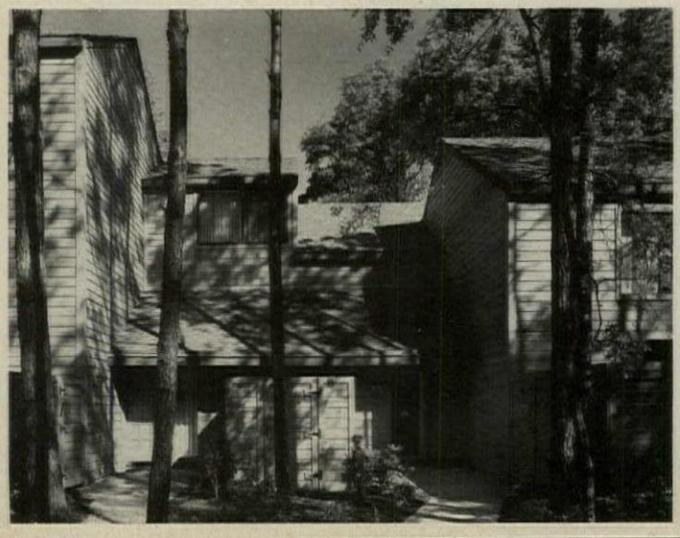
A consistent experience versus a consistent form

The solution to these problems, insofar as architecture by itself has the power to effect broad social solutions, is bound to be in a kind of residential environment that at least does not prevent care in any of its parts, and that, with any luck, invites it in all of them.

But what will that entail? For one thing, it may entail avoiding foolish consistency, however appealing consistency may be. Consider,

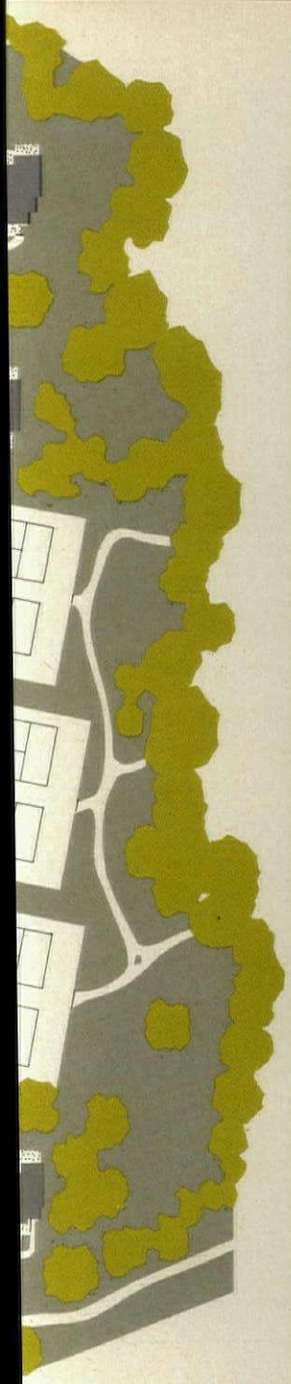
continued on page 148





Heritage Villas on Hilton Head Island are arranged according to the familiar format of rows of houses along curving streets and cul-de-sacs. Three more or less well defined zones—a swimming pool, a lagoon and tennis courts—are separated from the roads by the houses. All the parts, though, seem less memorable than the whole place, which is wooded, mainly with pine and oak, and redolent of the images and moods of this warm southern island. The houses are modest and leave the theme-making to the site.

HERITAGE VILLAS, Sea Pines Plantation, Hilton Head Island, South Carolina. Owners: *The Landmarks Group Incorporated and the Sea Pines Plantation Company*. Architects: *Cooper Carry and Associates—project architect: Rodger Dodson*. Consultant: *Harry Clements, Jr., Georgia Nursery and Landscape Company* (landscape). General contractor: *Marthame Sanders and Company*.



E. Alan McGee photos

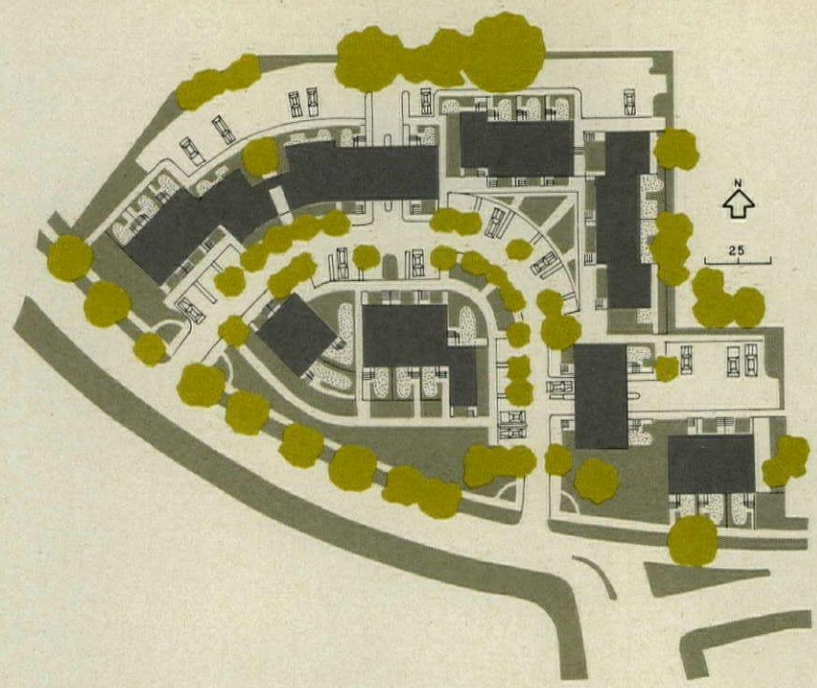
continued from page 145

for instance, the case of the schematic design for a house that has public space in front, private space out back, the car in a carport, the furnace in the furnace room, and kitchen, baths, bedrooms and living room all neatly consigned to their proper places. It makes a consistent, logical system—as an abstract representation lying on the architect's drafting board. The problem is that, for all its consistency, it can be deeply at odds with a totally different kind of consistency—that of the human sensibility, which presumably does not change as it moves from the garage (which may be cold and damp and cluttered) or from the public space (which may be dangerous) inside the house to the kitchen (perhaps designed around the appliances more than for their owner's comfort) or to the living room (which may be completely splendid).

All of the designs that are shown here and on the following seven and the preceding four pages make efforts in many directions at once to form residential environments not so much around a diagrammatic, conceptual consistency as around the consistent sensibilities of the inhabitants. The designs shown on the previous four pages—one in London, and one on Hilton Head Island in South Carolina—make whole places, the former by adapting itself carefully to the qualities of the neighboring buildings, and the latter by being carefully modest and unobtrusive in order not to destroy the qualities of the natural site, which then become themselves the qualities of the housing environment.

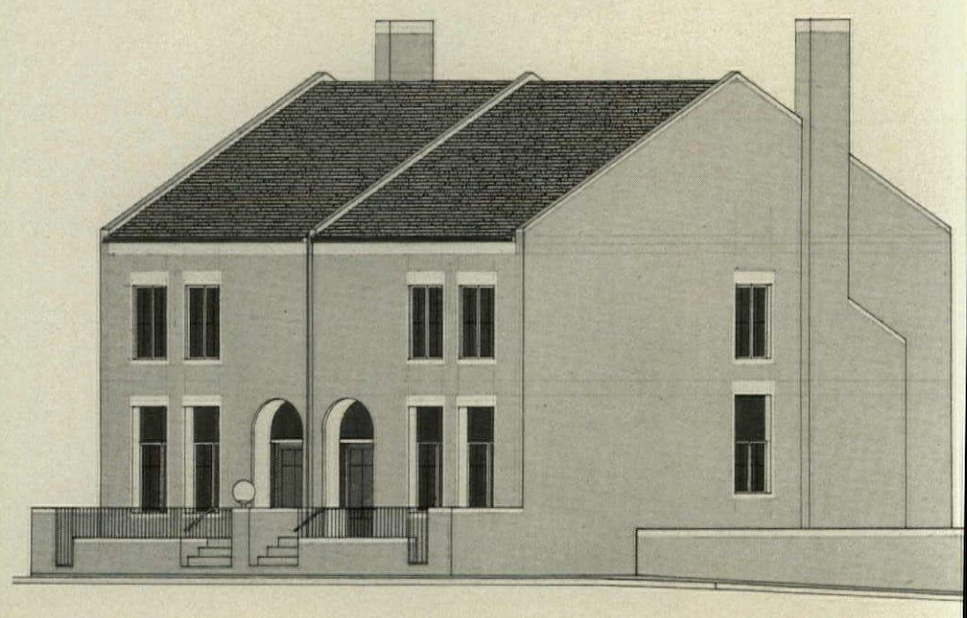
On this and the following pages are a series of designs for housing which organize themselves around community spaces (almost all of them streets) in an active attempt to enliven those spaces while at the same time making private places to live adjacent to them. All of these designs, too, have to deal in some way and at some scale with the difficult problem of accomodating the automobile—which, in the housing in London, was not a problem because few people who live there own cars, and which, in the housing on Hilton Head Island, was fairly easily solved on a spacious site by having cars drawn up in front of each house in the traditional suburban way. In the housing designs that follow, however, the density is greater, and so is the problem of the automobile—not just because there are more of them requiring more and more parking spaces, but because their power to insulate people from their environment is increased.

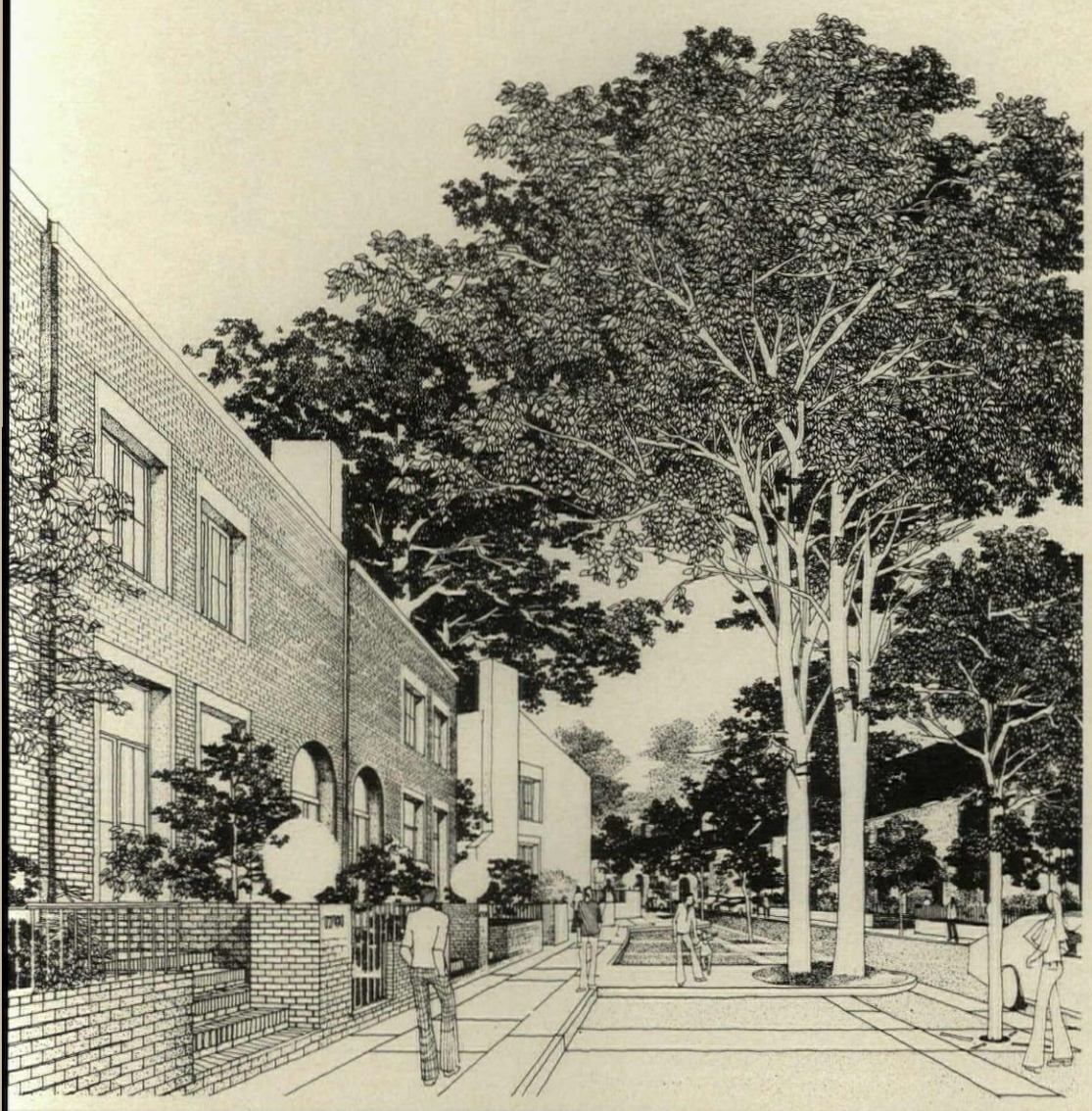
Finally, readers will notice that the designs shown on these pages look startingly, or perhaps discouragingly, traditional—a fact which is not easy to explain. One explanation was offered by Marley Carroll, head of the design team for Eastover Gates, which is shown on the right: "We didn't start out to design traditional looking houses; we just wanted to be sensible about the function and the imagery of each of the parts. So we used chimneys because fireplaces are nice, and chimneys visible on the outside seem to say 'house.' Pitched roofs let the rain drain off easily, and they have a nice profile; and large arched front doors tell you clearly where the entrance is. We were surprised when the design turned out to look traditional." —*Gerald Allen*

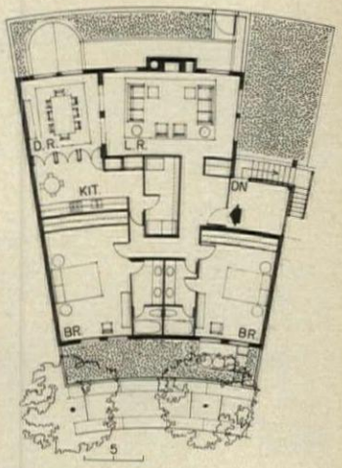


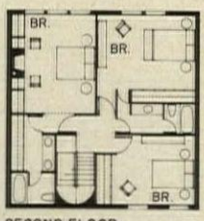
Eastover Gates is a small townhouse development in an old neighborhood with single-family houses on curving, tree-lined streets. Accordingly, and unlike many new developments, this one is similarly organized. More than half the required parking spaces are here, and the rest are behind the houses. The architect's first concern in planning the site was to create a place that could be comfortably inhabited by people and cars, whether stationary or in motion. But they were also careful to make the soft delineations—between, for instance, street and sidewalk, or sidewalk and the front steps and gardens of the houses—that tell what is whose in this public space.

EASTOVER GATES, Charlotte, North Carolina. Architects: *Wolf Associates—design team: Marley Carroll, Paul Poetzsch, Aid Mistri.* Engineers: *Bullard/Austin Associates* (mechanical/electrical). Consultant: *Arnold Associates* (landscape).

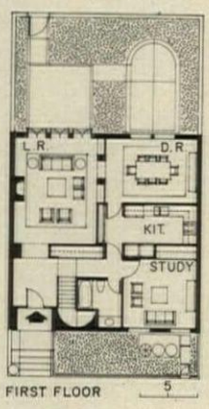




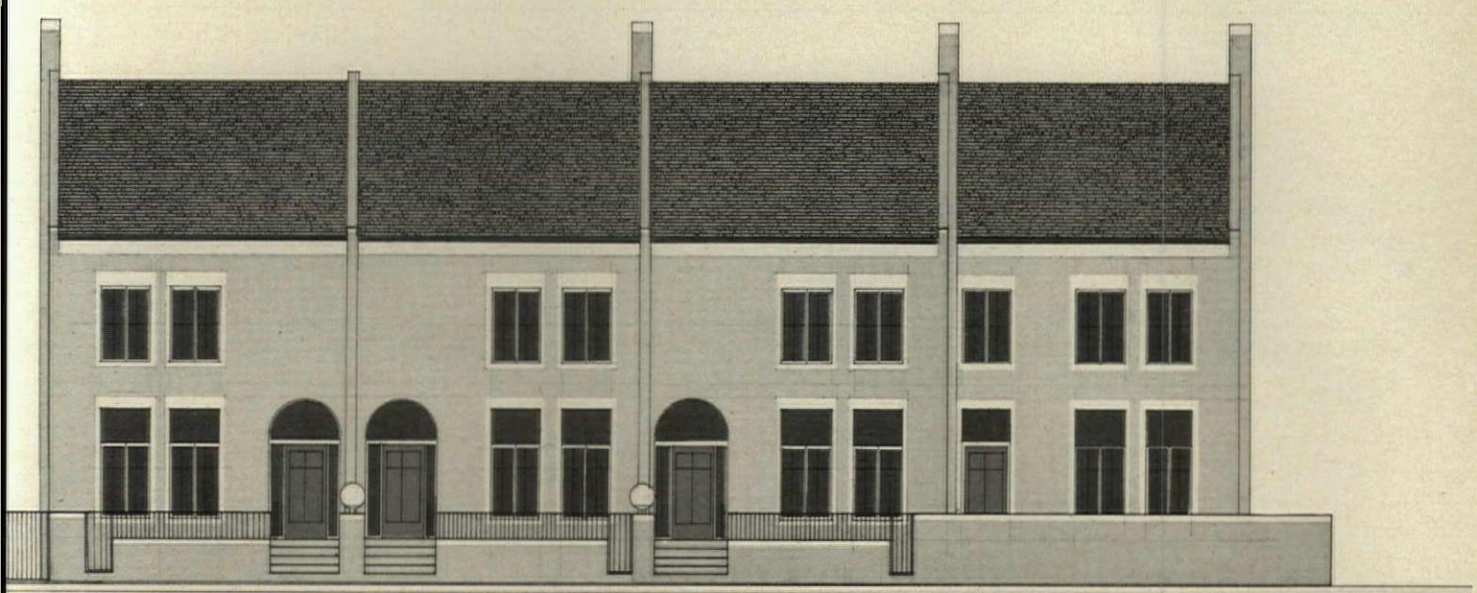


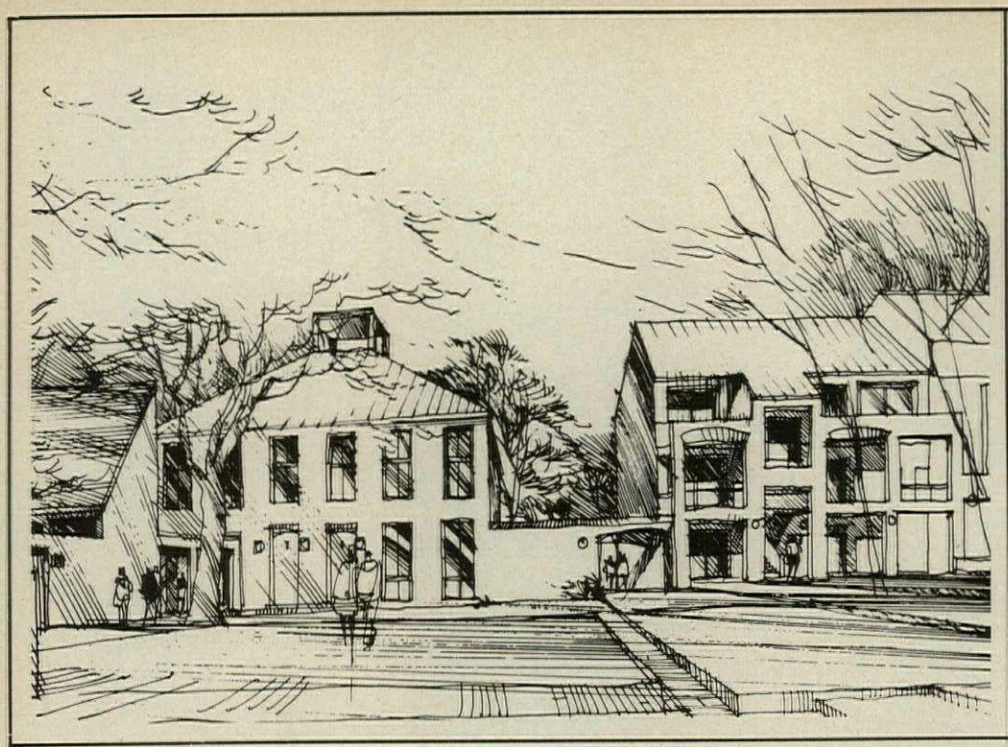


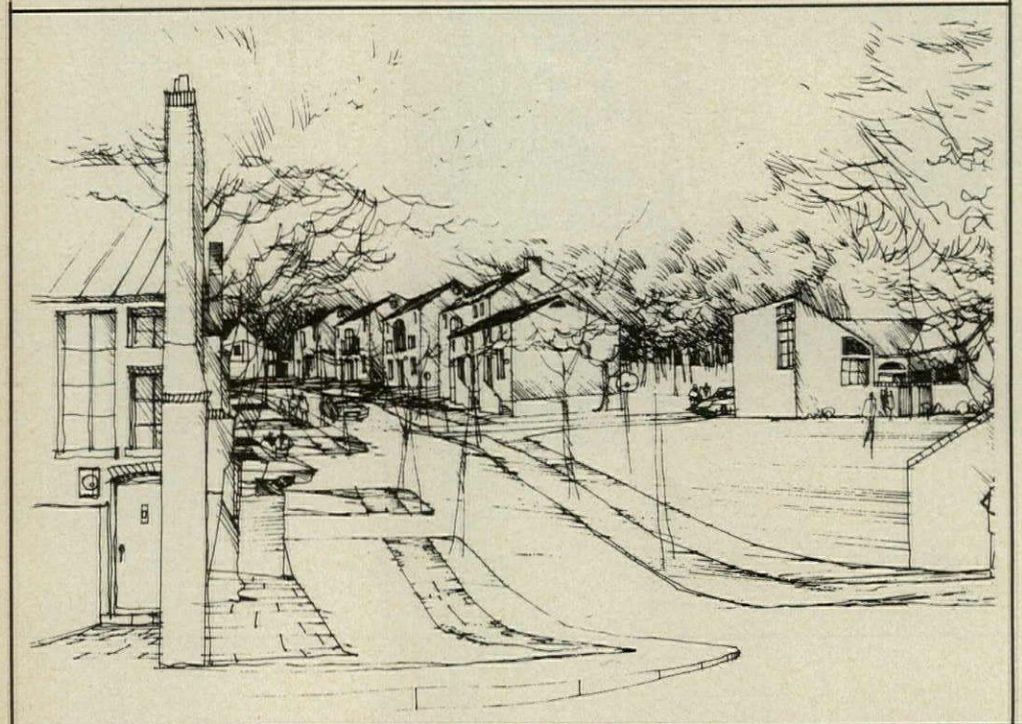
SECOND FLOOR

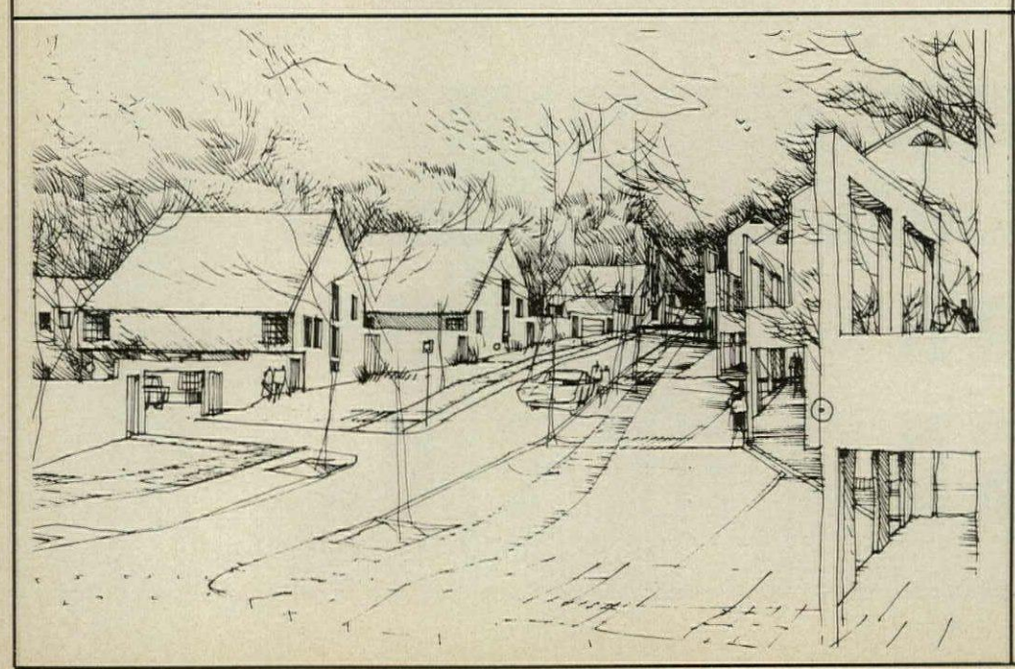


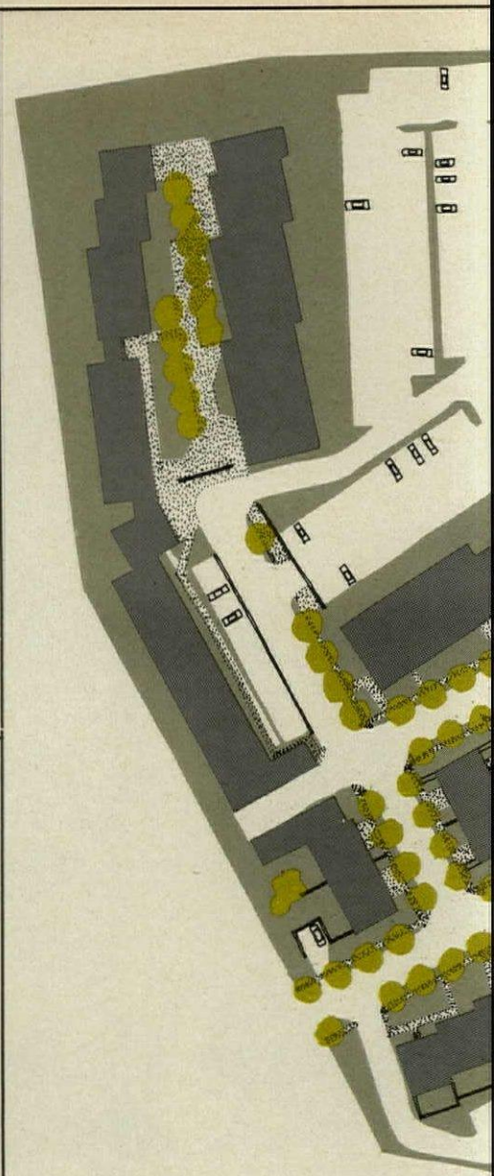
FIRST FLOOR

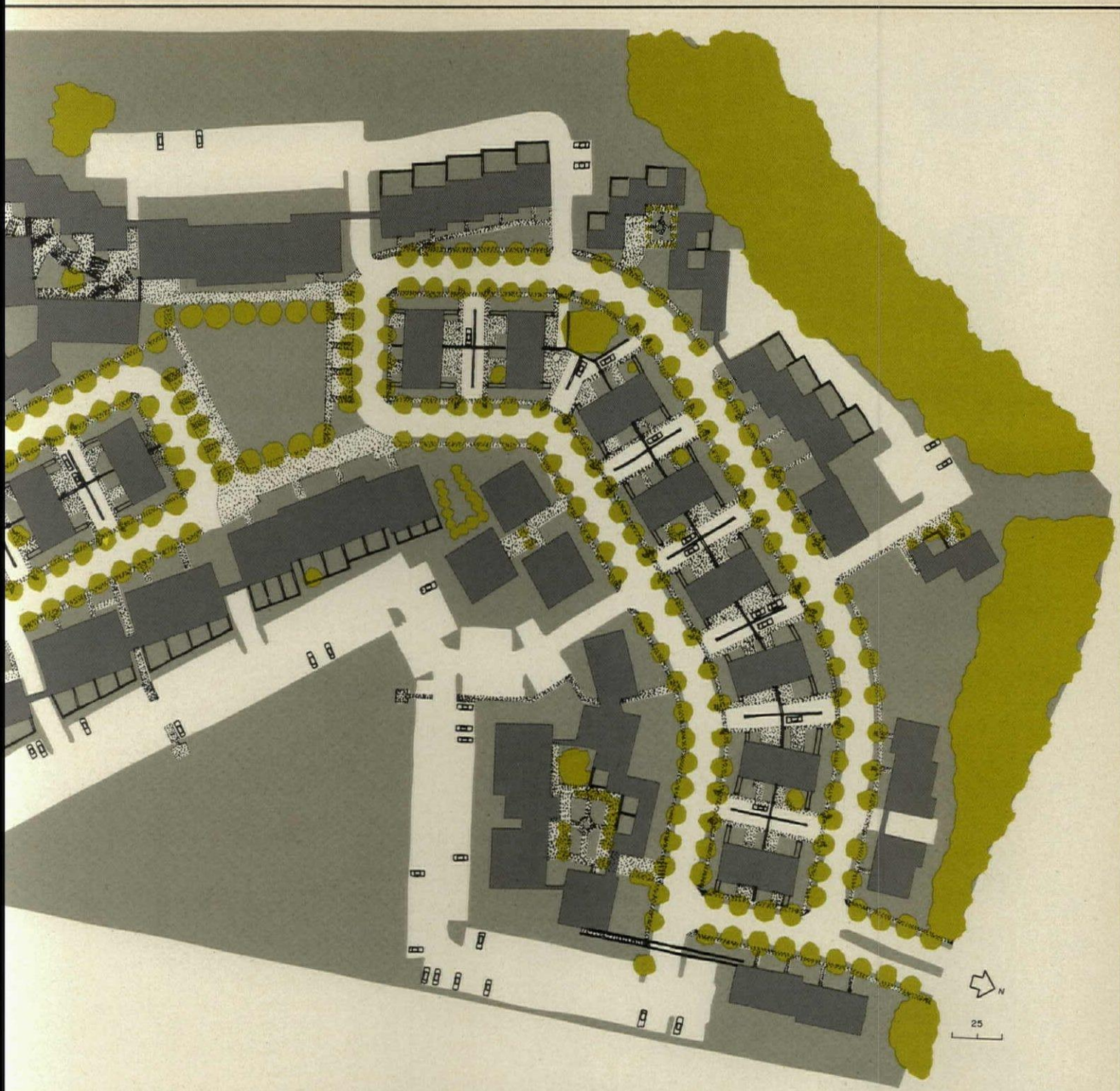












The design for the Village of Owen Brown in Columbia, Maryland, is similar in intent to that for Eastover Gates, shown on the previous two pages, in that it is organized around a street—here a series of streets. But there is one very important difference: whereas the density of Eastover Gates is about eight and a half units per acre, the density here is about 15. Thus the street itself can be counted on to provide only visitor parking, and the parking for the residents themselves has to be provided somewhere else.

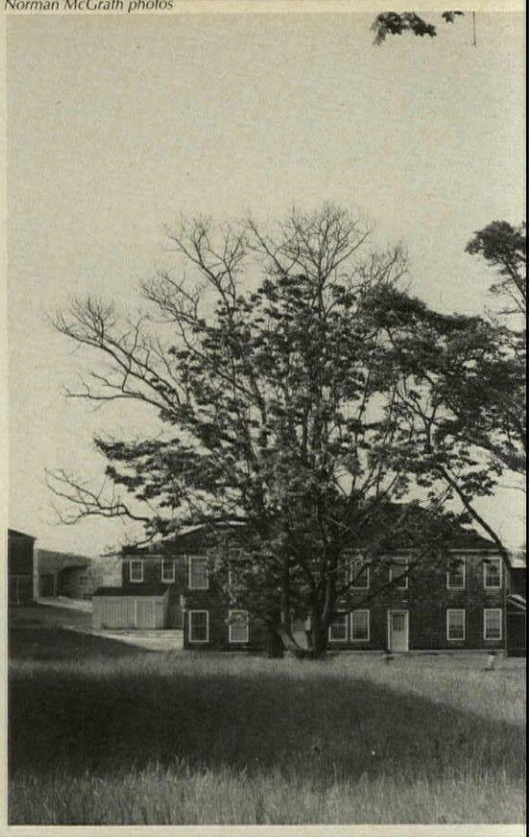
This is done in two ways. In the fourplex units, sited between the two streets, parking is immediately adjacent to the dwelling units—most often in an awkward head-on arrangement that lets the second car for a dwelling unit, if there is one, block the first. The rest of the residential parking is in conventional lots behind the dwelling units.

What is created by this arrangement is an old-fashioned street, traveled on by cars, with sidewalks for pedestrians. But most of the residents will actually arrive at the back doors of their houses, where they can park their cars. It seems worth asking whether this kind of site plan will not simply replicate the standard suburban situation, where houses almost always are entered from their back doors near where the cars park, leaving the front door (and also the front lawn) almost completely unused.

The site plan for the Village of Owen Brown is an almost exact reversal of the more usual suburban housing site plan, which provides large numbers of parking spaces (and not much else) in front of the houses, and reserves the spaces behind for various private or community activities. It is reasoned here that it is better to have these activities out front, rather than to sequester them behind.

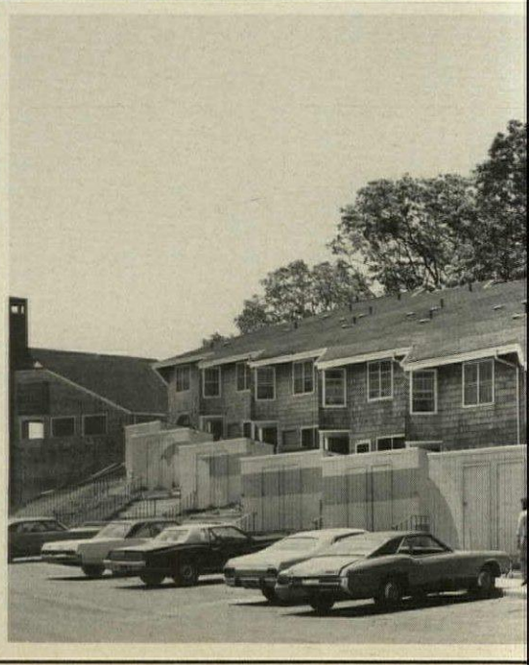
VILLAGE OF OWEN BROWN, Columbia, Maryland. Owners: *Rouse-Wates Inc.* Architects: *MLTW/Turnbull Associates—associate architects: Charles W. Moore Associates.* Engineers: *Skarda and Rikert* (structural), *Ernest Moritz and Associates* (mechanical/electrical), *Seybolt, Gore, Newquist and Berlinsky* (civil). Consultant: *Kurt Bluemel Inc.* (landscape).

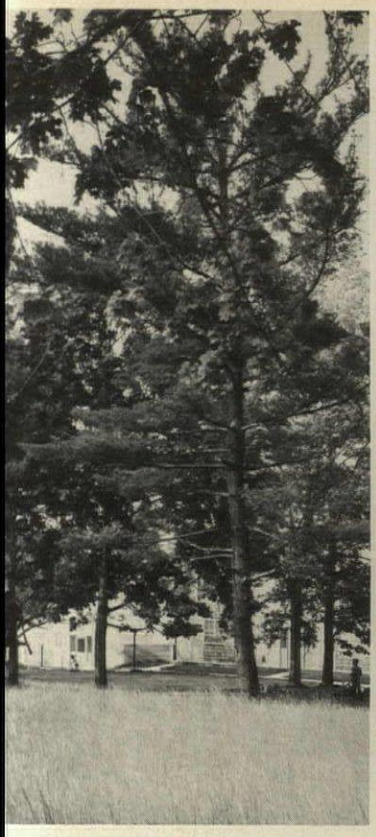
Norman McGrath photos

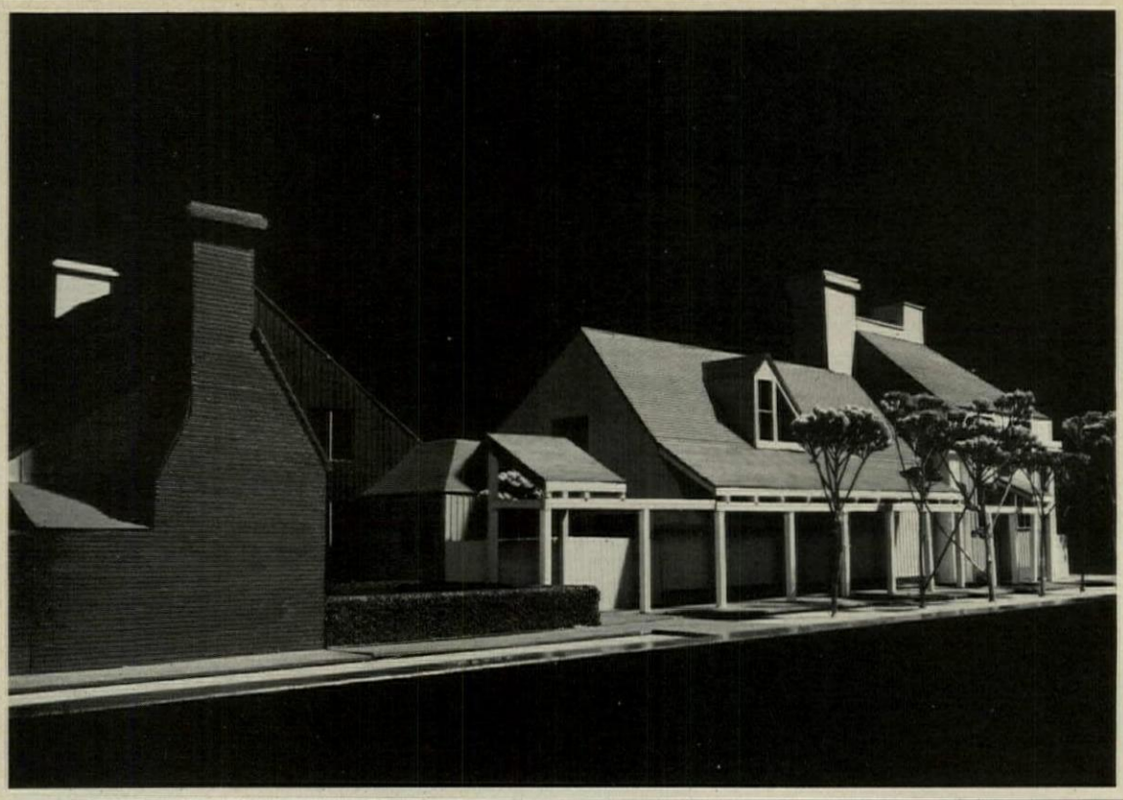


Whitman Village in Huntington, New York, is shaped around two characteristics of its site. One is that in the middle the site is open and grassy, with large, handsome old trees (photo above). The other is that on one side it is bounded by a busy four-lane road separating it from the local train station parking lot (photo above right). Accordingly, on this side the housing units turn their back on the street and on their parking in order to face the interior greensward. On the other side of the site, however, freestanding fourplexes make a much softer boundary.

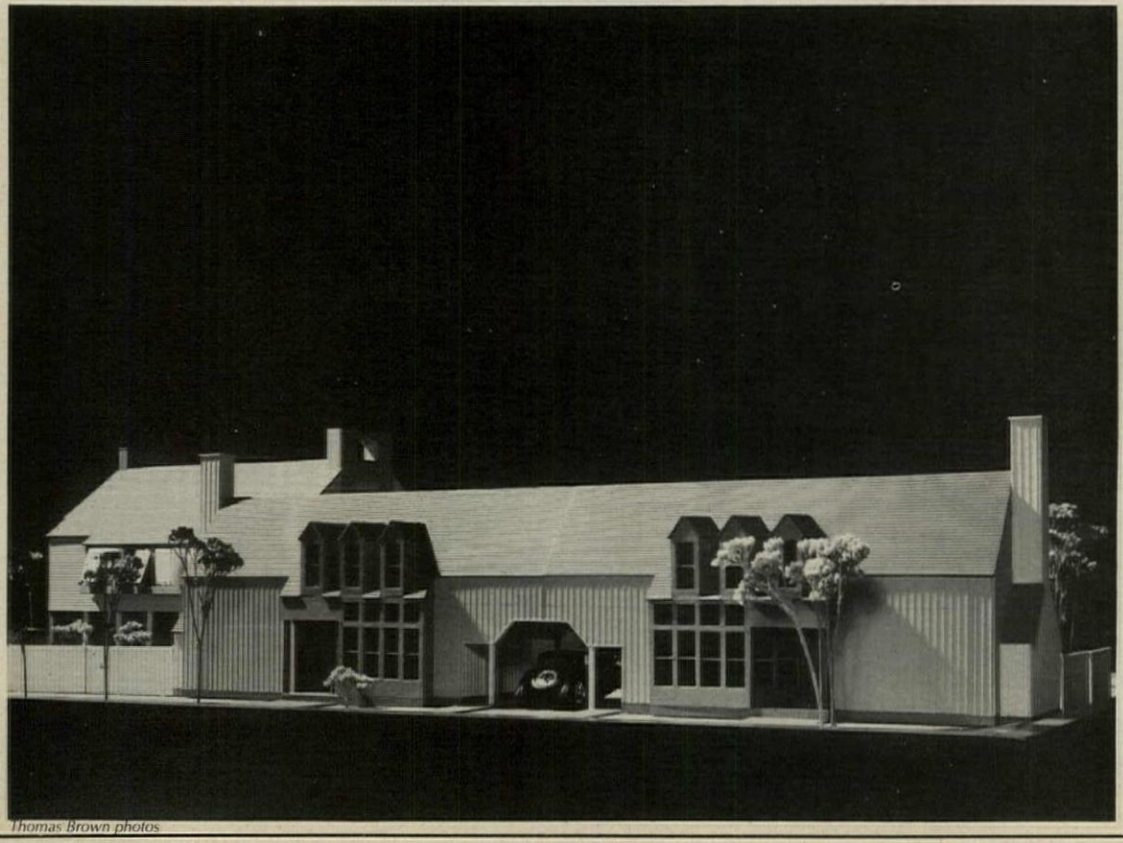
WHITMAN VILLAGE, Huntington, New York. Architects: *MLTW/Moore-Turnbull—construction administrator: Edward Johnson and Company.* Engineers: *Spiegel and Zamecnik Inc.* (structural), *John Alteri* (mechanical/electrical), *Nelson and Pope* (civil). Consultant: *David Weingarten* (graphics). Owner/contractor: *Melville Industrial Associates.*



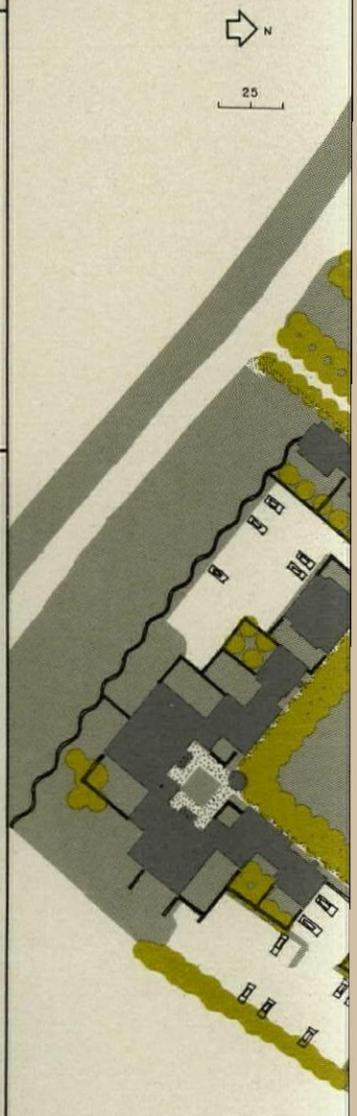


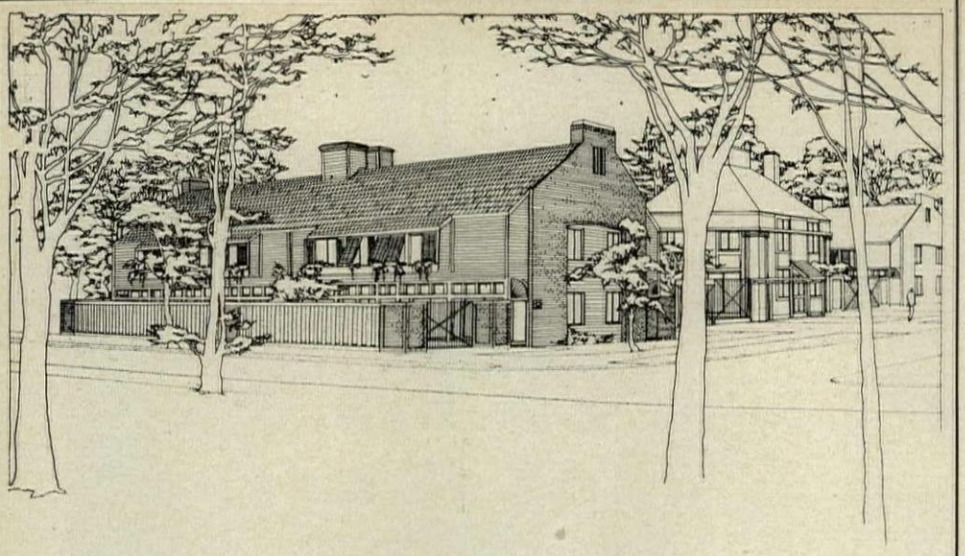


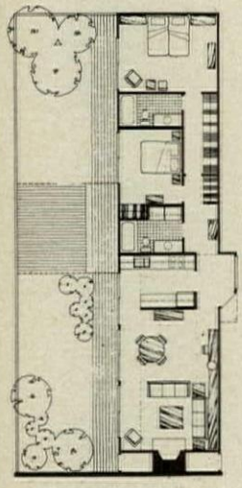
Housing for Kingsmill on the James, near Williamsburg, Virginia (see also RECORD, December 1974, pages 130-131), continues the format of Eastover Gates and Owen Brown Village, shown on the preceding pages. Here the density is about eight units to the acre, and most of the parking is provided on the street in small parking areas behind one of the two basic types of unit clusters (photo below). This building, recalling an old-fashioned garage or stable, acts as a gateway between the street and the parking area, and is in the process two houses. The site is organized more formally near the main entrance (left of the adjacent site plan), where the land is cleared and relatively flat. The organization becomes more



Thomas Brown photos







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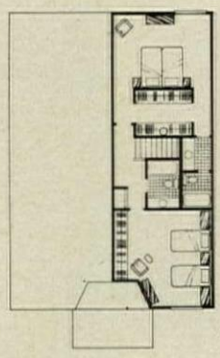

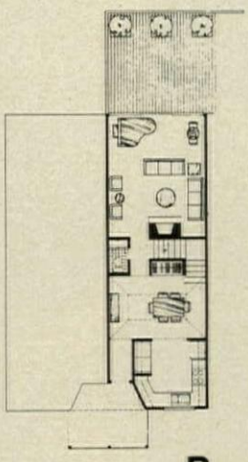

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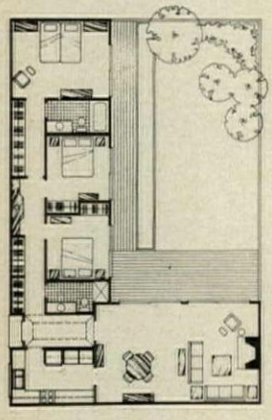

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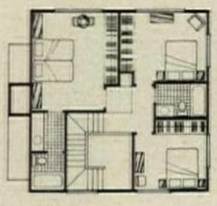
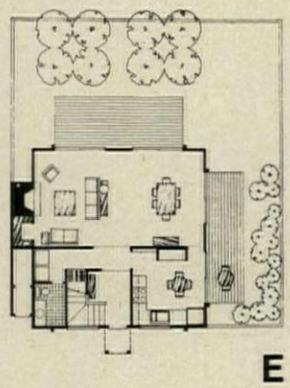




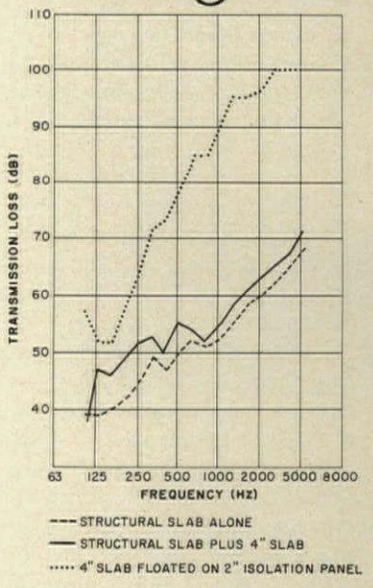
E

random and casual farther away from the entrance, where the land is heavily wooded and hilly.

Typical unit plans are shown above. Each unit sits on the ground on its own plot of land, designed to be sold outright rather than as condominiums. The rendering above shows the architects' conscious attempt to recall the look as well as something of the format of historic American towns.

KINGSMILL R-3 HOUSING DEVELOPMENT, Kingsmill on the James, Williamsburg, Virginia. Owners: *Busch Properties Incorporated.* Architects: *Charles W. Moore Associates—project architect: Robert L. Harper.*

Floating floors offer simple, economical control of airborne and impact noise



by J. Thomas Rector, AIA, Consolidated Kinetics Corporation

The kind of structural acoustic isolation that is frequently a must in custom-designed broadcasting and recording studios can be obtained with a standardized "floating-floor" system that, because of its relative economy, often finds application in other situations. A fairly common planning necessity that might profit from this built-in acoustic protection is the placement of a mechanical room (the *source*) directly above offices, conference rooms, hospital rooms, classrooms or libraries (the *receivers*), all areas requiring some degree of quiet. While the architect should try to physically separate noisy from quiet spaces during design, for a variety of reasons this is not always possible.

Isolation may also be the answer to such diverse acoustic problems as music practice rooms, which represent both noise sources and critical receivers, and low-flying jet aircraft. Impact noise under bowling alleys or beneath pedestrian malls can also be controlled.

A floating floor system consists of a concrete slab "floated" on special acoustic isolators, which in turn rest on the structural floor. Typically, the floating slab is 4 in. thick, cast in place by conventional methods. In the system developed by our firm, the acoustic isolators are 2-in. thick pads of specially molded, precompressed fiberglass encased in a flexible elastomeric membrane. These pads, along with fiberglass sound-absorption cavity infill, are bonded to ½-in. exterior-grade plywood panels. The standardized panels serve as one-time forms for the concrete slab poured on top of them.

The resulting floor—8 in. of concrete sandwiching a 2-in. space—achieves a sound transmission class (STC) of 80+. To achieve the same STC using mass alone would require a 64-in. concrete slab. At the same time, the isolated slab has an impact noise rating (INR) of +19, laboratory tested using a tapping-device technique.

The acoustic pads isolate the upper, floating slab from the structural slab beneath. When noise generated in the space above the floor sets the floating slab in motion, the isolation pads reduce the acoustic energy reaching the structural slab, which would otherwise transmit sound to the "quiet" area below. A loose analogy is the difference between an electrical conductor and an insulator controlling the flow of electricity.

Installation of a floating floor must prevent acoustic leaks at joints and penetrations

A floating floor must be treated as only part of an over-all system. After the floor has been isolated, the weakest links in the chain of acoustic protection are side walls and columns, which may conduct sound to the ceiling over the protected area. Design and installation must guard against acoustical short-circuiting that will diminish the floor's effectiveness.

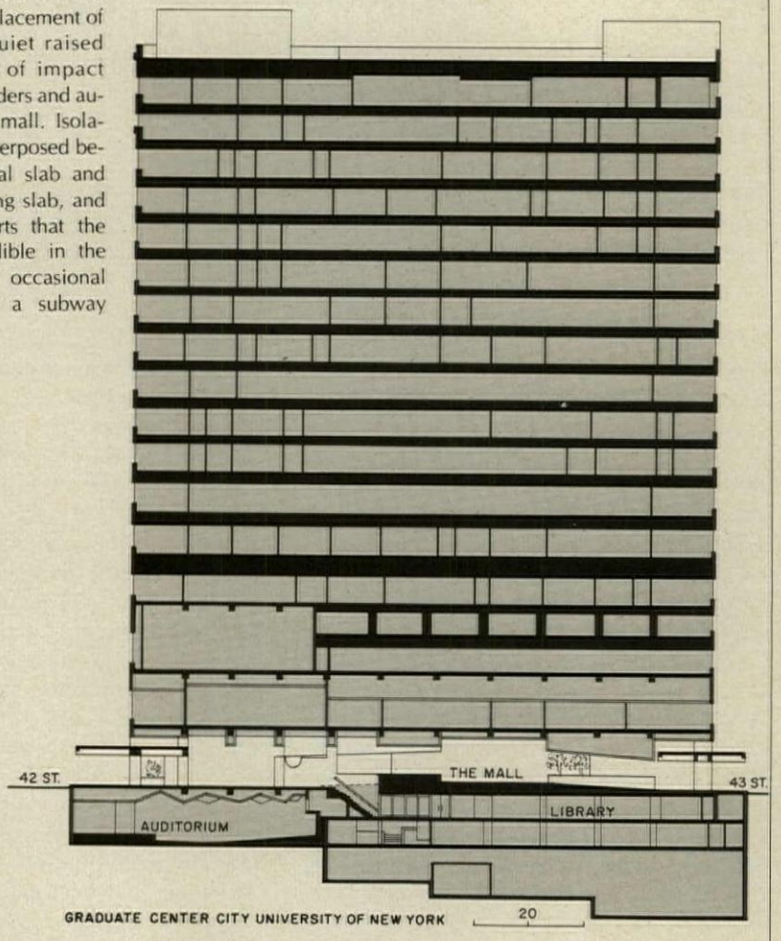
The floating floor and isolated walls and ceiling must be free of rigid connections to the main building structure. Floor perimeters must be isolated from adjacent walls and columns by a space filled with isolation media before the concrete is placed, and this joint must be sealed with resilient caulking after concrete has cured. Where penetrations occur, ductwork and pipes must be enclosed with isolation sleeves (see detail drawings).

For especially demanding applications, such as excessively noisy, penthouse-located, engine-driven equipment, the isolated slab may be thickened up to 6 in. This system, while relatively light, provides a sound transmission loss comparable to that of conventional floors of a mass eight times greater.

When a floating floor is used to isolate a machine room, it needs to be supplemented with a hung ceiling only in very exceptional circumstances. Flyover aircraft, however, often create exceptional noise; military jets especially, we found at one installation, tend to fly both faster and at lower altitudes than commercial planes. A roof designed to isolate interior space, such as a theater, from aircraft noise should usually have both a floating slab and a ceiling suspended from isolation hangers.

The composite barrier concept can be used both horizontally and vertically. The combination of double lightweight wall and ceiling components, plus a floating slab, can surround a high-magnitude noise source or a sensitive receiver, isolating it completely from adjacent areas.

The pedestrian mall through the ground floor at the City University of New York's Graduate Center (top right) connects Manhattan's 43rd Street with the very heavily trafficked 42nd Street. Because the mall is at the center of a long block in the populous midtown area, and because it is near a busy subway station, pedestrian use is substantial. At the same time, architect Carl J. Petrilli concluded that the most convenient location for the center's auditorium and library was below grade in what had been basement selling space in a department store (center right). This placement of areas requiring quiet raised serious questions of impact noise disturbing readers and auditors beneath the mall. Isolation panels were interposed between the structural slab and the concrete topping slab, and the architect reports that the loudest sound audible in the auditorium is the occasional distant rumble of a subway train.



GRADUATE CENTER CITY UNIVERSITY OF NEW YORK

Structurally, the floating slab can be designed to accept a wide range of loads, from the 40 psf adequate for a pedestrian mall to 400 psf for heavy mechanical equipment. The acoustical pads of the isolation panel can be varied from their normal 12-in. centers—say, to 24-in. centers—to accommodate lesser load ranges on the floating slab at lower cost. If pads are placed too far apart, however, the system may lose its utility for future requirements; that is, if the load is later increased, the isolators may be overloaded and the natural frequency of the material raised, thus reducing its capacity to screen out noise created by machinery vibration.

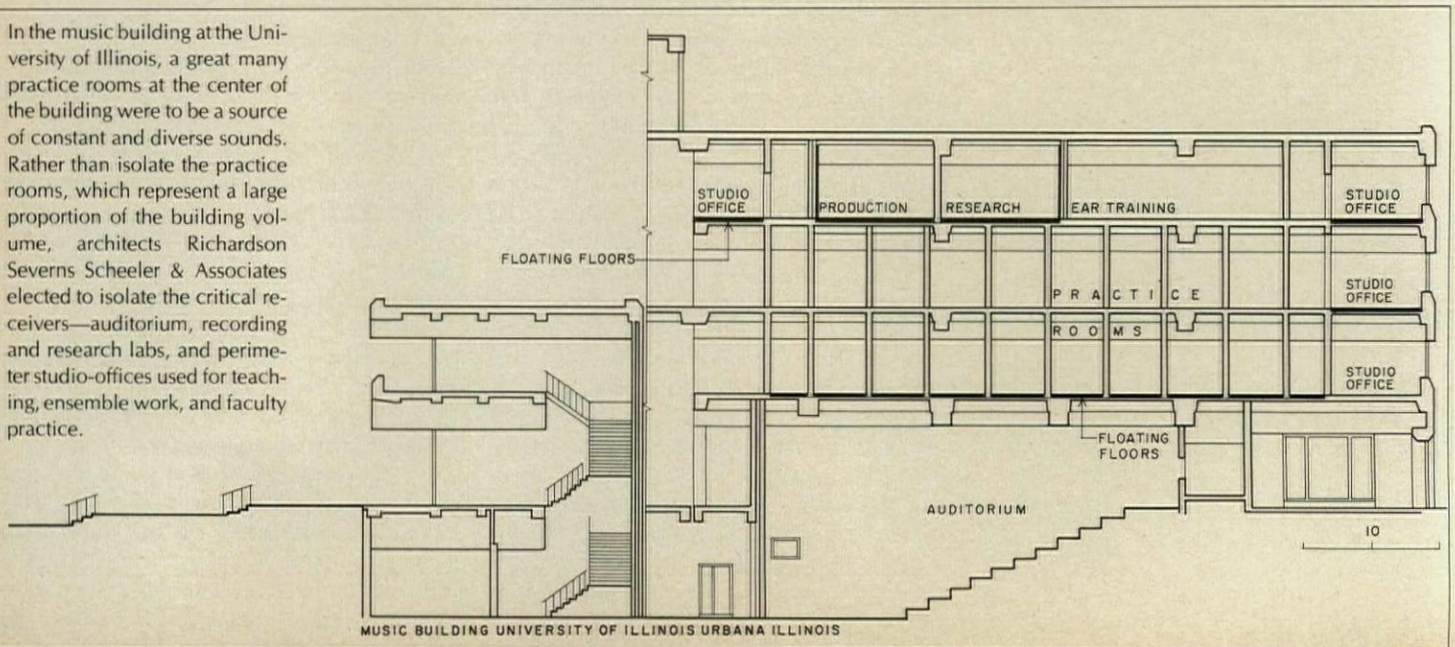
Designers should be conscious of what floating floors can and cannot do

Floating floors, however effective, will not eliminate all noise problems and should be treated as simply one of a number of methods for acoustic control. They do, for one thing, add weight and cost to a building—as a general guide, the additional dead weight is 50 psf, the additional cost $4 to $5 per sq ft. The system also typically adds 6 in. to total floor thickness.

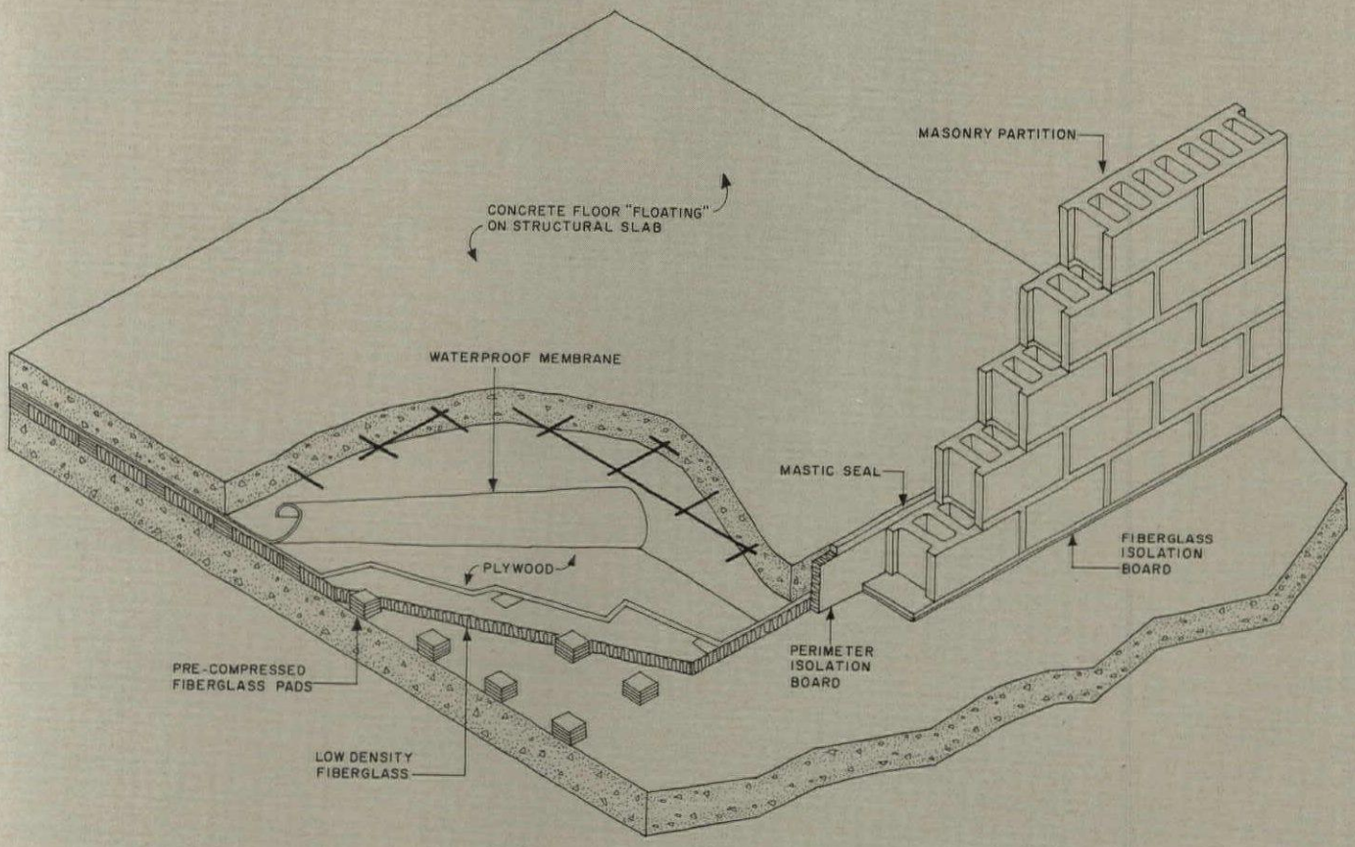
Moreover, a floating floor attenuates high-magnitude sound and vibrations only in the acoustic range above 30 Hz. It does not, therefore, eliminate the need for proper isolation of vibration below this range, such as the noise made by low-speed fans and, under some loading conditions, centrifugal chillers. Separate vibration isolators, such as springs, are used to dampen this. Additionally, the natural frequency of the isolation pads is between 10 and 15 Hz and may amplify rather than isolate frequencies below 15 Hz, such as those produced by an air compressor.

To repeat, a floating floor should be considered as part of an entire acoustical system. It should be specified only after more direct and economical cures, such as relocating either the noise source or the receiver, have been rejected, and only after a thorough analysis of the volume and nature of noise issuing from the source, of the noise level acceptable at the receiving end, and of the paths through which the noise will be transmitted.

In the music building at the University of Illinois, a great many practice rooms at the center of the building were to be a source of constant and diverse sounds. Rather than isolate the practice rooms, which represent a large proportion of the building volume, architects Richardson Severns Scheeler & Associates elected to isolate the critical receivers—auditorium, recording and research labs, and perimeter studio-offices used for teaching, ensemble work, and faculty practice.

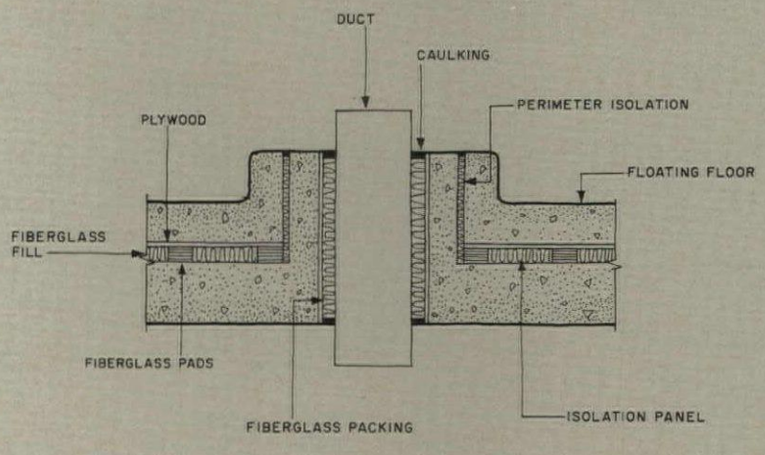


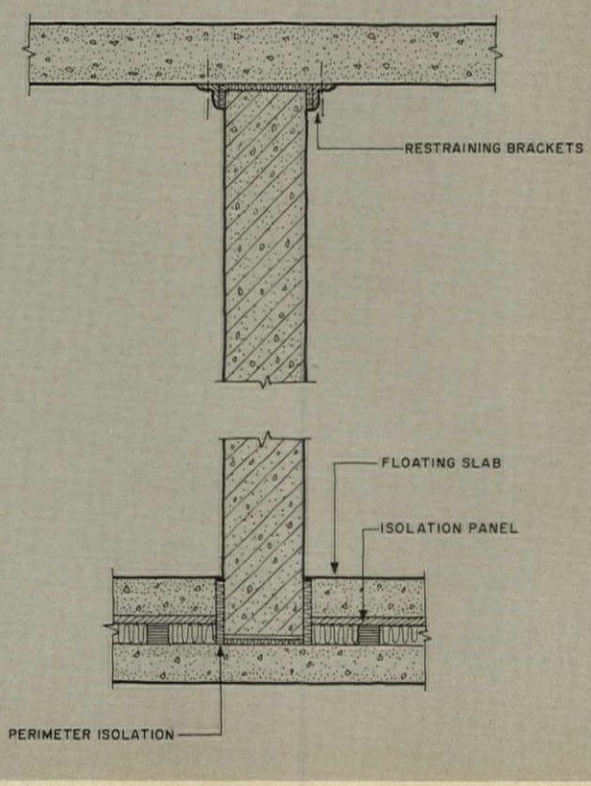
MUSIC BUILDING UNIVERSITY OF ILLINOIS URBANA ILLINOIS



The cutaway drawing above shows the major components of the standardized isolating panel that supports concrete floating floor. Molded, precompressed fiberglass pads, set on 12-in. centers, create a space between lower, structural slab and upper slab, thus preventing the transmission of airborne and impact noise to the structure itself.

Because walls may also transmit sound, the integrity of the isolation system is threatened if the connection between floating slab and partitions is not acoustically protected. The standardized system therefore provides special perimeter isolation boards to be set beneath partition and structural slab and between partition and floating slab (below right). Pipes and ducts must also be isolated from both slabs by fiberglass sheathing and by perimeter isolation curbs (below left).





Shielding spaces against electromagnetic radiation

by Ralph Aronson, Ray Proof Operation, Keene Corporation

The increasing reliance of medicine and industry on sensitive electronic instruments coincides with an increasing amount of ambient electromagnetic noise ("static") from radio and TV transmissions, X-ray units, even telephone dials. Recent studies estimate that ambient radio frequency is about 60 dB in and around hospitals, and further estimate that this noise increases 3 to 5 dB every year. These random signals seriously interfere with the precision of electronic measurements.

Because the sources of radio-frequency interference (RFI) cannot be controlled or even predicted by a building's users, the most effective way of dealing with it is to provide sensitive instruments with a shielded environment. An RFI shield is a highly conductive metallic envelope that offers minimum resistance to any current flowing through it.

The basic envelope of our firm's RFI-shielding system consists of rigid modular panels of galvanized steel with a plywood core. The framing members, also of galvanized steel, are designed to provide an RFI-proof joint without caulking. Because the joints must be snug, particular attention is paid to the mechanical fasteners—cadmium-plated steel screws placed on 4-in. centers for a tight continuous fit.

Although the ideal shield would be a thick steel tank with no openings, provision must, of course, be made for ingress and services. Doors and frames must fit close around the opening, and a set of contact fingers ensures a leak-proof seal when the door is shut.

Air inlets and outlets must be fitted with wave-guide vents, metallic baffles that prevent radio-frequency intrusion. It is also often advisable to join vents to the building's ductwork with nonmetallic flexible connectors, typically a canvas collar. Water and gases must also enter the shielded space through wave-guide penetrators.

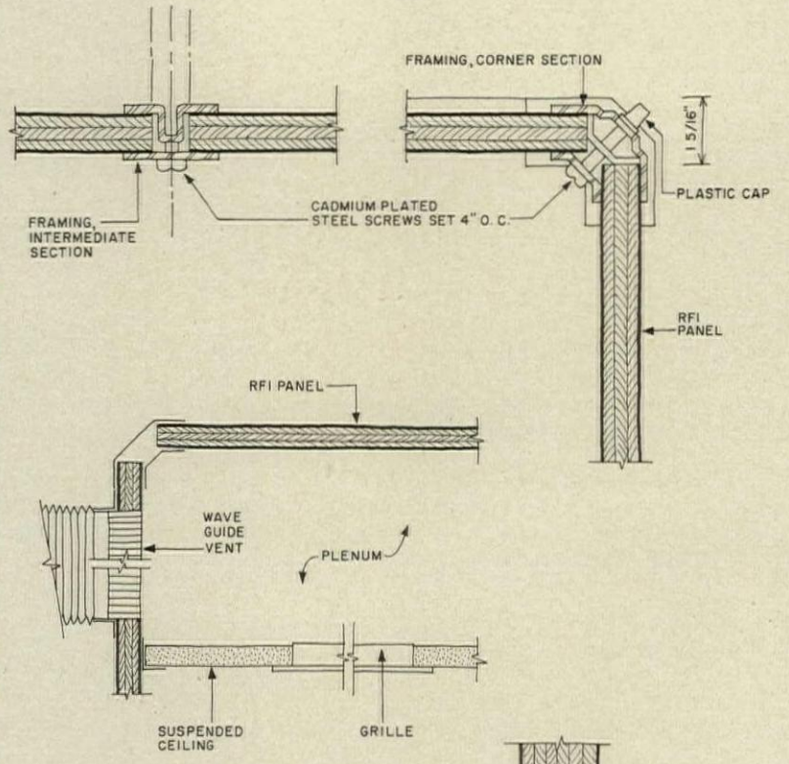
Any wire—power, telephone, intercom—penetrating the shield may act as an antenna to conduct radio frequency into the space. Every electrical wire must therefore enter through a special radio-frequency electrical filter. Because fluorescent lighting introduces its own contamination into the shielded environment, lighting must be supplied by either incandescent or interference-free cold cathode fluorescent lamps.

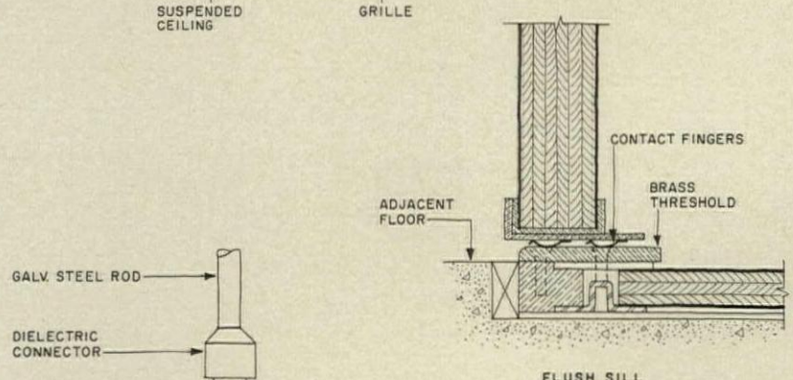
The system described is like that used in about 70 per cent of our installations. It provides an attenuation of around 120 dB, and allows considerable planning flexibility. For special purposes, however, other systems have been developed.

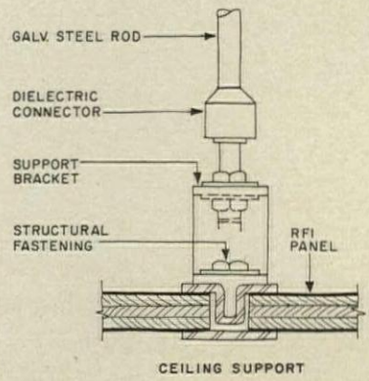
Normally, shielding is tested once after installation but before architectural finishes have been applied, and again after finishes are in place. It is good practice to re-test the shielding at least once a year.

COSMO Photographers

A highly conductive metallic envelope constructed around sensitive electronic instruments shields this equipment from radio-frequency interference ("static"). Surfaces of the room at left (photographed before architectural finishes were applied) are sheathed with galvanized steel and plywood panels. To ensure RFI-proof environment, seams and corners are tightly sealed with galvanized steel strips fastened at 4-in. intervals (immediately below). Duct openings are a potential source of radio-frequency intrusion, and supply air must enter the space through baffled wave-guide vents (below).







Doors and frames are equipped with close-fitted edges, and contact fingers maintain continuous seal at the threshold (above). For hung ceilings, dielectric insulators prevent multiple grounds developing between the shielding and the main structure (left).

For more information, circle item numbers on Reader Service Inquiry Card, pages 231-232.

Energy-saving glass offered in bronze tone

Improving on traditional fabrication, this *Solarban 485 Twindow* reflective double-glazed unit has a transparent metallic film that provides a bronze tone and muted reflectivity, with good life-cycle cost. ▪ PPG Industries, Pittsburgh, Pa.

Circle 300 on inquiry card

Sofa and settee by Richard Schultz

The basic units of the new seating series include a two-seater settee and a three-seater sofa (shown), but multiple seating applications are available, designed to provide public areas with a well proportioned extendable seating system. The structure includes an upholstered back and seat suspended from a round tubular steel base frame connected to an oval tubular steel stretcher, both in chrome or polyester finish. ▪ Knoll International, New York City.

Circle 303 on inquiry card

more products on page 169

Freestanding fireplaces in three configurations

Available in low-profile, conical or rectangular styles, the fireplaces are being marketed as *The Compatibles*, all offered in six colors: red, lime green, orange, off-white, yellow and black, in baked-on porcelain enamel. These are woodburning units that may be converted to electric or gas log operation. Conical units come with 30- or 36-in. diameter hearths, while low-profile models have 30- or 40-in. diameter hearths. The rectangular unit has a 28-in. wide hearth. All fireplaces are guaranteed for smoke-free operation and carry a 20-year owner guarantee. ▪ Heatilator Fireplace, Mt. Pleasant, Iowa.

Circle 301 on inquiry card

Oak signage with change potential

In natural oak—with other woods available—these signs are made to graphic and size specifications, and feature wood sections that are easily changed by hand. ▪ Best Mfg. Co., Kansas City, Mo.

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Take it from Dave Lennox...

COMPARE OUR ENERGY SAVINGS WITH ANYONE ELSE'S.

For example, take the Lennox DMS4 multizone rooftop system, with exclusive Outdoor Air Discriminator.

This is one of the most versatile space heating and cooling systems ever designed. Its efficiency and energy-conserving superiority challenge all other HVAC systems available today.

The exclusive Lennox Outdoor Air Discriminator™ automatically determines heating/cooling modes. You can cool with outside air and heat with primary energy. Or, you can cool with mechanical refrigeration and reclaim condenser heat for heating. Which is more efficient? The Lennox DMS4 makes the decision for you automatically. It continually monitors the ratio of heating input to cooling requirement in order to operate at the lowest energy level.

Application versatility.
Lennox DMS4 offers gas, electric, hot water, or steam heat. Seven models range from 16 to 45 tons cooling capacity.

Get the facts.
Find out how Lennox compares with other makes. For complete competitive, energy-saving data, write Lennox Industries Inc., 570 S. 12th Ave., Marshalltown, Iowa 50158.

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"Attaboy, Dave!"

Nifty problem-solving ideas from Lennox.

For more data, circle 78 on inquiry card

For more information, circle item numbers on Reader Service Inquiry Card, pages 231-232.

AIR CONTROL CATALOG / The company's complete line of registers, grilles and diffusers for heating, cooling and ventilation is featured in a new 48-page catalog. Included are baseboard, sidewall, floor and ceiling units in a variety of sizes and finishes. ▪ Leigh Products, Inc., Coopersville, Mich.

Circle 400 on inquiry card

UNITIZED TUBS, SHOWERS / One-piece, molded tub and shower combinations for houses, apartments, hotels and motels are described in a color brochure including a new tub/shower unit which features an exceptionally large bathing well, full shower, wide flat bottom, and built-in grip bar. Available in gold, avocado, blue, white, bone and bayberry, these unitized, fiberglass-reinforced polyester resin fixtures are said to be easy to install. ▪ Lasco Industries, Anaheim, Cal.

Circle 401 on inquiry card

SANDWICH PANEL FLAMMABILITY / All types of sandwich panels are said to be examined in this brochure, including foamed plastics, plywood and various composites. Over 150 tables, diagrams, and graphs provide a data bank on sandwich panels, and a bibliography covers the literature of these materials from 1950 to 1974. The appendices provide ASTM standards and tests for sandwich panels and information on their applications. The literature is offered at $25 from the publisher. ▪ Technomic Publishing Co., Inc., Westport, Conn.

Circle 402 on inquiry card

HAND-BLOWN LIGHTING / The company announces that it is now the U.S. distributor for hand-blown contemporary lighting manufactured by the Glasshütte Limburg company in Europe. A 152-page catalog contains information on ceiling, wall and table fixtures. A price list is included. ▪ Koch & Lowy Inc., New York City.

Circle 403 on inquiry card

HOSPITAL ARTERIAL SYSTEM / *Com/Core* provides medical facilities with built-in patient life support services, including all medical gas pipelines, communications and electrical power, which can be distributed directly to the patient's bedside. Full-color literature describing the system is available explaining construction details and system advantages over conventional installations. ▪ Day-Brite Lighting Div., Emerson Electric Co., St. Louis, Mo.

Circle 404 on inquiry card

CENTRAL AIR CONDITIONING / A four-page brochure on high-capacity central air-conditioning systems designed for larger homes includes specifications and features information on precharged condensing units, blowers and preinsulated refrigerant tubing. ARI standard ratings range from 41,000 to 47,000. ▪ McGraw-Edison Co., Albion, Mich.

Circle 405 on inquiry card

HEALTH CARE DECORATING / The new kit provides paint, trim and accent colors and coordinated vinyl fabric wallcoverings plans for 12 specific areas of the hospital, clinic, nursing home, convalescent home and sanitarium. Illustrated in full color, each plan for a specific facility contains coordinated and complementary wallcovering swatches and a room design sketch depicting possible use of the materials. According to the company, the Designer's Portfolio is for the smaller health care facility that may not be able to afford professional assistance. The information provided could also be of assistance to architects in planning health care facilities. The kit is available for $3.50. ▪ United-DeSoto, Inc., Chicago, Ill.

Circle 406 on inquiry card

EXPOSED AGGREGATE / A full-color brochure describes chemically retarded exposed aggregate precast concrete panels for architectural applications. Included are descriptions of the various depths of reveals obtainable, each illustrated with detailed color photographs. Examples of exposed aggregate on several buildings are shown, as well as a documented comparison of exposed aggregate versus smooth concrete. ▪ Preco, Plainview, N.Y.

Circle 407 on inquiry card

SOUND-ABSORBING MASONRY / *Soundblox 2* features modified construction using special fillers with metal septums to provide sound-absorption performance. The units are load-bearing and permit sound control to be built into the structure of a building, according to the company. An eight-page brochure gives details. ▪ The Proudfoot Co., Inc., Greenwich, Conn.

Circle 408 on inquiry card

KITCHEN CABINETS / Catalog sheets covering a 1975 line of moderately-priced modular kitchen cabinet systems and bathroom vanitoires include information on construction, finish and hardware features of the all-wood cabinets. Cabinet styles are offered in single- and double-paneled all-oak fronts, in oak fronts in V-groove plank and peg designs, and in cherry or dark walnut tone finishes. ▪ Excel Wood Products, Inc., Lakewood, N.J.

Circle 409 on inquiry card

ROOF DECKS, INSULATION / A 12-page brochure on *Zonolite* roof decks and roof insulation describes how these decks protect the roofing membrane and provide insulation, strength, fire- and wind-resistance. Specifications, fire resistance ratings, "U" value and load span tables are included. ▪ W. R. Grace & Co., Cambridge, Mass.

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more literature on page 185

Constantly developing better ways to form concrete

Ceco's research and development of forming systems affords architects, engineers and contractors the benefits of new and better ways of executing poured-in-place concrete construction. As always, Ceco's experience gives you simplicity, reliability and economy. With monolithic reinforced concrete systems, all materials and forming equipment are available locally everywhere. You can design with true versatility in rib slab, waffle slab or flat slab construction. And with Ceco's forming services, you get a dependable floor system fast. You can have large modules and attractive finishes for exposed ceilings by specifying Ceco's fiberglass forms. Ceco crews of formwork specialists erect and remove forms of steel and fiberglass, on schedule, on a firm lump-sum contract. For more facts, please see Sweet's files or consult your nearest Ceco district office.

Colorado National Bank, *Denver, Colorado*
Minoru Yamasaki and Associates, *Architects*
Skilling, Helle, Christiansen, Robertson, *Structural Engineers*
N. G. Petry Construction Company, *Contractor*

CECO concrete forming services

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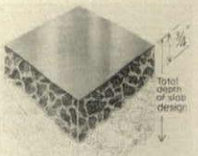
For more data, circle 80 on inquiry card

ACRYLIC-NYLON CARPET / "Virginia City," a tufted contract carpet, is a blend of 85 per cent acrylic and 15 per cent nylon. The pile yarns are three-ply, processed in a manner that creates a variegated "imbedded chip" or "dappled fleck" appearance. Because of the dense construction of its tightly twisted three-ply yarns, the product is said to offer exceptional resistance to wear and abrasion. Seven variegated colorations are available, most dominated by natural tones: brown-heather, charcoal, gold-beige, tan, gray, brown and beige ▪ Philadelphia Carpet Co., Cartersville, Ga.

Circle 304 on inquiry card

SELF-POLISHING CONCRETE FLOOR / The *Vibratory Absorption Process* topping is a self-polishing concrete floor for industrial plants, warehouses, laboratories and other buildings. Enough water is used to achieve workability during placing. This also permits the topping to contain large amounts of rough, coarse aggregate. Immediately after the concrete has been placed, the *Absorption Process* technique is used to remove the workability water. This produces a very high final strength concrete binder by reducing the water-cement ratio close to the theoretical minimum, according to the company. After a calculated time delay, the floor is troweled to seal the surface. By repeated time-delayed floating and proper timing of the troweling operations, the topping develops a built-in gloss. ▪ Kalman Floor Co., Inc., White Plains, N.Y.

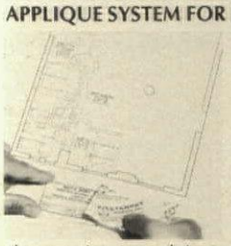


Circle 305 on inquiry card

VANDALPROOF SIGNAGE / Photographic imbedding of imagery makes *Metalphoto* highly resistant to attack by weather, chemicals or vandals, according to the company. Any form of imagery for reproduction in the metal—photographic halftones, line or toned art or typography—may be specified. Maximum single sheet size for plates is 24 by 40 in. Adhesive, magnetic and mechanical mounting techniques are used to create multiple sheet murals and wall sections. ▪ Metalphoto Corp., Cleveland, Ohio.

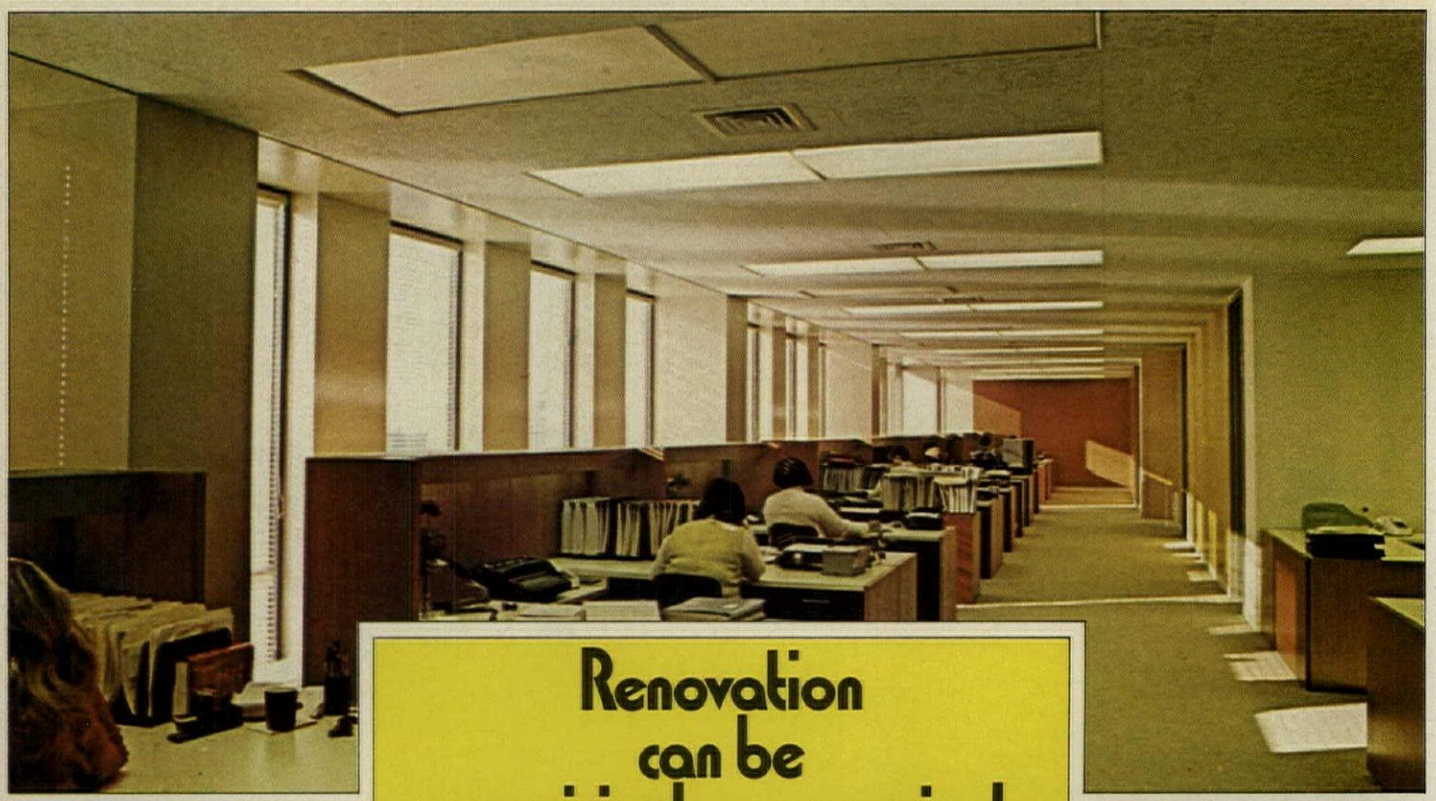
Circle 306 on inquiry card

APPLIQUE SYSTEM FOR DRAFTING / The polyester applique sheet is said to eliminate repetitive drawing of title blocks, specs, circuit diagrams, and any drawings that are used repeatedly. Copies of the original tracing or drawing are reproduced on the sheets using any plain (or bond) paper copier, states the company. The new applique is pressure-sensitive and easily applied to the required work. Applique sheets are supplied in standard 8½-by-11-in. sizes. ▪ Standpat Products, Port Washington, N.Y.



Circle 307 on inquiry card

more products on page 171



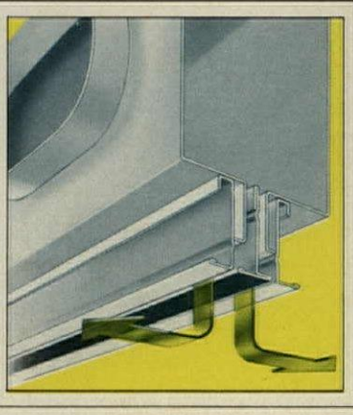
Renovation can be surprisingly economical when you specify Roper Eastern ceiling and wall systems

Take the renovation of this office building at 625 N. Michigan Avenue, Chicago, for example. Here, the 20th and 21st floors house the executive offices of Romanek, Golub and Company, prominent Chicago real estate developers, brokers, building managers and investors.

When this knowledgeable company decided to renovate their headquarters, they were happy they had selected Roper Eastern's Tablock 281 as the original ceiling system. Why? Because Tablock's immediate accessibility, flexibility and stability enabled the firm to salvage the suspension system and nearly all the ceiling tile.

Using the loft method of construction (positioning the ceiling before installing partitions), shown in photo at left, partitions were removed with only slight damage to the tile. In contrast, where partitions were placed prior to the ceiling system, shown in photo at right, not only were the walls destroyed, but also a major portion of the ceiling system.

Tablock 281 is just one of Roper Eastern's five unique ceiling suspension systems.



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We've also developed an exciting new modular package that combines grid **and** air delivery systems. It's called Geminaire-a real problem solver. Geminaire features both exposed and concealed elements for a dramatic 3-D effect...ceiling air delivery ducts are totally unobtrusive!

Demountable walls too...the truly modern way to renovate.

Here's even more design freedom. With our ESP Demountable Wall System, you can specify the wall or partition—ceiling height or free standing—gypsum board, wood paneling, vinyl or metal, that fits the requirements of the job. ESP installs quickly and easily, dismantles and re-assembles in minutes. Cost? Surprisingly low—often less than conventional drywall construction.

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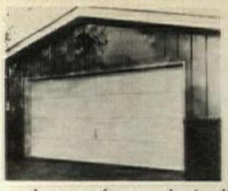
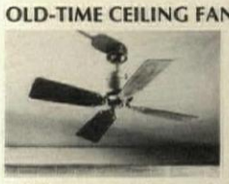
For more data, circle 82 on inquiry card

RESIDENTIAL GARAGE DOOR / Door panels have a rough-sawn cedar look, yet are said to offer the durability characteristic of hardboard which may be stained any desired color. All hardware in the garage door is custom-designed and manufactured, including custom-wound and performance matched springs. All parts of each door will be recorded on data film at the factory, so exact replacement parts may be ordered any time. The door is available in single car or two car models. ▪ Raynor Mfg. Co., Dixon, Ill.



Circle 308 on inquiry card

OLD-TIME CEILING FAN / This fan is not a replica, but is offered as an actual descendant of the 1890's model which has never been out of production. Fan blades on the 36-in. and 56-in. models resist splitting, cracking and chipping. The two-speed motor has a weather-resistant bronze finish, lifetime lubricated bearing, and a five-year guarantee. Fans mount on ceilings as low as 8 ft and come complete with ceiling hook, insulated hangar, and installation instructions. ▪ Chromalox Comfort Conditioning Div., St. Louis, Mo.

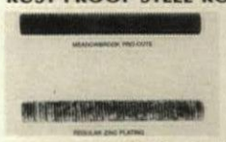


Circle 309 on inquiry card

DOUBLE JOINTED SPOUT FAUCET / The faucet features cast red brass housings, replaceable stainless steel seats, and swiveling seat disks held in place with corrosion-resistant screws. The wall-mounted supply arms adjust from 4 to 8 in. for installation, and the spout and swivel joints are heavy duty brass with a polished chrome finish. ▪ Fisher Mfg. Co., Los Angeles, Cal.

Circle 310 on inquiry card

RUST-PROOF STEEL RODS / A process of coating threaded steel rods with zinc phosphate virtually eliminates rust, extends the life of the rods and offers many other advantages to users in the building field, according to the company. Identified as *ProCote* finish, the process costs considerably less than zinc plating which is used for the same results. *Pro-Cote* finish can be used for rods up to 14 ft long. ▪ Meadowbrook Products, Inc., Lancaster, Pa.



Circle 311 on inquiry card

AREA LIGHTING / The "Dual" outdoor area light combines two different lamps and optical systems into a single luminaire. One optical system throws illumination out over an area, while the other system spreads illumination to the sides. The fixture's construction includes a one-piece aluminum housing; cast aluminum ballast housing and pole fitter; sliding door frame for servicing, and *Alzak* aluminum finished reflectors. ▪ Guth Lighting, St. Louis, Mo.

Circle 312 on inquiry card

more products on page 181

62-63

Auditorium seat designed by Peter Dickinson
Installed at the Jennie King Mellon Library, Chatham College
Johnstone, McMillin and Assoc., architects, Pittsburgh, Pa.
Kilham, Beder and Chu, Consulting architects for design, NYC.

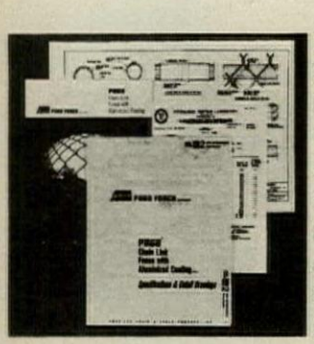
JG Furniture Company, Inc. 121 Park Avenue Quakertown, Pa. 18951

AE/UPDATE

A classified advertising section devoted to helping architects and engineers keep up to date on building product manufacturers.

FREE, HIGHLY ILLUSTRATED BROCHURE shows show ODS™—Overhead Distribution Systems—provide economical, convenient alternatives in overhead distribution of electrical and communications services. Choice of surface metal raceways for the most efficient use of materials. Plugmold® multioutlet power laterals providing for single or mixed 125V and 277V services. Plug-in convenience for Tele-Power ® Poles and ceiling lighting fixtures. Switch control as desired. Matchless space use versatility. The Wiremold Company, West Hartford, Conn. 06110.

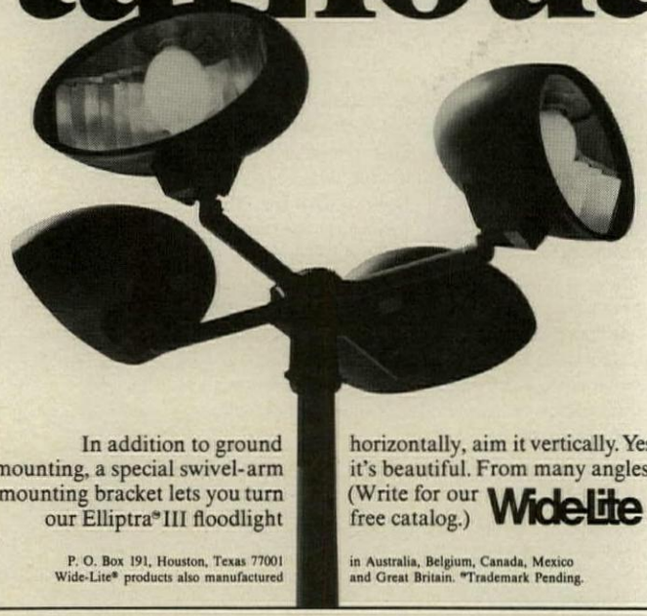
For more data, circle 84 on inquiry card



FREE FENCE SPEC KIT saves time, trouble. Invaluable for planning chain link fencing. Kit includes drawings on styles, wire gauges, gates, fittings, framework. Also includes lab reports, work sheets and specifications. Page® aluminized fabric lasts 3-5 times longer than the best of galvanized. Send for your kit today. Page Fence Division of Acco. P.O. Box 430, Bridgeport, Conn. 06602.

For more data, circle 85 on inquiry card

Light turnout



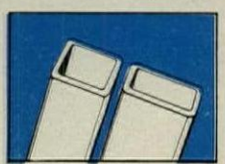
In addition to ground mounting, a special swivel-arm mounting bracket lets you turn our Elliptra®III floodlight horizontally, aim it vertically. Yes, it's beautiful. From many angles. (Write for our free catalog.) **Wide-Lite**

P. O. Box 191, Houston, Texas 77001
Wide-Lite® products also manufactured in Australia, Belgium, Canada, Mexico and Great Britain. ®Trademark Pending.

For more data, circle 86 on inquiry card

Designing with steel?

Look at the aesthetics and structure/ability of Regal Welded Steel Tubing



1" square thru 12" x 8" rectangle. .083 thru .500 wall

Our clean-lined, smooth squares and rectangles assure better appearance and give you basic design advantages.

Higher strength-to-weight ratios let you use lighter structural columns and beams, trusses, mullions, and stairways. Also provide handsome concealment of conduit, pipe, etc.

You can simplify layout and speed construction due to easy joining to the four flat surfaces.

These are only a few of the cost-saving advantages of Regal structural steel tubing. Learn more about how Regal structural steel tubing can save you time and costs. Write for our new catalog, free on request. Or contact your steel service center.

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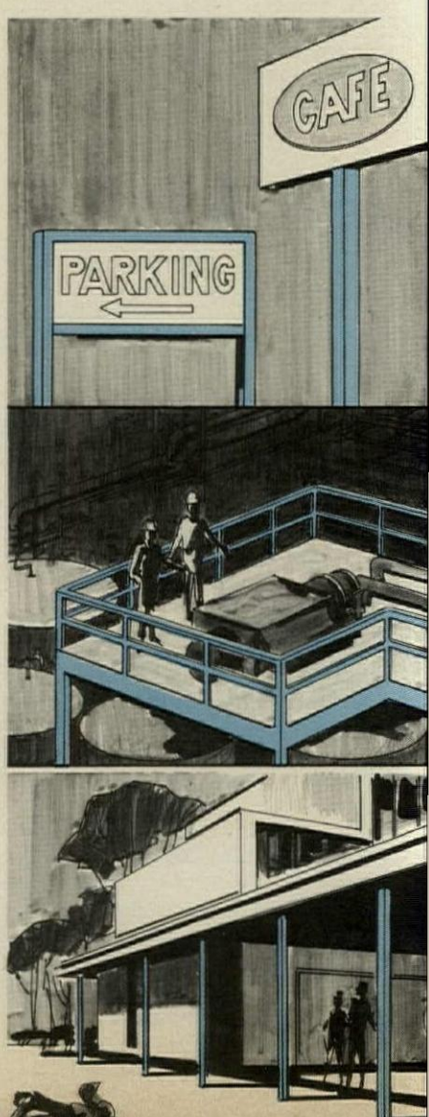
For more data, circle 9 on inquiry card



GF presents The Cube.

It doubles your thinking power.

The new GF Cube offers twice as many desks and console configurations as other systems of similar design.

This variety will help you meet the requirements of just about any business office. You will be able to design for work efficiencies and the best utilization of today's expensive office space.

The segment of an Open Office plan shown here displays the basic elements of the new GF Cube System. Other pieces in the system enable you to meet the need for different heights, depths and work surfaces throughout the office.

Think about versatility.

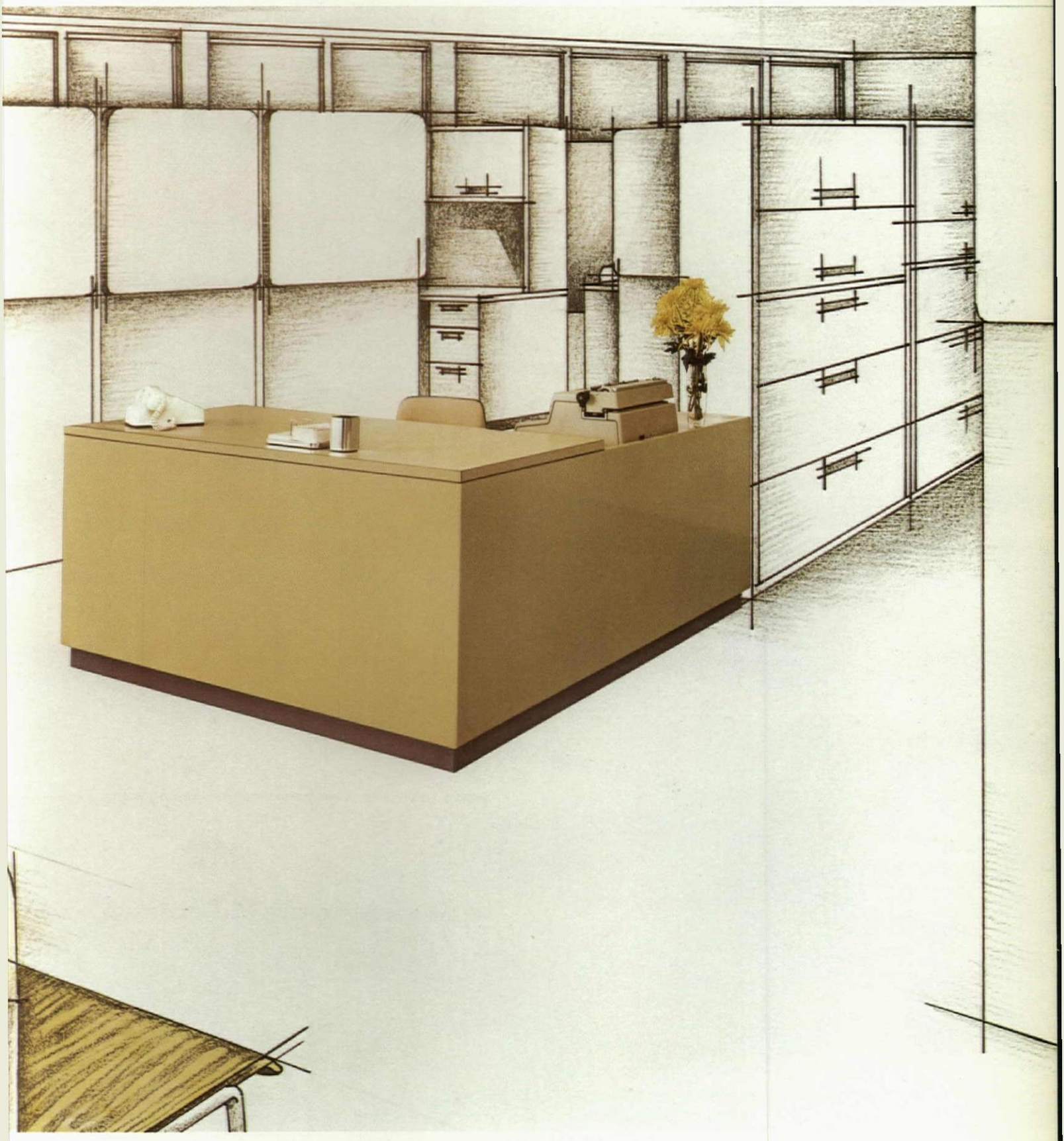
The GF Cube offers solutions to the requirements of each individual in an office, and it does so while maintaining design continuity throughout.

Extended desk units provide added work surfaces and increased storage capacity in their pedestals. Standard end panel units are 36″ and 45″ long. Pedestals are offered in 36″, 45″ and 60″ length returns.

Cube consoles come in desk and typing heights. Five lengths are available, including a 90″ Console.

The Cube System enables you to handle work stations requiring Input and Display Units, CRT Devices, Calculators or word processing units. Desk risers for the GF Cube provide space for reference materials, with open or closed shelf space.

Think about compatibility.

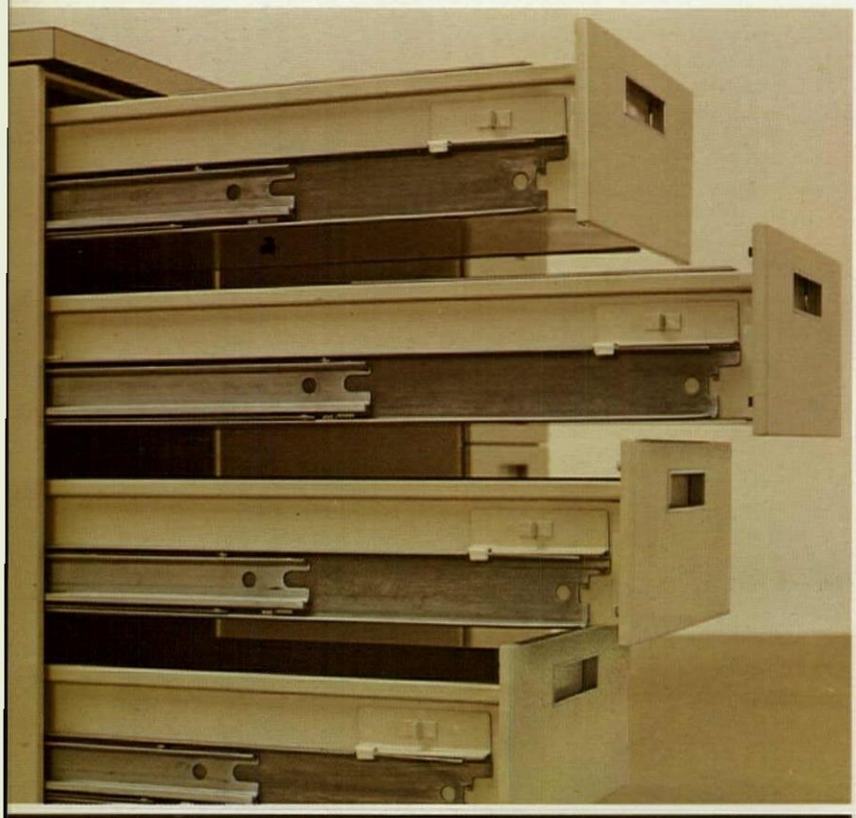


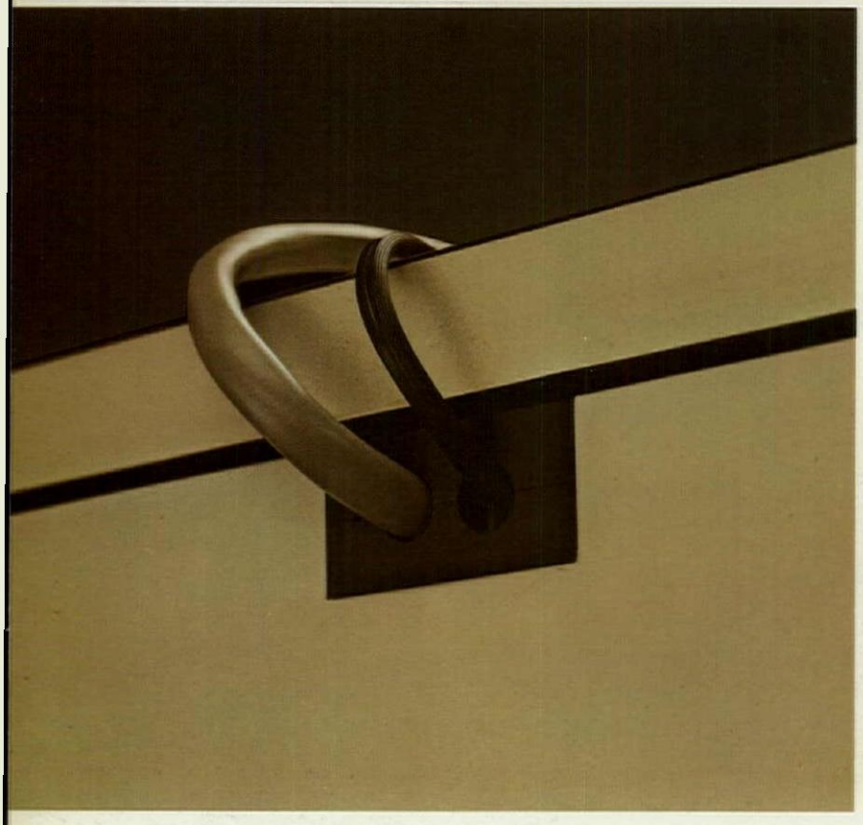
The new GF Cube has design compatibility with other GF furniture in both design and function.

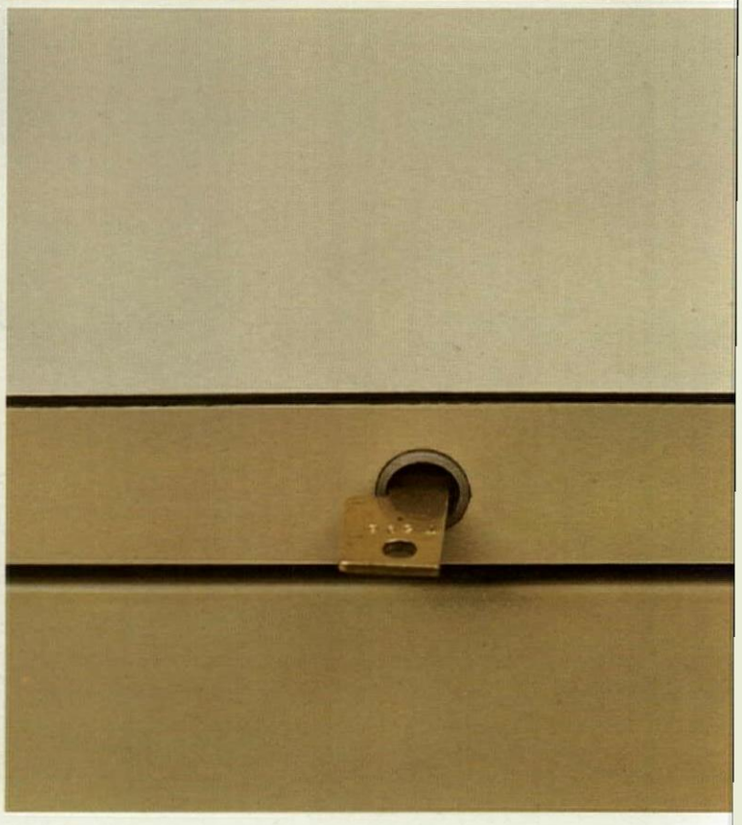
The Cube complements the GF Davis Allen Collection of executive and general office furniture (left). And The Cube is compatible, in dimensions and overall appearance, with the panels of the GF Environmental System Program (ESP) (center) as well as our Quantum System of lateral files. (right).

You can, quite literally, extend The Cube concept from the reception room to an executive suite.

Think about workability.





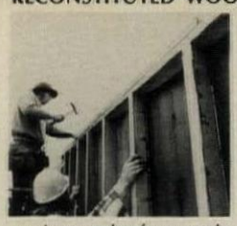


Cube desks contain full-depth storage drawers as standard equipment. They are designed to absorb impact without bending or warping. **1.** Fully-progressive suspensions are available for heavy duty use. These are the same units used in our finest filing systems. **2.** Pedestal drawers offer many options. For instance, it is possible, to provide filing for 11,000 tab cards in one pedestal. **3.** Cube desk offers the finest wire management system available for telephone and electrical equipment. Large Amphenol connectors are no problem. **4.** And the unique GF locking system locks the entire desk with "push-button" ease.

Call your local GF Dealer or visit our showroom. They're in the Yellow Pages. Or write GF Business Equipment, Inc., Youngstown, Ohio 44501. In Canada: Toronto, Ontario.

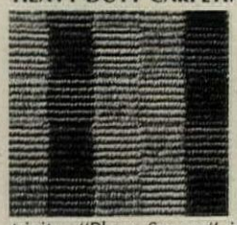
Office Furniture Systems
GF Business Equipment

RECONSTITUTED WOOD STUDS / Lumber studs made largely of reconstituted particles, have been developed as part of long-range plans to help increase the nation's timber supply through better utilization. Named *COMPLY*, the product is a composite two-by-four made with particleboard and veneer. A glued-up "sandwich" is made, using 1½ by 2⅝-in. strips of the particleboard as the core. Two 1/16 in. veneers of solid wood are then laminated to each narrow side of the particleboard. The product uses the high-strength stiff wood from the outer portion of the log for the veneer facings while the inner portion is chipped for particleboard. ▪ Georgia-Pacific Corp., Portland, Ore.



Circle 313 on inquiry card

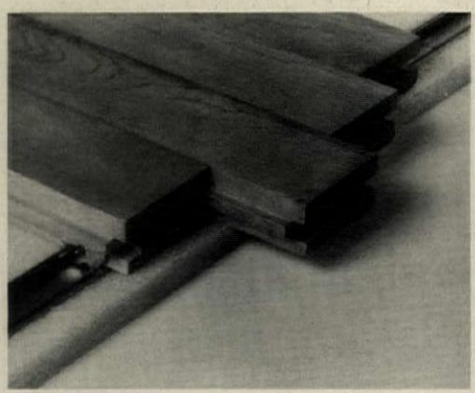
HEAVY-DUTY CARPETING / Engineered for heavily-trafficked commercial installations, this carpet combines a subdued check motif, a ribbed texture, and a stripe. Pile yarns are two-ply *Antron* nylon, treated to prevent build-up of static electricity. "Plaza Square" is woven on velvet looms with three colors alternating in each colorway to produce the design effect. Three examples feature maroon, used with gray and red, again with purple and blue, and again with rust and cardinal red. ▪ Lees Carpets, King of Prussia, Pa.



Circle 314 on inquiry card

HIGH-PRESSURE LAMINATE COLORS / Natural and subtle patterns, earth tones and butcher block wood grains are included in the 1975 standard line of decorative *Micarta*. With the addition of a blonde end cut (left), there are now three different butcher block patterns. End cuts in blonde and walnut shades (right) are made up of 1- and 1⅞-in. blocks and a blonde long grain is composed of ¾-in. planks running the length of the sheet. Other new designs are also available. *Micarta* is a high-pressure laminate available in 100 grades in standard construction and sizes. ▪ Westinghouse Electric Corp., Decorative Micarta Div., Hampton, S.C.

Circle 315 on inquiry card

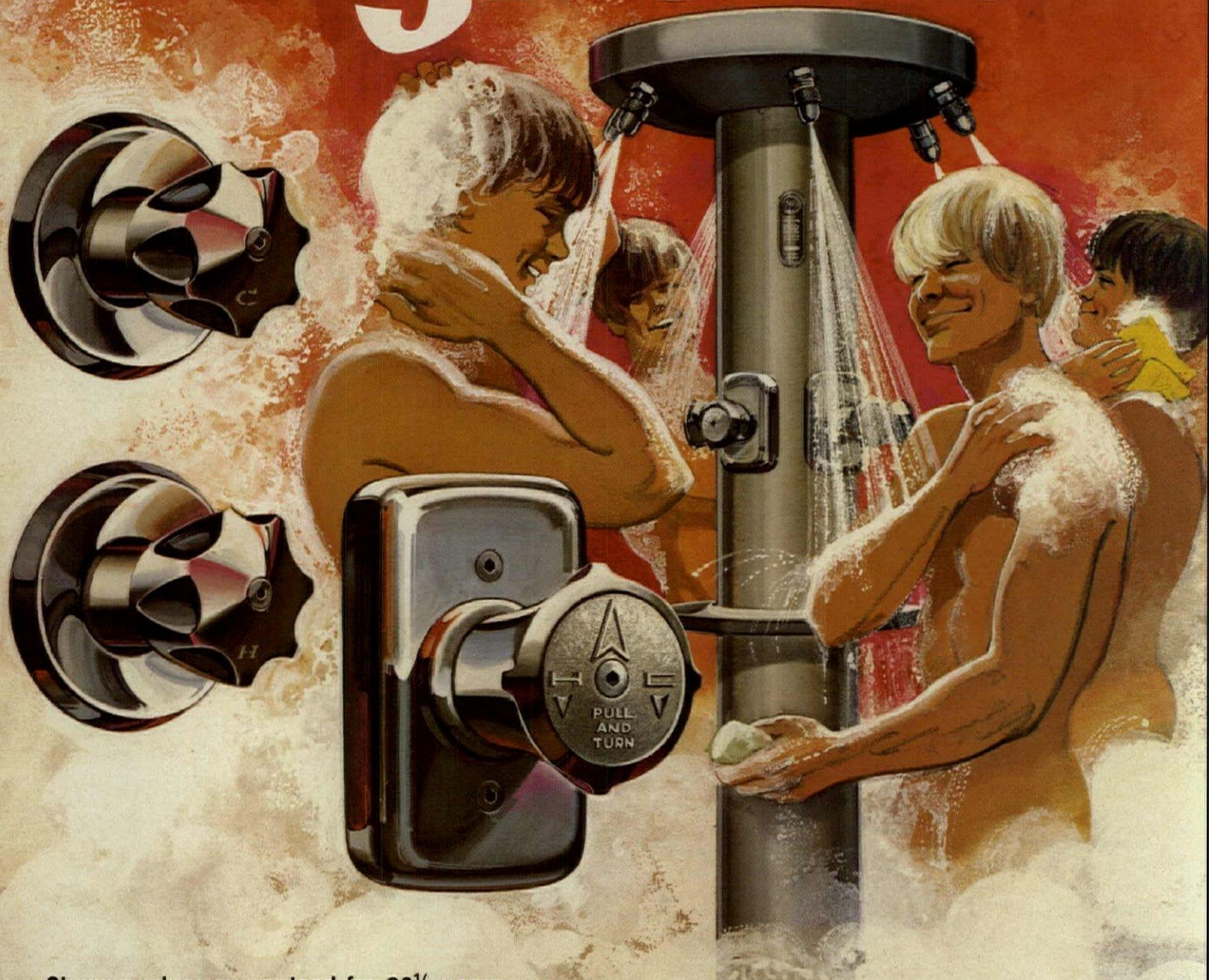


UNDERLAYMENT FOR WOOD FLOORS / *Blanketseal* is a closed cell polyurethane foam which is said to improve the moisture resistance and playability of *Lock-Tite* maple sports flooring. ▪ E. L. Bruce Co., Inc., Memphis, Tenn.

Circle 316 on inquiry card

more products on page 183

Bright idea



Shower valves guaranteed for 83⅓ years.

We guarantee our Bradtrol and Pos-I-Pak shower valves for 83⅓ years . . . an even 1000 months. If either valve leaks or drips during that time, we furnish replacement parts free of charge. We can give you a guarantee like this because our Bradtrol permanently lubricated single control valve has just one moving part. No washers, O-rings, springs or seals. Nothing to wear out or corrode. And the Pos-I-Pak valve for hot and cold or tempered water. No washers here either. No seats, threads or packing. So no leaking.

You can specify either for any shower we make. For Column showers that serve from 2 to 6 people with a single set of connections. For Panelon® Econo-wall® Wall-saver® and Corner showers that put every inch of floor and wall space to use. Showers that save money during installation and afterwards. Ask your Bradley washroom systems specialist for complete guarantee details. And write for latest literature. Or call (414) 251-6000. Telex 2-6751. Bradley Corporation, 9109 Fountain Blvd., Menomonee Falls, Wisconsin 53051.

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BRADLEY

Leader in Washroom Fixtures and Accessories

For more data, circle 39 on inquiry card

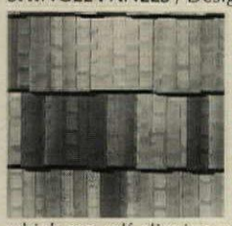
MODULAR FORMING SYSTEM / A modular gang forming system that claims to cut forming time in all kinds of mass concrete work consists of pre-engineered reusable steel components that can be assembled quickly and easily into gang sections at the job site. These components are available separately and in any combination. The "Gird-R-Form" system can be used to form shear walls, core walls, corners, pilasters, piers and columns on dams, power plants, etc. The rigidity and high-load capacity of each unit permits one tie to cover an area of 12 to 20 sq ft. ▪ Patent Scaffolding Co., Fort Lee, N.J.

Circle 318 on inquiry card

HARDBOARD PANELING / "Plainsman" is a highly textured, deeply embossed hardboard paneling for residential and commercial use. Available in three colors (gray, brown, and white) the 4-by-8-ft panels offer random-plank design approximating the look of rough hewn cedar. ▪ Masonite Corp., Chicago, Ill.

Circle 319 on inquiry card

SHINGLE PANELS / Designed to create a rustic effect on sidewalls and mansards, the natural light and dark Western Red Cedar shingles are bonded into panels and hewn for realism. Horizontal butt lines are formed by the three-layer shingle panels, which are self-aligning with a 14-in. weather exposure. The 8-ft panels are offered in natural cedar or various semi-transparent tones. Matching color nails and wood corners are available. ▪ Shakertown Corp., Winlock, Wash.



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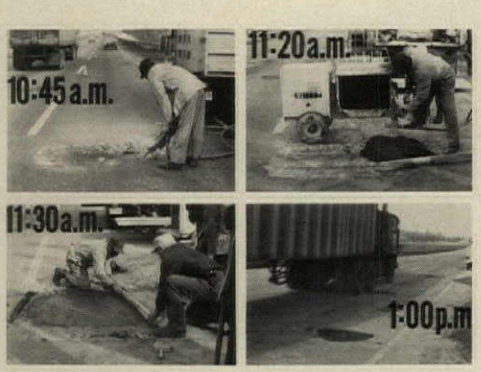
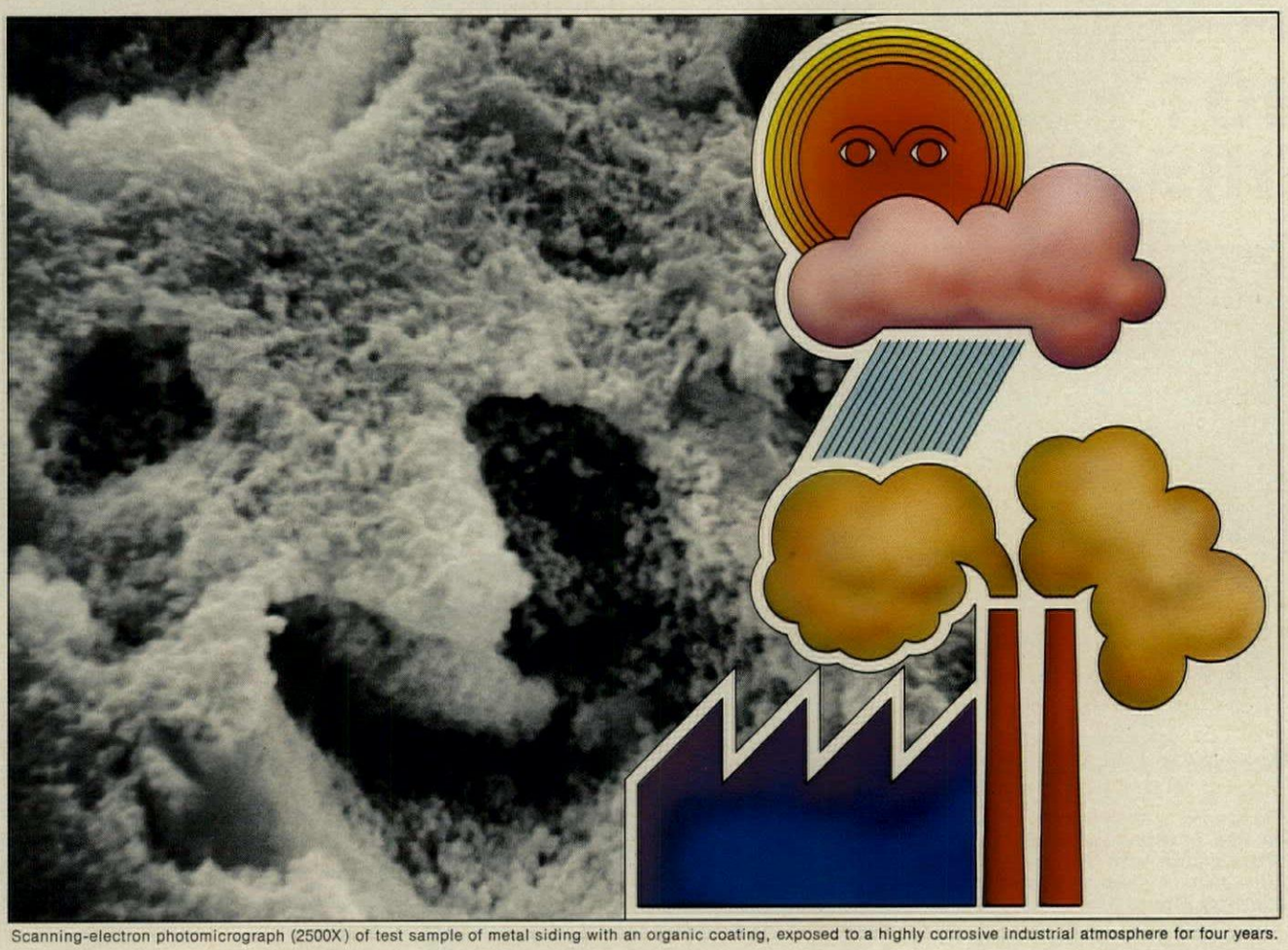


CHEMICAL ACTION CONCRETE REPAIRS / Compressive strength of 1975 psi in 45 minutes and flexural strength of 825 psi in three hours is claimed for this concrete repair developed for highway, bridge deck and airport pavement maintenance. The new material is a complex magnesium phosphate compound described as neither a Portland cement nor an epoxy, but conceptually different from these two types of concrete patching materials. Called *Set-45,* it is mixed with water only, can be used at below-freezing temperatures and forms a monolithic bond with concrete, cement and masonry surfaces. ▪ Set Products, Inc., Macedonia, Ohio.

Circle 321 on inquiry card

See how corrosion starts, then stops, because of an aluminum substrate.



Scanning-electron photomicrograph (2500X) of test sample of metal siding with an organic coating, exposed to a highly corrosive industrial atmosphere for four years.

The scanning-electron photomicrograph you're looking at shows how any organic coating weathers in time.

The coating has become spongelike and retains moisture. Wet cycles last longer. The hydrophilic cells trap such contaminants as sulfur dioxide, which combines with water to form sulfuric acid. Now the corrosive effects of electrolytic action include chemical attack at the interface . . . underfilm problems that can cause flaking or loss of adhesion . . . and staining or streaking, depending on the performance of the substrate.

At this point, however, an aluminum substrate helps to *protect* an organic coating because its natural aluminum oxide film resists the effects of electrolytic action. This stability at the paint-metal interface discourages flaking or adhesion loss. Painted aluminum can be drilled, punched and sawed without concern about chipping or undercutting.

If you want color in the second place, put it on aluminum in the first place. It will last. Especially if you specify an Alcoa® Super Alumalure® finish, the long-life PVF coating that offers the advantages of a super-tough fluorocarbon at a price you can live with.

For more information, see Sweet's Architectural or ICR/PE files. Or write Aluminum Company of America, 1085-C Alcoa Building, Pittsburgh, PA 15219.

Change for the better with Alcoa Aluminum

ALCOA

For more data, circle 91 on inquiry card

WOOD PRESERVATIVE / A 12-page technical bulletin discusses a water-repellent wood preservative, recommended as a prime coat for paint to prevent blistering. It may also be used as a natural finish for wood, and is said to kill termites, powder post beetles and moss. Detailed product specifications are included in the literature. ▪ Zehrung Corp., Portland, Ore.

Circle 411 on inquiry card

ENERGY-SAVING LIGHTING / An eight-page case history booklet describing energy-saving lighting illustrates the wattage reductions and improved seeing conditions possible for a variety of applications through the use of high efficiency lighting equipment. Twelve case studies cover school, commercial, office, industrial, outdoor, highway, and other applications. ▪ Johns-Manville Service Center, Denver, Colo.

Circle 412 on inquiry card

CONTRACT CARPETING GUIDE / A 168-page guide to contract carpeting, complete with illustrations and tables, written especially for architects and designers describes the components of a specification and how each affects performance. The author next discusses the different methods of construction for woven, tufted, needlebonded, knitted, and loomed or spongebonded carpets. Fibers, both natural (wool) and man-made (nylon, acrylics, polypropylene, polyester), are defined and evaluated according to physical properties and performance; and various types of backings, installations, and cushions are described. The significant aspects of performance—static control, flammability, tests and performance standards, and maintenance—are each explored in separate chapters. This information is then applied in evaluations of installations in hospitals, schools, airports, offices, and banks. The price is $18.50. ▪ The Whitney Library of Design, New York City.

Circle 413 on inquiry card

PLAYGROUND EQUIPMENT / A 24-page, color catalog illustrates and details play environments for all ages, and outlines the principles behind their durability, low maintenance, and safety. Also covered are multi-action slides, pocket playground and special equipment for helping rehabilitate handicapped children. Discussed are methods for permanent or portable ground-level or rooftop installations, and above-ground pools for community, school and institutional use. The catalog includes complete costs and specifications. ▪ Playground Corp. of America, Long Island City, N.Y.

Circle 414 on inquiry card

VINYL LAMINATES / Twelve styles and shades of wood and leather grain vinyls are shown in a new brochure, along with 12 solid colors, and all are now available for immediate delivery from stock. The brochure explains how the company's vinyl film is constructed and why it is particularly well suited for use in mitre grooving applications. ▪ Phillips Films Co., Inc., Auburn, Pa.

Circle 415 on inquiry card

UTILITY DISTRIBUTION AND CONTROL / Specification sheets for pre-packaged utility distribution and control systems designed for the heavy loads of food service operations are available from the company. Systems bring electric, gas, water and steam services directly to equipment by means of stainless steel raceways and quick disconnect connections. Units meet all requirements of national codes governing utility distribution construction. ▪ Avtec Industries, Inc., Downers Grove, Ill.

Circle 416 on inquiry card

DETAILING REINFORCED CONCRETE / A revised "Manual of Standard Practice for Detailing Reinforced Concrete Structures" (ACI 315-74) based on the Building Code ACI 318-71, and standard specifications for highway bridges of the American Association of State Highway Officials, contains improved methods and standards for placing reinforcing steel and information on preparing engineering drawings. Developments in precast and prestressed concrete and in the increased use of computers to aid the detailer are covered. Typical engineering and placing drawings are shown to illustrate the use of the standards. The manual costs $16. ▪ American Concrete Institute, Detroit, Mich.

Circle 417 on inquiry card

LIGHTING MAINTENANCE AND INSTALLATION / The "Trouble-shooting Guide for Fluorescent Lamps" contains 14 tables that describe normal end-of-life characteristics and typical fluorescent lighting system maladies. Shortened lamp life, end blackening of lamps, slow lamp starting, lamp blinking, streaks on tubes, radio interference, lighting system noise and other problems are detailed along with 64 possible causes and suggested corrective maintenance techniques. This 20-page booklet also explains how to analyze fluorescent systems for fixture circuitry malfunctions and discusses the operating characteristics of common fluorescent light sources. ▪ General Electric Co., Cleveland, Ohio.

Circle 418 on inquiry card

Rooftop pool

2½ acres big, five stories up, and leakproof.

Overly builds the pools that others don't.

The three decorative pools in the center of the Empire State Plaza in Albany, N.Y., just may be the world's largest structurally unsupported aluminum fabrication—and Overly's the fabricator. The pools rest on top of the five-story Empire State Plaza Substructure and cover 2½ acres of Plaza area.

The statistics involved almost boggle the mind. Some 13 miles of welds have been made, and all welders had to pass stringent welding examinations before they were certified. Overly engineers and foremen trained them. High winds and rainfall sweep the site; welders work inside enclosed rolling shelters. The main pool will expand 8½ inches in length and 4½ inches in width at times, so the pools are floated on gravel beds. One will be frozen for ice skating in the winter; the main pool and south pool will feature decorative fountains, sprays and an Alexander Calder sculpture. All three pools are warranted for five years against leakage.

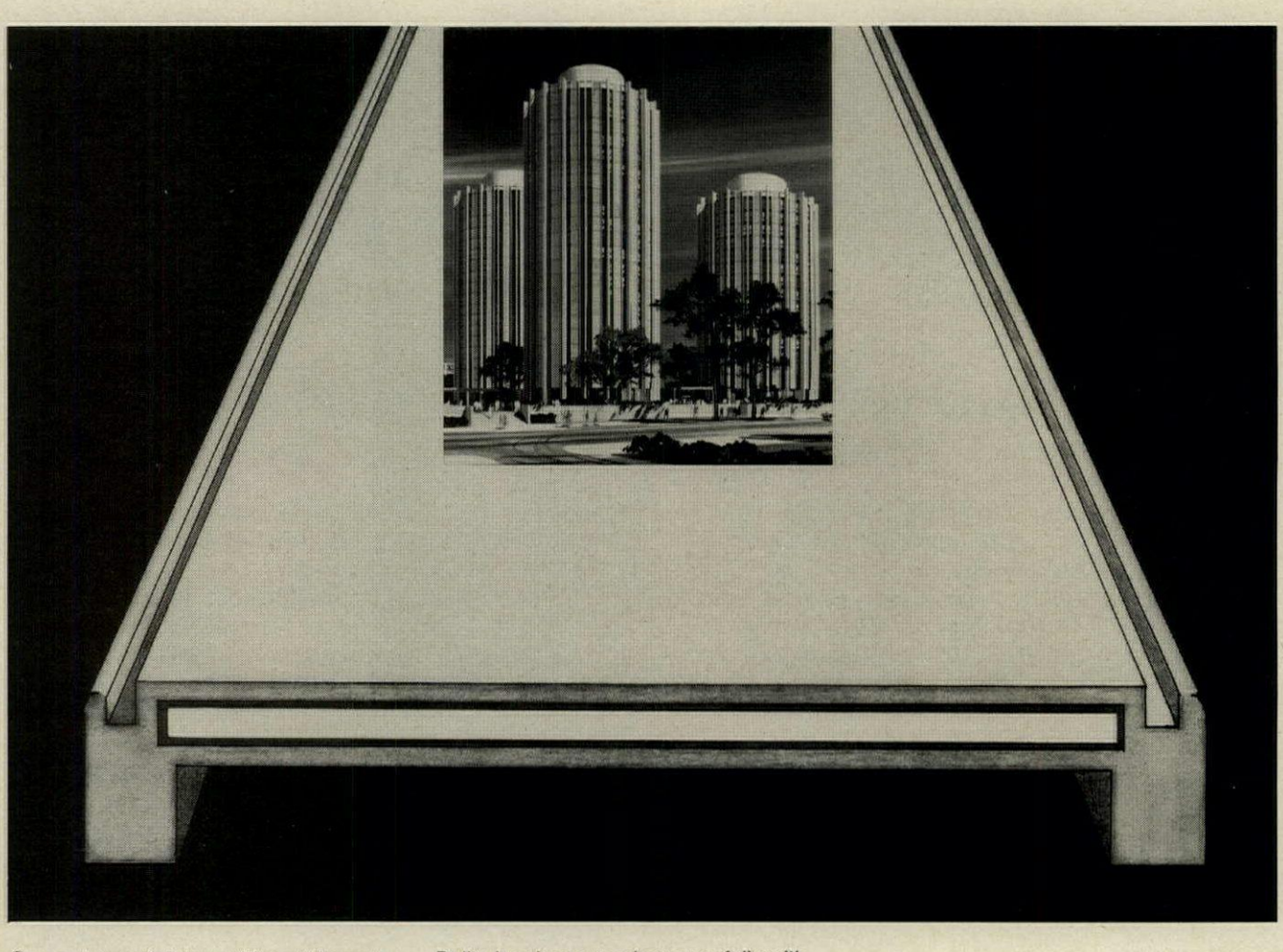
This is the biggest rooftop pool job Overly ever built, of course. If we can build them that big, we can build one to your specifications, on top of a hotel or anywhere. We also design, fabricate and install therapy pools as well as competition-type Olympic-sized pools. For the complete story on our Albany installation and our pool catalogs, write Overly Manufacturing Company, 574 West Otterman Street, Greensburg, Pa. 15601. We're also in Sweet's.

overly
MANUFACTURING CO.
DOES WHAT OTHERS DON'T

For more data, circle 94 on inquiry card

Here's a good sandwich for weight and energy watchers:

Dylite® foam and concrete.



Concrete sandwiches with cast-in cores of Dylite expanded polystyrene foam are being specified by architectural engineers and designers to cut tons off a building's weight and reduce air conditioning and heating energy costs for the building owner.

Dylite is desired as the core material because of a combination of properties. It has low thermal conductivity. Its closed cell structure results in low water absorption.

Dylite has been used successfully with concrete and other materials in many applications around the country. The University of Pittsburgh Student Residence Towers shown is one example.

It is also being used as insulation for many types of construction panels and as a plaster base. It can be cut, sawed or shaped on the job site with conventional tools.

For more information, write to ARCO/ Polymers, inc., 1500 Market Street, Philadelphia, PA 19101.

ARCO/Polymers, inc.
Subsidiary of AtlanticRichfieldCompany

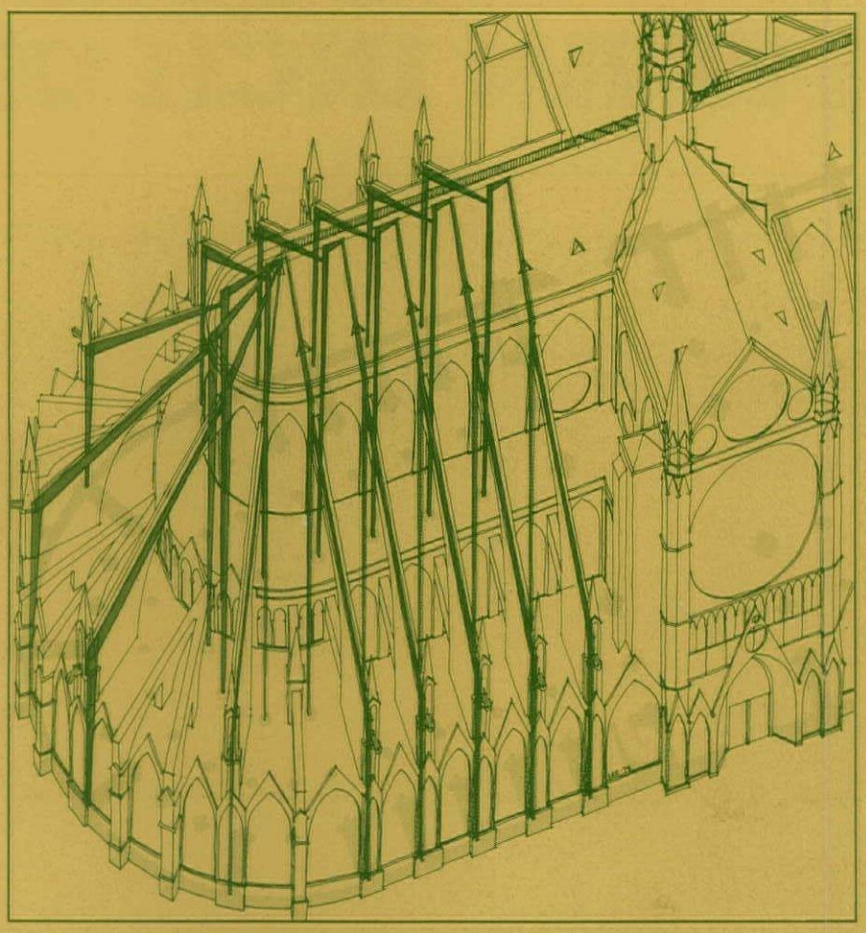
CAUTION: Dylite is combustible and should not be exposed to open flame or other ignition sources.

 # A-3 Architectural Record; Roofing, Siding & Insulation (3025)

For more data, circle 44 on inquiry card

For more data, circle 95 on inquiry card

STARSOLUTION 4



Notre Dame: Paris. In 1845, Eugene Emmanuel Voillet-le-Duc took on the task of restoring Notre Dame de Paris and other Gothic structures in France. He wanted to preserve its Gothic integrity or as Victor Hugo put it, "the living history" of the building. Yet Voillet-le-Duc was not a purist. He was keenly interested in new concepts and new materials such as cast iron and in prefabrication. Neither was he a stranger to budgets.

Voillet-le-Duc would have been particularly interested in Star's pre-engineered building systems that offer economy, quick erection and compatibility with other materials. He'd also have appreciated *our* progressive attitude.

We think the real innovations in pre-engineered buildings are yet to come. Why not from you, monsieur? At least consider the possibilities that exist with Star before you tell us to go take a flying buttress.

Star Buildings

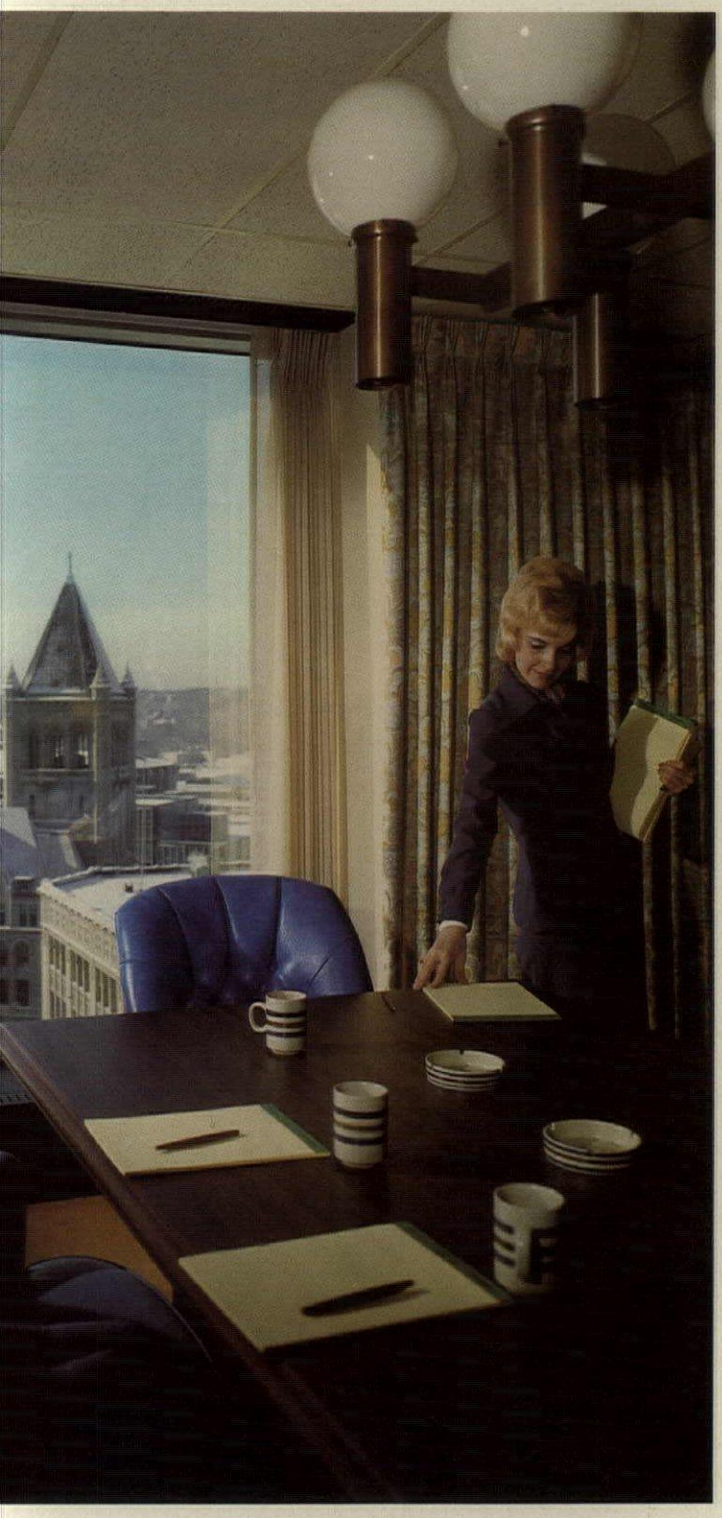
There's a place for us.

For more information about Star Building Systems, write: Star Manufacturing Company, Dept. AR35, Box 94910, Oklahoma City, Oklahoma 73109. Or see the Star catalog in Sweet's Architectural and Industrial Construction/Renovation Catalog File, Section 13.7.

WHEN YOU'RE AI
34° BELOW O
MAKE IT AN INCH OF HIGH

Northern Federal Building, St. Paul, Minnesota. Owner: Yorktown Investment

NCH AWAY FROM
98° ABOVE,
PERFORMANCE GLASS.



THE GLASS FOR ALL SEASONS.
VARI-TRAN®– THERMOPANE®

While extremes may not be the norm, the people of St. Paul, Minnesota, have stepped very quickly through −34° winter mornings, and sweltered through long 98° summer days. Under these extreme conditions, architects and owners select building materials very wisely. At the Northern Federal Building in St. Paul, wise meant selecting LOF reflective Vari-Tran® coated glass in Thermopane® insulating units for the tower.

SAVINGS ON ELECTRIC ENERGY TO HEAT BUILDINGS.

In the 14-story tower portion of the building glazed with LOF high-performance glass, the amount of energy required for heating at a peak load is just over 2,800,000 BTUH. Had it been glazed in single-pane clear glass, the peak load requirements would have been 4,700,000 BTUH. The 1,900,000 BTUH difference reduces peak load system input by 559 kilowatts—amounting to a considerable savings in electrical heating cost.

OVER $164,000 SAVED IN INITIAL A/C COSTS.

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Block Building, Bayside, Wisconsin. SGS-580 structural gasket system with bronze reflective glass

Architect: Donald L. Grieb & Associates
Curtain Wall Contractor: Lurie Patek Glass Co.

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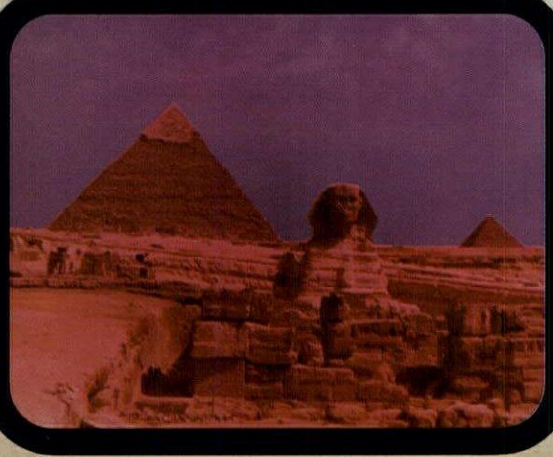

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2. Entries must be postmarked before December 31, 1975.
3. All entries eligible for Sweepstakes Drawing, January 21, 1976.
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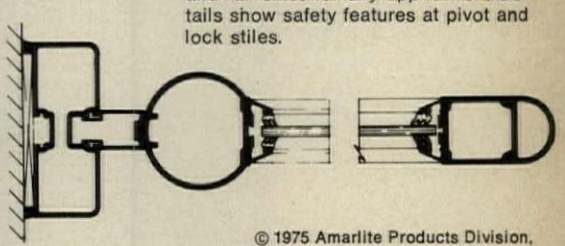

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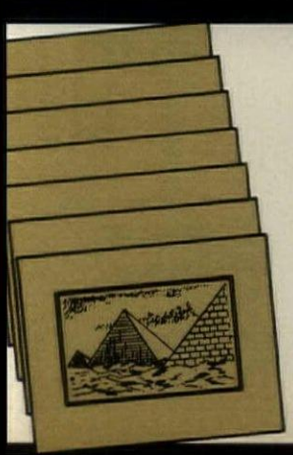

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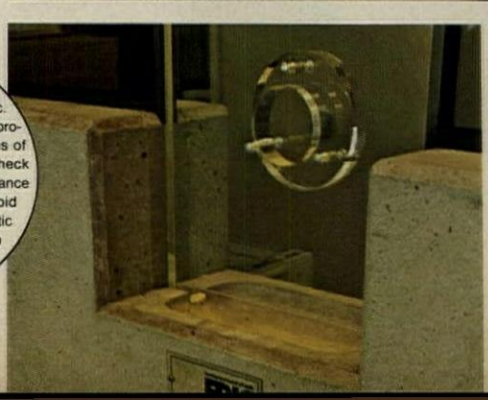

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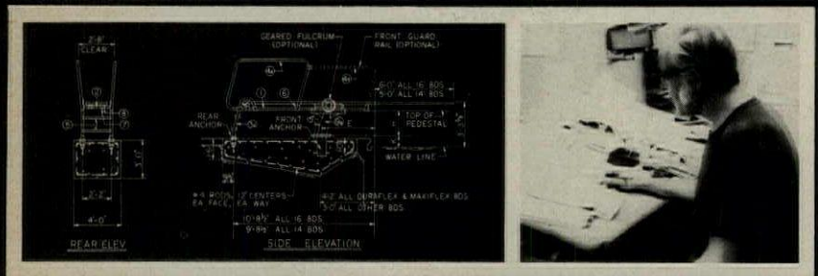

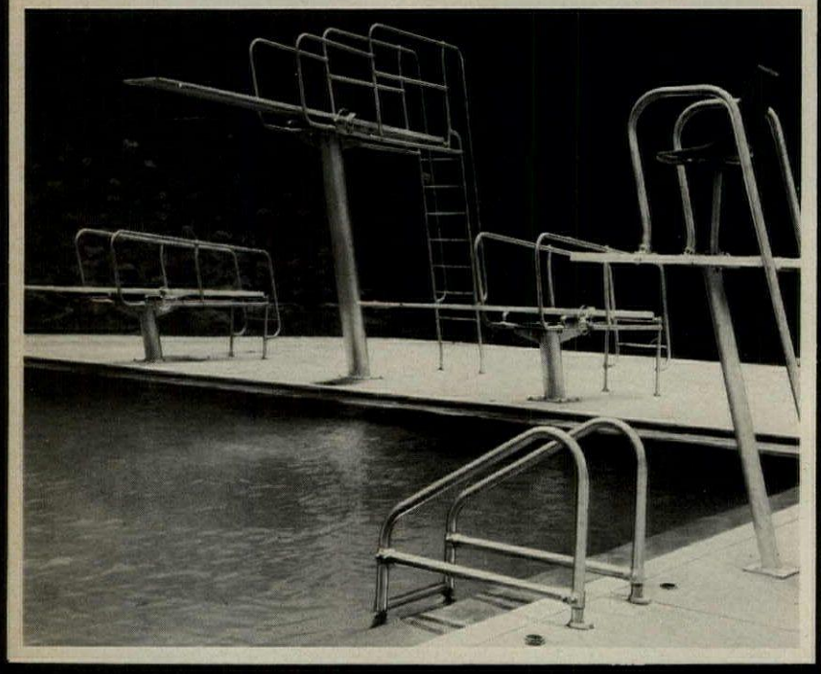

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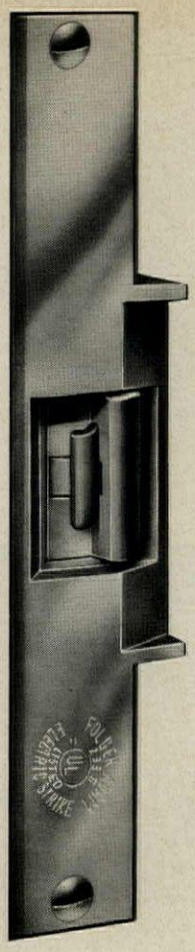

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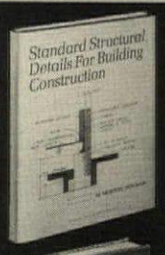

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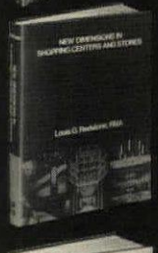

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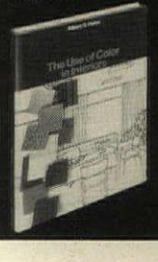

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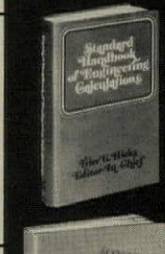

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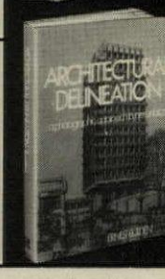

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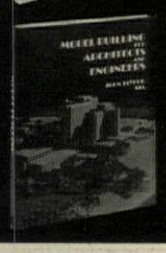

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OFFICE NOTES

New associates, promotions

Bruce Hartwigsen, AIA and **Hussein Shahine, AIA,** have been admitted as general partners to the firm of Rogers, Butler & Burgun, Architects, New York City.

Henry L. Ribbing has joined the architectural staff of R. W. Booker & Associates, Inc., St. Louis, Mo., as a project architect.

Robert E. Owens has been named vice president and director of interior design for the Leo A. Daly Co., Omaha-based engineering, architecture and planning firm.

Jim Orzechowski has been admitted to the partnership of Smith Carter Partners—a Winnipeg-based integrated architectural, engineering, planning and design practice.

The firm of Don Wudtke and Associates, Inc., San Francisco, Cal. has announced that **Richard E. Watson, AIA** has been named secretary-treasurer of the firm and a member of the board of directors, **John D. Kluttz** has been named vice president, and **Robert J. Stadelman** has been named an associate.

Edmund C. Sonnenschein, Jr. has left the Perkins & Will Partnership, Washington, D.C. to join John Carl Warnecke & Associates as vice president and project director.

Frank J. Malone has joined the firm of Kenneth Balk and Associates, Inc., St. Louis Mo., as director of construction management.

Hans Clinton Jensen has been appointed an associate in the Houston-based firm of Pierce, Goodwin & Flanagan.

Richard C. Rowland has joined Vaughn Hickman Perspective, an Indianapolis architectural rendering firm, as division director.

Arthur Erickson Architects announced the appointment of **Russell A. Vandiver, Jr.** as project director for the British Columbia Medical Centre at 2412 Laurel Street, Vancouver, British Columbia.

Jerry A. McLellan, P.E. has joined the Kalamazoo office of Carl Walker & Associates, Inc., consulting engineers.

Dalton•Dalton•Little•Newport have appointed **Hon. Robert E. Isaacs, AIA** (formerly Assistant Postmaster General of the U.S.) as vice president.

Ray Widmer, formerly of McIntire & Quiros-Pacific has been named a principal in the firm of Hale, Haaland and Associates Inc., a Thousand Oaks, Cal.-based firm.

J. Jesus Robles has been named an associate at Wheeler & Gray, a Los Angeles civil and structural engineering firm.

Richard W. S. Lee, architect, has recently joined the staff of James Gilbertson Associates, Lake Havasu City, Ariz.

Carole Harris has been appointed director of interior design for Nathan Johnson & Associates, Inc., Detroit, Mich.

Alexander/Rickli Architects—a joint venture, are pleased to announce that **Warren K. Kieding** has been promoted to an associate in the firm.

F. William Heilman, Jr. has been elected executive vice president of STV, Inc., consulting engineers, Pottstown, Pa.

James L. Hewlett, AIA has been named president of Architectural Designers, Inc., Architecture Interiors & Planning, P.O. Box 34355, Dallas, Texas.

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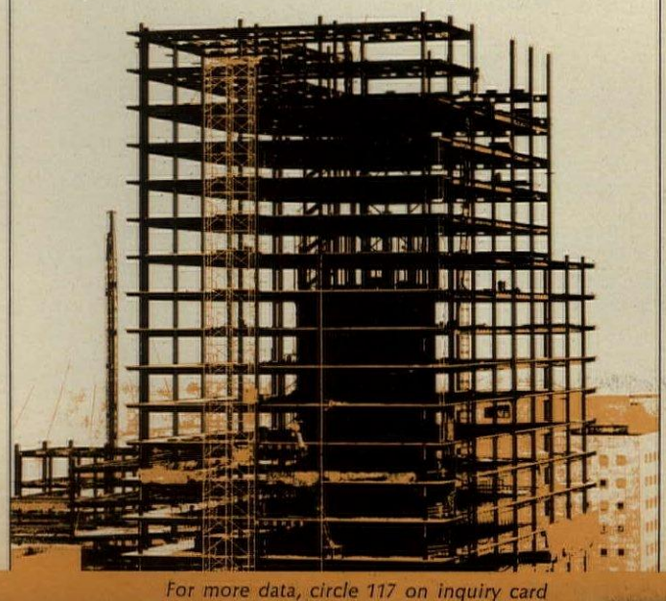

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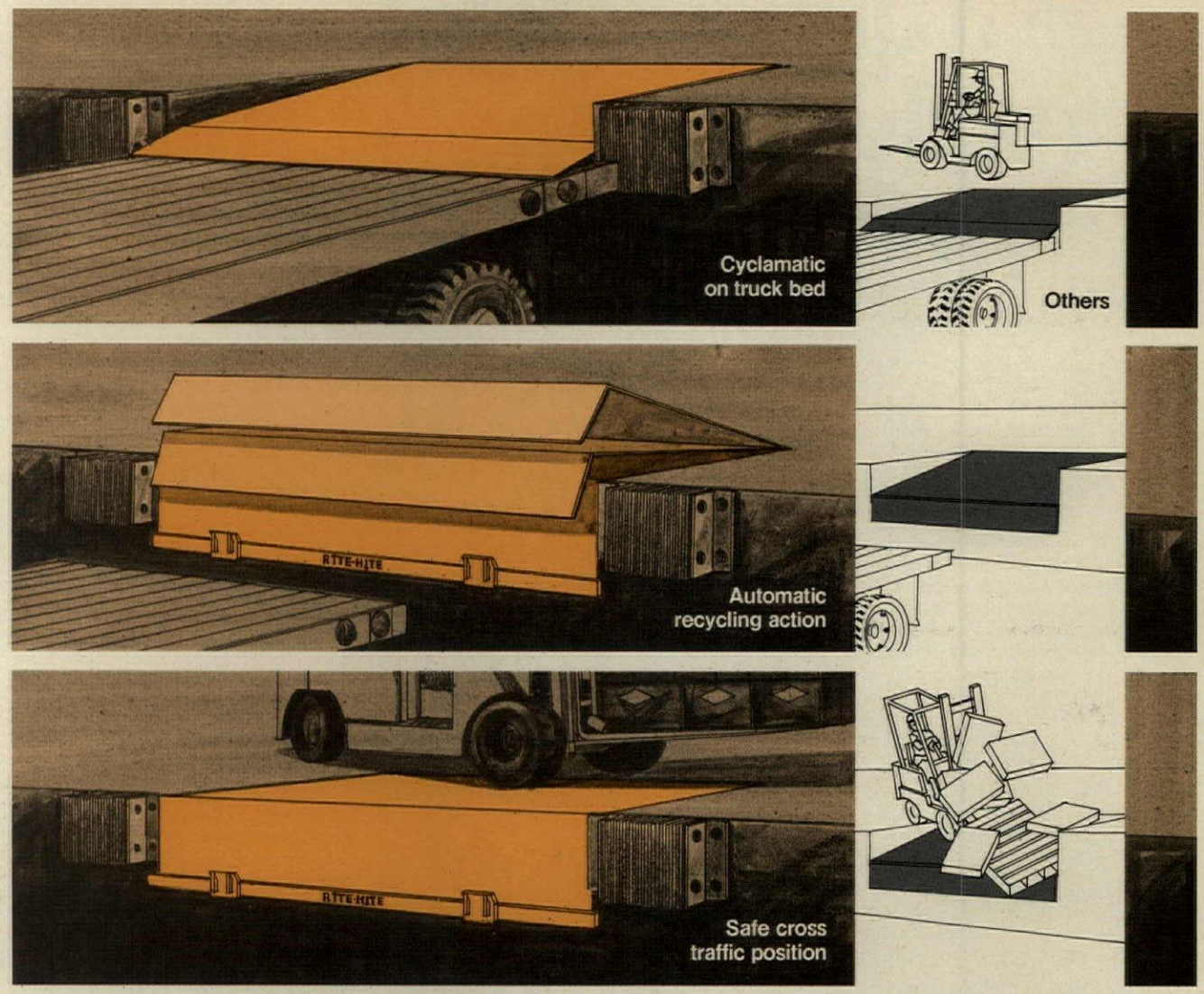

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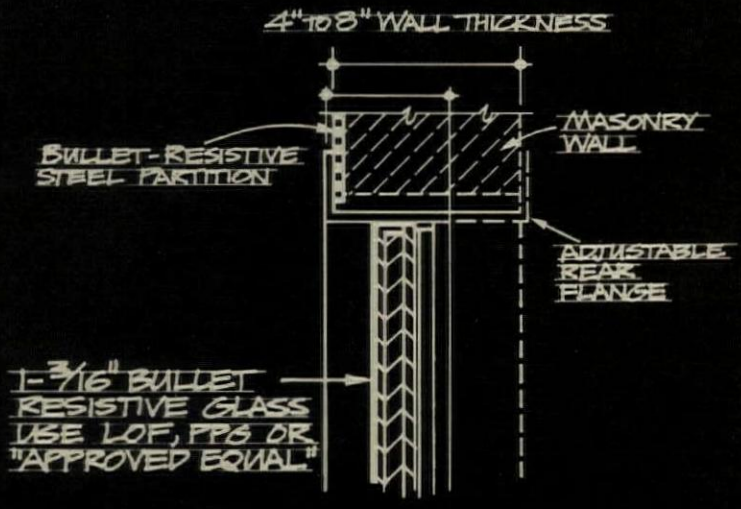

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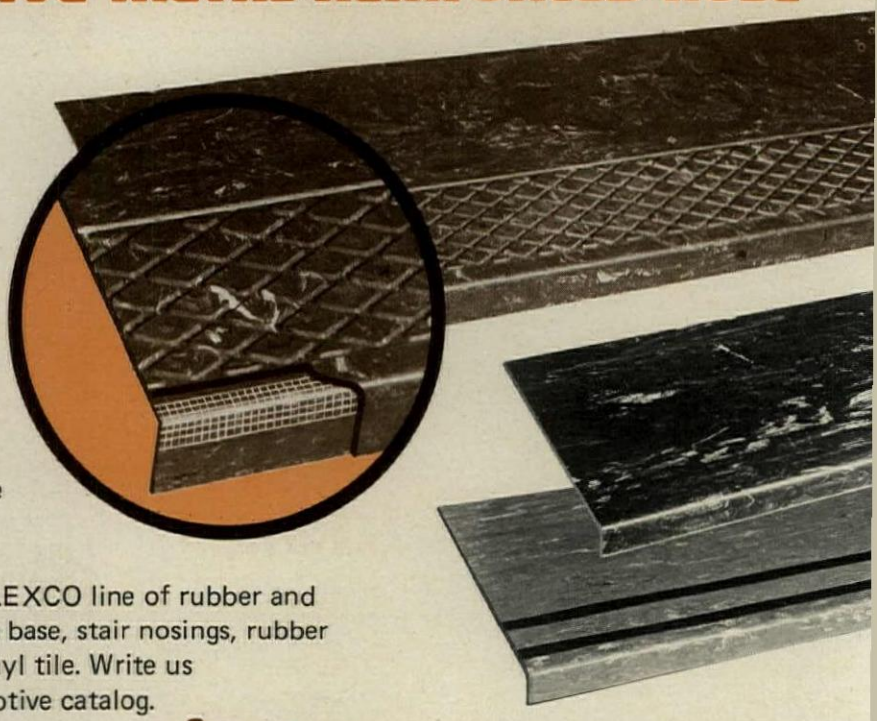
FLEXCO Rubber Treads are made of tough high grade rubber in 1/4" and 1/8" gauges! Diamond design safety treads, smooth treads and smooth design with Carborundum Safety Strips are made in a full range of sizes up to 72" long. Eight modern color styles.



You should know more about the FLEXCO line of rubber and vinyl stair treads, cove base, stair nosings, rubber tile and conductive vinyl tile. Write us for samples and descriptive catalog.

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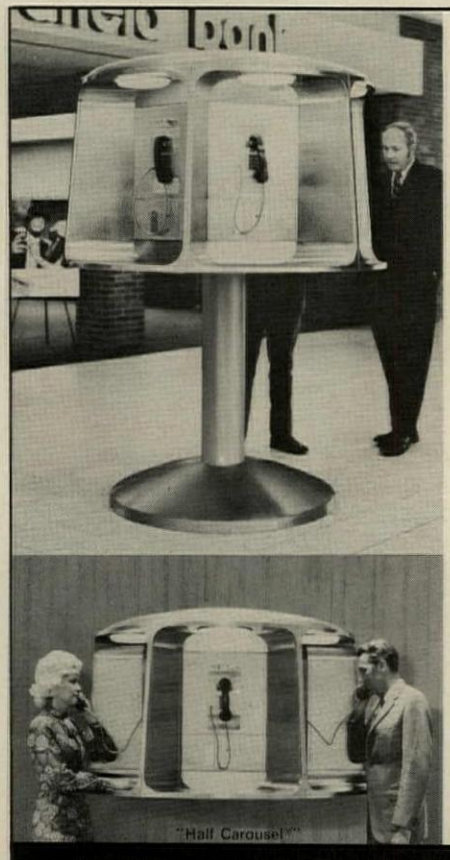
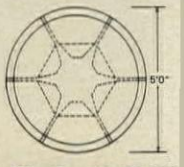


Six telephones in five-foot diamet



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Telephone 312/272-8880

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Gentle enough to transport blood

Consider this: for the first time, blood samples can be transported pneumatically with no significant red cell damage. How? AMSCO's 6″ and 8″ Anti-Agitation Transport Systems. Features include "anti-slosh" component design, impact-free reverse-pressure delivery. Proven safe for blood specimen transport . . . ideal for all items handled by AMSCO's Message and Messenger Systems.

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Control Air Quality By Washing The Air Before It Leaves Your Plant.

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The Air Washer uses a patented design based on impingement combined with a water spray to trap all air borne particles into a removal bag for easy disposal.

There are no moving parts. . .practically no maintenance. Air Washer offers vibrationless, trouble free, operation and it is easy to install anywhere.

For information on the new ECI Air Washer, see Sweets file 11.25EA, or contact ECI Air-Flyte Corp.

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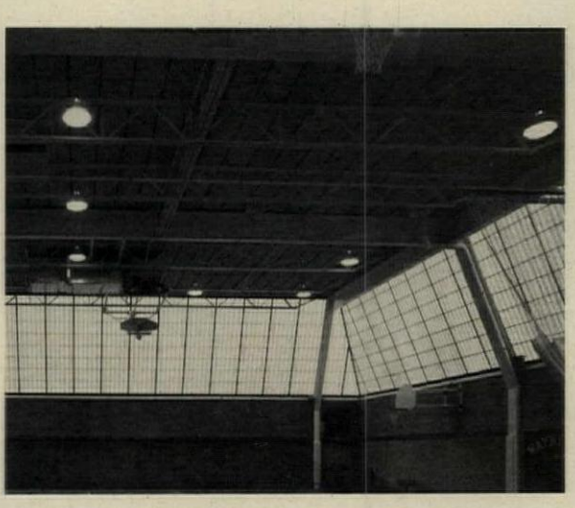
KALWALL® SYSTEMS



Kalwall is a complete, translucent, insulating wall — or roof — system!

Kalwall lets you save heating and air conditioning energy — and use the sun's energy to even greater advantage to save on artificial lighting, *and even pick up solar heat in the cold months!* (Ask about our NEW Sunwall!)

You can design your buildings with a choice of key ENERGY SAVING factors:

- It can have a variety of "U" Factors ranging between *.06* and *.40!**
- It can have a light transmitting value ranging between *3%* and *75%!*
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And Kalwall can be engineered for *every* building situation, *every* location, and *every* exposure!

PLUS — Kalwall buildings win design awards every year!

*As much as 86% energy savings over single glass!

Put these Energy Saving Systems to work in your buildings! Phone or write Mr. Bruce Keller, Vice President! A copy of the 1975 catalog is available too.

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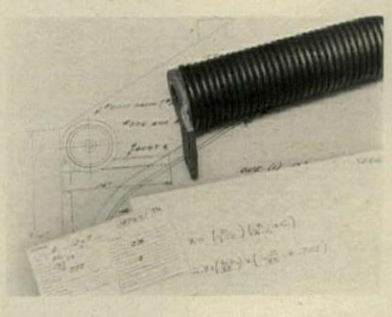
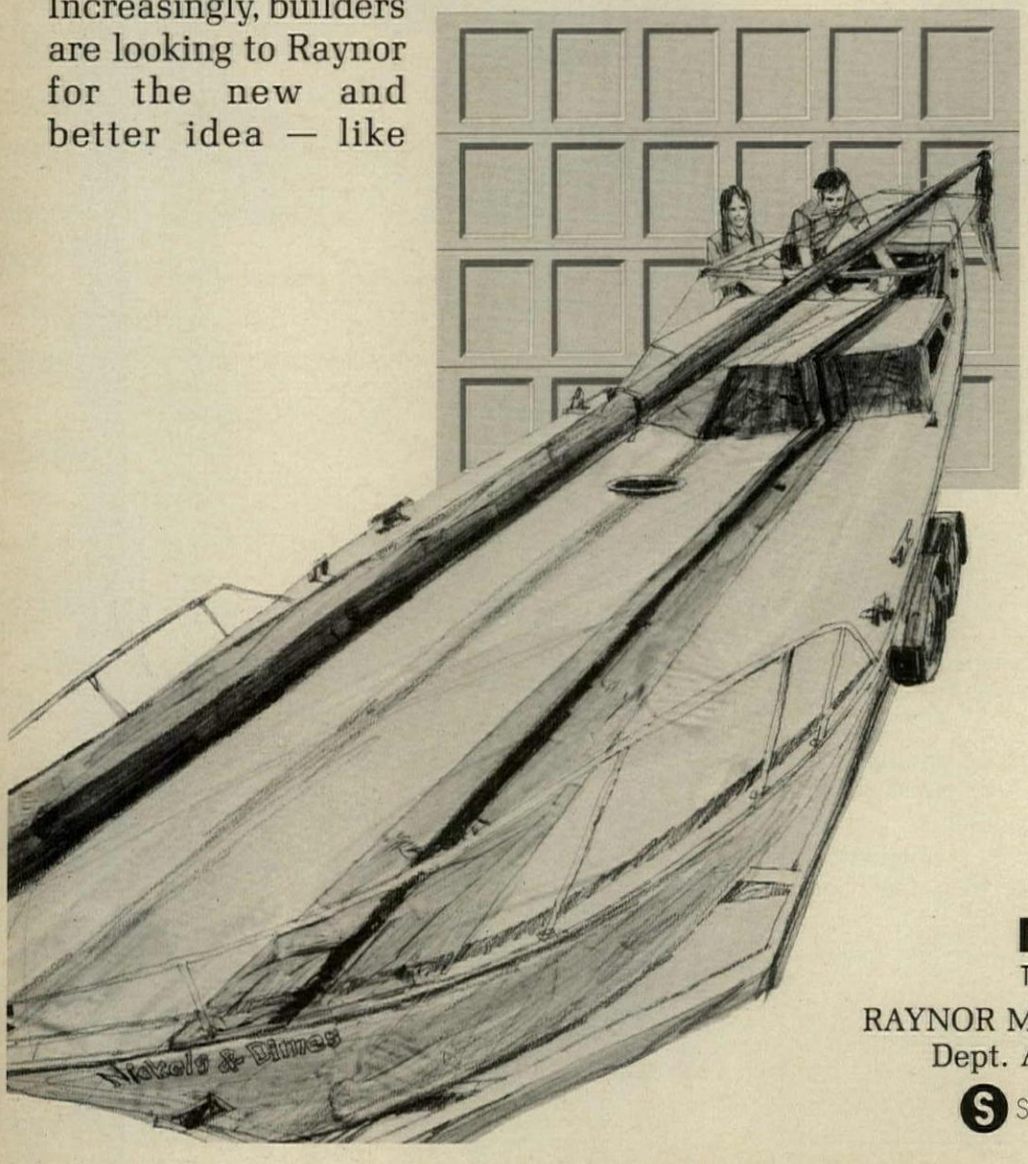
Patented

FOR ENERGY SAVING BUILDINGS!

If It's Worth Protecting, It Deserves A Raynor Door



There are good reasons why Raynor doors are appearing on more and more homes and apartments throughout the country. It's largely due to the many extras that only Raynor offers. There's a wide choice of materials, from wood to steel to fiberglass. And a choice of styles to blend with any architectural decor. Increasingly, builders are looking to Raynor for the new and better idea — like the low-priced Rebel door that features rigid extruded aluminum rails so panels stay straight and true longer. There are extra quality touches, too. Springs are custom wound and all hardware is custom engineered to perfectly suit the characteristics of each door. It's extra work to do it that way, but Raynor goes to the trouble so you won't have trouble later. Whatever protective purpose you have in mind, it deserves a Raynor door.



Raynor The Brand You Can Depend On

RAYNOR.
The Brand You Can Depend On

RAYNOR MANUFACTURING COMPANY,
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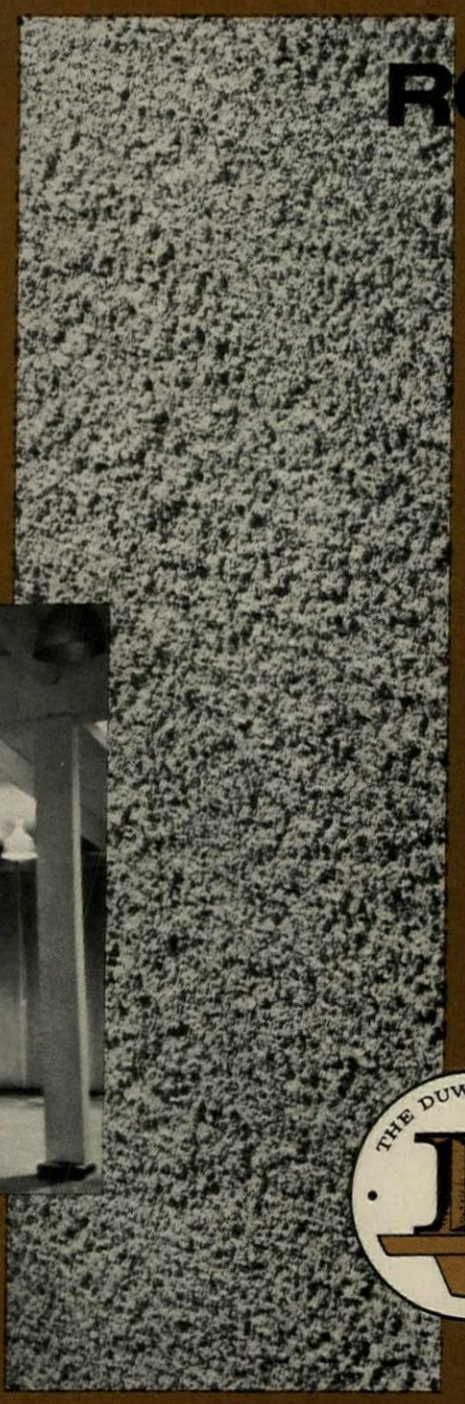
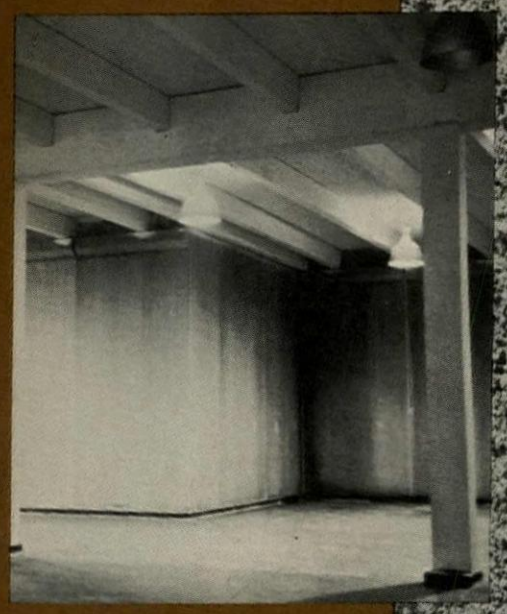
ROOF DECK





for quiet, strong architectural expression.
Duwe DULITE Roof Deck provides an economical engineering approach to attractive, permanent building construction.

Check these proven DULITE *advantages:*

Rates "as having a two-hour fire retardant value" by the Insurance Rating Bureau. This high safety factor assures lower insurance premiums. U.L. approved.

Conserves heating and cooling energy: insulating value equals 2" rigid board insulation, approximately four times that of ordinary concrete – "U" factor =.169.

Helps meet OSHA noise control requirements – NRC =.75.

Offers "nailable" concrete surface for covering with roofing materials as desired.

Made with light, strong DuCrete aggregate, may be trimmed to fit with power saw on the job as required.

Weighs no more than 10 lbs. per sq. ft., is not affected by water, will not retain moisture.

Finished in a natural, light grey color that may be easily spray painted.

Presents an attractive textured surface for improved building decor.

Available in slabs 3", 3½" and 4" thick by 24" wide; lengths up to 8'4". Standard, in-stock lengths are 4' and 5'.

Write or call for complete information and specifications on nationally available DULITE and Duwe's complete structural concrete line.

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If not, write for your special copy today. It details Bali-Architect's many impressive

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Cabot's BLEACHING OIL

Home by Techbuilt Inc., N. Dartmouth, Mass.; Architect: Fred Della Paolera; Cabot's Bleaching Oil on cedar siding and fence.

The unique "driftwood" look, usually found only in seacoast areas after years of exposure to sea air, may now be attained anywhere in a matter of months. Cabot's #0241 Bleaching Oil, when applied to new wood, provides a delicate gray tone that weathers gradually to a beautiful, natural driftwood gray. Suitable for all untreated exterior wood surfaces, any type of lumber. Everybody talks about the weather . . . Cabot's has done something about it.

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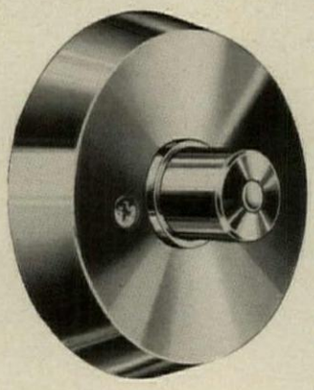
It takes guts to stand up to the gang.

When your plan or contract calls for water saving and water limiting shower valves, the system you decide on had better have guts. Because the chances are it's going into a gang shower at a school gym, public swimming pool or prison. And it's going to take abuse. Not just once in a while. But day in and day out, month after month.



Showeroff Automatic Shower Limiter 4-420

Here's the unit that's got the guts to take it. Symmons Showeroff. It's vandal-proof. There's no way it can be ripped from the wall. It's kid proof. Symmons design and construction sees to that. It conserves energy. It saves water, fuel, and operating costs. Press the button and it will deliver a regulated cycle of water and shut itself off. If the button's pushed a dozen times during the shower, Showeroff will still just deliver its cycle and stop. And working in combination with a Symmons Temptrol central water controller, it will deliver just the temperature you select, too.

Get in touch with the Symmons rep near you. Or call us direct at (617) 848-2250. Or write us: Symmons Industries, Inc., 31 Brooks Drive, Braintree, Mass. 02184. We've got the guts to handle the roughest customers.

Symmons®
We've got the guts to be better.

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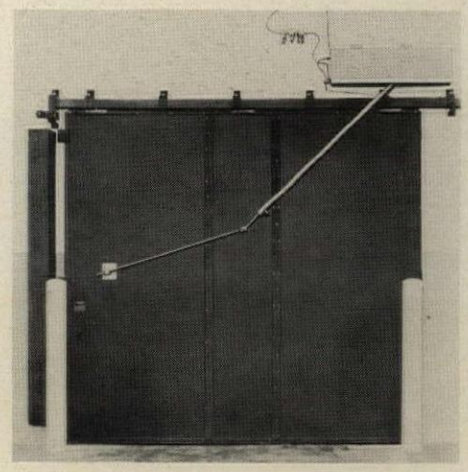
Yes, New Kelley AIR-GLIDE™ DOOR OPERATORS are better.



Here's Four Good Reasons

1. **GREATER SAFETY**
2. **LONGER LIFE**
3. **GREATER SIMPLICITY**
4. **LOWER COST**

Kelley Air-Glide Door Operators can be easily and quickly installed on swinging or sliding doors weighing up to 1500 lbs. They're instantly reversing with 2 independent safety systems. One is a unique pressure sensitive switch standard on all units. The second is door edge mounted.

Speed is fully adjustable and is under complete control throughout the entire operating range. They're self-lubricating and pull cord switch control is frost penetrating.

Two years use and extensive testing assures proven reliability. Users list available upon request.

Get the complete story from your Kelley Air-Glide representative or contact:

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Milwaukee, Wisconsin 53209
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55-645

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Compactus Mobile Storage Systems save on the high space cost of fixed shelving . . . help beat today's economic crunch! Movable shelving maximizes storage . . . minimizes space needs . . . eliminates all but one access aisle. Store anything in half the space. Semi-Automatic and Manual Systems available.

COMPACTUS—the storage maximizing system

POWERS

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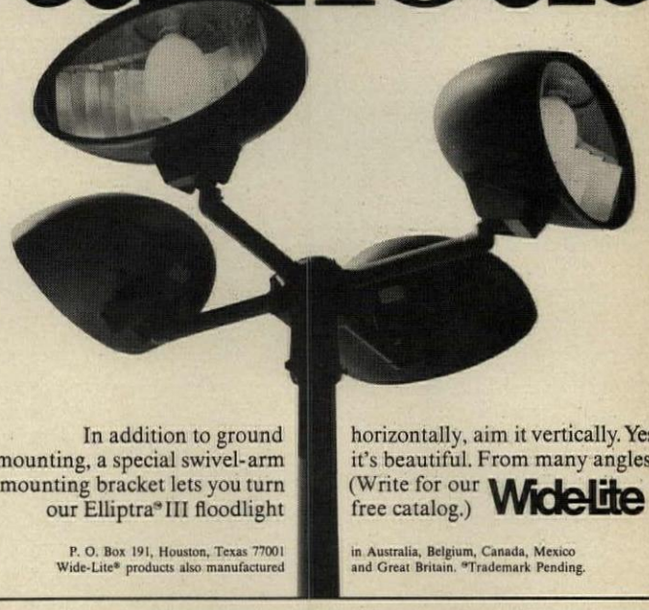
Light turnout



In addition to ground mounting, a special swivel-arm mounting bracket lets you turn our Elliptra® III floodlight horizontally, aim it vertically. Yes, it's beautiful. From many angles. (Write for our free catalog.) **WideLite**

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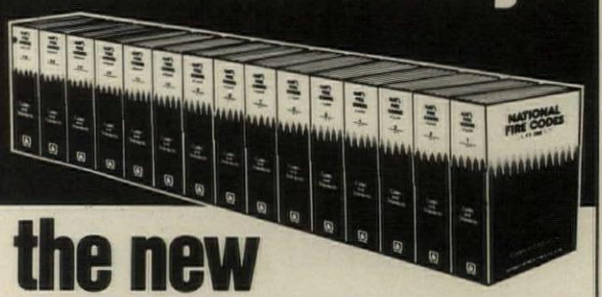

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Trans-Logic, the breakthrough system.

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Massey firmly believes that there is no substitute for teachers. But we do believe that students learn more quickly when they are comfortable.

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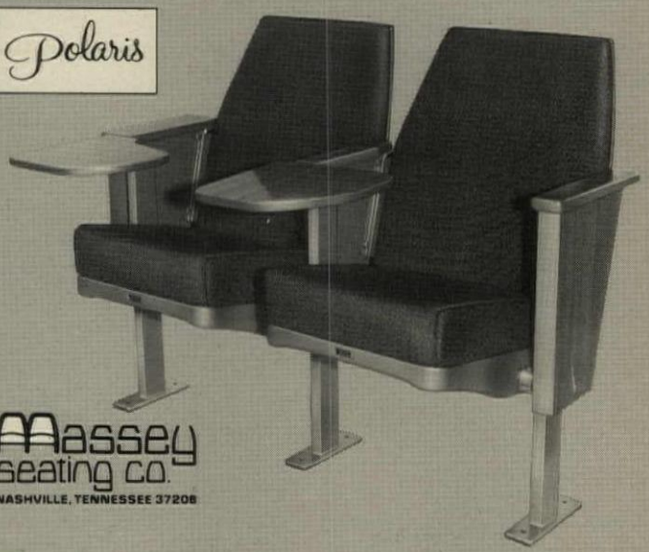

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NASHVILLE, TENNESSEE 37208

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MA SWEET'S

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Sweet's has taken another step to make your product information searches faster, easier and more effective with a new service called BUYLINE. It helps take the mystery out of locating sales representatives. Here's how BUYLINE works:

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Within minutes the BUYLINE operator will supply you with the name, location and telephone number of the nearest sales representative for any 1975 Sweet's client-manufacturer . . . information not readily available from any other source.

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Maybe that's why we only half jokingly call it MA SWEET'S. It's just another step in our effort to take better care of you.

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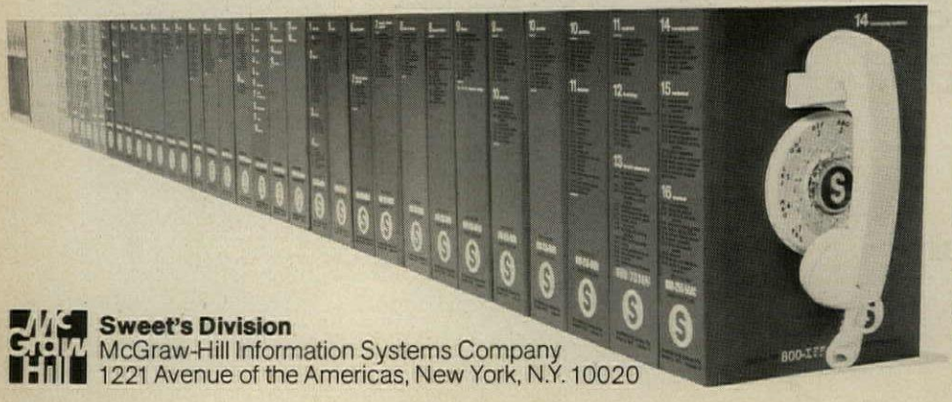

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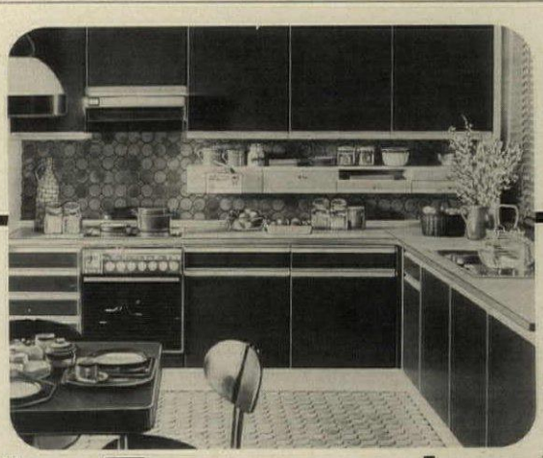

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The NEW
DIAZIT-TRAN eighteen

IT'S AMMONIA-FREE ... No more mixing and pouring chemicals. No more ammonia fumes or smell. No warm-up ... yet sharp, clear prints including sepia intermediates. Send for price and spec details of the most complete line of competitively priced whiteprinting (blueprinting) equipment available today.

■ Six models to choose from, including the AMMONIA-FREE DIAZIT-TRAN 18

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U.S. #1, Youngsville, N.C. 27596

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New EnerCon heating and air conditioning

The system that puts money

Introducing two new air-conditioning systems for schools.

Right now, as construction and energy costs keep soaring with no end in sight, AAF has two new ways to keep a tighter fist around your operating budget. The EnerCon Classroom Air Conditioner and the Reverse-Cycle UNIvent. Two new systems that dras-

It costs less annually to heat and cool with EnerCon than with any other system. Approx. energy cost per sq. ft. per year:
EnerCon—17¢
4-Pipe Unit Ventilator—23¢
Central VAV—24¢
Roof Top—39¢
Dual Duct—42¢

tically cut heating/cooling power costs in schools. Both recycle energy. Both save money. Both are designed for easy installation in either modernization or new building projects.

Save up to 25% in energy costs.

With EnerCon. The system designed to save energy, by not wasting it.

EnerCon is a new concept in school heating and cooling. It captures and reuses energy other systems throw away.

A simple water loop makes it possible. The water loop—interconnecting each unit—recirculates energy throughout the system. Or, stores it until needed. You spend less—up to 25% less—in system operating costs.

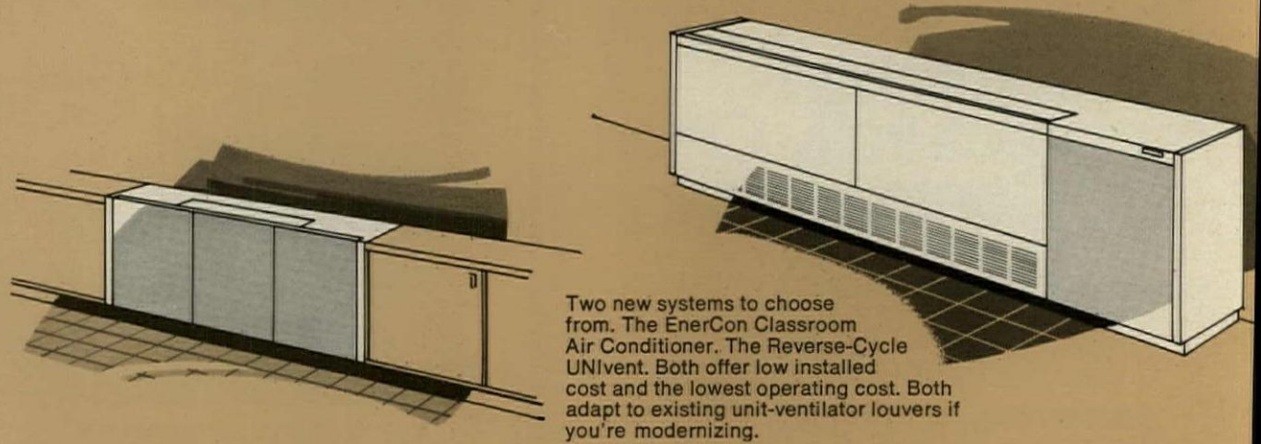
The Reverse-Cycle UNIvent System.

Where desired, the ASHRAE II ventilation cycle can be provided with AAF's new Reverse-Cycle UNIvent. With a wall louver similar to standard unit ventilators, it has 100% outside-air capability. With ASHRAE Cycle II, you have fresh air constantly, and during moderate temperatures, you can cool without operating the refrigeration circuit. So you save even more over conventional systems. You get all the operating economies of reverse-cycle air conditioning with all the benefits of a unit-ventilator system.

And the Reverse-Cycle UNIvent is a perfect solution to modernization, too. Existing "heat-only" unit ventilators are easily replaced by Reverse-Cycle UNIvents. A larger wall opening is *not* necessary, and frequently it is possible to reuse the existing hot water piping for the water loop.

The EnerCon Classroom Air Conditioner system.

This Reverse-Cycle unit also cuts power costs to the bone. EnerCon Classroom Air Conditioners can be used as an individual system or in conjunction with Reverse-Cycle UNIvents. Either way, they're the answer for offices, corridors and administrative areas where 100% fresh air isn't essential—the EnerCon



Two new systems to choose from. The EnerCon Classroom Air Conditioner. The Reverse-Cycle UNIvent. Both offer low installed cost and the lowest operating cost. Both adapt to existing unit-ventilator louvers if you're modernizing.

ack into your budget.

Classroom Air Conditioner brings in up to 25% outside air.

These units also adapt to existing unit ventilator louvers if you are modernizing. And, EnerCon Classroom Air Conditioners are compatible in design and construction with all AAF cabinets and classroom accessories, including the effective, energy conserving Draft/Stop return air arrangement.

EnerCon pinpoints your heating/cooling needs.

The average school frequently calls for both cooling and heating at the same time, even during the middle of winter. For instance, heat gain from lights, equipment and people means that core areas need to be cooled whenever they are occupied. So, core areas must usually be cooled even while perimeter areas are being heated.

And during moderate weather conditions, the shifting of the sun from one side of a school to the other can make the difference as to whether you heat or cool the perimeter. Conventional systems exhaust the heat from the areas being cooled, EnerCon reuses and utilizes this energy. You get cooling or heating where you want it, quickly and efficiently, at less cost.

And, you get a lot of heating practically free of charge.

Schools frequently have excess heat available during the day when classrooms are occupied, even when it is chilly outdoors. That excess heat is transferred to the water loop raising its temperature to the maximum limit before any heat is rejected from the building. The EnerCon system can then heat the building during the night by transferring heat stored in the water loop.

EnerCon cuts costs all around.

Energy costs. Installation costs. Operating costs. They're all cut to the minimum. In fact, the annual owning cost of an EnerCon system, whether it's EnerCon Classroom Air Conditioners or Reverse-Cycle UNIvents, is especially attractive when compared to other heating/cooling systems on the market today. It's designed for today's school.

For more information, write: AAF, Dept. 131, Box 1100, Louisville, Kentucky 40201.

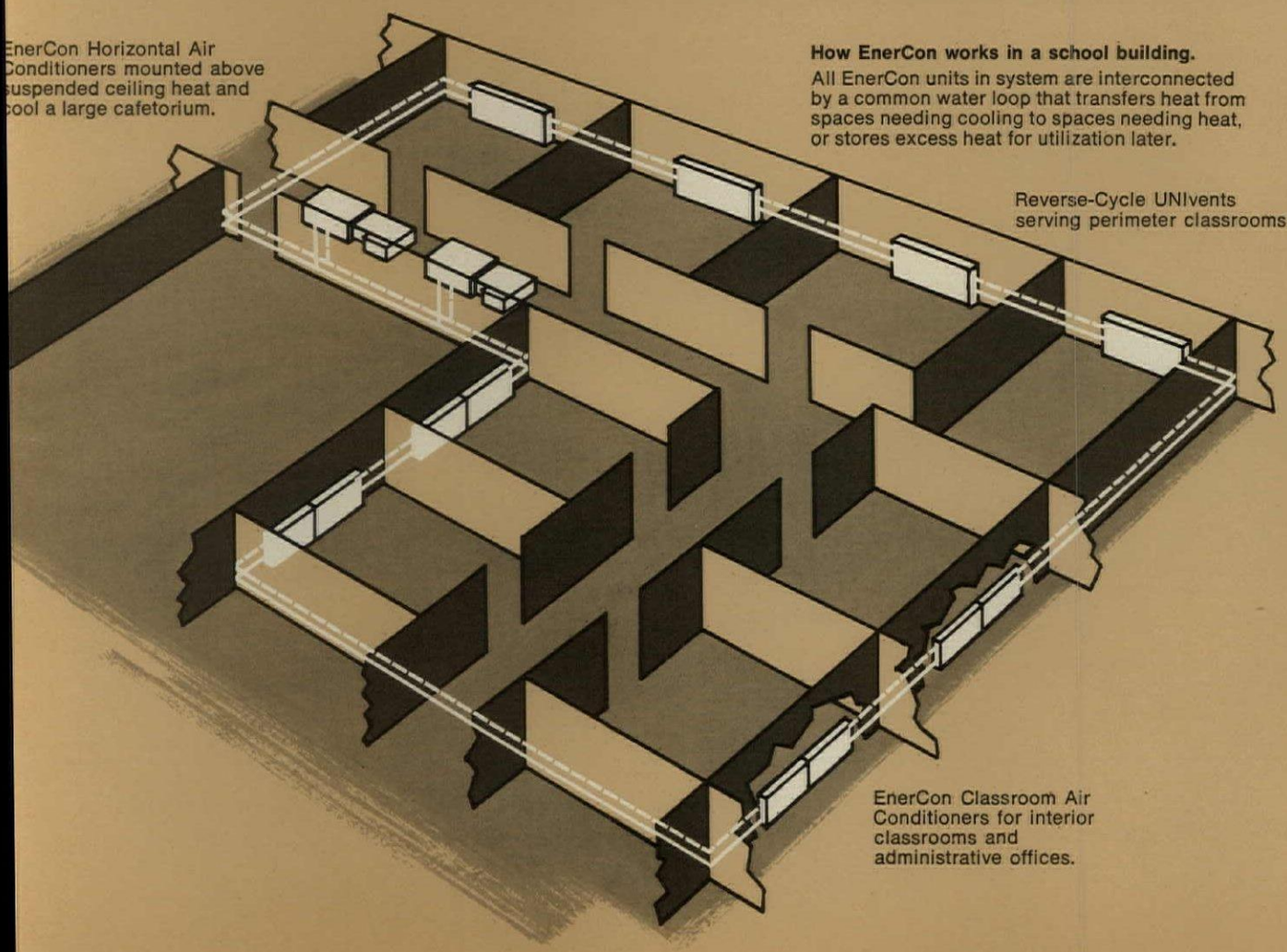
Better Air is our Business.

AAF American Air Filter
SCHOOL ENVIRONMENTAL SYSTEMS

EnerCon Horizontal Air Conditioners mounted above suspended ceiling heat and cool a large cafetorium.

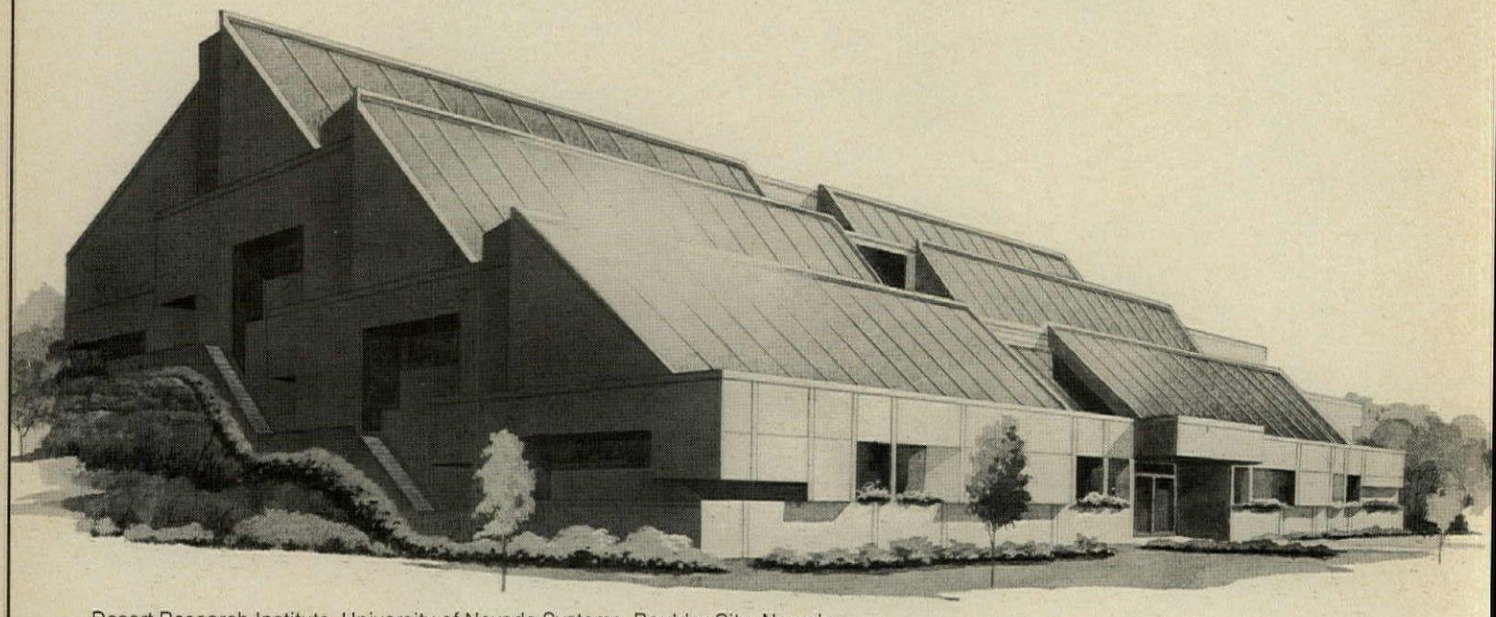
How EnerCon works in a school building.
All EnerCon units in system are interconnected by a common water loop that transfers heat from spaces needing cooling to spaces needing heat, or stores excess heat for utilization later.

Reverse-Cycle UNIvents serving perimeter classrooms.



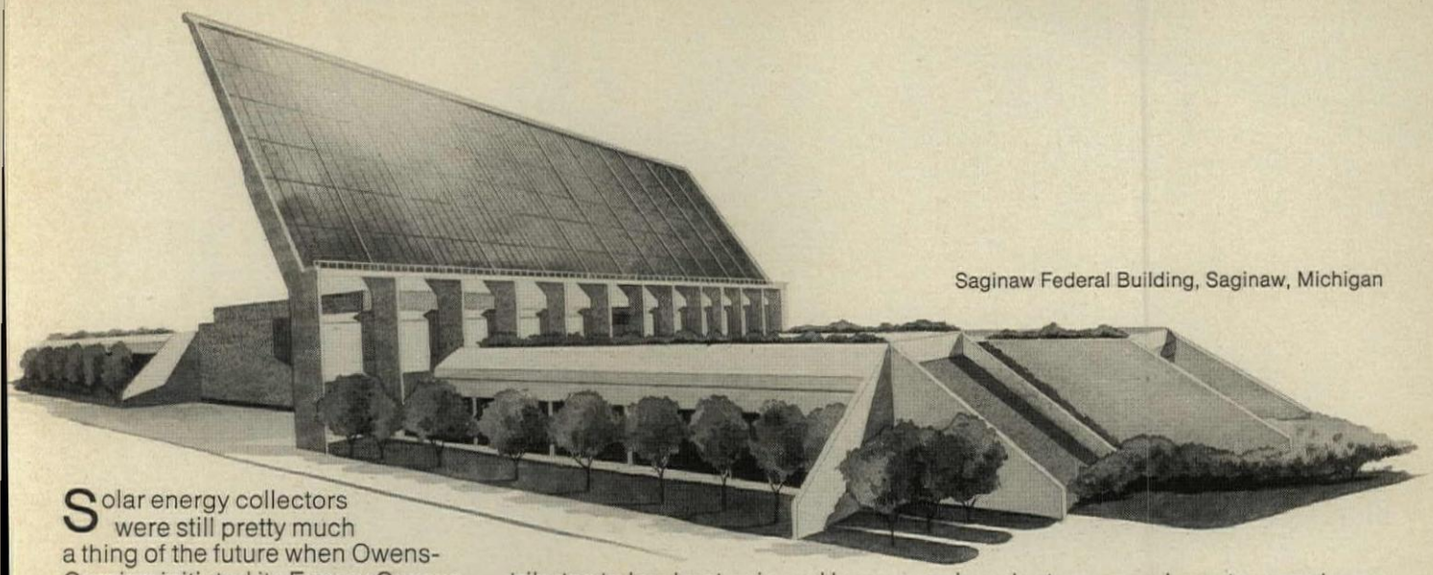
EnerCon Classroom Air Conditioners for interior classrooms and administrative offices.

Presenting the 1974 winners of the Owens-Corning Energy Conservation Awards.



Desert Research Institute, University of Nevada Systems, Boulder City, Nevada

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



Saginaw Federal Building, Saginaw, Michigan

Solar energy collectors were still pretty much a thing of the future when Owens-Corning initiated its Energy Conservation Awards Program in 1971.

This year, both our Award Winners—plus two designs receiving honorable mention—rely heavily on the sun for their energy needs.

Look these designs over. They may suggest a way your company can conserve energy and cut fuel costs.

Desert Research Institute, University of Nevada Systems, Boulder City, Nevada

A 4,000 sq. ft. solar collector provides energy for 98% of the heating, 30 tons of cooling, and 96% of the hot water demand in this 8,800 sq. ft. structure. Estimated energy savings: 63,000 KWH annually.

Concrete walls and ceilings act as an insulation envelope that protects against temperature fluctuations and an uneven draw on the energy collector.

Structure is built into a hillside for perimeter shielding from heat and cold. Plant life on exterior walls gives additional shielding.

Design by Jack Miller & Associates, Las Vegas, Nevada, in association with Arthur D. Little, Inc., Cambridge, Mass.

Saginaw Federal Building, Saginaw, Michigan

An 8,000 sq. ft. flat plate solar energy collector provides energy for heating and cooling.

Fenestration is pushed into the earth, and approximately half the roof is landscaped with lawn, shrubs, trees and seating. This contributes to low heat gain and loss.

Design by Smith, Hinchman & Grylls Associates, Inc., Detroit.

Two Honorable Mention Awards

The Owens-Corning Energy Conservation Awards Jury found two other designs worthy of special attention.

Science Museum of Virginia, Richmond, Virginia. Combines a 28,000 sq. ft. solar energy collector with a heat-recovery system for heating and cooling. Expected energy operating cost: $12,000 vs. $50,000 for a conventional heating and cooling system. A saving of 75%.

Mechanical design by Hankins & Anderson, Inc., Consulting Engineers, Richmond, Virginia.

Denver Community College of Denver/North Campus, Westminster, Colorado. Combines a 50,000 sq. ft. solar collector with a heat-pump system to cut fossil fuel requirements by nearly 80%. Insulation maintaining an exterior wall U-value of .065 is used throughout.

Design by A.B.R. Partnership, Denver, Colorado.

How the Awards Program works.

Owens-Corning accepts entries in any of four building design categories:

Institutional—schools and hospitals, for example.

Commercial—office buildings, shopping centers, retail stores and similar structures.

Industrial—including manufacturing plants, research centers, and warehouses.

Governmental—post offices, administrative buildings and military structures, among others.

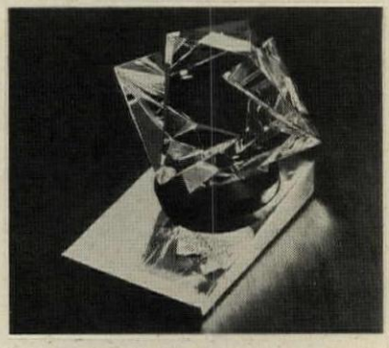
Any registered architect or professional engineer in the U.S. is eligible to enter a design. The only requirement is that the design be a *commissioned* building project. (The use of Fiberglas* insulation—although an excellent way to conserve energy—is not a requirement.)

Winners are selected by a special Awards Jury composed of leading engineers and architects.

Send for free Energy Conservation Awards Program brochure

If you'd like to know more about the winners, or their designs, write for a free brochure giving complete details.

Owens-Corning Fiberglas Corporation, Att. V. G. Meeks, Fiberglas Tower, Toledo, Ohio 43659.



The Owens-Corning Energy Conservation Award: "Triangles," a multi-faceted Steuben Crystal sculpture that captures and reflects light from triangular planes.

Owens-Corning is Fiberglas

OWENS/CORNING FIBERGLAS TRADEMARK®

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B.P. Centre, Cape Town, South Africa.

START AT THE TOP IF YOU

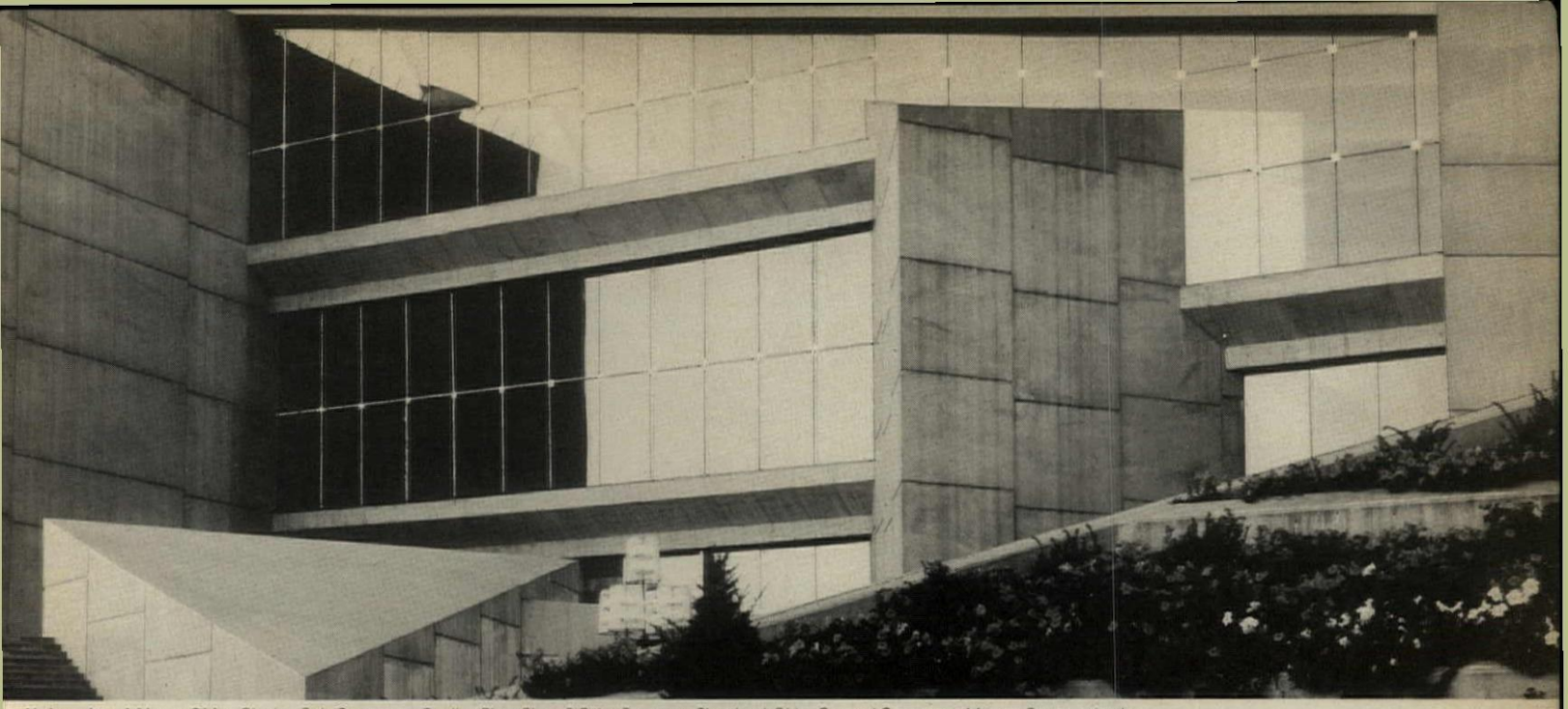
A unique combination of experience and sophisticated technology gives the Pilkington all-glass facade system an unrivalled design flexibility, allowing architects greater scope for creative expression.

Using specially processed and tempered 'Armourfloat' glass plates suspended from the building structure we can design single assemblies up to 75ft. high with no limitation in length. That's far in excess of all previous glass systems.

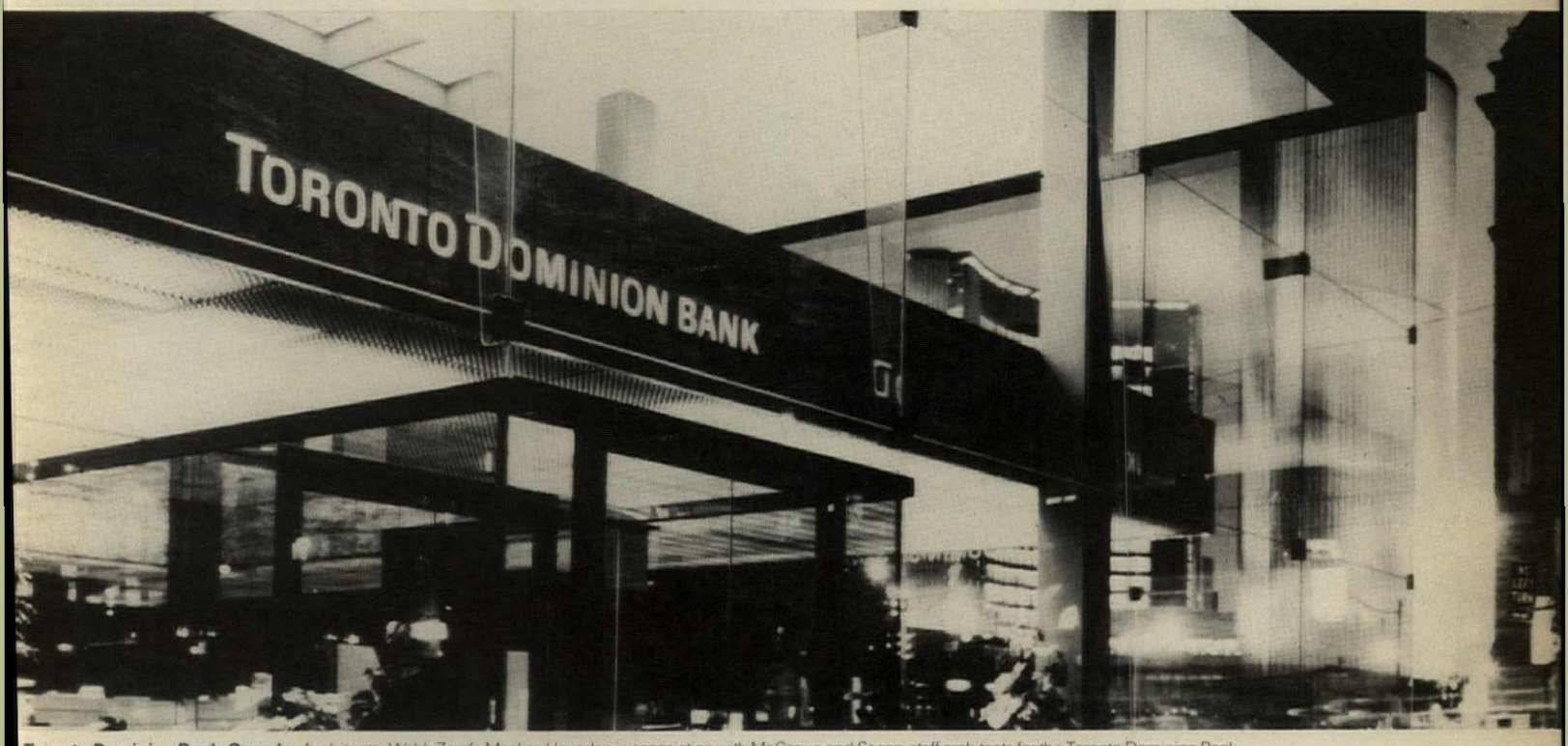
During the last 12 years over 50 buildings in 16 countries around the world have incorporated Pilkington 'Armourfloat' suspended glass assemblies.

The design potential for the system is enormous. The new Louisiana Downs grandstand, Bossier City, employs a multiple assembly system 600ft long and 66ft high. One vast assembly 1000ft long and 53ft high forms the complete facade of a new office complex at Ipswich in England.

Inherently more versatile than other systems, Pilkington assemblies can be designed to satisfy virtually any performance criteria. For example the assembly for the Centre Point building in London was designed to withstand wind pressures of 66ps and was tested to over 80psf. A completely novel spring suspension system was designed to cope



University of Akron, Ohio. *Glazing Sub-Contractor:* Sterling Plate Glass & Paint Company, Cleveland, Ohio. *General Contractor:* Mosser Construction Inc. *Architect:* Dalton, van Dijk, Johnson & Partners, Caudill Rowlett Scott, Carl E. Bentz. *University Architect:* Rudolph Tichy.



Toronto Dominion Bank, Canada. *Architects:* Webb Zerafa Menkes Housden in association with McCague and Sagan, staff architects for the Toronto Dominion Bank. *Installation:* Pilkington Brothers Canada Ltd., Contract Division.

WANT TO MAKE IT BIG.

with the very large movements resulting from the unusual structure of the Standard Bank building in Johannesburg. And only last year completely independent verification of our technology was given through tests conducted in the United Kingdom, by the Government funded Agrément Board on a series of full scale systems.

So if you want to explore the really big potential for all glass facade systems, start at the top, find out more about Pilkington 'Armourfloat' Suspended Glass Assemblies.

For an illustrated booklet write now to:
Doug Curry, Pilkington Brothers Canada Limited,
101 Richmond Street West, Toronto 1, Ontario.
Cables: Pilkho Tor. Tel: (416) 363 7561.

PILKINGTON GLASS

PILKINGTON 'ARMOURFLOAT' SUSPENDED GLASS ASSEMBLIES

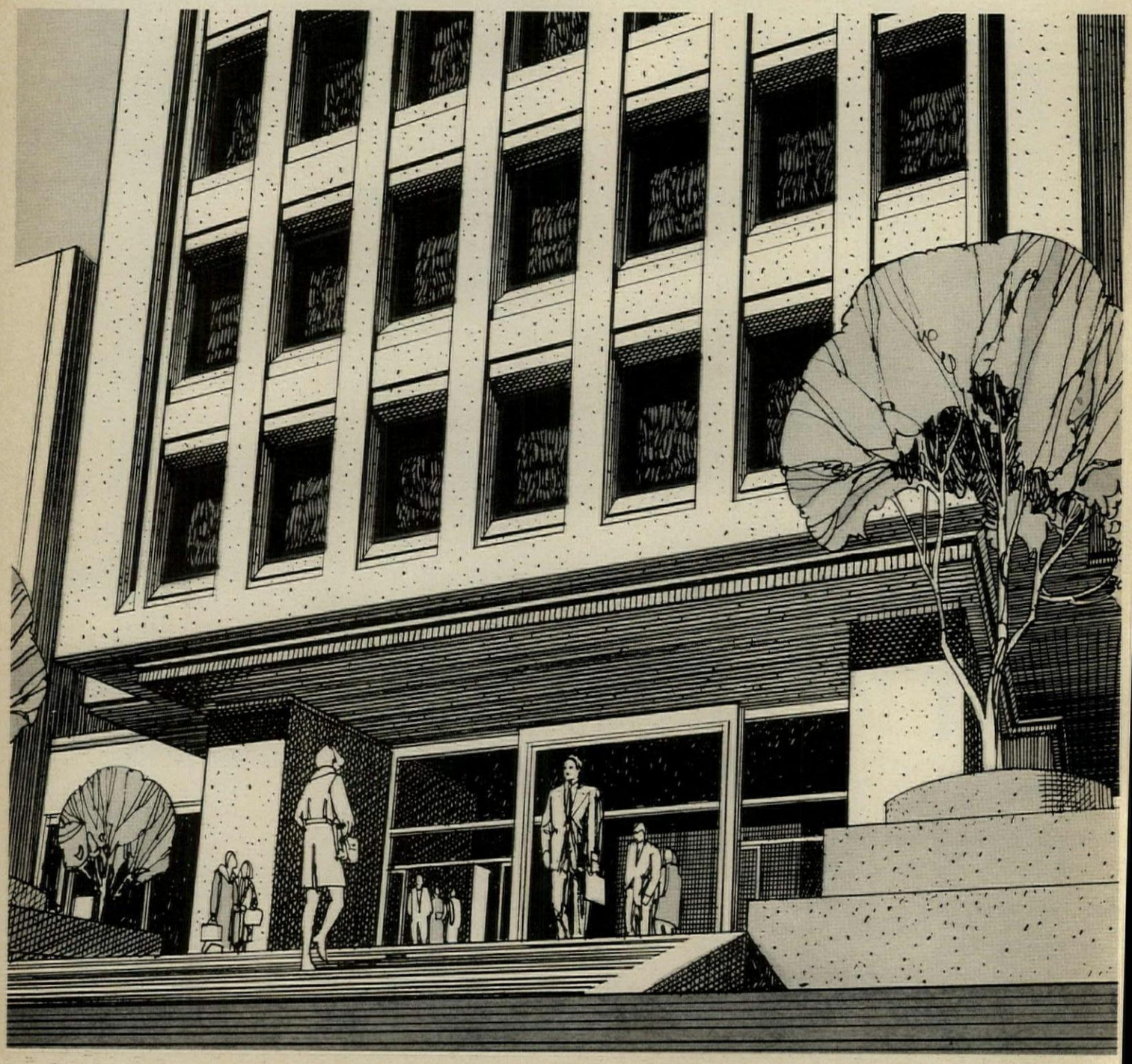
Making life better through glass.

For more data, circle 140 on inquiry card

Now you can get a structural gasket glazing system with the appearance you want without the problems you don't want.

The glazing system is Tremco's WEJ-Grip®. It gives an architecturally attractive, clean line appearance with a narrow sight line, as well as proven trouble-free performance.

By applying our years of experience in window systems, we've eliminated some typical structural gasketing problems. And we'll be happy to work with you while you're in the design and specification stage. Then, we'll gladly work with your contractor to show him how easy it is to install Tremco WEJ-Grip.



Fast and easy to install.
The WEJ-Grip system has several features that will help your glazing contractors save installation time, labor and expenses.

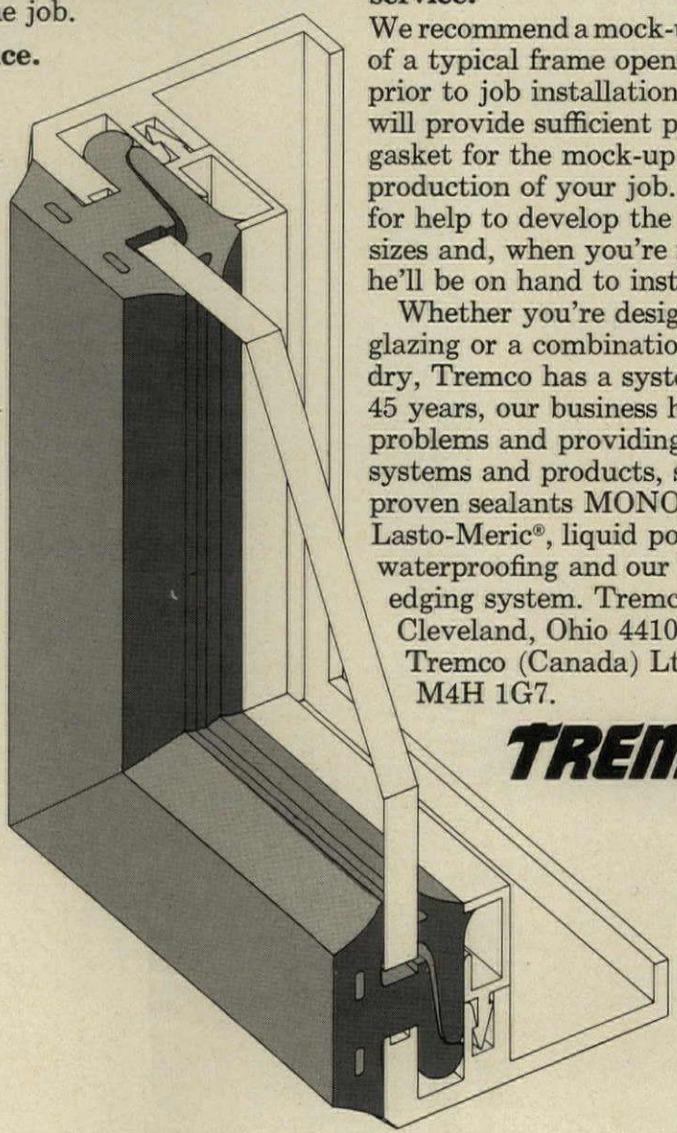
Take straight-in glazing, for example. Unlike most gasketing systems, the WEJ-Grip system permits lights of glass to be positioned easily and safely. There is little chance of chipping glass edges or cutting gasketing. And there is no need to seam edges, a real asset for high-performance glass.

What's more, WEJ-Grip can be installed in the coldest temperatures. Cold weather installations have been successfully completed even in Alaska. This means buildings can be closed in quickly, year round.

Because WEJ-Grip is glazed from the inside, glazing contractors don't have to use costly scaffolding. And if glass ever has to be replaced, WEJ-Grip will simplify the job.

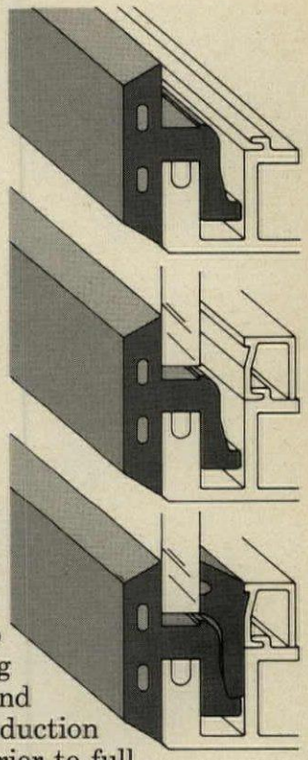
Proven high performance.
Tremco WEJ-Grip meets all the design criteria of structural gasket systems. It resists gasket rotation or roll-off. Allows for normal movement of panels or glass, including heat absorbing glass. It cushions glass and helps prevent breakage caused by normal building movement, seismic shock or sonic vibrations.

To prevent problems at the critical corner areas, WEJ-Grip offers patented, pre-fabricated reinforced corners that will outperform most injection molded-type corners.



WEJ-Grip is basically a two-piece system consisting of a gasket and locking wedge. They are extruded from ozone-resistant, 100% virgin neoprene.

After being subjected to dynamic and static tests, the tests show that WEJ-Grip meets or exceeds the NAAMM performance requirements for water infiltration and structural performance for design loads of at least 40 P.S.F.



Backed by Tremco service.
We recommend a mock-up of a typical frame opening prior to job installation and will provide sufficient production gasket for the mock-up prior to full production of your job. Just call Tremco for help to develop the mock-up, confirm proper sizes and, when you're ready for installation, he'll be on hand to instruct glaziers.

Whether you're designing for gaskets, wet glazing or a combination of the best in wet and dry, Tremco has a system for you. For over 45 years, our business has been solving these problems and providing top-quality leakproof systems and products, such as our job-proven sealants MONO®, DYmeric® and Lasto-Meric®, liquid polymer Tremproof™ waterproofing and our Tremline™ roof edging system. Tremco, 10701 Shaker Blvd., Cleveland, Ohio 44104.
Tremco (Canada) Ltd., Toronto, Ont. M4H 1G7.

TREMCO®

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Prefiled catalogs of the manufacturers listed below are available in the 1975 Sweet's Catalog File as follows.

A Architectural File (green)
I Industrial Construction File (blue)
L Light Construction File (yellow)
D Interior Design File (black)

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ORC Box A-1. Washington, D.C. 20525.

ARCHITECT—Established expanding national company, with over 1000 stores, is seeking an architect. The qualifying person should be a registered architect with a background in architectural and interior design, and have the ability to head a department where the responsibility would also include business administration in terms of implementing and supervising construction, taking into account both technical know-how and cost control. There is excellent growth potential with this St. Louis based firm, and the benefit program is outstanding. Please contact Bernard Bloom, Edison Brothers Stores Inc., P.O. Box 14020, St. Louis, Missouri 63178.

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POSITIONS WANTED

Financial Executive-Heavyweight-listed co. V.P., Controller—CPA (Big 8 exp.)—Attorney—Acquisitions, financial controls, taxes. Exp'd. real estate, construction industries. Combines technical skills with imagination. $28-32,000 required. For resume: PW-6356, Architectural Record.

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Graduate with B.A. in Arch., age 25, with 2¼ years experience in design, detailed working drawings, client contact, excellent references. For resume and/or interview please contact: Richard H. Janssen, 3418 Coy #1, Ames, Iowa 50010. Phone (515) 292-4861.

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British Architect—Planner seeks associate arrangement preferably with West Coast firm. Visiting San Francisco during April and would be able to discuss objectives with interested architects and designers or to consider employment against a specific practice or teaching assignment. Reply to arrive before April 10 at Brian Clear, 3 Isham Close, Northampton NN2 7AQ, ENGLAND, Tel: 0604-36155/0604-34734 office.

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Parking Consulting—Edison Parking is a major national parking company in: (1) ownership and operation of 100 facilities in nine states; (2) consulting to architects for the functional design and economic analysis of parking facilities. The professionals and technicians of Edison's Consulting Division serve on the architect's team for development of a project, combining operating experience with design and economic disciplines. Background booklet and free Parking Design Checklist on request. Edison is a true independent consultant; we are not seeking architectural or engineering design work nor are we affiliated with any "package" building system. Contact Jerome Gottesman, Edison Parking Corp., 69 Academy Street, Newark, N.J. 201/643-3170.

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First, it's later than you think, with schools closing on different semester schedules, and students torn between lining-up "sure" jobs now or gambling that something in their chosen field will come along later.

Second, and most important, it's in our industry's best interest to encourage and hold its life-blood by providing practical experience in their future profession.

And, since there'll always be more applicants than openings, you'll be able to select the cream of the crop, then evaluate them with an eye towards hiring, when as coveted graduates, the job market might well be in their favor.

Because we believe this program is of mutual benefit to both employer and employee alike, we again offer our services as a clearing-house.

Just fill out and return the coupon below, and we'll include your organization in a free listing to be sent to Placement Directors and Department Heads at leading colleges and universities across the nation. They'll post it, and the students will contact you directly.

Free summer help listing

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TYPE AND NUMBER OF STUDENTS SOUGHT: Architect Civil

Mechanical Electrical Other: (Draftsman, Illustrator, Model Builder, etc.)

March 1975

A fireplace with a view? Anything is possible with The Anyplace Fireplace™

When Mr. and Mrs. Peter Lowenstein commissioned architects Chimacoff/Peterson of Princeton, N.J., to design their dramatic vacation home in Montauk, Long Island, what mattered most was "that it have a great sense of space emphasizing the relationship between indoors and out."

With that in mind, a fireplace "with a view" was a natural. So the architects naturally specified a Heatilator brand fireplace, the one you see here. They wanted a quality product that could be decorated for any room. And they were pleased that Heatilator fireplaces can be built-in anyplace, in any enclosure.

You can specify a Heatilator *Anyplace Fireplace* right up against combustible walls, with no costly masonry for support or protection. And now there are more models than ever. Woodburning, gas and electric. Built-in. Wall-hung. Plus a new line of freestanding fireplaces. The *Compatibles*™, in popular House & Garden colors. The design and decor possibilities are virtually endless!

For expert help in fireplace planning, call your Heatilator Fireplace Man. For his name, call toll-free 800-553-8905*. Or write: Heatilator Fireplace, A Division of Vega Industries, Inc., 1919 W. Saunders St., Mt. Pleasant, Iowa 52641. (Also available in Canada.)

See Catalog in Sweet's Architectural, Light Construction, and Interior Design Files.

heatilator®

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*Iowa residents call collect (319) 385-8880

New Independent Report proves Sloan Flush Valves use 12½% less water than tank-fed systems

High-rise developers, especially, should read this comparative test report by Stevens Institute. It covers water usage, drain system compatibility and fixture performance.

We knew that Sloan Flush Valves saved water.

However, now an independent report published by the Davidson Laboratory of the Stevens Institute of Technology proves conclusively that Sloan Flush Valves use 12½ % less water than tank-fed water closets.

The Stevens Report also proves that Sloan Flush Valves are fully compatible with 4-inch wet vent drainage systems and meet all plumbing codes. No significant difference occurred between Sloan-operated and tank-operated water closets under various conditions of system stack flow, trap seal retention, or blowback failure.

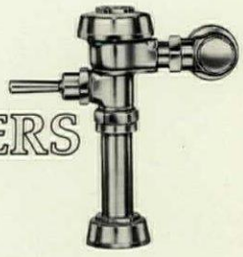
Ten separate and severe fixture performance tests were also run. Here, too, Sloan Flush Valves equalled or bettered tank performance.

There's no point in talking about water conservation unless we all do something about it. Sloan Flush Valves do something. They save water. 12½ % over tanks.

Send for the Stevens Report now. It's free and it contains facts and figures available nowhere else.

SLOAN VALVE COMPANY
10500 Seymour Avenue
Franklin Park, Illinois 60131

SLOAN FLUSH VALVES THE WATER SAVERS



For more data, circle 144 on inquiry card