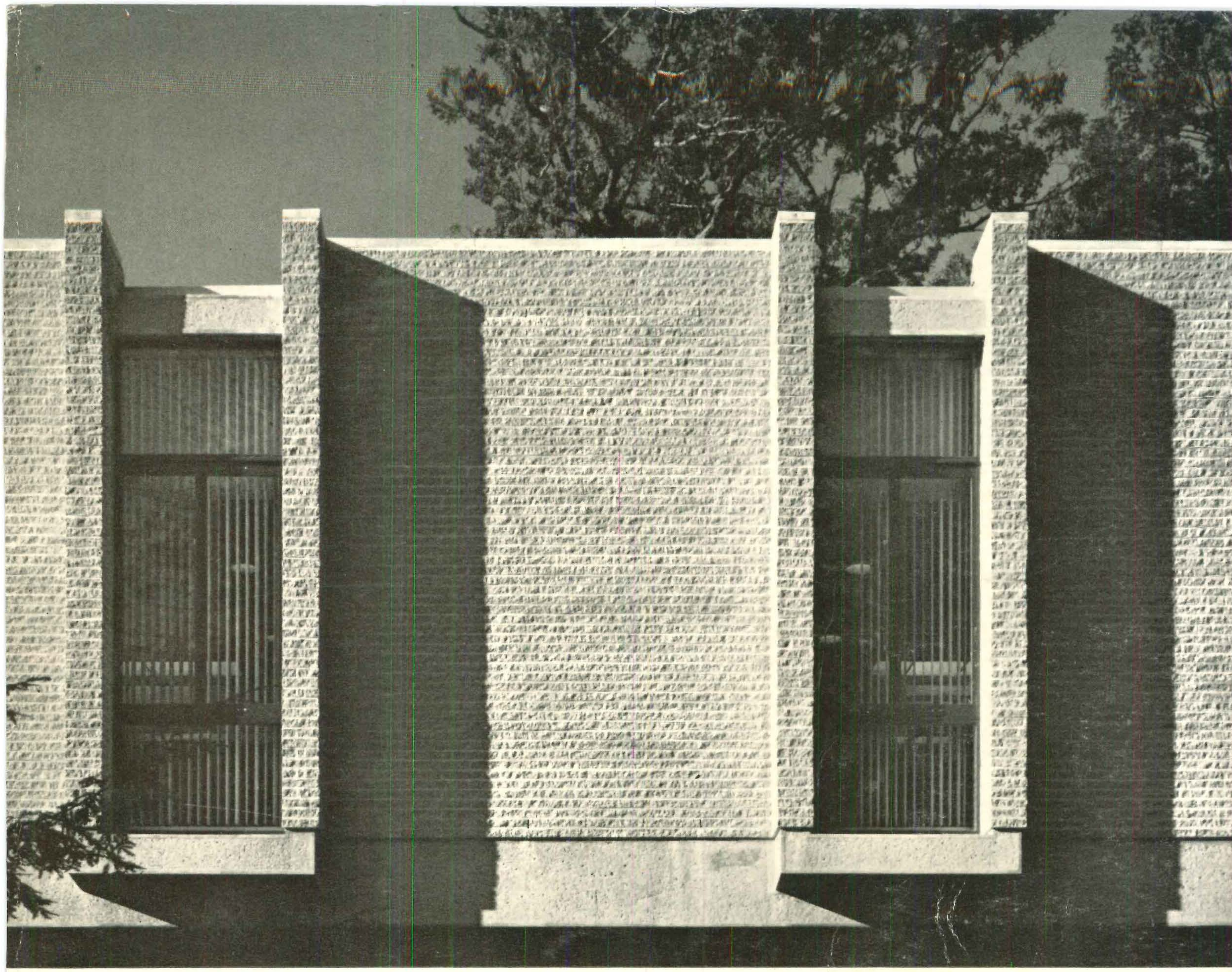

# ARCHITECTURAL RECORD

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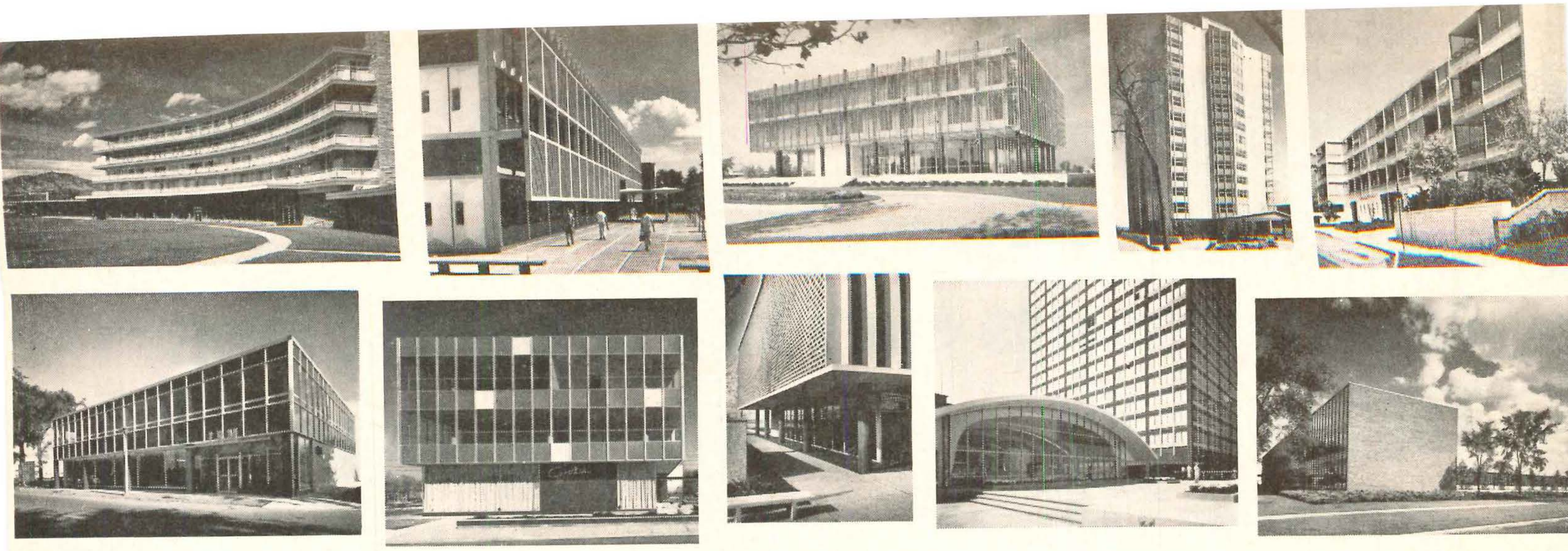
BUILDING TYPES STUDY: CAMPUS PLANNING

NEW HOUSES BY EDWARD LARRABEE BARNES

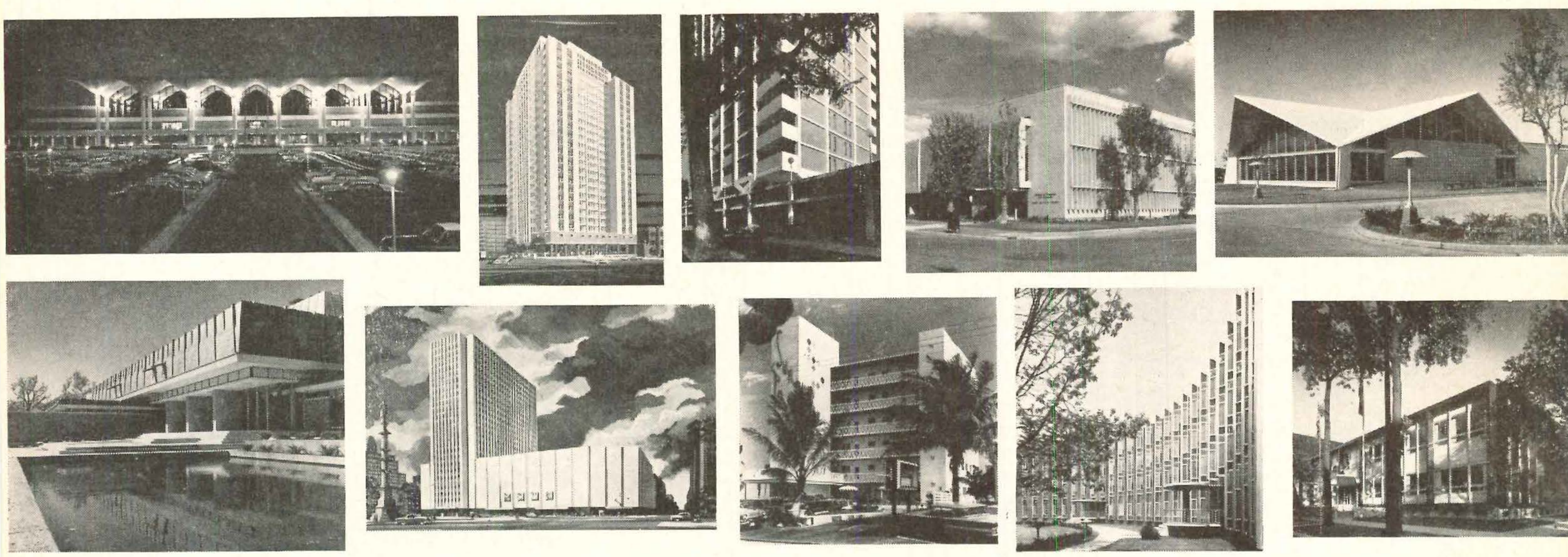
SCIENCE BUILDING FOR A SMALL COLLEGE

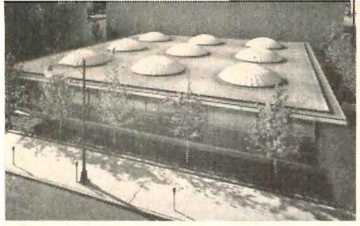
HIGH-RISE APARTMENT STRUCTURES OF STEEL

FULL CONTENTS ON PAGES 4 & 5

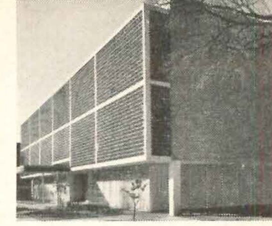


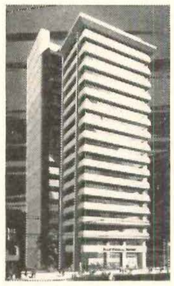


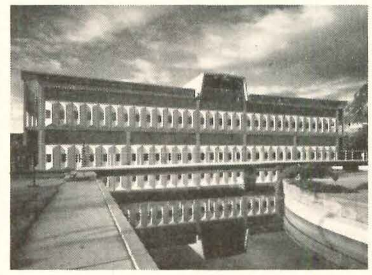
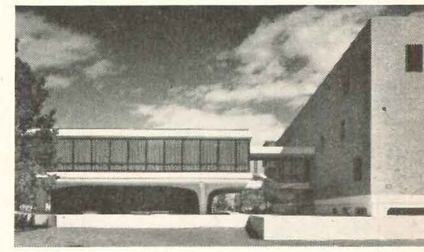




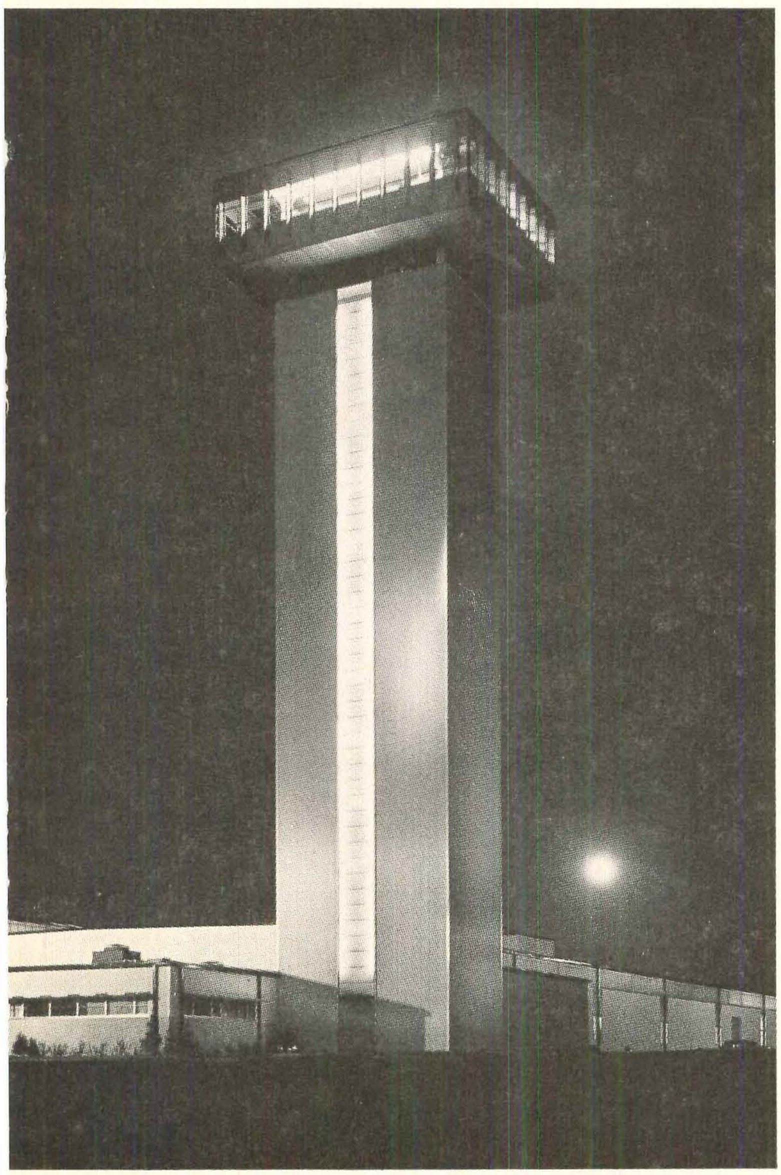




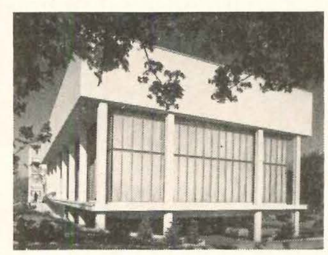


# in more than 38,000 buildings







**New test tower, tallest in the U. S., provides facilities for developing new ideas in elevators**

Recently completed at the new Dover plant in Mississippi, this 14-story tower houses three elevator shaftways. Here, new ideas in elevator hoisting machines and accessory equipment are developed and tested. Facilities are provided for work on both high-speed electric (cable) elevators for high-rise buildings and Oildraulic® elevators for buildings to seven stories. The tower symbolizes Dover's position as the fastest growing and third largest elevator manufacturer in the United States.

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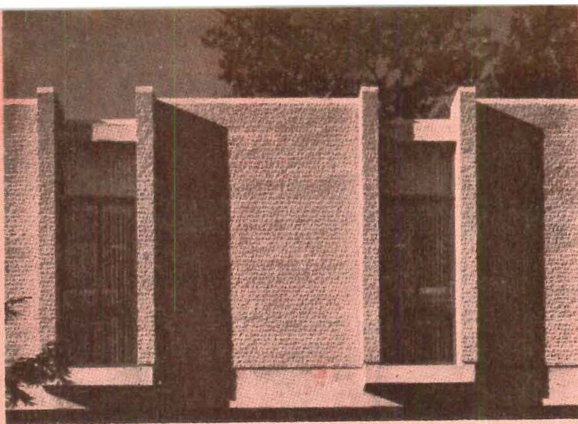

*Cover:*

Stokes Hall, Haverford College, Haverford, Pa. Architect: Vincent G. Kling. Photograph by Lawrence S. Williams

*Advertising Index: 366*


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## *Architectural Engineering*



# ARCHITECTURAL

### *Architects and Buildings*



### *Authors and Articles*



## *Record Reports*

# Features



# RECORD

CONTENTS

*November 1964*

## *Building Types Study 339: Campus Planning*

# *Coming in the Record*

DESIGN FOR THE PERFORMING ARTS

*More and more architects are concerned these days with the design of more and more kinds of buildings for the performing arts—on campuses, in urban renewal projects, in civic centers and elsewhere; single-purpose and multi-purpose halls for drama, for opera, for symphony, for recital, for ballet, or for some combination of these. Next month's Building Types Study will present and analyze the functional and technical planning of a wide variety of significant examples of current work.*

QUALITY HOUSING FOR A SMALL CITY

*Perhaps no architectural or human problem today more desperately needs the attention of architects than that of housing (and few problems, perhaps, are more difficult). A newly-completed private, middle-income development by Marcel Breuer combines town houses with a high-rise unit on a five-acre site near the Cornell University campus in Ithaca, New York, in a scheme which achieves a high degree of amenity.*




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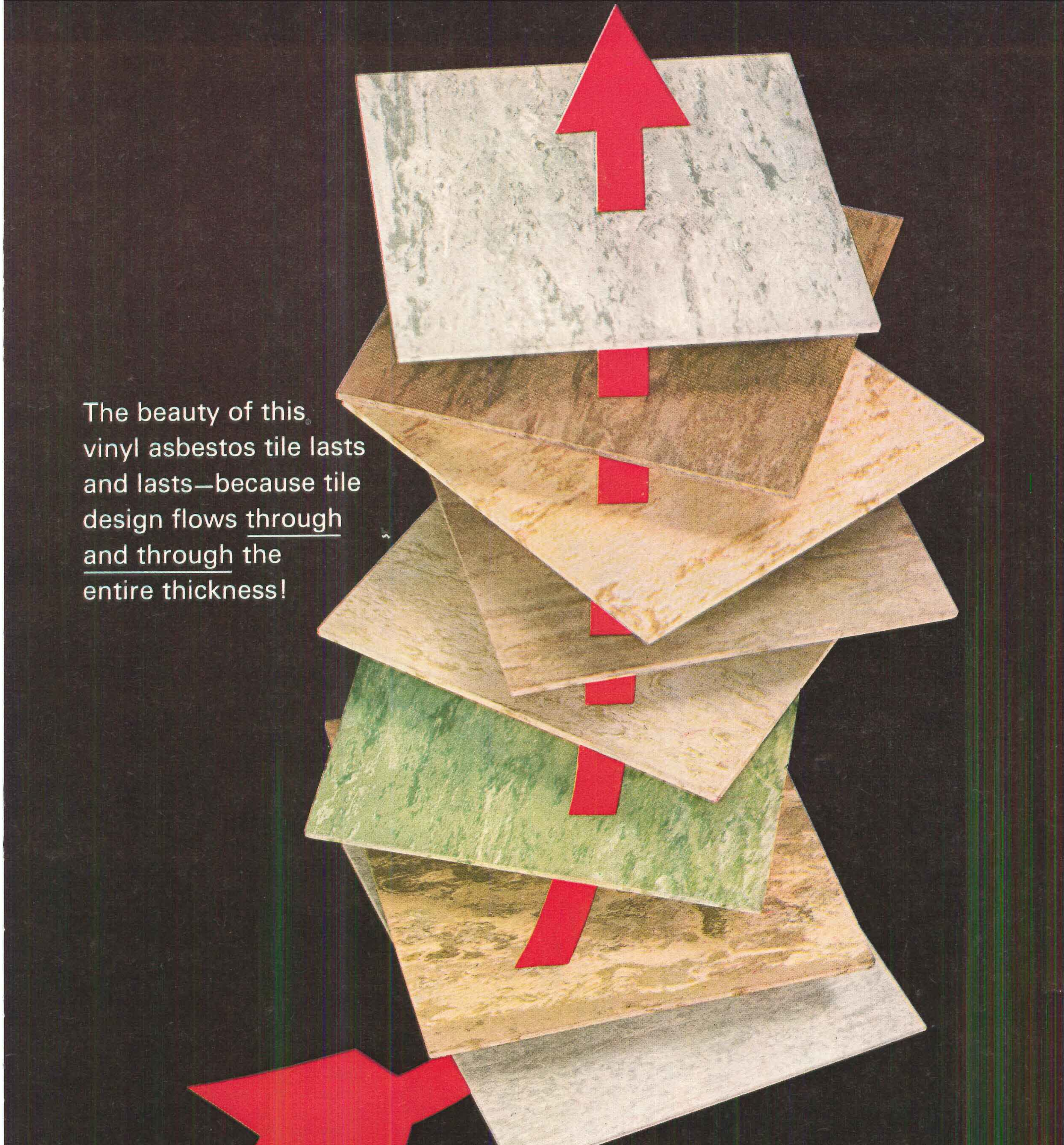


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# Lip Service for Noise Control

As architects face the responsibilities of designing for ever-increasing concentrations of people, many environmental matters are going to demand something besides the lip service we usually give them. We talk a great deal about a wide variety of conditions of living which are necessary to human health and happiness, but, beyond basics like heating, lighting and perhaps cooling, we just ignore most human needs.

Let me confine this piece to just one—noise control. This little burst of indignation is prompted by a paragraph from a recent speech by architect Welton Becket, who was addressing the "American Medical Association Congress on Environmental Health Problems." While he dealt with many other matters on which he urged the cooperation of architects and doctors, he had this to say about noise:

"Dr. Vern Knudsen of U.C.L.A.'s Department of Physics calls noise 'one of the waste products of the 20th century.' He points out that city dwellers are deprived of adequate rest as a result of muscular tension caused by the sounds around them. Dr. Knudsen blames noise for robbing the body of rest, reducing working efficiency and causing deafness. While sounds above 80 decibels begin to grate on the human ear, and those of 160 decibels can destroy hearing, man's exposure to sound over the past years has risen to the 150 decibels of a four-engine jet. And we still have to cope with the sound and vibration of the supersonic booms of the next stage of airliner development. Yet, Mr. Knudsen's studies show that human exposure to 90 decibels or more can flush skin, constrict stomach muscles and definitely shorten tempers. There is some suspicion that sound can even be a factor in heart and arterial diseases."

This hypersensitive observer can testify to other sufferings those decibels induce. Some years ago, when businessmen began to travel in airplanes, I discovered that flying made me ill. An hour's flight, as smooth as only air travel can be at times, would reduce me to a dizzy sort of dry nausea. One day a nurse who was assisting me listened to my tale and suggested that I should limit my mode of travel to shanks' mare. Then I put the problem to a doctor. "That's very interesting," he said, "I once wrote a paper about it." "Well," I said, "then I've come to the right man." "Sorry," he replied, "I never did get the answer."

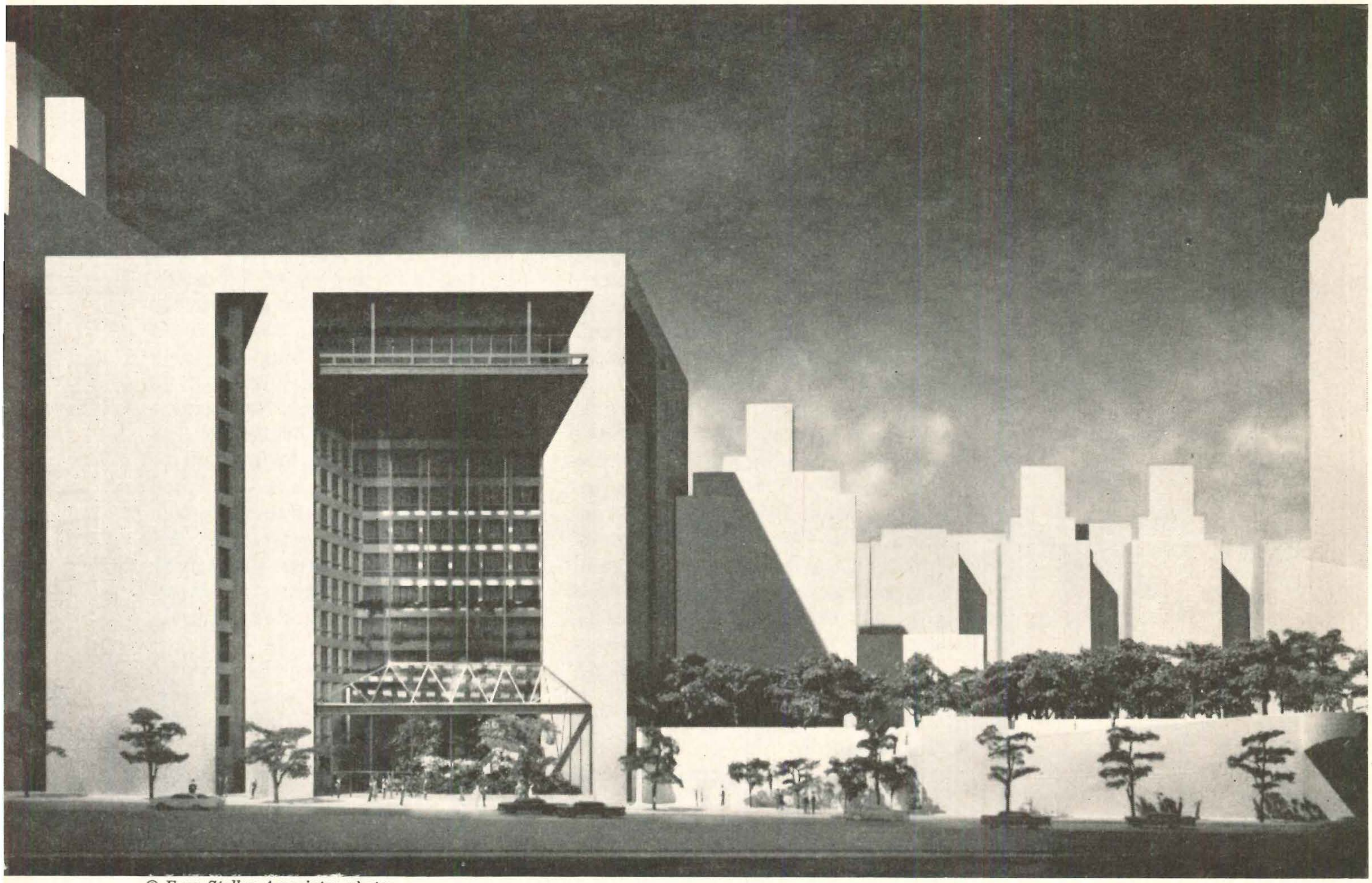
The answer to my problem came out of painful analysis of flying recollections. I remembered that the worst moment came at take-off, when they revved up those four old piston engines. Friends were quite ready to point out that this was the moment of nervousness, but it finally occurred to me that this was the moment of maximum noise level, and then I had the answer. A pair of wax and cotton ear plugs (40¢ at the drug store) and my flying troubles were over. I have since learned that flight surgeons at air bases are well aware of the problem.

So I now number among the hazards of living: female voices at cocktail party level, the assinine custom of piped-in music, the noise of air-conditioning or ventilating fans, the overpowered P.A. system for convention speakers, and so on. But my little ear plugs make the difference. You have no idea how much better a convention speaker sounds when those plugs are pushed in tight.

Now, of course, these sound effects do not approach the sheer volume of jet motors (yes, jets are just as noisy, if you're really noise sensitive); some are of the nuisance variety, like the thumping of air-conditioning compressors. Nothing is more annoying than your neighbor's TV set, as heard, for example, in the convention hotel back in Miami. I remember watching the running of the Kentucky Derby, turning off the set, and then wondering why the sound didn't shut off. It took a moment to realize that the noise wasn't going to stop until the guy in the next room also turned off his set.

So has building design progressed; so does building design deal with environmental problems. We *know* about acoustics; we *know* how to make buildings practically soundproof. Decibels can "flush skin, constrict stomach muscles and definitely shorten tempers." They have shortened my temper innumerable times. And I wonder about all this talk of environmental design.

—*Emerson Goble*



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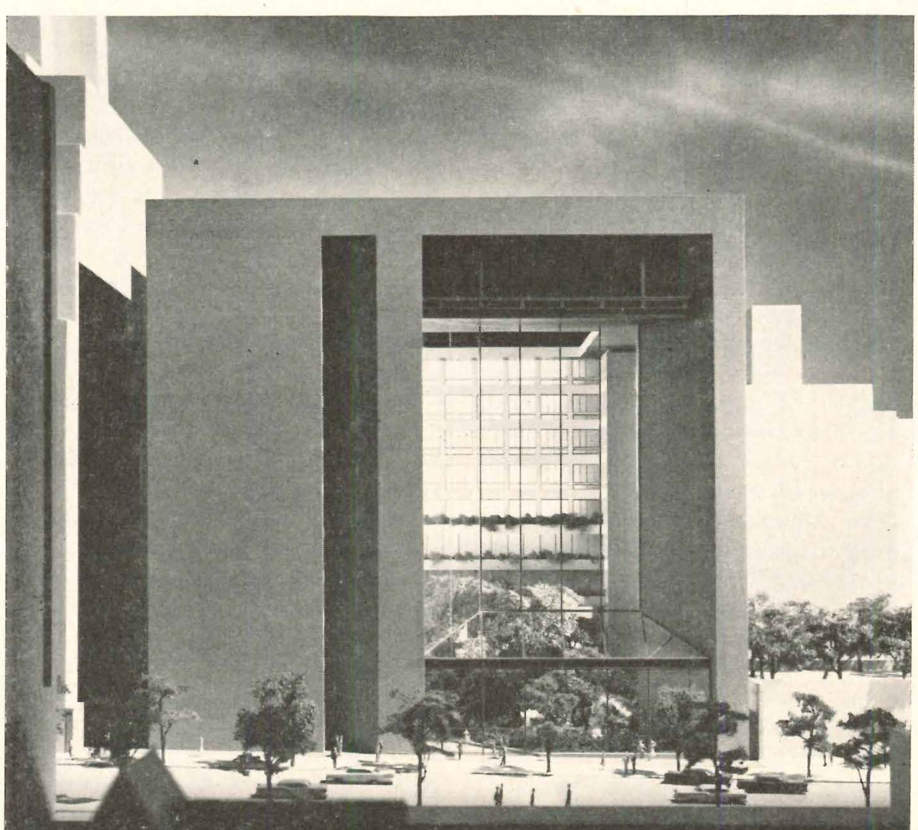

## New York Headquarters Enclosing A Garden

An enclosed street-level garden with glass walls opening it to public view will be a major feature of the 12-story Ford Foundation headquarters building now under construction at 321 East 42nd Street in New York. The architects are Joseph N. Lacy, John Dinkeloo and Kevin Roche, principals of Eero Saarinen Associates. Design objective was to provide employes with space which both allowed them to enjoy the view and let them be aware of each other in a building whose scale and character would respect its neighbors.

The granite-faced structure will be in the shape of a "C" with right angle corners surrounding the garden. The only exceptions to the C-shape are the top two floors, which continue above the glass walls completely around the east and south sides of the building.

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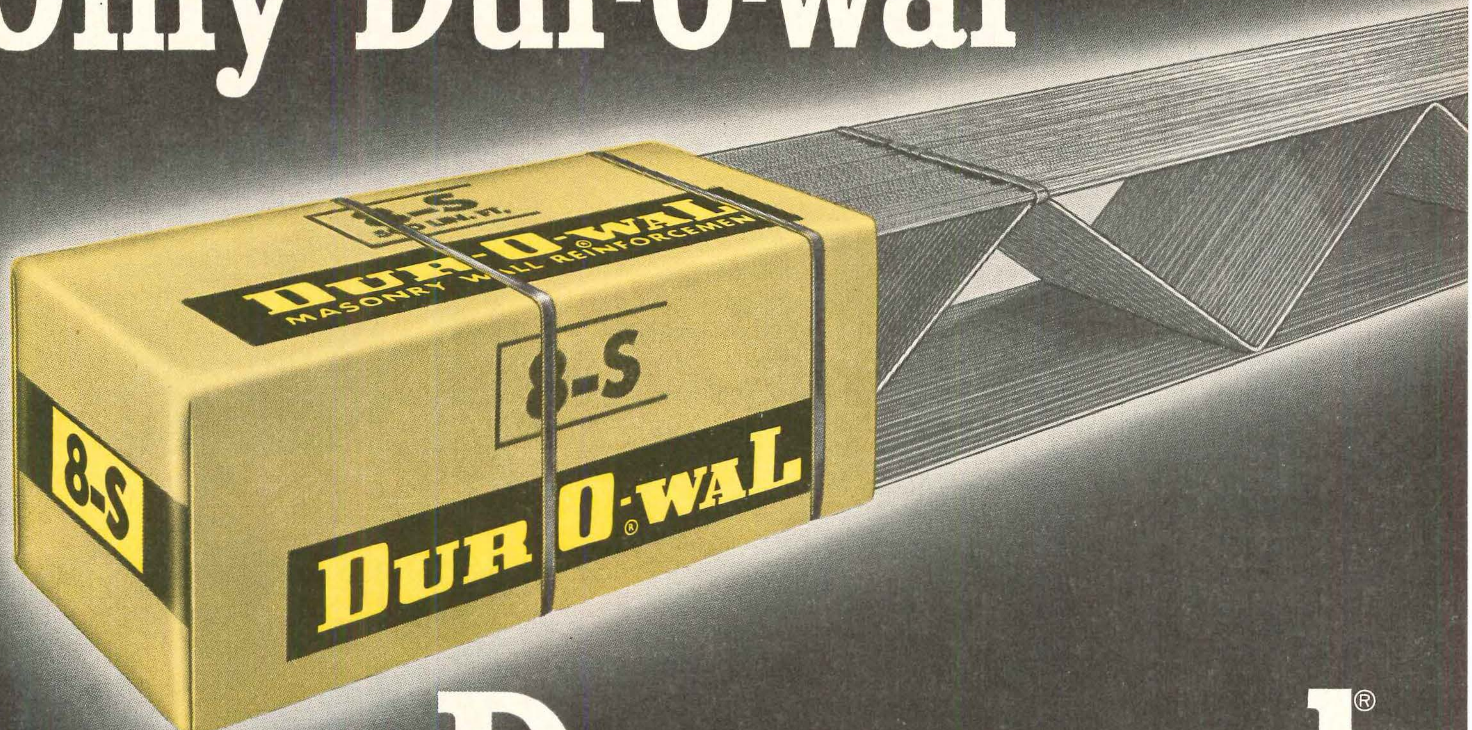


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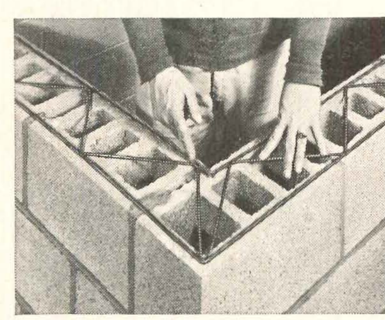

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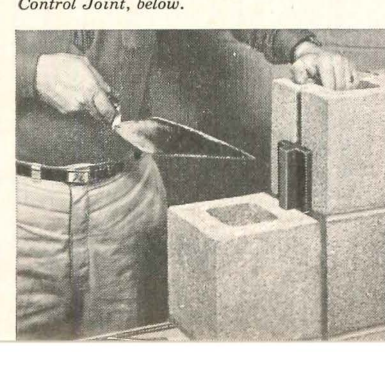

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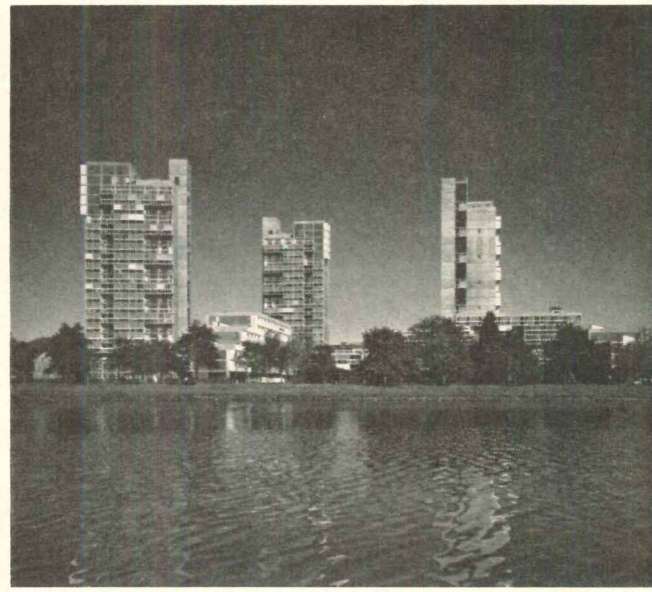
# MARRIED STUDENTS RESIDENCE COMPLETED AT HARVARD



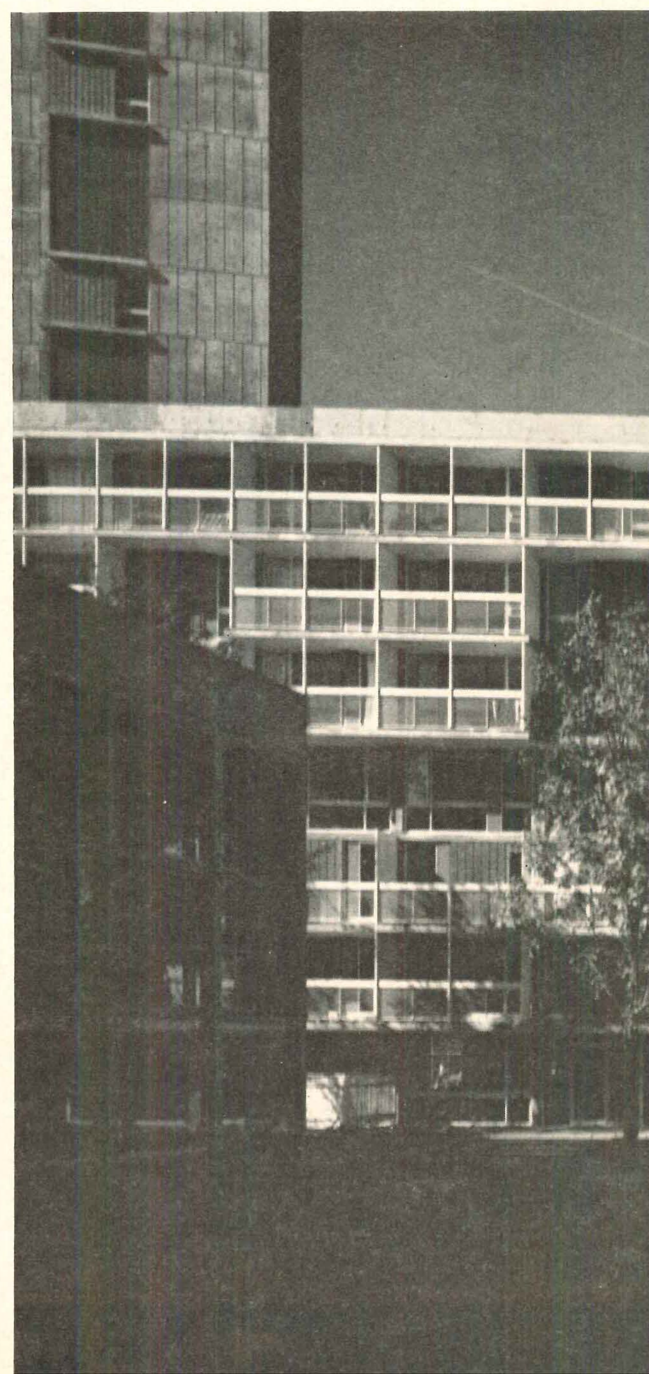
A seven-building, $10 million complex for married students at Harvard University, including three high-rise structures, was designed with particular attention to its relationship to its neighborhood on the Charles River, Cambridge, Mass. Designed by Sert, Jackson and Gourley, architects, the Francis Greenwood Peabody Terrace was opened to 500 families at the beginning of the academic year.

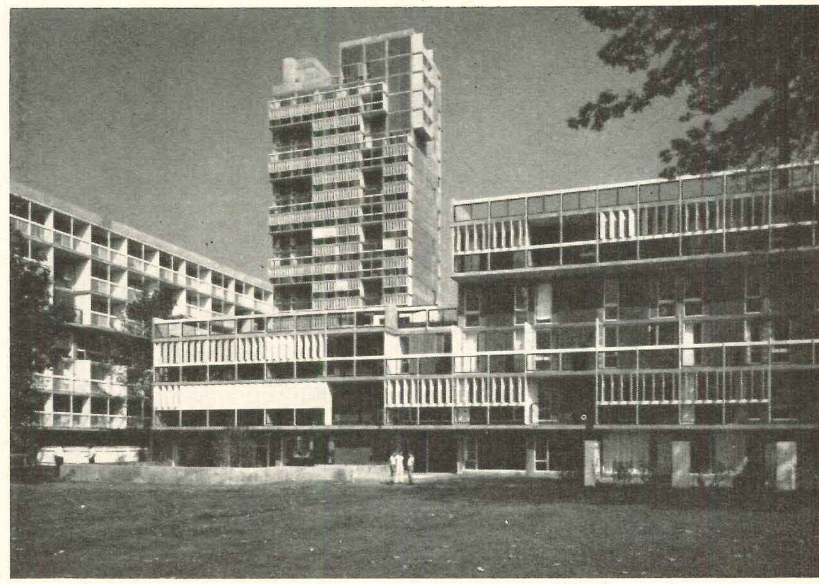
The project was completed with great speed and economy, with the first group of dwelling units ready in January 1964, eight months before scheduled completion. This was made possible by a high degree of standardization in design and construction method throughout the complex. The entire 500-unit project, which used glass and precast concrete panels as the basic materials for the exterior walls, was enclosed against the weather in little more than nine months.

The three high-rise buildings are 22 stories, and are grouped toward the center of the site. The remaining four are stepped down from seven stories to three to provide a gradual transition from the towers to the height of the Harvard Houses and to the three-story wooden dwellings of the surrounding Cambridge neighborhood.

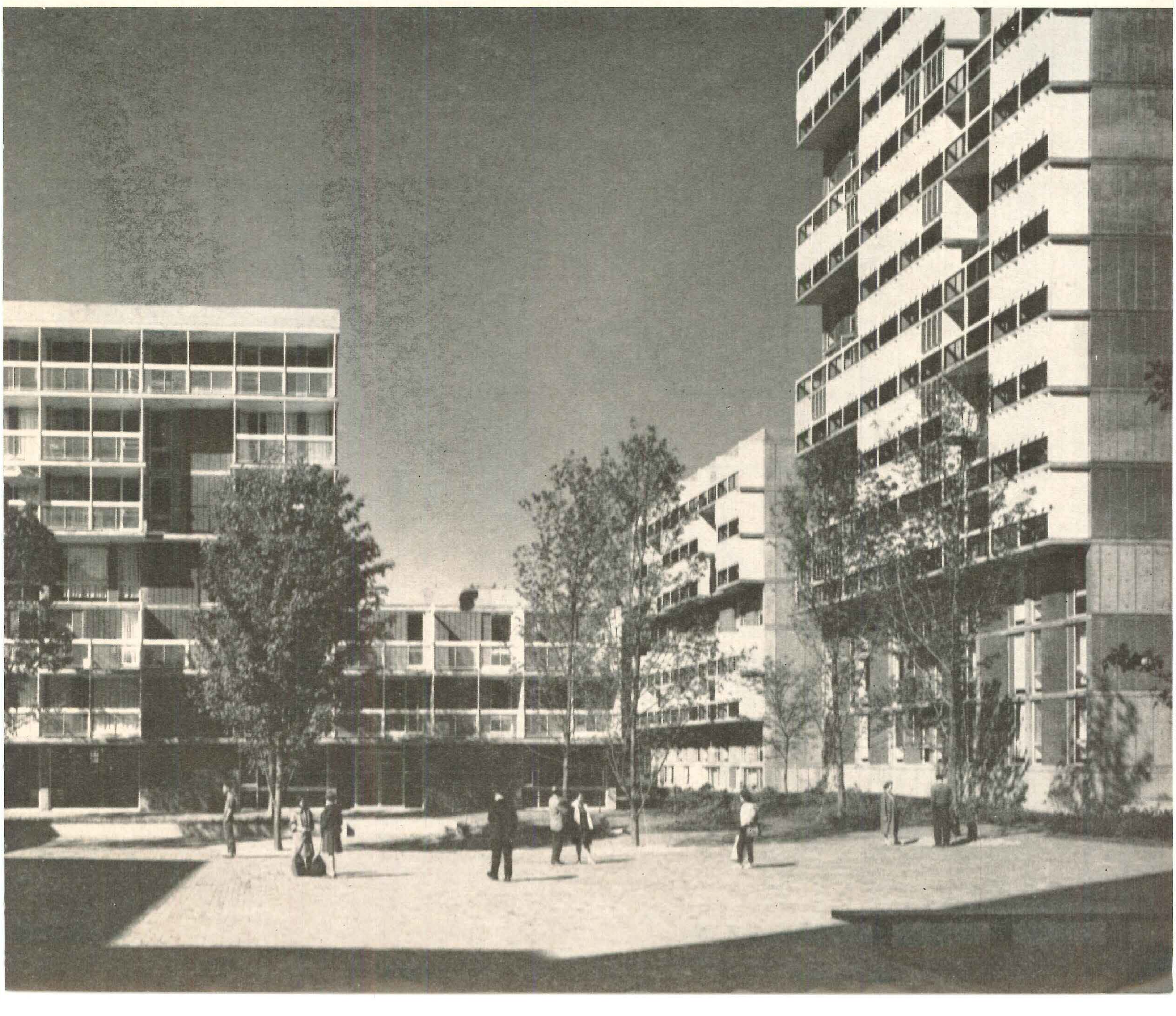
All terrace residents and their neighbors benefit from open spaces distributed throughout the six-acre site. A long, tree-lined pedestrian mall running through the developments gives its neighbors on the east unobstructed access to the Charles River on the west. A central plaza is the community core of the terrace, with most of the community facilities opening on to it. The prohibition of vehicular traffic further contributes to a park-like atmosphere.

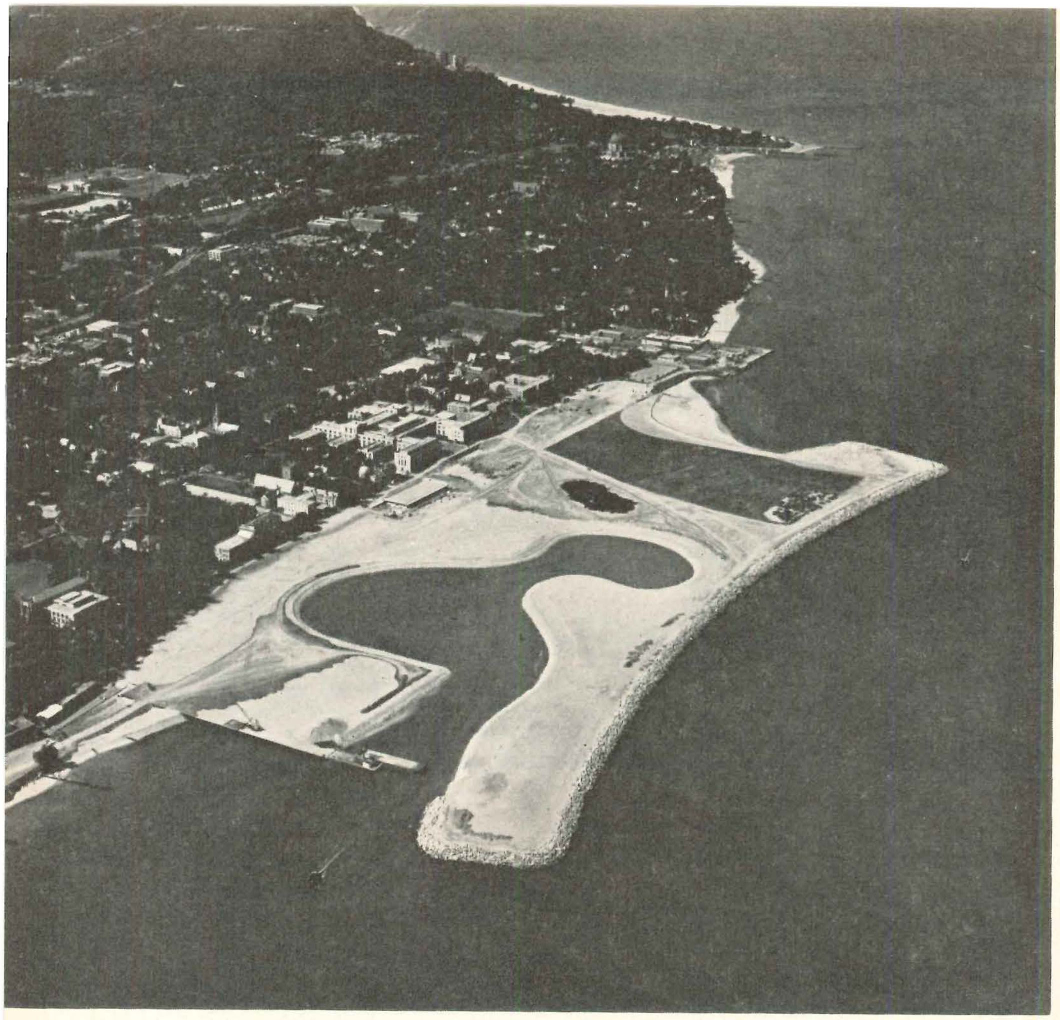
Forty-six per cent of the apartments have one bedroom; 33 per cent have two bedrooms. Seventeen per cent are efficiencies—a one room studio-bedroom combination—and 4 per cent are suites with three bedrooms and two baths. Rent ranges are: $90-110 for efficiencies; $105-130 for one bedroom; $125-155 for two bedrooms; and $175-180 for three bedrooms.





*Robert D. Harvey*

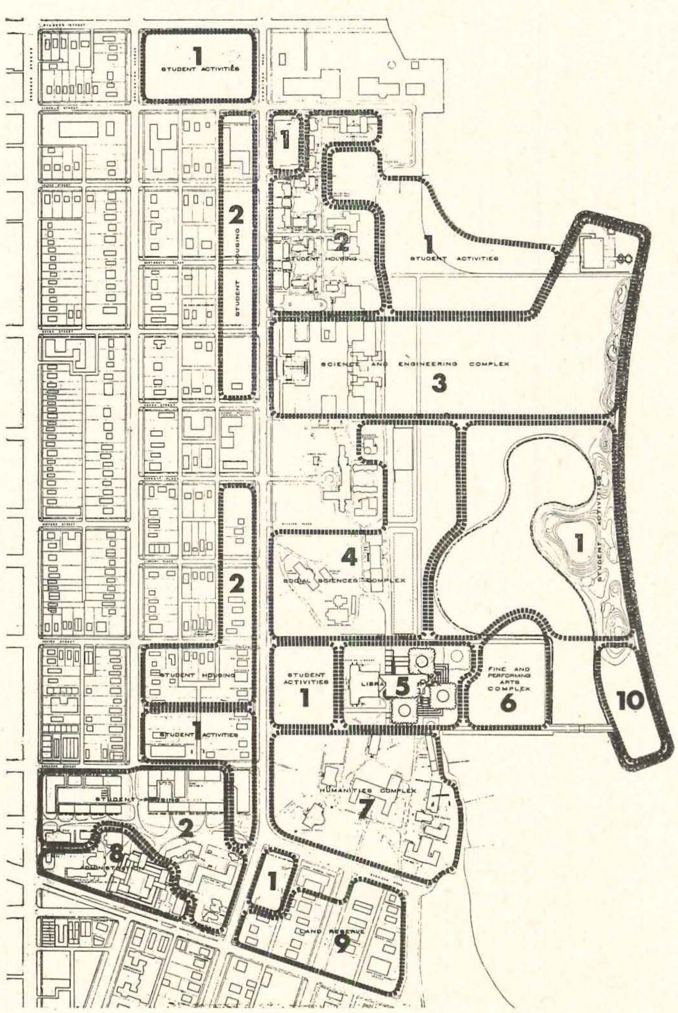


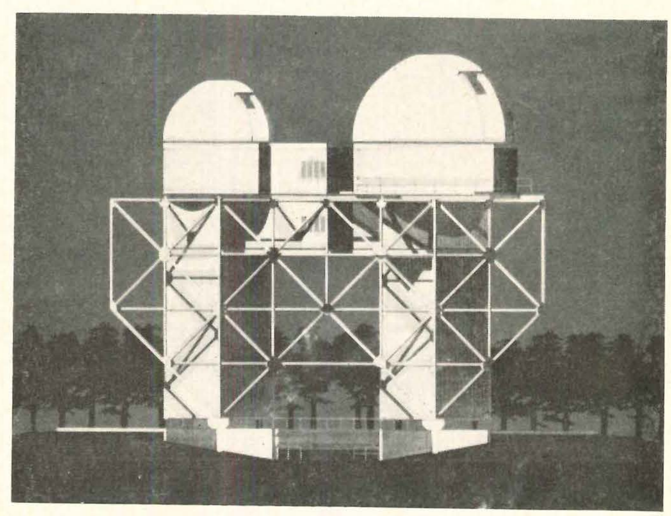


# Northwestern Expands On Lakefill Campus

A new lake campus has been completed at Northwestern University, Evanston, Ill., to create land for the university's building program. Walter A. Netsch, Jr., a partner of Skidmore, Owings and Merrill of Chicago, is the architect. The 74-acre, $6.5 million lakefill project with a nine-acre free-form lagoon will almost double the area of the present campus. "The Lake Campus was developed," Dr. J. Roscoe Miller, president of the University said, "not to accommodate greater numbers of new students, but to meet the needs of a greater university."

In October, ground was broken on the northeast point of the Lake Campus for the first phase of construction of the Lindheimer Astronomical Research Center; an observatory of twin 70-foot-high domed towers which will be erected at a cost of almost $1 million. Next spring construction will begin on the library (University Library Employs Radial Plan, July 1964, page 15).



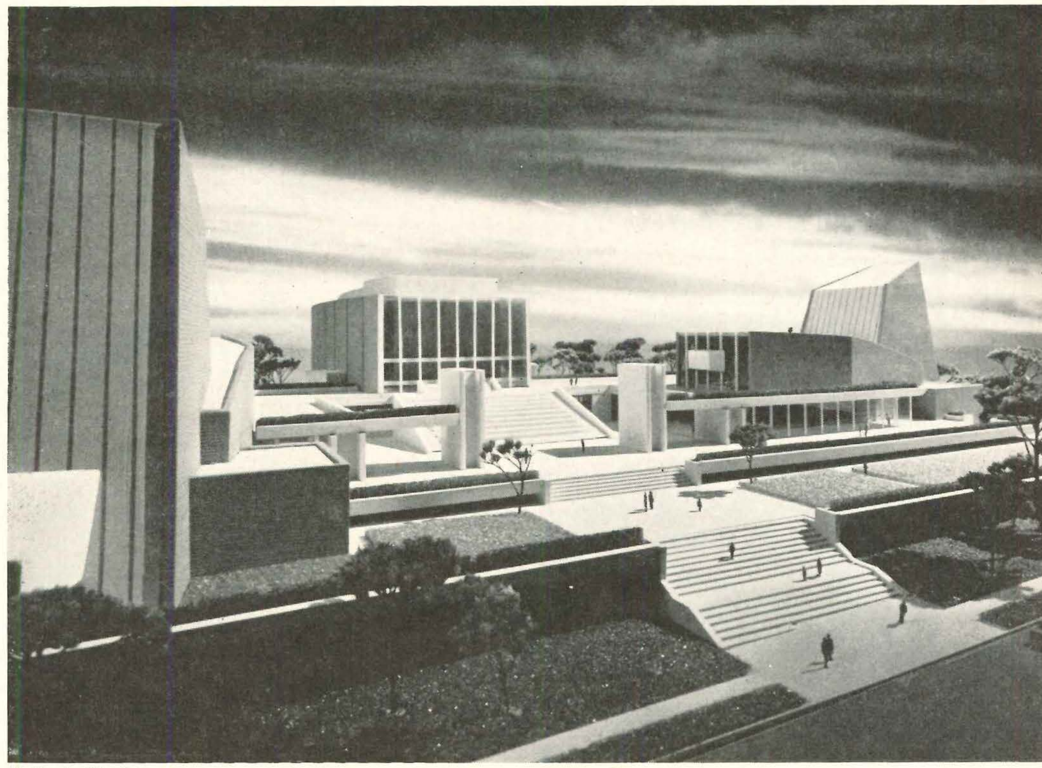



The Lindheimer Astronomical Research Center

1. Student Activities
2. Student Housing
3. Science and Engineering Complex
4. Social Sciences Complex
5. Library Complex
6. Fine and Performing Arts Complex
7. Humanities Complex
8. Administration
9. Land Reserve
10. Conference

## Krannert Center For The Performing Arts

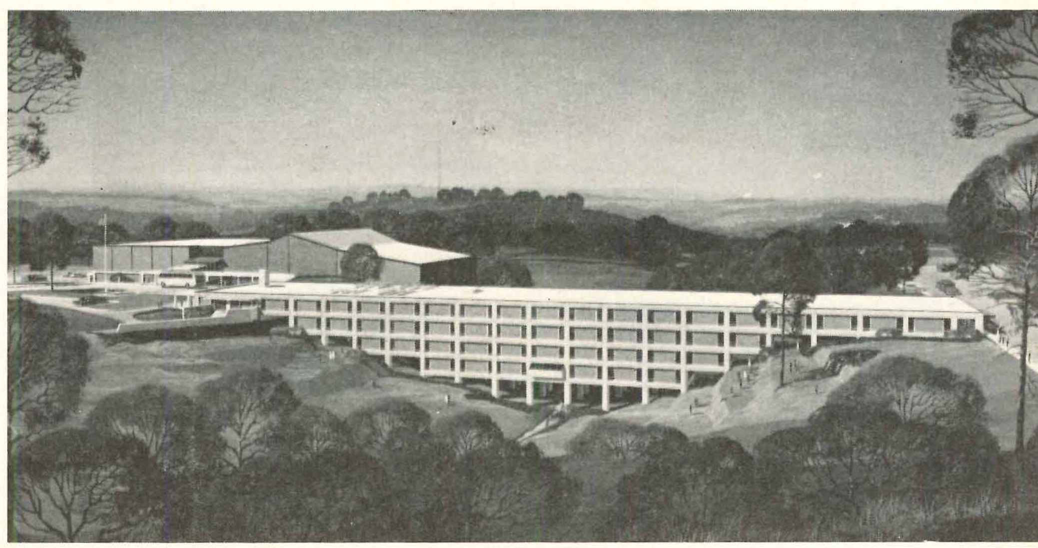
Four separate theaters connected by functional areas comprise the design by architect Max Abramovitz (Harrison and Abramovitz, New York) for the Krannert Center for the Performing Arts at the University of Illinois, Urbana. Steps of the $14,325,000 projects will serve as seats for an outdoor theater. Model shows music theater (*right*), which will seat 1,000; music auditorium (*center*), which seats 2,200; and drama theater (*left*), with a seating capacity of 700. Not visible is experimental theater, seating 250, near the drama theater. Classroom and parking facilities will be provided below ground



© *Louis Checkman*

## Classroom Building Bridges Two Hills

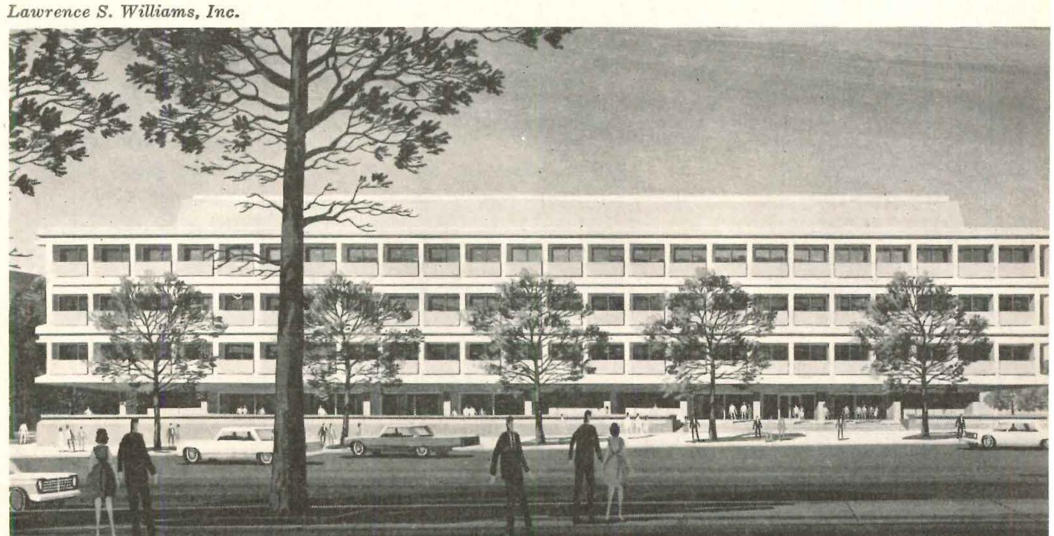
A five-story classroom building spanning the crest between two hills to form a connecting bridge is a prominent design feature of a three-building senior high school complex at Marietta, Ohio. Architects are Joseph Baker and Associates, Newark, Ohio. The other two units in the $3 million complex are a gymnasium-auditorium structure and a shop building. Students will enter the top or fifth floor of the classroom building and walk down to lower levels. Each level has an exitway to outside grade. A small brook passes under the school at the bottom of the valley



*Lawrence S. Williams, Inc.*

## New Laboratories At Franklin Institute

The Franklin Institute Laboratories, Philadelphia, designed by architect Vincent G. Kling, will include a "linear utility spine" which encompasses the entire length and height at the center of the building. The utility "spine," about 3 feet wide and four stories high, is designed to allow for more flexibility and economy in distribution of laboratory utilities. Offices will line the perimeter of the building. The textured limestone facing and deep-set windows will relate the structure to the institute's neoclassic main building



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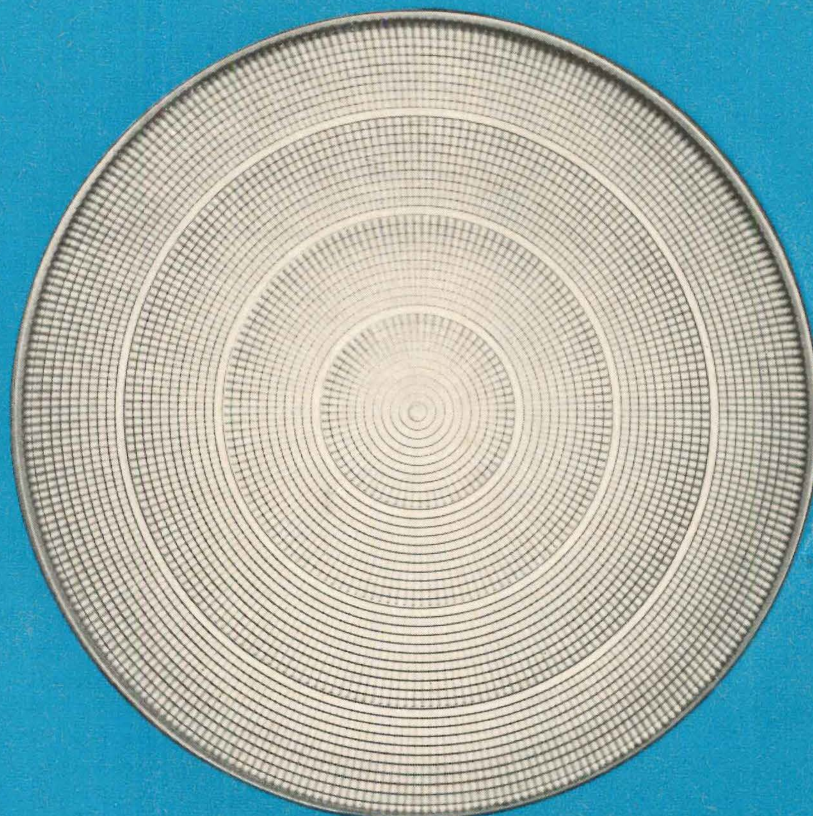

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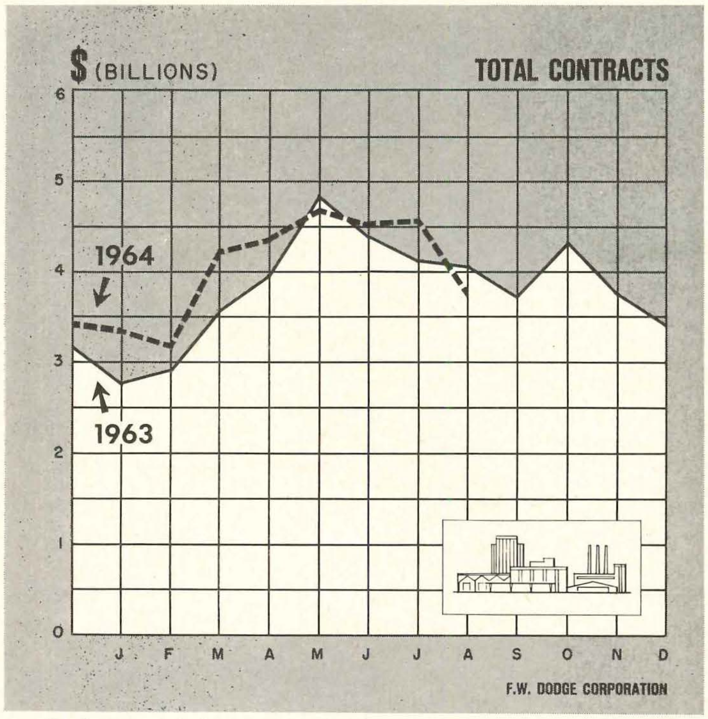
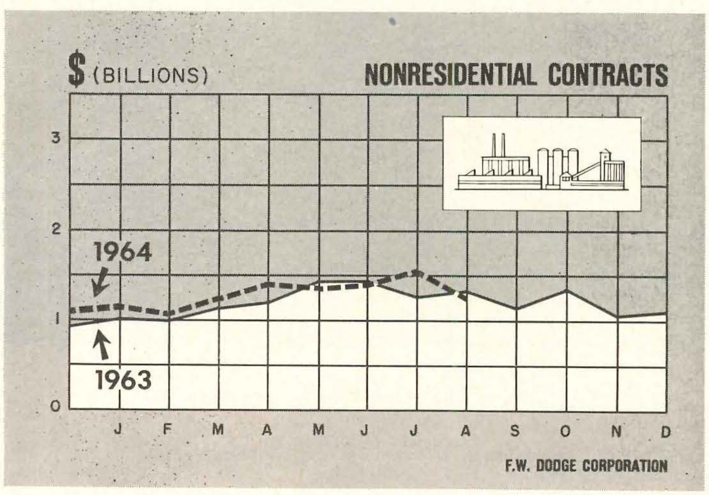
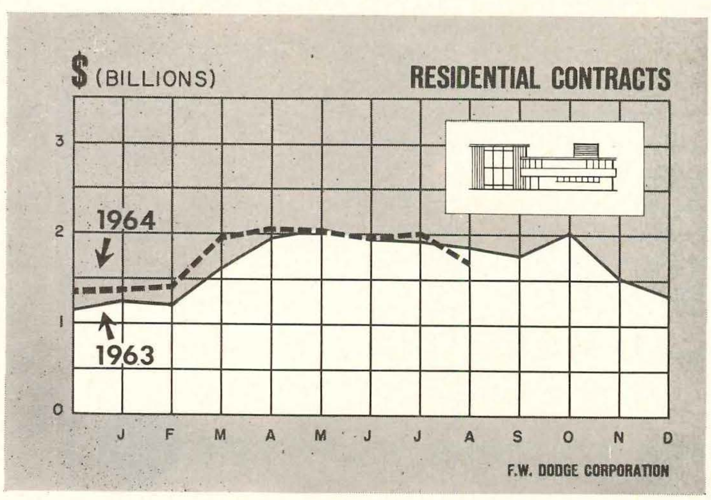



*Total contracts include residential, nonresidential and non-building contracts*




# DORMS VS. CLASSROOMS

The hustle and bustle of campus construction at colleges and universities throughout the nation involves a remarkable variety of building types, and no matter which one you look at—whether it's classrooms, labs, libraries, gyms, auditoriums or administration buildings—you get the same show of sharply accelerated building. It's been brought on, of course, by already swelling enrollments, and the promise of much more to come.

For some kinds of university facilities it is possible to gain a little flexibility, and so postpone new construction for a short time, by using what you already have more intensively. It's sometimes expedient, as a temporary measure, to cram more students into existing classrooms, or to keep the library open longer hours, but this doesn't work with living quarters. One area where increased enrollment is most quickly reflected in the need for new construction is dormitories, and for many schools it is the availability of living quarters, rather than of academic facilities, that sets the limit on acceptances. All types of higher educational facilities are currently being built in record volume, but where in 1960 the nation's colleges and universities were spending roughly a dollar for dorms to match each dollar spent for classroom construction, today they're spending more than two dormitory dollars for every one that goes for classrooms.

It's not only a simple matter of need. Financing also plays an important role in determining which kinds of college facilities get the priorities, and often the classroom has finished quite literally "out of the money." Government and industry have been eager, in recent years, to back university research programs with large grants and donations for the construction of laboratories and other scientific facilities. Living quarters, and for that matter dining halls and social centers, have also managed to do well in the money markets. The Housing and Home Finance Agency has, for more than a decade, provided low cost financing for these types of revenue-producing college buildings, for a total of approximately $2 billion to date.

Public schools, of course, derive the bulk of their building funds (some 60 per cent) from government appropriations and tax levies; private colleges rely to a great extent on gifts and grants (about 55 per cent) and borrowing (about 10 per cent) for their construction money. In both cases, the total falls well short of over-all needs—about 15 to 20 per cent so far in the 60's according to a U.S. Office of Education survey of more than 1,500 college presidents—and often as not it has been the academic facilities which have been served last. The Higher Education Facilities Act of 1963 will certainly change things. This five year Federal program which authorizes $1.2 billion (to be supplemented by private matching funds) in grants and loans is geared primarily to academic construction: classrooms, labs and libraries.

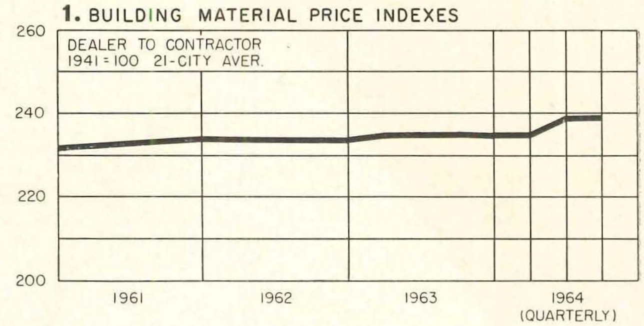
Along with non-Federal matching funds, the total amount available under the new College Aid Act alone could lead to nearly $3 billion of construction during the next three years. Three billion dollars is close to the total contract value of *all* academic building—elementary, secondary and college together in the U.S. last year.

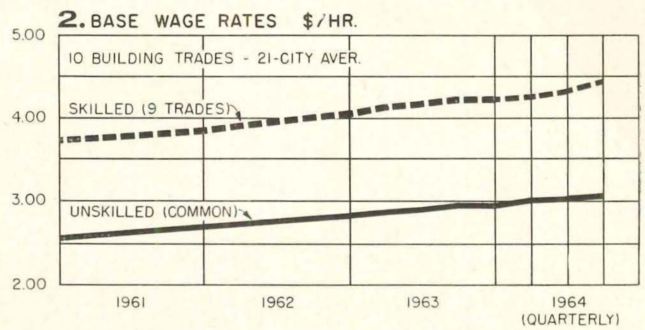
*George A. Christie, Senior Economist*
*F. W. Dodge Company*
*A Division of McGraw-Hill, Inc.*

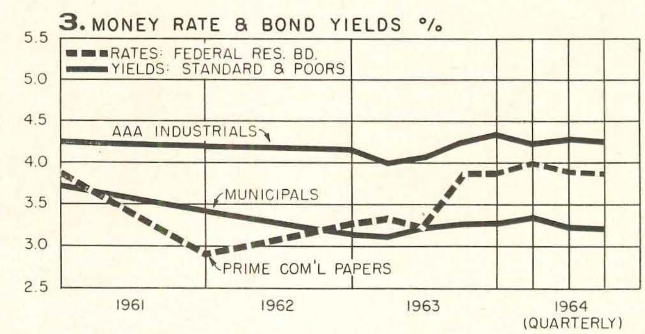
# *Building Construction Costs*

*By Myron L. Matthews*
*Manager-Editor, Dow Building Cost Calculator, an F. W. Dodge service*

The information presented here permits quick approximations of building construction costs in 21 leading cities and their suburban areas (within a 25-mile radius). The tables and charts can be used independently, or in combination as a system of complementary cost indicators. Information is included on past and present costs, and future cost can be projected by analysis of cost trends.




A. CURRENT BUILDING COST INDEXES—OCTOBER 1964

1941 Averages for each city = 100.0

| Metropolitan Area | Cost Differential | Current Dow Index Residential | Current Dow Index Nonresidential | Per Cent Change Year Ago Res. & Nonres. |
|---|---|---|---|---|
| U.S. AVERAGE— 21 Cities | 8.5 | 265.9 | 288.1 | +2.00 |
| Atlanta | 7.1 | 299.8 | 318.0 | +2.68 |
| Baltimore | 8.0 | 268.6 | 259.9 | +1.89 |
| Birmingham | 7.4 | 246.3 | 264.9 | +1.91 |
| Boston | 8.4 | 240.7 | 254.8 | +2.95 |
| Chicago | 8.8 | 295.3 | 310.6 | +1.66 |
| Cincinnati | 8.8 | 257.4 | 273.6 | +2.24 |
| Cleveland | 9.3 | 269.3 | 286.2 | +2.25 |
| Dallas | 7.8 | 251.2 | 259.5 | +1.54 |
| Denver | 8.3 | 273.5 | 290.7 | +1.70 |
| Detroit | 8.9 | 267.7 | 281.0 | +2.02 |
| Kansas City | 8.3 | 239.1 | 253.1 | +0.73 |
| Los Angeles | 8.4 | 268.9 | 294.2 | +1.81 |
| Miami | 8.4 | 263.9 | 277.0 | +1.56 |
| Minneapolis | 8.9 | 268.1 | 285.0 | +2.29 |
| New Orleans | 7.9 | 239.4 | 253.7 | +0.76 |
| New York | 10.0 | 273.9 | 294.6 | +1.91 |
| Philadelphia | 8.7 | 264.6 | 277.8 | +1.22 |
| Pittsburgh | 9.1 | 251.4 | 267.3 | +2.28 |
| St. Louis | 8.9 | 259.7 | 275.2 | +3.04 |
| San Francisco | 8.5 | 340.4 | 372.5 | +3.32 |
| Seattle | 8.5 | 244.2 | 272.9 | +1.96 |

B. HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL BUILDING TYPES, 21 CITIES

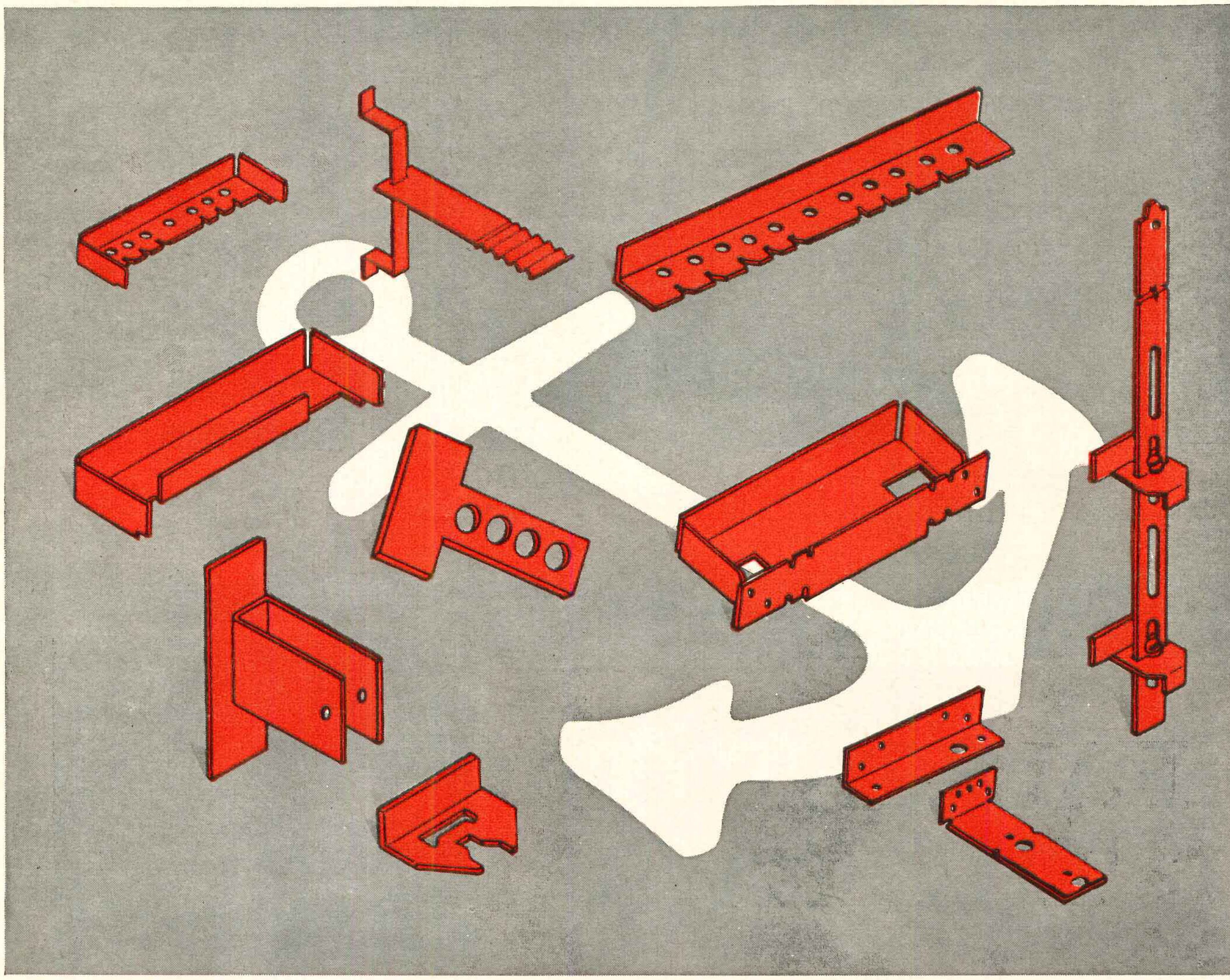
1941 average for each city = 100.0

| Metropolitan Area | 1952 | 1957 | 1958 | 1959 | 1960 | 1961 | 1962 | 1963 (Quarterly) 1st | 1963 2nd | 1963 3rd | 1963 4th | 1964 (Quarterly) 1st | 1964 2nd | 1964 3rd | 1964 4th |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U.S. AVERAGE 21 Cities | 213.5 | 244.1 | 248.9 | 255.0 | 259.2 | 264.6 | 266.8 | 269.4 | 270.3 | 273.4 | 275.0 | 274.7 | 276.8 | 278.6 | |
| Atlanta | 223.5 | 269.6 | 277.7 | 283.3 | 289.0 | 294.7 | 298.2 | 302.0 | 303.0 | 305.7 | 307.5 | 310.0 | 312.3 | 313.4 | |
| Baltimore | 213.3 | 249.4 | 251.9 | 264.5 | 272.6 | 269.9 | 271.8 | 272.3 | 272.9 | 275.5 | 277.1 | 277.2 | 279.3 | 280.5 | |
| Birmingham | 208.1 | 228.6 | 233.2 | 233.2 | 240.2 | 249.9 | 250.0 | 251.3 | 252.0 | 256.3 | 257.8 | 258.0 | 259.9 | 260.1 | |
| Boston | 199.0 | 224.0 | 230.5 | 230.5 | 232.8 | 237.5 | 239.8 | 240.4 | 241.2 | 244.1 | 245.6 | 246.1 | 247.9 | 251.3 | |
| Chicago | 231.2 | 267.8 | 273.2 | 278.6 | 284.2 | 289.9 | 292.0 | 296.4 | 296.4 | 301.0 | 302.8 | 302.2 | 304.5 | 305.1 | |
| Cincinnati | 207.7 | 245.1 | 250.0 | 250.0 | 255.0 | 257.6 | 258.8 | 260.0 | 260.7 | 263.9 | 265.5 | 265.1 | 267.1 | 268.9 | |
| Cleveland | 220.7 | 258.0 | 257.9 | 260.5 | 263.1 | 265.7 | 268.5 | 272.3 | 272.8 | 275.8 | 277.4 | 276.3 | 278.4 | 282.0 | |
| Dallas | 221.9 | 228.4 | 230.5 | 237.5 | 239.9 | 244.7 | 246.9 | 251.5 | 252.2 | 253.0 | 254.5 | 253.7 | 255.6 | 255.6 | |
| Denver | 211.8 | 245.6 | 252.8 | 257.9 | 257.9 | 270.9 | 274.9 | 275.0 | 275.4 | 282.5 | 284.2 | 282.6 | 284.7 | 287.3 | |
| Detroit | 197.8 | 237.4 | 239.8 | 249.4 | 259.5 | 264.7 | 265.9 | 267.1 | 267.9 | 272.2 | 273.8 | 272.7 | 274.7 | 277.7 | |
| Kansas City | 213.3 | 230.5 | 235.0 | 239.6 | 237.1 | 237.1 | 240.1 | 242.3 | 242.9 | 247.8 | 249.3 | 246.2 | 248.0 | 249.6 | |
| Los Angeles | 210.3 | 248.4 | 253.4 | 263.5 | 263.6 | 274.3 | 276.3 | 279.1 | 279.7 | 282.5 | 284.2 | 284.0 | 286.1 | 286.1 | |
| Miami | 199.4 | 234.6 | 239.3 | 249.0 | 256.5 | 259.1 | 260.3 | 262.4 | 266.7 | 269.3 | 270.9 | 270.1 | 272.1 | 273.1 | |
| Minneapolis | 213.5 | 235.6 | 249.9 | 254.9 | 260.0 | 267.9 | 269.0 | 271.4 | 272.1 | 275.3 | 276.9 | 275.0 | 277.1 | 281.6 | |
| New Orleans | 207.1 | 232.8 | 235.1 | 237.5 | 242.3 | 244.7 | 245.1 | 246.5 | 246.5 | 248.3 | 249.8 | 247.1 | 248.9 | 249.3 | |
| New York | 207.4 | 240.4 | 247.6 | 260.2 | 265.4 | 270.8 | 276.0 | 280.9 | 280.9 | 282.3 | 284.0 | 284.8 | 286.9 | 289.7 | |
| Philadelphia | 222.3 | 255.0 | 257.6 | 262.8 | 262.8 | 265.4 | 265.2 | 265.6 | 265.6 | 271.2 | 272.8 | 271.1 | 273.1 | 274.5 | |
| Pittsburgh | 204.0 | 234.1 | 236.4 | 241.1 | 243.5 | 250.9 | 251.8 | 255.0 | 256.1 | 258.2 | 259.7 | 260.8 | 262.7 | 262.9 | |
| St. Louis | 213.1 | 237.4 | 239.7 | 246.9 | 251.9 | 256.9 | 255.4 | 260.1 | 262.4 | 263.4 | 265.0 | 266.8 | 268.8 | 271.4 | |
| San Francisco | 266.4 | 302.5 | 308.6 | 321.1 | 327.5 | 337.4 | 343.3 | 350.1 | 350.1 | 352.4 | 354.5 | 358.2 | 360.9 | 364.1 | |
| Seattle | 191.8 | 221.4 | 225.8 | 232.7 | 237.4 | 247.0 | 252.5 | 256.5 | 257.8 | 260.6 | 262.2 | 260.1 | 262.0 | 265.7 | |

**HOW TO USE TABLES AND CHARTS:** Building costs may be directly compared to costs in the 1941 base year in tables A and B: an index of 256.3 for a given city for a certain period means that costs in that city for that period are 2.563 times 1941 costs, an increase of 156.3% over 1941 costs.

TABLE A. Differences in costs between two cities may be compared by dividing the cost differential figure of one city by that of a second: if the cost differential of one city (10.0) divided by that of a second (8.0) equals 125%, then costs in first city are 25% higher than costs in second. Also, costs in second city are 80% of those in first (8.0 ÷ 10.0 = 80%) or 20% lower in the second city

TABLE B. Costs in a given city for a certain period my be compared with costs in another period by dividing one index into the other: if index for a city for one period (200.0) divided by index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than those of the other. Also, second period costs are 75% of those of the other date (150.0 ÷ 200.0 = 75%) or 25% lower in the second period. CHART 1. Building materials indexes reflect prices paid by builders for quantity purchases delivered at construction sites. CHART 2. The $1.20 per hour gap between skilled and unskilled labor has remained fairly constant. CHART 3. Barometric business indicators that reflect variations in the state of the money market



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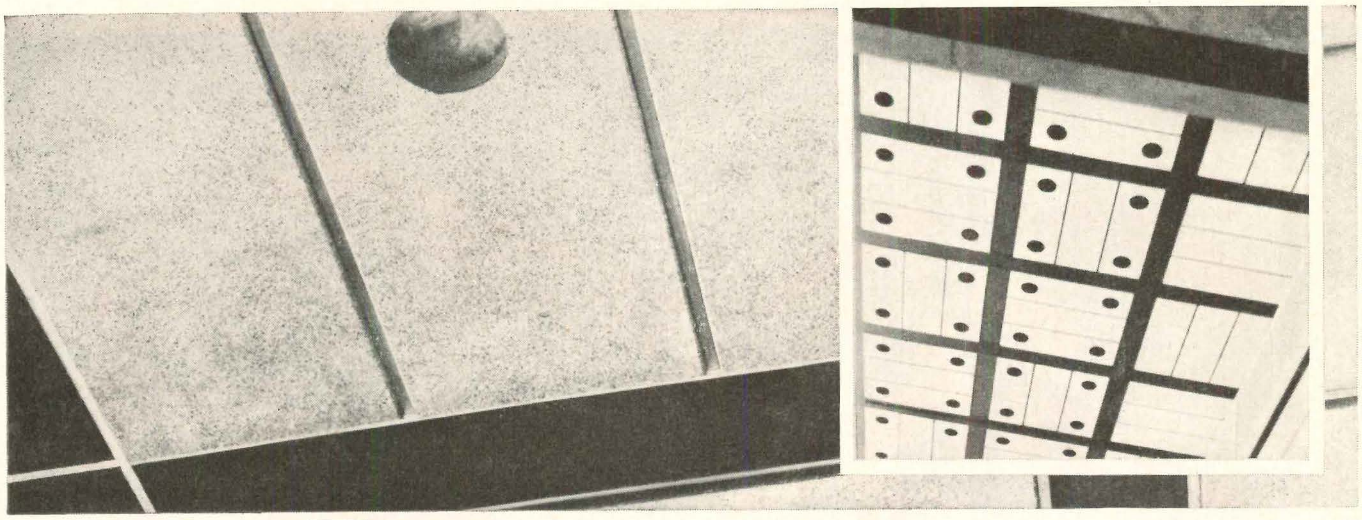

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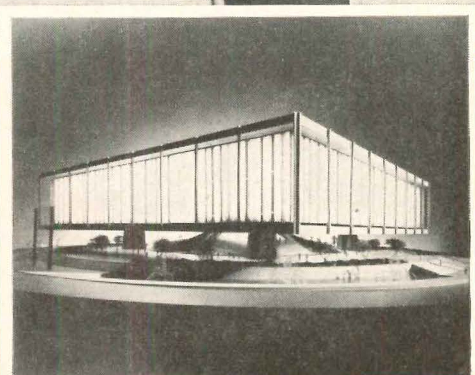

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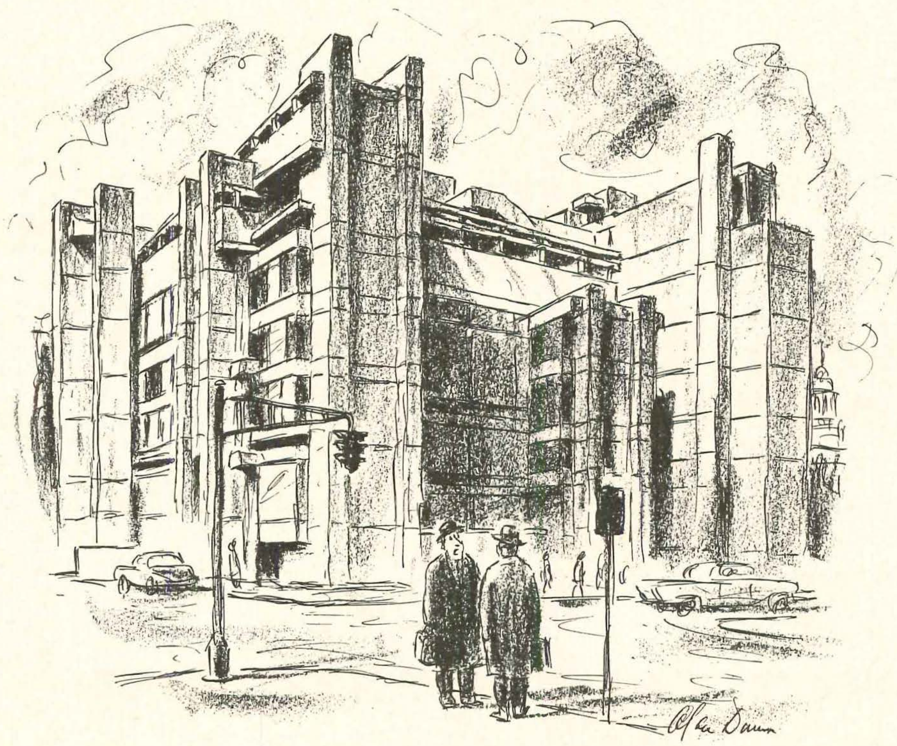


—*Drawn for the* RECORD *by Alan Dunn*

"I don't know how to break it to Paul but my mother saw it and she loves 'every little nook and cranny'!"

# ASPEN CONFERENCE EXPLORES PLACE OF AUTO IN CITY

The influence of popular taste on the excellence of design and the problem of the automobile and its relation to the city were two major topics of discussion at the 14th annual International Design Conference held in Aspen, Colo. June 21-27. The conference was attended by approximately 650 design and business executives.

Louis Dorfman, director of design for Columbia Broadcasting System, felt that the market place has been less interested in improving popular taste than in catering to it. The designer should lead popular taste in achieving excellence because he believes "the public is educable, that it reaches out instinctively for what is worthy and beautiful. . . . We will have no one to blame but ourselves if we fail to create a public that will understand, support and celebrate the designer's achievements."

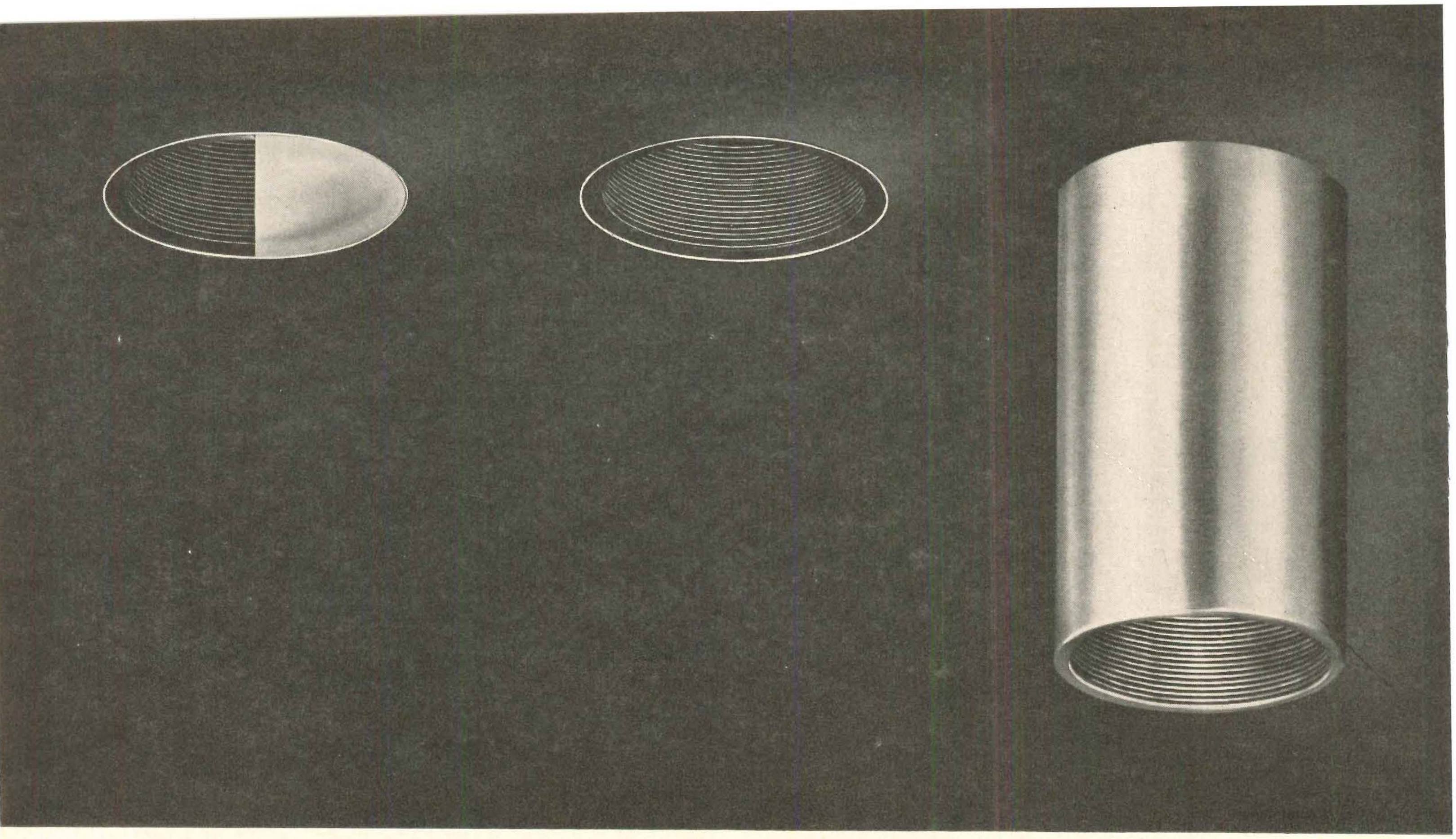
A dearth of design critics and reviewers is a factor in poor design, felt Ralph Caplan, New York lecturer and writer. Because of lack of this type of criticism "we contribute to the flood of superfluous appliances, automatic cameras for recording automatic moments, and middle class housing designed to achieve the utter lack of privacy heretofore reserved for the poor."

"Certainly in all history there has never been less restraint and less coherence at the top level of architecture: among the creators and the critics," said Robin Boyd, Australian architect. Mr. Boyd thinks there are two other main levels of design, the "professional" and the "pop," where there is much consistency. The basic "pop" level, as he sees it, has extricated all the most obvious visual effects of the last two decades into a very real international style, and the "professional" level has a consistency of "unoffending gray curtain walls" in fairly clean-cut shapes arranged as a reasonably effective diagram of the functional program. "Modern architecture is still in a mess, but only because it is still fluid, sorting itself out."

Richard S. Latham, president of Latham-Tyler-Jensen, told the conference that man's affluence, which creates a choice among many, should demand more professional solutions of a higher order to our machine art. He feels that the automobile, a glorious "super toy" and product of this affluence, should be eliminated from the city because "like a rat, it is not a necessary evil; it is just a transportation device, to be used where needed, and eliminated where it destroys man's ability to be a better human being."

Strongly disagreeing with Mr. Latham was architect Paul Rudolph. "The automobile is the greatest problem to American cities," he said, "but it also offers the greatest organizing element for the city of the future. The automobile should certainly be kept out of some areas of the city; and other areas should be redesigned so that they are consistent with the existence of the automobile."

Peter Blake, New York architect and author of "God's Own Junk Yard," feels that the new scale of architecture in America and elsewhere is the city as a whole, with the automobile a part of this whole. He feels that the parking garage structure should be a mile and a half long, topped with apartments, offices and shopping centers. "This is a building that will generate other things in its area."



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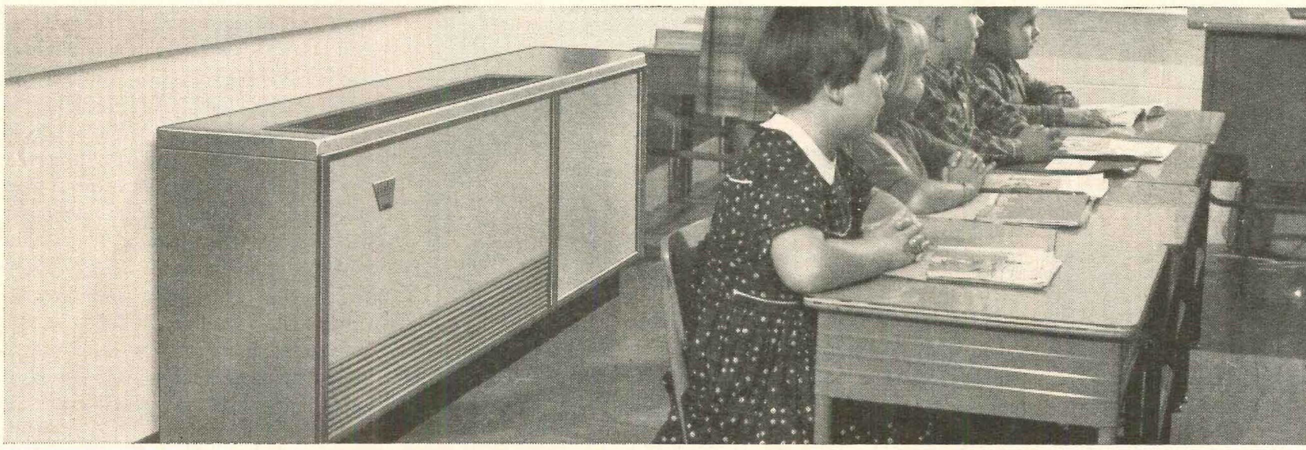

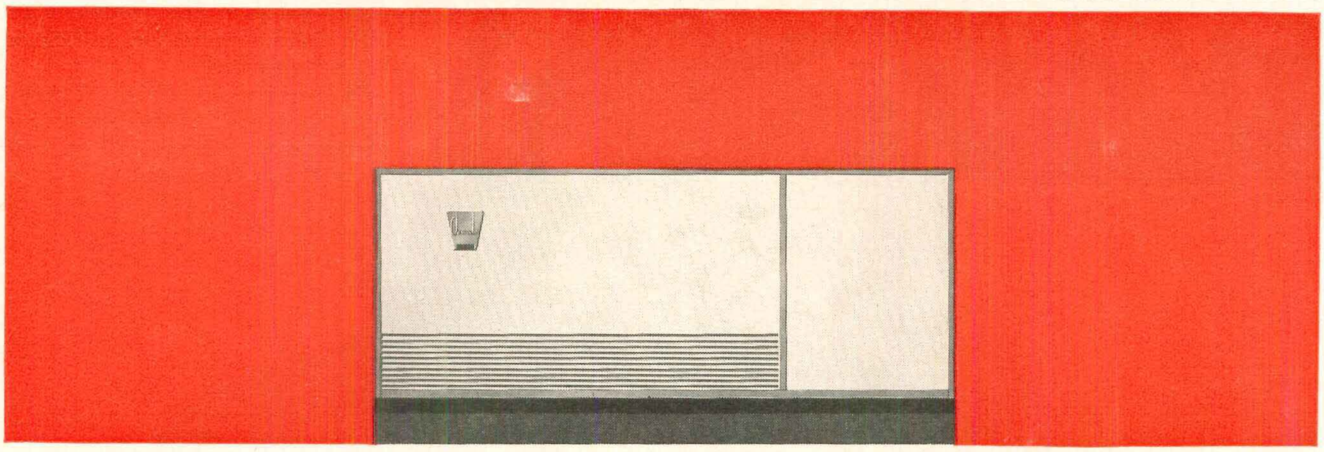

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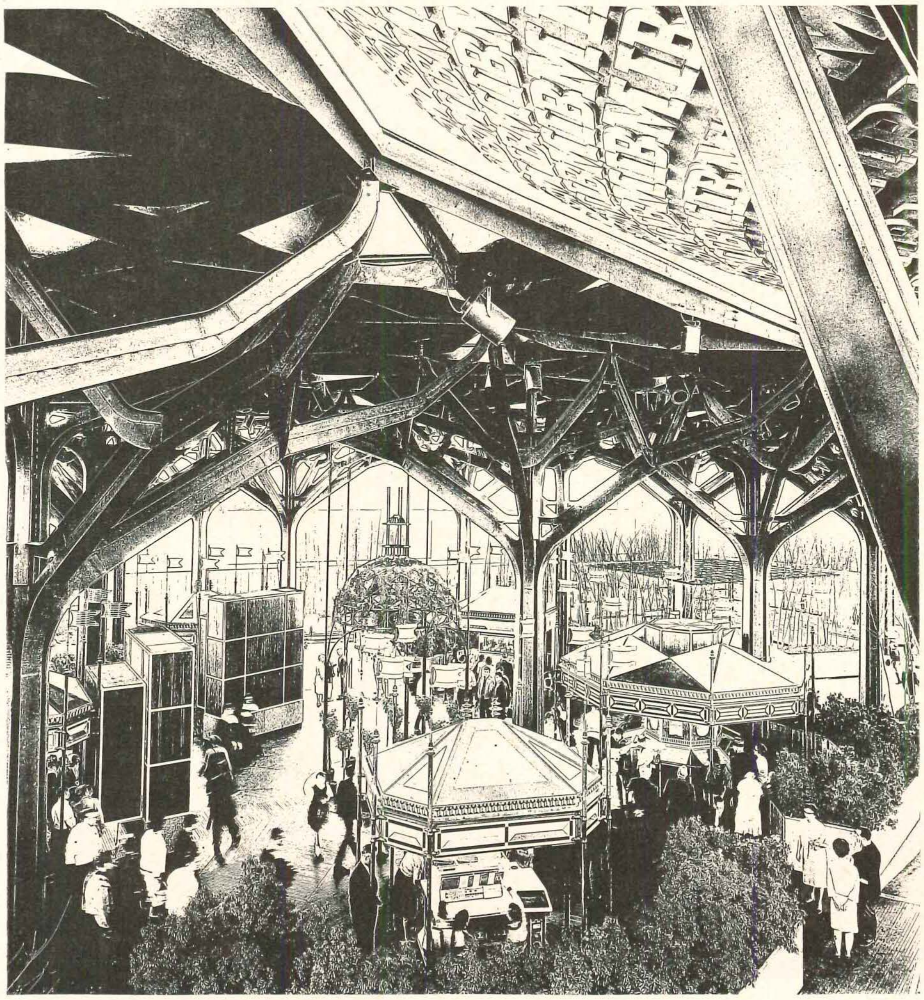
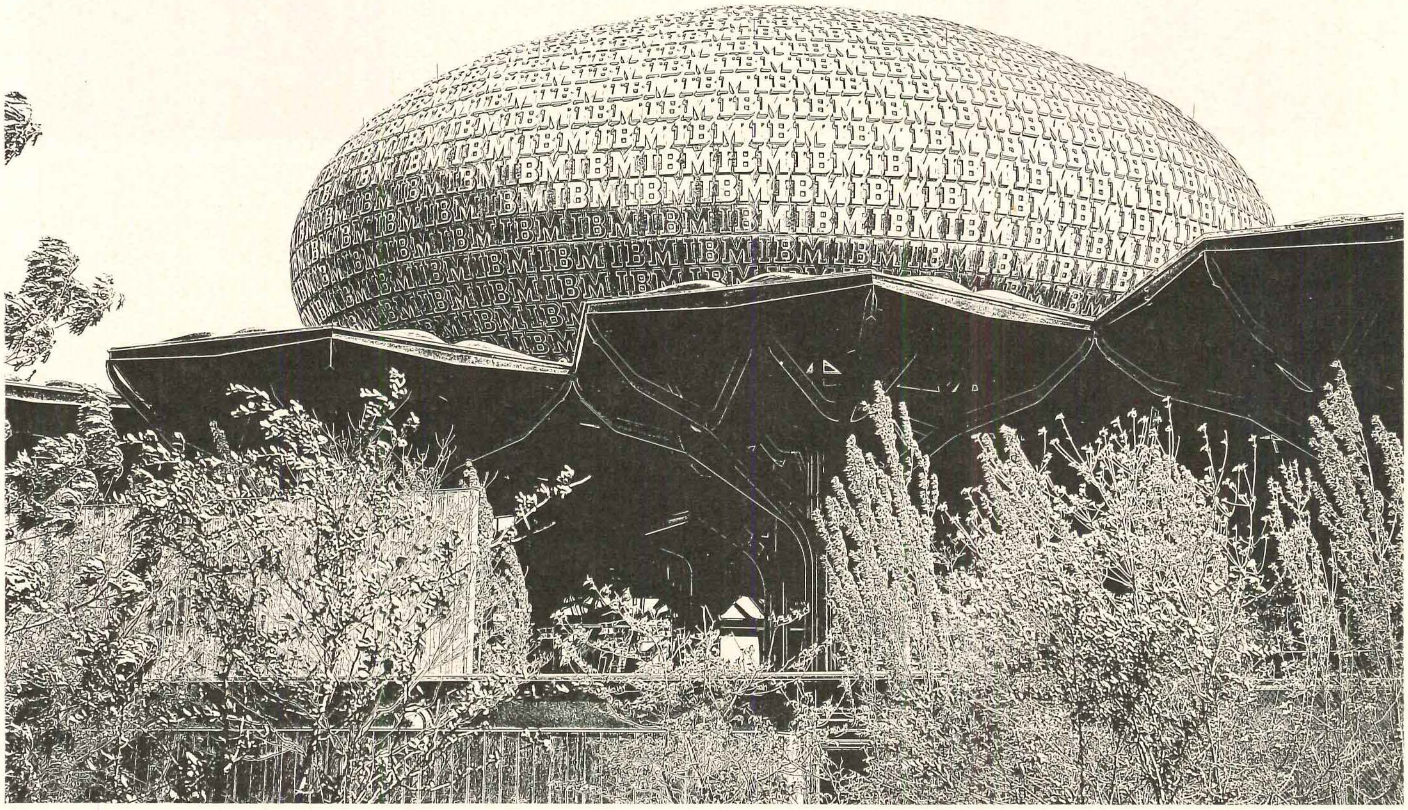


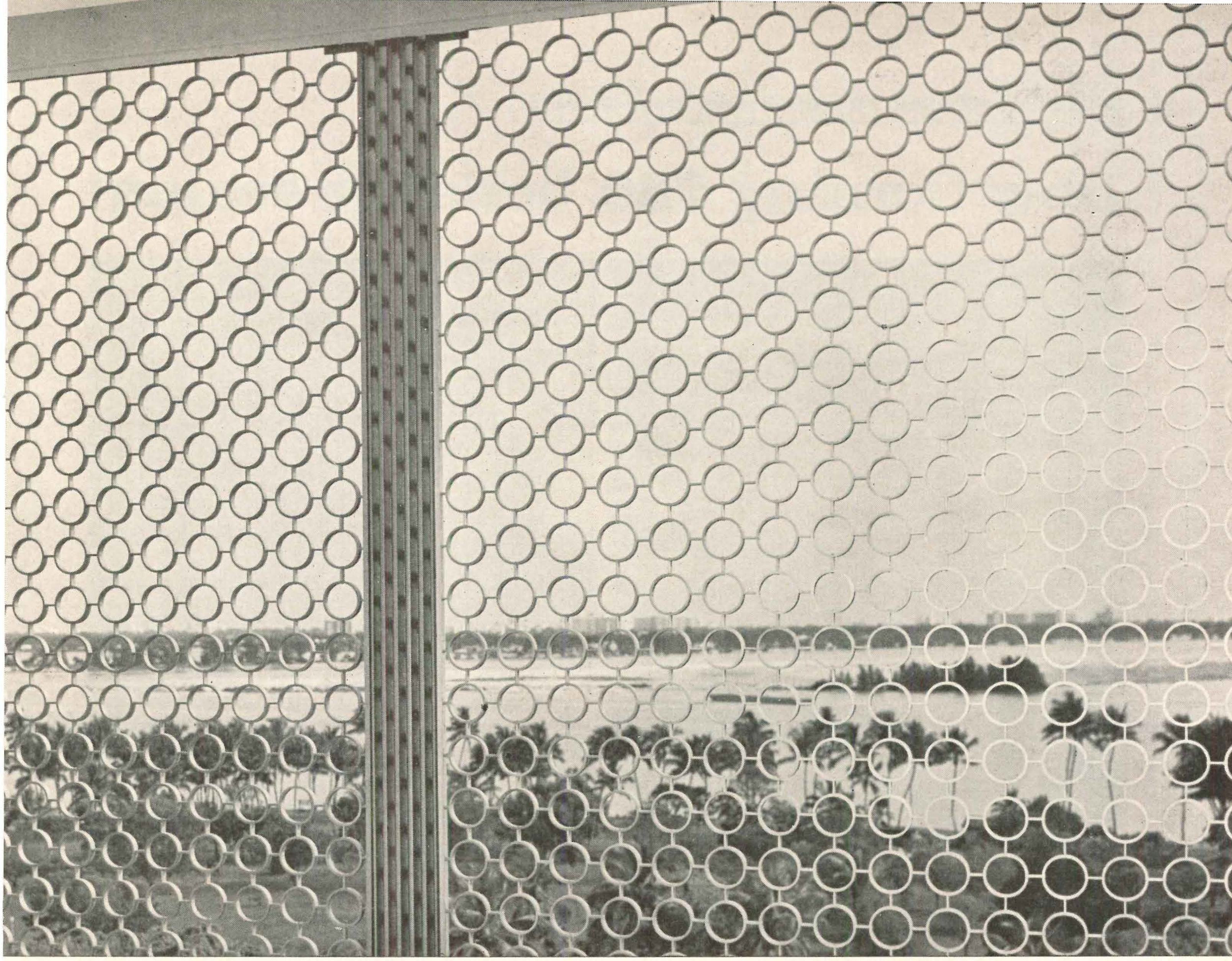

*Malcolm Smith photos*

## Line Derivation Photos Give New View of IBM Pavilion

These photographs of the IBM Pavilion at the World's Fair, designed by Charles Eames and the office of Eero Saarinen & Associates, architects, were taken by Malcolm Smith of New Canaan, Conn., using a "line derivation" process. In the process applied by Mr. Smith a film positive is made from the original negative. The original negative is then placed back-to-back in exact register with the film positive on a sheet of high contrast film in a printing frame. The latter is then placed on a rotating turntable and exposed to light from one side so that the light penetrates only through the small space between the two film emulsion layers along the image outlines. This produces a film positive line image from which a negative is made for producing final prints. The process eliminates halftone and renders a line at each sharp demarcation in tone on the original negative.

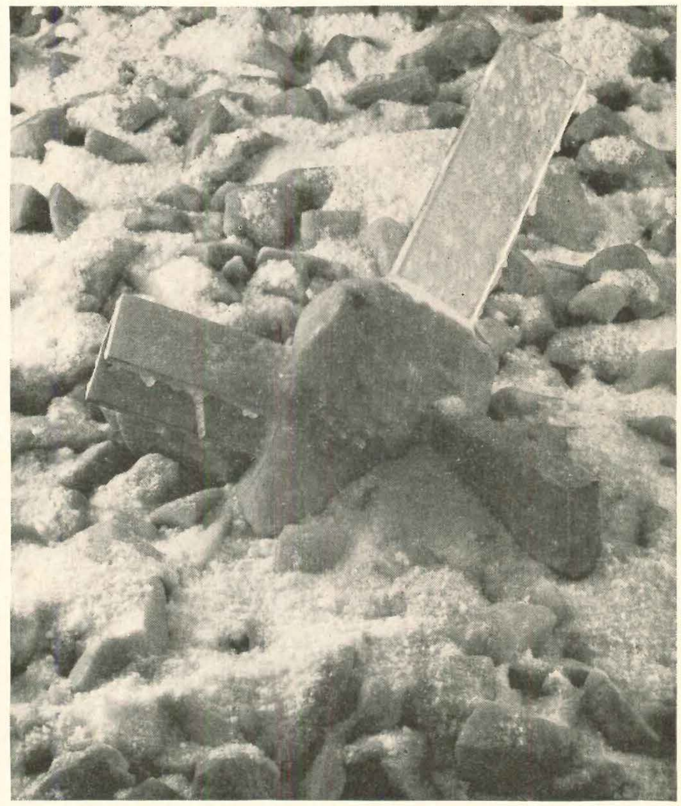
In the examples shown the only hand work used was routine cleaning up of dust marks. Nothing has been added to the photographic image.





BUILDING PRODUCTS NEWS from Dow Corning

# Dow Corning 780 building sealant



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**Dow Corning**

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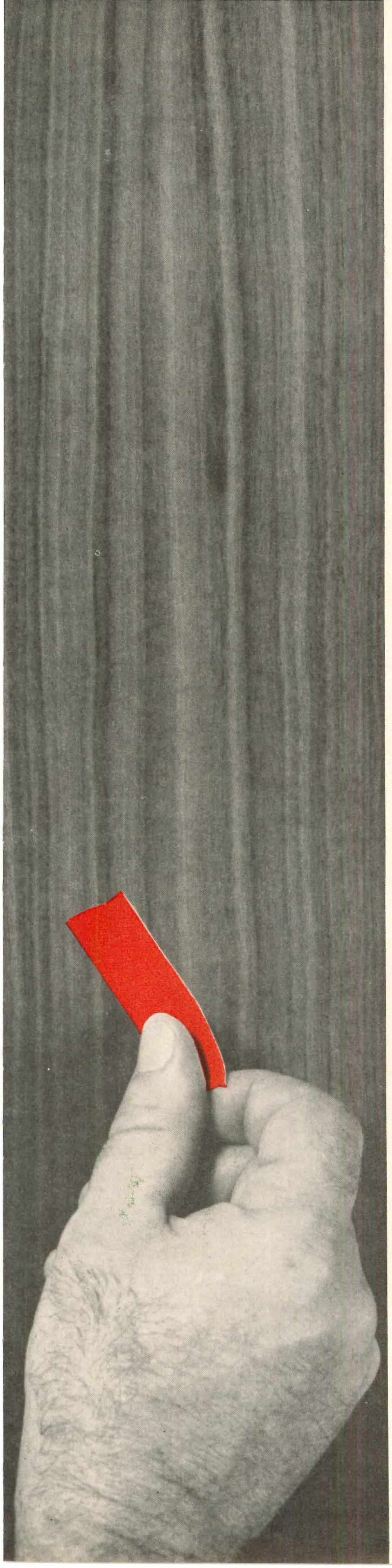

# Here's why everyone at Leopold believes in red tape

Red tape at The Leopold Company helps you get the best desk money can buy! For example, if a craftsman anywhere in the plant spots a flaw, on goes a piece of red tape and out goes the imperfect part. Actually, you don't see much red tape used because Leopold craftsmen are super-critical of themselves and seldom are guilty of imperfect work. Red tape, however, is a marvelous psychological reminder that the real final inspector is our customer. So you see, everyone at Leopold believes in red tape because it also means user satisfaction. Do some final inspecting of your own at your Leopold dealer's showroom. Inspect the contemporary desk shown below, and other units from the traditional, conventional and budget lines. See for yourself what a little red tape can do in the right hands . . . or write for literature on the styling you prefer.

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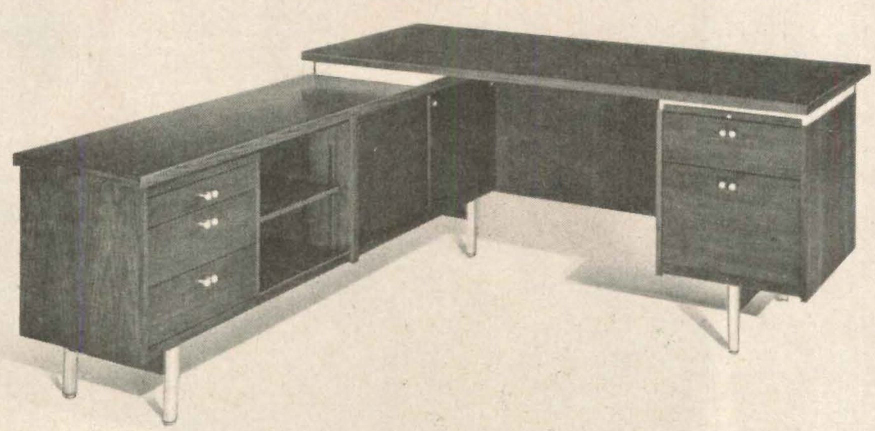

# ideas!

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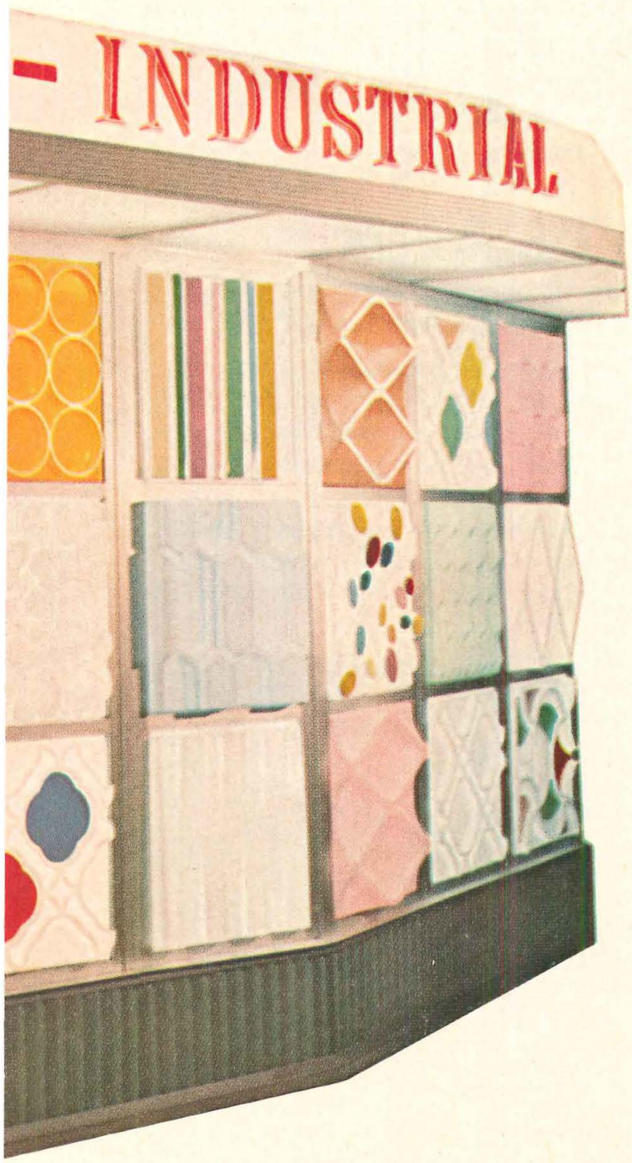


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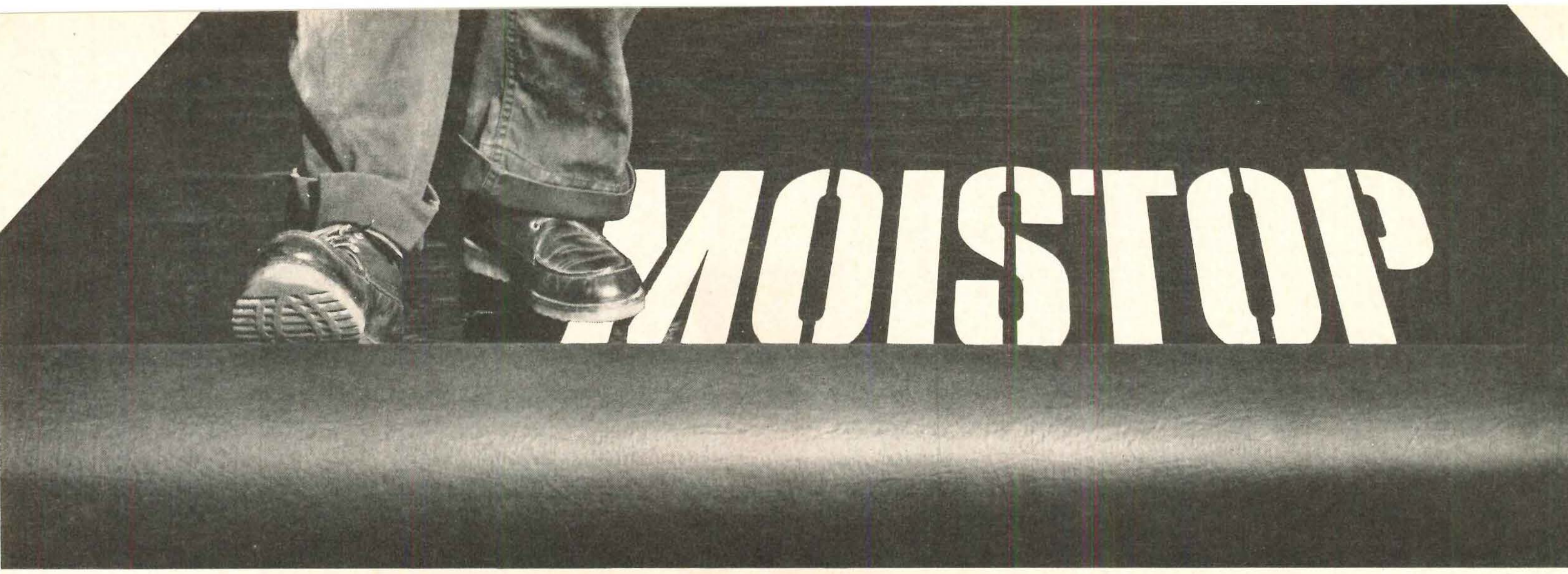


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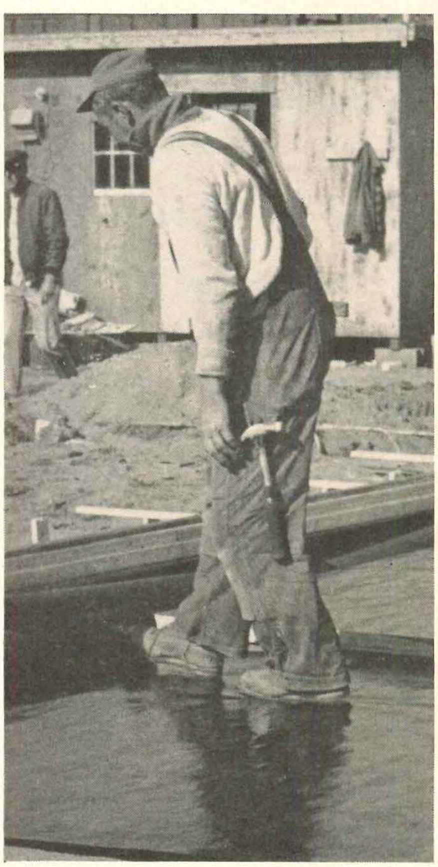

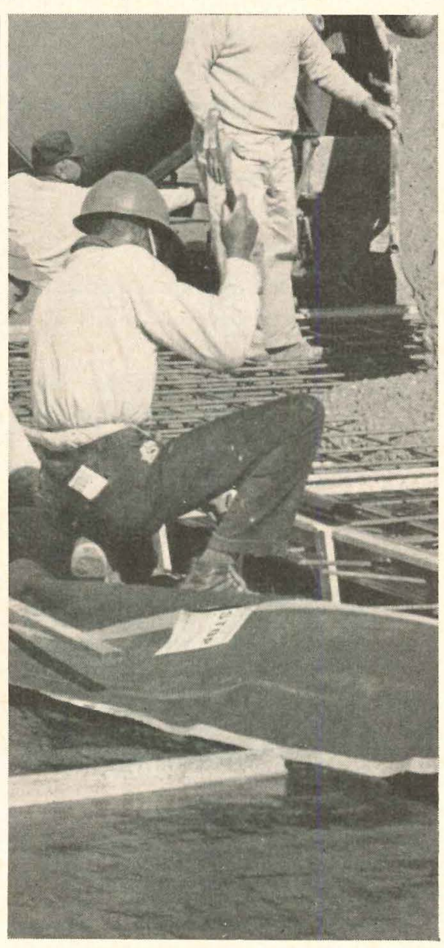

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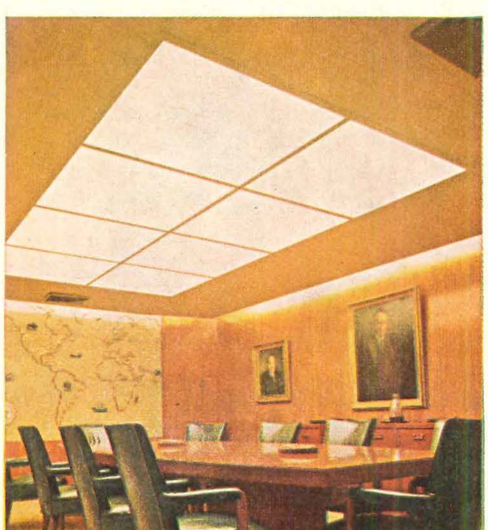
# PLEXIGLAS...12 years without yellowing



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A monthly roundup of reports on new books of special interest to architects and engineers

*This Month's Books*



## Art Versus Man

THE IRRESPONSIBLE ARTS. *By William Snaith. Atheneum, 162 East 38th St., New York, N.Y., 10016. 264 pp. $5.00.*

Architect-industrial designer-painter William Snaith, in this volume, makes a blistering attack on the forces that are pushing the arts beyond man's understanding, turning the arts into instruments of alienation. Snaith discusses developments in architecture, painting, sculpture and music, displaying in the process an impressive breadth of knowledge and understanding of each. He says, "Art has not lost its steam—only its purpose." Art, according to Snaith, is obsessed with originality, troubled by an advanced technology, has destroyed its disciplines and turned its back on man.

The author accuses the "artist-architect" of being more concerned with the fulfillment of esthetic goals than with serving human needs; of creating hollow sculptures to which people must adapt themselves. And adds, "We have now advanced from the glass greenhouse to the concrete grotto." He describes today as a period of rampant expressionism, which produces profoundly irrational "people containers." The several chapters on architecture include thoughtful evaluations of the Seagram's fountains, Philharmonic Hall, the Yale Art and Architecture Building, the Guggenheim Museum, and others—as well as a discussion of the house.

Snaith traces the historic development of the dichotomy between art and man from its beginning in the early 1800's with the credo of "art for art's sake," and the growth of esthetic license to the point where painting, sculpture, and music have become, in his view, incomprehensible, non-communicative. He describes abstract painting as nihilistic outrage; laments the sculptor's concern with exploring the assembly of junk; and tells us that contemporary music has cut the important umbilical cord of tonality and "made a leap into a strange new world of sound."

Snaith accuses the group he describes as "the establishment"—artists, esthetes, mandarins (a powerful elite), tastemakers, collectors and status seekers—of developing an elaborate set of esthetic rituals and mumbo-jumbo to the point that art has become a private set of ideographs to which ordinary people have no key—so art is denied them.

Snaith writes well and makes his points with vigor and understanding, not in a carping tone, but more in the spirit that something he loves has been outraged. He is a painter of considerable achievement, with four one-man shows and several museum exhibitions to his credit. He makes the plea that "art needs man; the tricks are running out, originality has descended to novelty; meaning and nobility have given way to fashion. The artist must rid himself of the final inhibition—his distrust of man." Required reading for architects.—*James S. Hornbeck.*

## Environmental Design

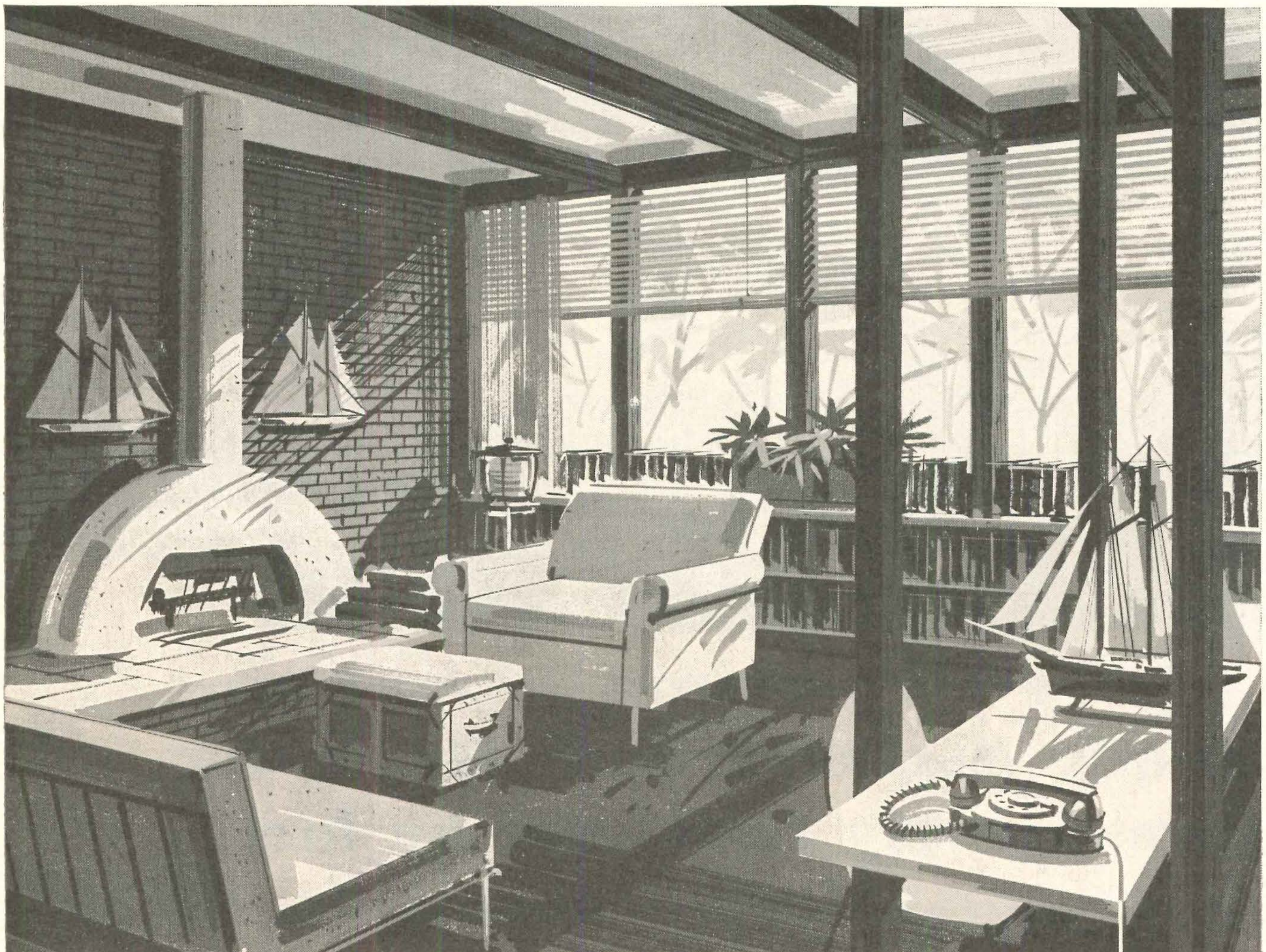
URBAN LANDSCAPE DESIGN. *By Garrett Eckbo. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 36, 247 pp., illus. $16.50.*

## A Review

### By Albert Mayer

I am glad that Eckbo wrote this book. It is precisely the kind of book that needs to have been written, and to be read. Read by whom? Answer: by architects, by landscape architects, by policy-making and policy-executing legislators and officials, and by laymen who are concerned

*continued on page 57*



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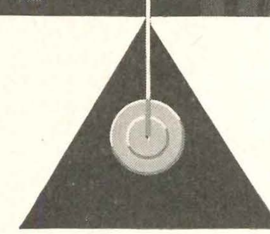

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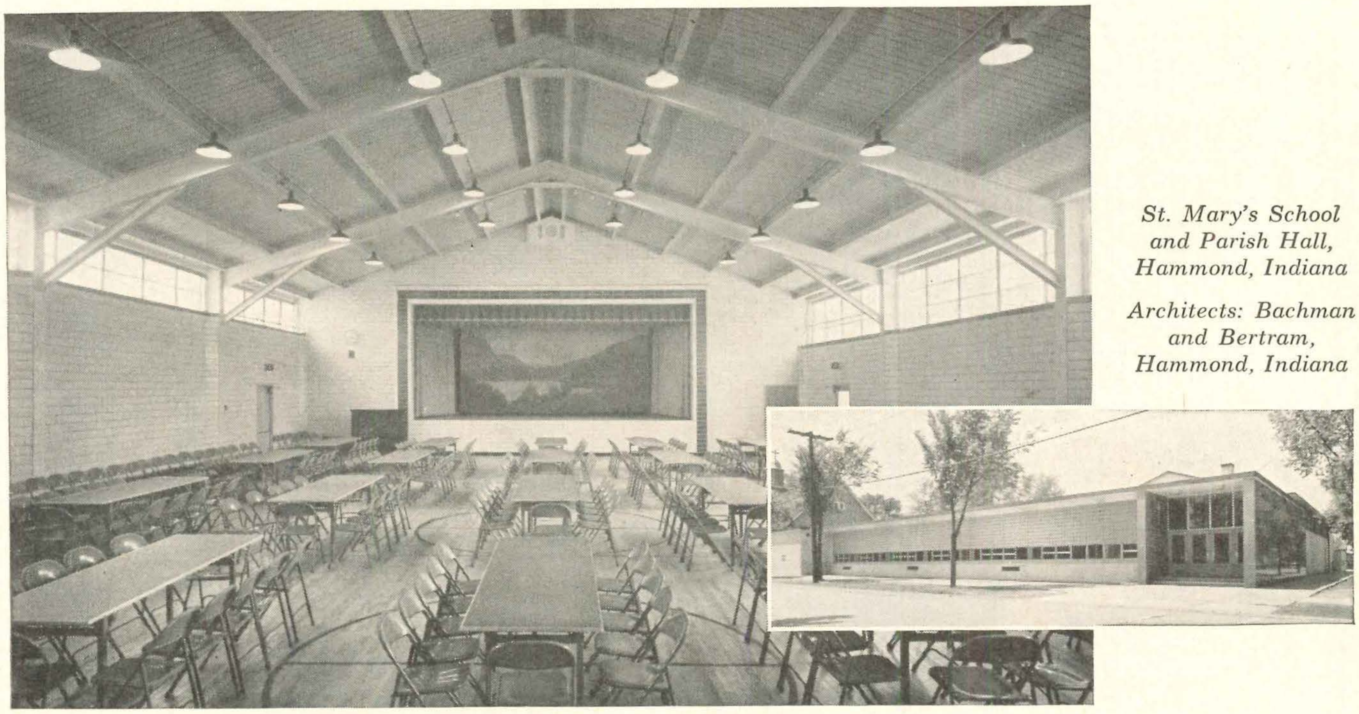

*St. Mary's School and Parish Hall, Hammond, Indiana*

*Architects: Bachman and Bertram, Hammond, Indiana*

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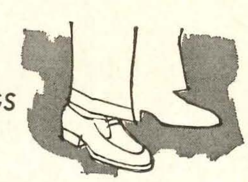

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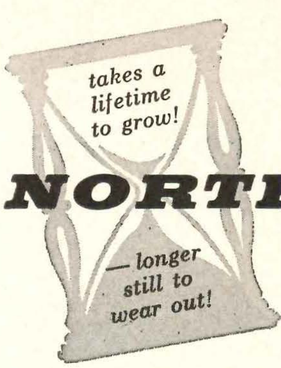


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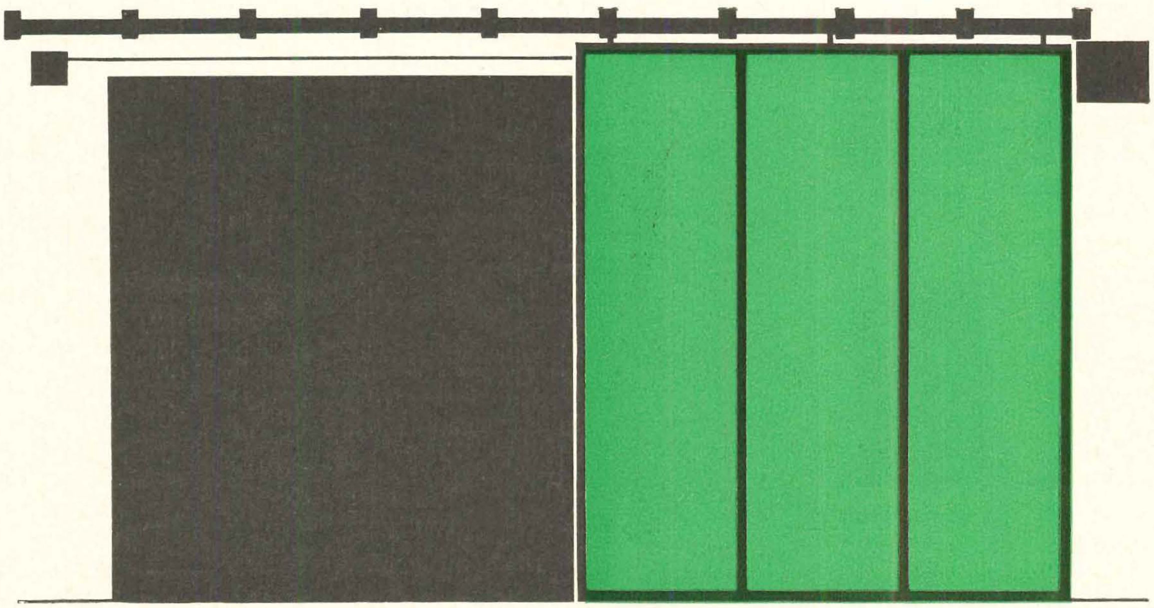

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## *Required Reading*

*continued from page 52*

with environment, and who are worried or *should* be worried about it. It actually succeeds in meeting the needs of these very various groups.

Eckbo makes the point again and again, though it can scarcely be said too often, that landscape is what we live in and are surrounded by, as ambient in a sense, as the air we breathe. It is not merely the verdant and other accents and insertions that sometimes surround buildings or fill the areas between.

In a major sense, it is the buildings that are the interlopers in the landscape, not the landscape that is an appendage to the buildings. Actually, and by and large, the landscape profession itself has accepted that more minor role. In our quantitatively great cities, it is easy, of course, to ignore the meaning of landscape, of non-building space, easy for builders of huge buildings (architects and entrepreneurs) to plan and to design in other than a spirit of reverence for environment, to design in terms of the sterile zoning god. But actually, among the pavement and the bricks in the city, we must carve out and *redeem* landscape, for both the functional and spiritual-emotional reasons. We must do it singly and privately, as well as through government.

With so broad a concept as he visualizes, I am sorry the book is called "Urban Landscape Design," which somehow seems to me to shrink the comprehensive subject to which Eckbo actually addresses himself to the dimensions of a narrowly professional treatise.

A great part of the book *is* devoted to spirited discussion and illustration of actual specific programs, analysis, planning, design of various elements and scales in the environment. It is thus a stimulating technical-social exercise. There is enough of this, and in enough detail, so that one can learn, or admire, or argue with design programs, idioms and solutions. But the book is broader and deeper than this in another aspect also. Eckbo provides what is so far as I know, universally lacking in this kind of book. He deals trenchantly with what I have elsewhere called the underlying dynamics of development, points out in a number of different ways that we simply cannot design to our capacity and gifts and insights, under a system of speculative development which forces the sacrifice of so much in favor of easy salability, of maximum exploitation of maximum-priced land, of minimal equity investment, of quick turnover and of a tax system that reinforces and accentuates this condition. One doesn't expect the architect or landscape architect to become an economic expert. But a good infusion of these underlying hard realities has its real alerting importance.

The author notes with justice that this nihilistic laissez-faire is modified by institutional and civic scale and policy. But without any question the tune is called by the private developer-entrepreneur, not only on his individual enterprise, but also in the whole atmosphere and basic matrix of development.

In still another aspect, the author's subject-matter transcends his

*continued on page 64*

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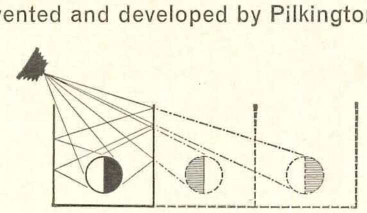

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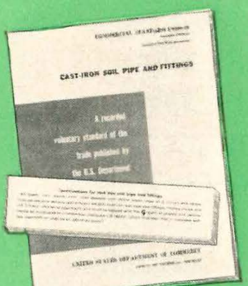

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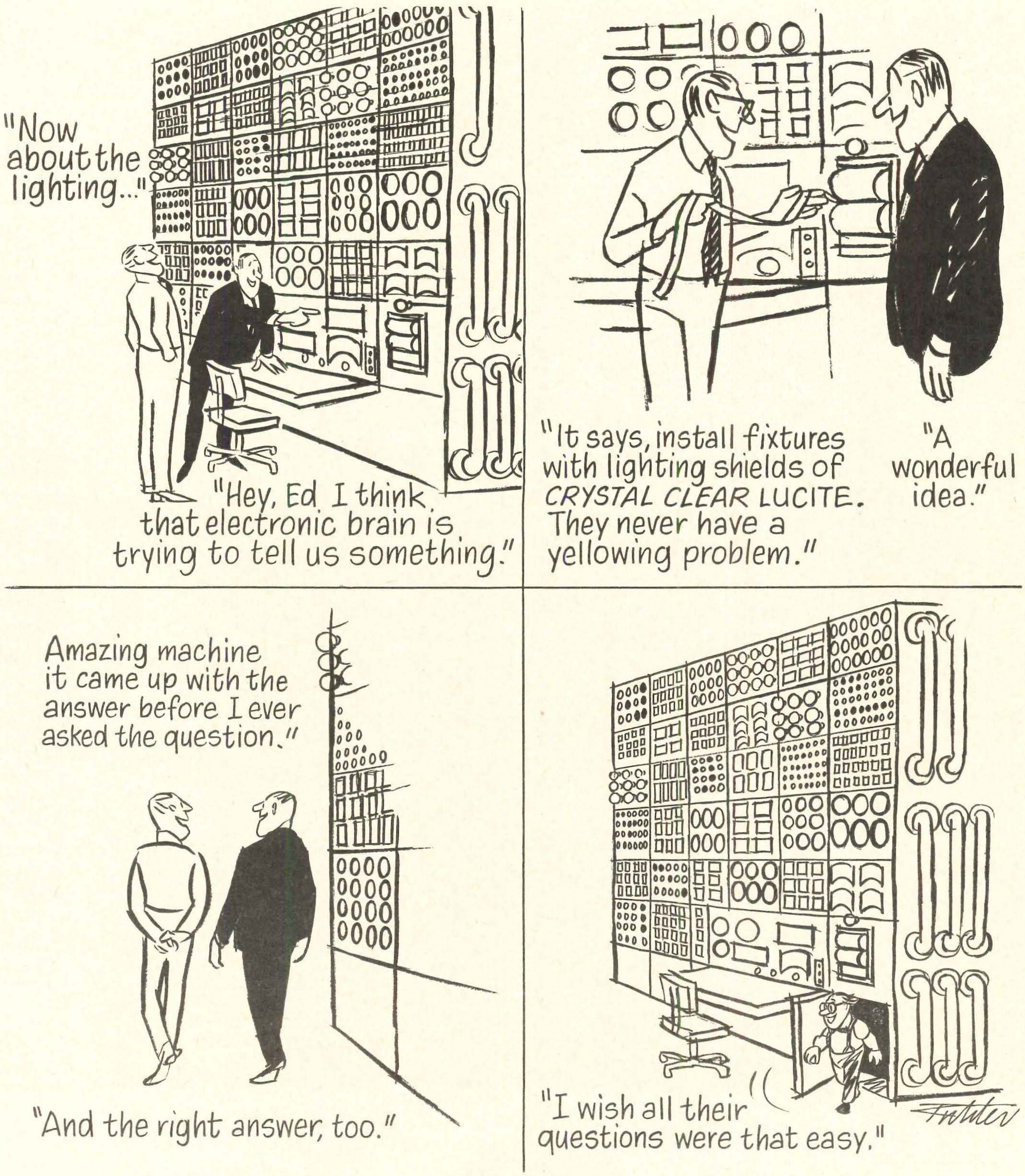


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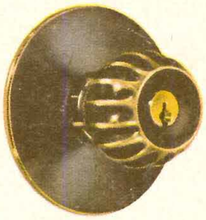

WATERLILY Schlage's new, exclusive design reflects the simplicity and charm of sculptured metal. Softly contoured knob is effectively emphasized by the oxidized brass finish shown here. Also available in other standard finishes. Knob, 2" diameter; rose, 3—5/8" diameter.

**Beauty you might have designed yourself** What a wonderful opportunity to specify locks throughout your building that tie in with your own design ideas! Here is quality you—and your client—can see and *feel*. This exclusive Schlage design is one of a group of new styles for commercial and residential use. It pays to specify the best—you get so much more. The beauty of a Schlage Lock never grows old. It gives long, trouble-free service. No wonder so many architects and designers specify Schlage. For a free, colorful folder illustrating new, exciting lock designs, ask your Schlage sales representative. Or write directly to the Schlage Lock Company, 2201 Bayshore Boulevard, San Francisco 19, California.

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## *Required Reading*

*continued from page 57*

title. He rightly includes the natural environment of the rural and metropolitan rural areas, and what we can do to retain and enhance their value in the face of the encroaching and leap-frogging metropolitan complexes. In this connection, I regret that he has failed to note and discuss the brilliant British concept and practice of the inviolate greenbelt, so little known here and so deeply fruitful. The greenbelts will make an indispensable addition to the present important expansion in our acquisition and preservation of scattered open spaces, being based on a sense of order and urban relationship to open land, and standing as the symbol and actuality of the limitation of urban anarchy and arrogance and excessive disorderly reach.

I find myself reviewing books from time to time: generally, as in this case, for two reasons. It is a book I feel I must read. And the only way to assure doing it, pressures being what they are, is to undertake to review it. The second is that books which architects feel they ought to read and to own, are high-priced. This one costs $16.50. One can't afford that kind of money too often for a book. But why must books be so expensive? Take this one. Excellent as it is, it would have been more excellent if it had been considerably shorter. The thinking, welcome as it is, would have gained by being seriously compressed. And, hold your breath: it is excessively illustrated —an unusual complaint. Grateful as one is for adequate provocative illustrations, somewhere around half or two-thirds of the illustrations would, in my judgment, have been amply inclusive and illustrative of varied approaches and the various issues. It would have made a sharper impress. But if you've got the $16.50, buy the book and read it.



## Religion and Architecture

PROTESTANT WORSHIP AND CHURCH ARCHITECTURE. *By James F. White. New York Oxford University Press. 224 pp. $6.00.*

This unusual book on church architecture is both a history and an analysis of forms of Protestant worship and of their effect on the design of religious buildings. Although the part of the church actually used for worship is often relatively small in relation to the total building, it is vital that its function should be properly understood.

Dr. White's book is an attempt to interpret the various approaches to Protestant worship and to relate them to appropriate architectural solutions. The book is certainly controversial, but is undoubtedly of interest to theologians, to architects concerned with church building and to all who are interested in the role of the church in present day society. The absence of photographs seems a pity, as some of the points would have been made more effectively with cogent illustrations to supplement the use of plans.

*continued on page 74*


Marina City, twin 60-story apartment towers in Chicago. Architect, B. L. Goldberg, A. I. A.



## *Required Reading*

*continued from page 64*

### New Books on Art

ART OF THE ANGLO SAXON AGE. *By Esther Jackson. The Richard R. Smith Co., Inc., Peterborough, N.H. 176 pp., illus. $5.95.*

Ancient Saxon parishes were the source of inspiration for this illustrated study of England's churches as well as sculpture and illuminated manuscripts of the five centuries preceding the Norman conquest. Though largely photographic, the book has an accompanying text which touches briefly upon religious and historical events of the period—and the photographs show so naturally the richness of the art.

MATISSE. *By Jean Selz. Crown Publishers, Inc., 419 Park Avenue South, New York, N.Y., 10016. 95 pp., illus. $3.50.*

Some 75 of Matisse's works, from the Fauve period to his last paintings, are reproduced in this handsome little book. The text illuminates his personality and his art.

### Interior Design

DECORATION, *Volumes I and II. By the editors of Connaissance des Arts. French & European Publications, Inc., 610 Fifth Ave., New York, N.Y., 10020. Vol. I, 328 pp., illus. $27.50. Vol. II, 320 pp., illus. $24.50 until January 1965, and $27.50 thereafter.*

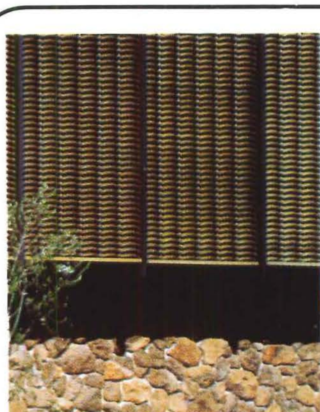
The staff of *Connaissance des Arts* have compiled a two-volume set of books on interiors intended to represent the French idea of what is best in the world of decoration (not much of it contemporary in inspiration). The books are indubitably beautiful, decorators' books of decoration, each containing a multitude of photographs and color plates.

The first volume analyzes the fixed elements of the décor and turns to a synthesis of background with furniture and objects of art. Volume II

*continued on page 82*


Pacific Gas & Electric Co., San Rafael, Calif. Carl F. Gromme and Ralph B. Priestley, AIA, Architects General Contractor: MacDonald, Young & Nelson, Inc. KALCOLOR® aluminum curtain wall: Kawneer Company, Richmond, Calif., Niles, Mich.

# P. G. & E. SPOTLIGHTS THIS SUNSCREEN EVERY NIGHT—IT'S SUNFAST KALCOLOR® ALUMINUM



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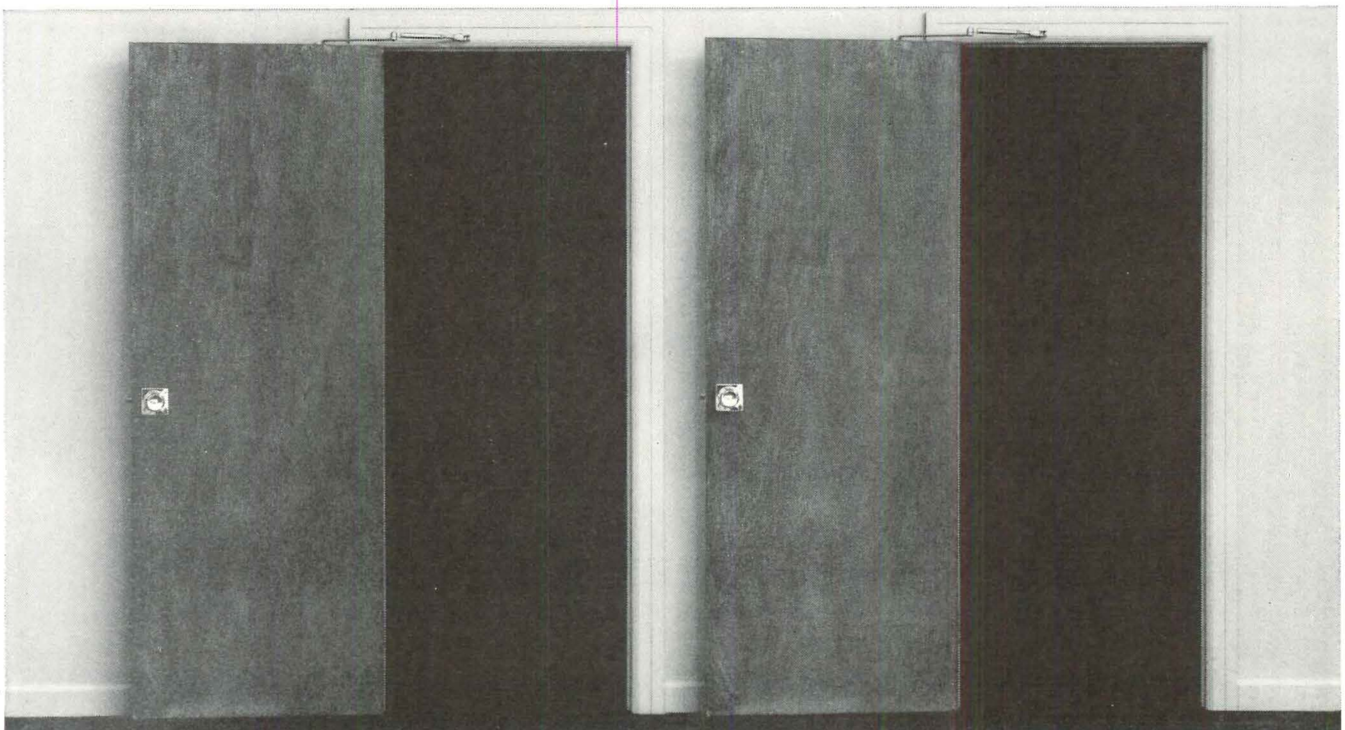
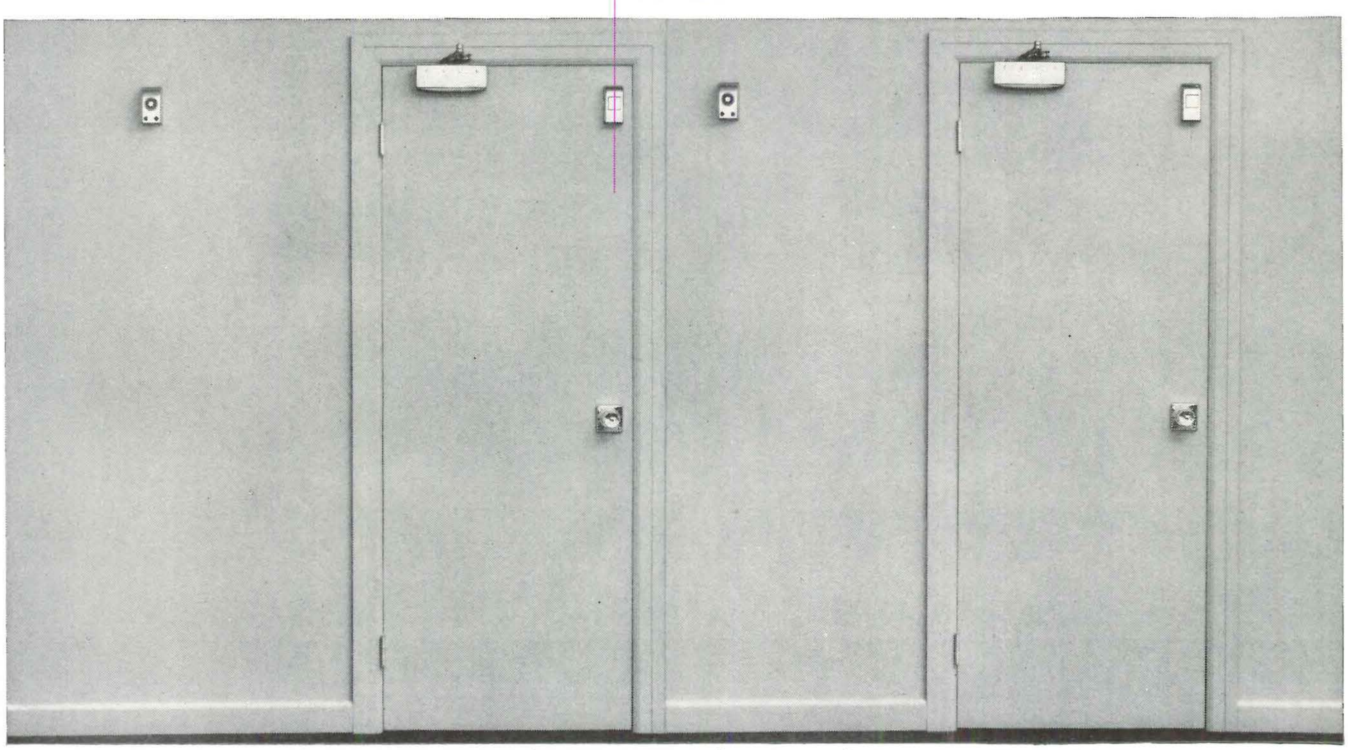


Fire!



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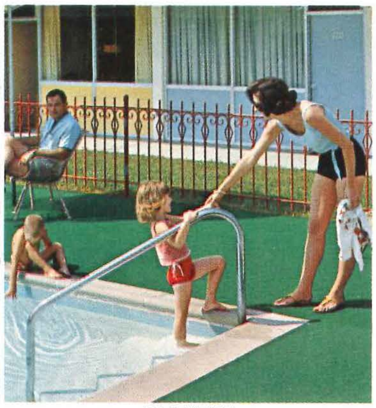
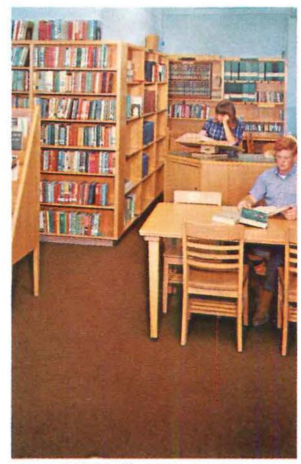


*POOLSIDE*

*LOBBIES*

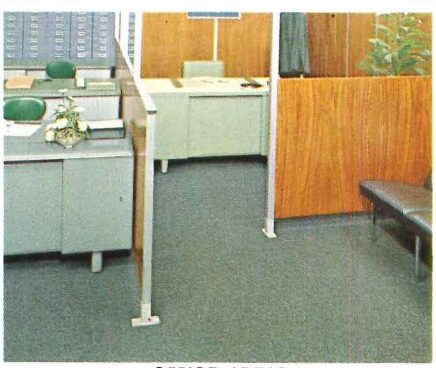
*MOTELS*

*EXPOSED WALKWAYS*



*SCHOOL LIBRARIES*

*HOSPITALS*



*OFFICE AREAS*

*TERRACES*

*RESTAURANTS*

Nine decorator colors starting at 12 o'clock going clockwise on star: Terrace Green, Oatmeal, Terrace Cardinal, Avocado, Terrace Bronze, Charcoal, Regal Blue, Brownstone, and Sapphire (center).

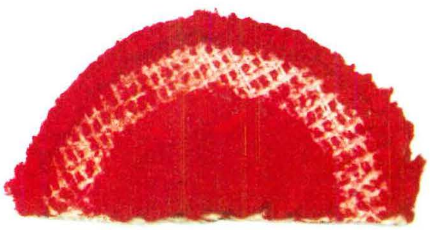
Ozite Outdoor-Indoor Carpet made with Vectra* polypropylene olefin fiber is not just another floor covering in competition with those you already know. It's in a class by itself—an entirely new *kind* of floor covering with features other carpets just don't have. The result? It opens up scores of new decorating ideas never before possible with conventional carpeting. Check the assignments you're working on now. You'll be surprised how many ways you can find to add dramatic creative touches with this new carpet. Turn this page for details on the remarkable technical advantages of Ozite Outdoor-Indoor Carpet made with new Vectra polypropylene olefin fiber.

**Ozite** *Outdoor-Indoor Carpet made with* Vectra olefin fiber

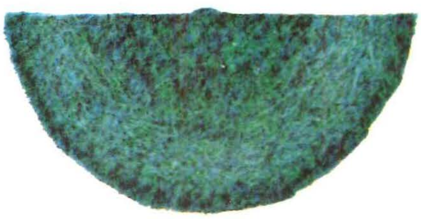
As advertised in **LIFE** magazine

*The Vectra Company • A division of National Plastic Products Company, Inc., Odenton, Md. Carpet made by the Ozite Corp., 7-120 Merchandise Mart, Chicago.*
**Vectra is the exclusive trademark of National Plastic Products Company, Inc. for its olefin fiber. Vectra makes fibers only, not fabrics or carpets.*

# Tests prove the superiority of Ozite Outdoor-Indoor Carpet made with Vectra* fiber over floor covering costing twice as much!

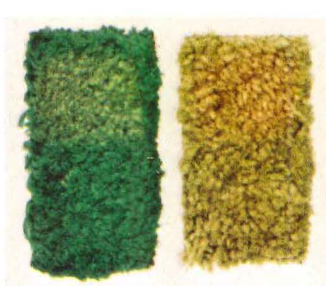


3,000 revolutions of abrasion test have $11.95 retail acrylic carpet down to the backing!



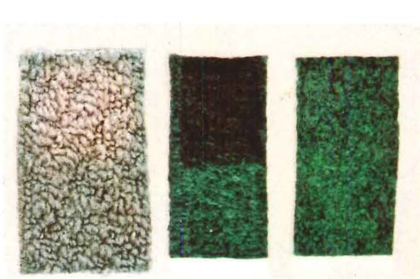
But, the abrasion wheel (Standard Taber Abraser), which can quickly spin off years of hard wear, barely makes a dent in new Ozite Outdoor-Indoor Carpet made with remarkable new Vectra polypropylene olefin fiber. Ozite's unique manufacturing method permits the use of staple fiber of higher tensile strength than normally used in regular carpeting.

**Fadeometer Test**



Wool
100 hours

Acrylic
160 hours



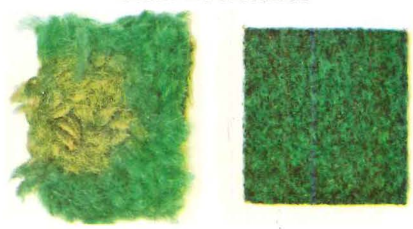
Nylon
100 hours

Polypropylene without stabilizers
216 hours

Polypropylene with stabilizers
Over 2,000 hours

Most manufacturers of piece-dyed carpets try for 40 to 60 hours fade resistance. Even stock-dyed carpets strain to reach 200 hours. The special stabilizing chemicals used in the solution-dyed Vectra fiber enables it to resist ultra-violet rays—and permits Ozite to guarantee its carpet to withstand 500 hours of Fadeometer test without discoloration!

**Stain Resistance**



Wool

Polypropylene

Vectra polypropylene fiber is resistant to most harmful chemicals that tend to bleach and stain competitive products, including most acids, alkalies, salts, solvents, and oxidizing agents. Ozite Outdoor-Indoor Carpet resists spotting and bleaching from ammonia, chlorine, coffee, tea, soft drinks, shoe polish, merthiolate, mustard, catsup—practically everything, including the accidents of dogs and children. Insects and mildew do not attack polypropylene. Fungus growth is not supported by the fiber itself. It does not absorb moisture—can't shrink, rot, or mildew. And it's non-static and non-allergenic, too.

Competitive carpet fibers absorb moisture to varying degrees, up to 27%.

A filament of Vectra reacts to water much like a solid glass rod. The water rolls right off. Vectra olefin fiber has zero (0%) moisture regain.

Other Fiber

Vectra

Easy to install. Cuts with scissors or knife. Lies flat. Doesn't curl. No binding of exposed edges necessary. Does not need carpet cushion, tacking, or professional installation. And no adhesive is required. If desired, waterproof cement may be used outdoors. Indoors, double-faced tape may be used, or cement if you prefer.

And it's a breeze to maintain! Can actually be hosed clean. Simple to patch. Because Vectra fiber is impervious to moisture it can either be scrubbed clean or vacuumed. It dries fast. And patching for cigarette burns (can happen to any carpet, you know) is easily done in minutes with a razor blade and leftover pieces—and it won't show!

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Chicago, Illinois

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City ____________________

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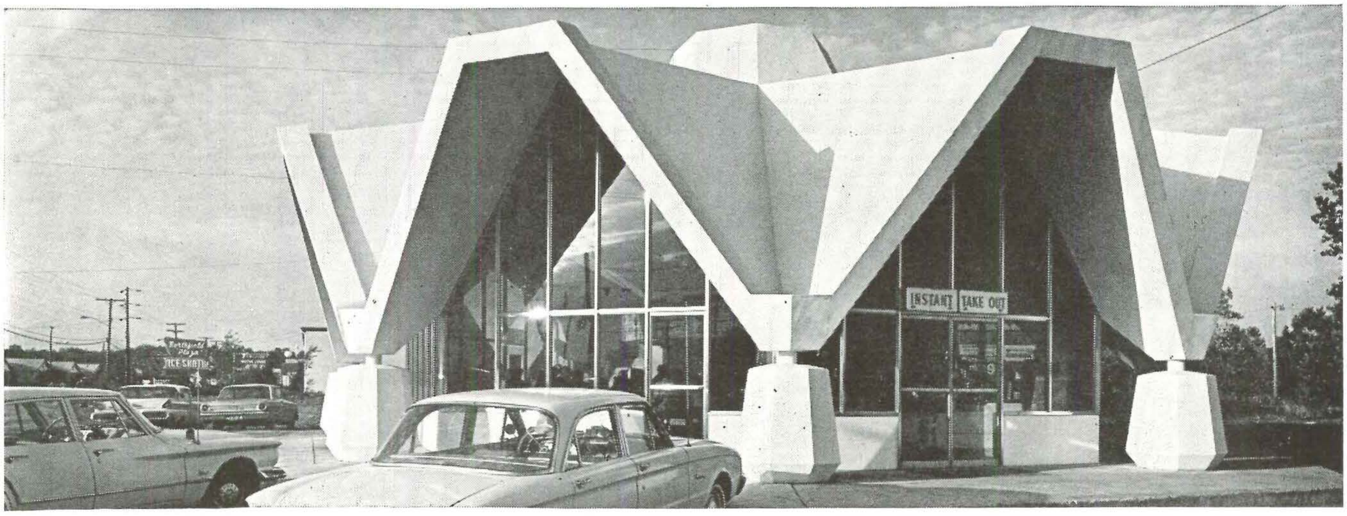


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*Architect: Fred S. Toguchi*
*Contractor: Leo W. Schmidt Co.*

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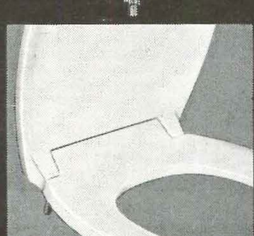

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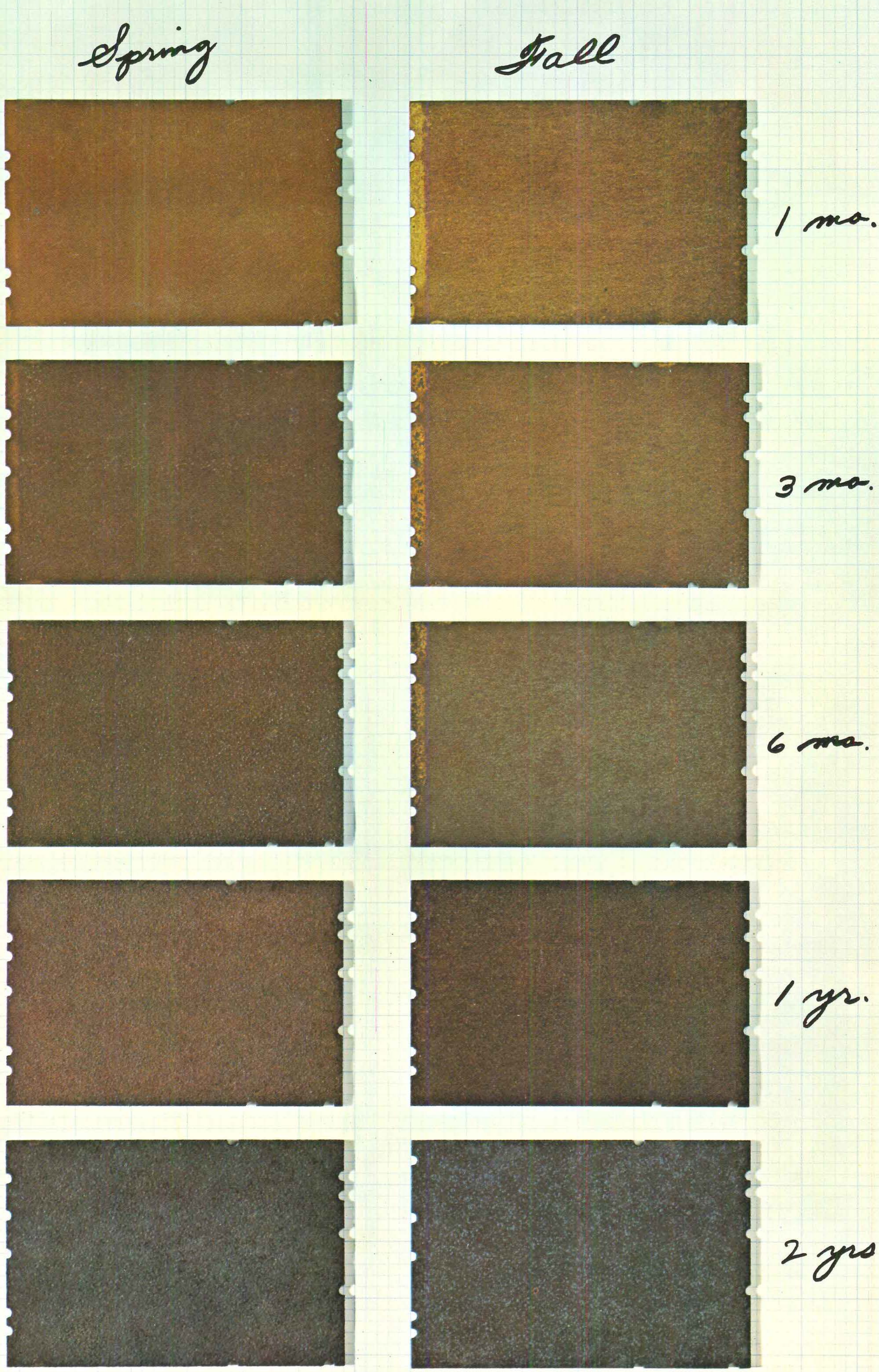

Spring
Fall
1 mo.
3 mo.
6 mo.
1 yr.
2 yrs.

## *Required Reading*

*continued from page 74*

defines language in current use among decorators—the Original, the Informal, the Grand Manner and the Romantic.

Architects should enjoy most the homage decoration pays the architect.

## New Edition

THE GOTHIC REVIVAL. *By Kenneth Clark. Penguin Books Inc., 53 West 43rd St., New York, N.Y., 10036. 218 pp., illus. Paperbound, $1.45.*

This is a new edition of Sir Kenneth Clark's 34-year-old classic on the Gothic Revival.

## Books Received

ENGINEERING MEASUREMENTS. *By B. Austin Barry. John Wiley & Sons, Inc., Publishers, 605 Third Ave., New York, N.Y., 10016. 136 pp. Paperbound, $2.95.*

THE GREAT AGES OF ARCHITECTURE. *By Bodo Cichy. G. P. Putnam's Sons, 200 Madison Ave., New York, N.Y. 440 pp., illus. $20.00 until January 1, 1965 and $25.00 thereafter.*

VICTORIAN ARCHITECTURE. *Edited by Peter Ferriday, J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa. 306 pp., illus. $8.95.*

URBAN DEVELOPMENT IN CENTRAL EUROPE. *By E. A. Gutkind. The Free Press of Glencoe, The Macmillan Company, 60 Fifth Ave., New York, N.Y., 10011. 481 pp., illus. $17.95.*

LOUIS C. TIFFANY, REBEL IN GLASS. *By Robert Koch. Crown Publishers, 419 Park Avenue South, New York, N.Y., 10016. 246 pp., illus. $7.50.*

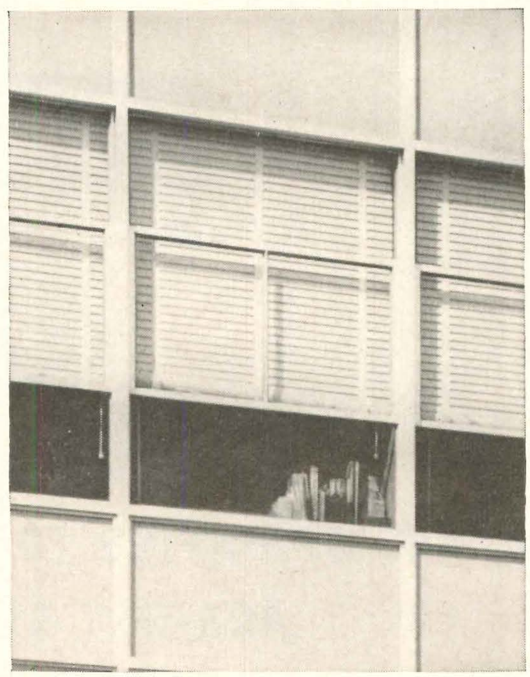
HABITATION, *Volume III. By J. H. van den Broek. American Elsevier Publishing Company, Inc., 52 Vanderbuilt Ave., New York, N.Y., 10017. 350 pp., illus. $29.50.*

THE URBAN COMPLEX. *By Robert C. Weaver. Doubleday & Company, Inc., Garden City, New York. 297 pp. $4.95.*

CAIRO, CITY OF ART AND COMMERCE. *By Gaston Wiet, translated by Seymour Feiler. University of Oklahoma Press, Norman, Okla. 170 pp., illus. $2.75.*

HOSPITAL DESIGN AND FUNCTION. *By E. Todd Wheeler. McGraw-Hill Book Company, 330 West 42nd St., New York, N.Y., 10036. 296 pp., illus. $13.50.*

# You can keep $131.61 from going out the window



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Want proof? Send for your copy of the pioneer study: "Cost analysis of Solar Controls" by Alfred J. Jaros, Jr. of Jaros, Baum and Bolles, Consulting Engineers, New York. This article, from the July 1963 issue of *Buildings Magazine,* explains the most efficient way to handle the large glass areas in today's modern buildings.

*All figures for typical West exposure, New York City.

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Please send me a copy of the Jaros study on solar control.

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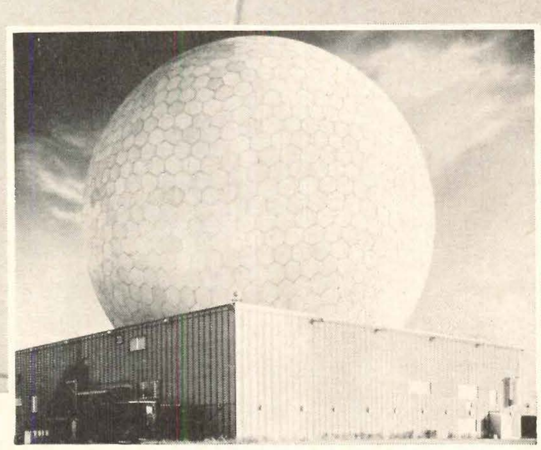

140-foot-diameter radome produced by Goodyear Aerospace Corporation to protect giant early warning radar antenna

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- must attain positive adhesion without the aid of primers, or surface conditioners.

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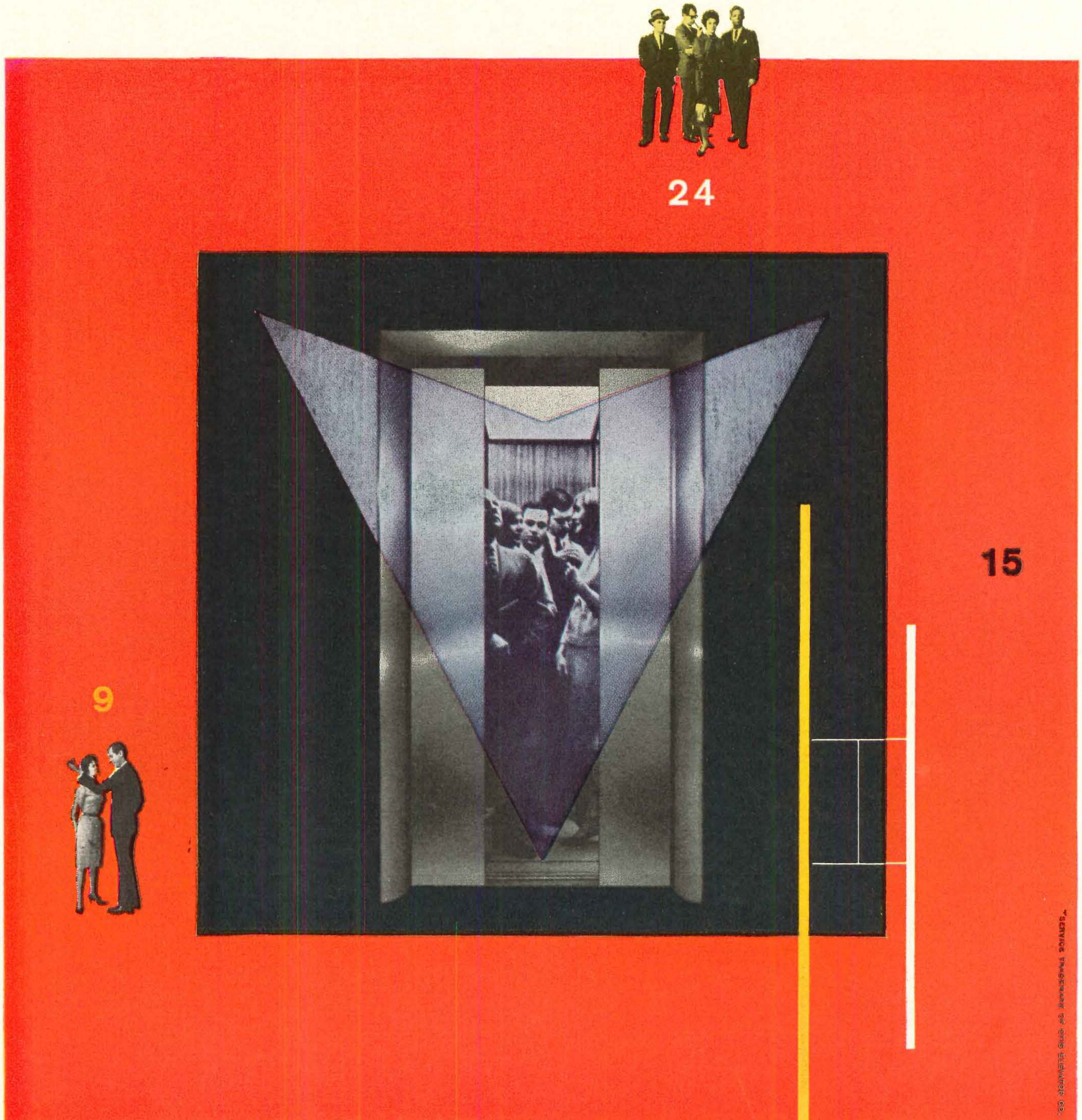


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# HOW ARCHITECTS PRACTICE INTERIOR DESIGN

## A summary of interviews

*By W. B. Foxhall*

There are at least three good reasons why architects are increasingly providing services in interior design, not only in the specification of finishes and fixtures but in the selection of fabrics and furnishings as well. The reasons are: (1) to control the palette of materials and colors of a whole building, inside and out, thus maintaining unity and increasing the depth of concept; (2) to perform a total professional service as agents for clients in coordinating all aspects, technical and esthetic, of buildings and their enclosed spaces; (3) to get paid for that service on a professional basis.

It was the first of these reasons that impelled Gyo Obata (Hellmuth, Obata & Kassabaum, Inc.) to look into the possibilities—and complexities—of interior design services. It soon became apparent that the service would indeed provide a welcome and unifying extension of architectural design, especially for owner-occupant clients. It also became apparent, however, that the architectural office must commit itself in a real way to a truly specialized design service. It must set up to provide that service. And it must integrate interior design services with the whole architectural operation.

Accordingly, an architect of demonstrated skills in interior design was engaged to head a separate department. This department is brought in at the working drawing stage to work out interior designs and coordinate the full range of materials for the building and its interiors. The department reports to Mr. Obata in the design area of the firm's practice. The firm does not enter into the purchasing of materials or furnishings. It writes specifications for them and obtains bids from interior contractors. Fees are based on a multiple of payroll.

### *The Market Place*

Problems in purchasing, contracting and fee structure underscore some of the characteristics of interior design practice which can develop a certain amount of grief for architects whose objective is to perform a total professional service. Historically, the business of purchasing fabrics and furnishings at discount for retail to customers of interior decorators has developed a set of commercial channels that seem inimical to professional practice. Further, these customs are locked into the discount policies of manufacturers and the licensing procedures of regulating bodies. The issuance of "resale numbers" to rather restrictively defined "commercial ventures" and similar trappings of the market place are not readily reconciled with the ethical standards and fee structures of architectural practice.

These difficulties are more apparent than real. Parallel commercial structures apply to the vending of all building components which architects and engineers specify with no problem at all. It is the reconciling of long habits of purchase and retail in the fabrics and furnishings industry with equally well established architectural procedures that requires some adjustment. Adjustments are rather simply made, and in various ways.

### *Integrated Practice*

The parallel between interior design and other specialized architectural services is spelled out clearly by Skidmore, Owings and Merrill, New York. At SOM, interior design is considered an integrated part of the architectural design sections. It has been deliberately and successfully guided in that direction through years of coping with the pressures of the market place. Today, all production and negotiation procedures are handled exactly the same as for other architectural services. There are, of course, physical differences between interior and other architectural documents, but the sequence from programing through preliminaries, working drawings and bidding documents, including periodic presentations and client approvals, is identical.

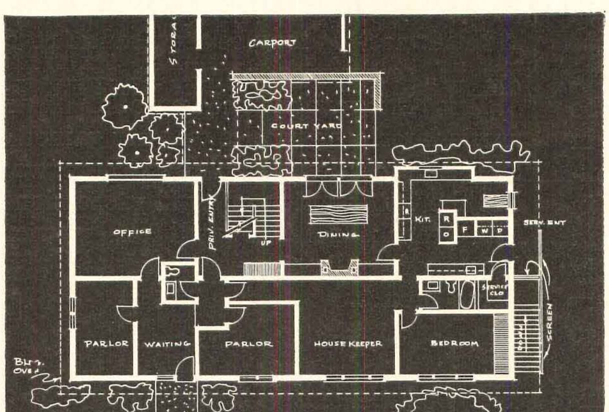
The firm does not make a business of interior design for buildings other than those for which it has the architectural commission. There are occasional exceptions to this rule, but mainly they are added or continuing services for important building clients.

Contracts for interior design generally are negotiated separately from the building design contract, especially in the development of new business. An attempt is made to develop a commission for interior design during early conversations with clients, but even when early proposals are accepted, negotiation for the work usually turns out as a separate effort.

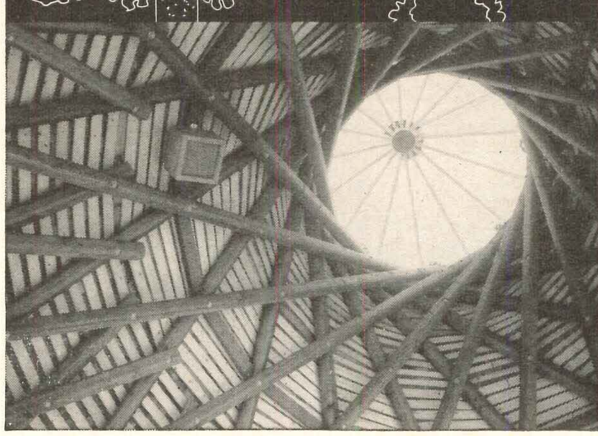
*continued on page 92*

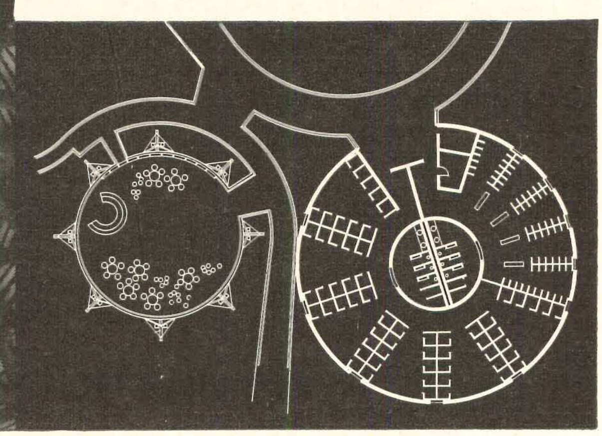


The unmatched color and texture and mood of this classic natural material offers exciting design opportunities for light commercial construction. And, beyond beauty, cedar shingles and shakes offer the practical advantages of superior wind and hail resistance, insulation, light weight, strength and durability. In fact, a cedar roof lasts for decades. If you would like more information about this unique material, write: Red Cedar Shingle & Handsplit Shake Bureau, 5510 White Building, Seattle, Washington 98101; 550 Burrard Street, Vancouver 1, B. C.




Above left: **Rectory/Our Lady of Lourdes Church, Vancouver, Washington. Architect: John Storrs. The mansard second story is Certigrade No. 1, 16″ Fivex shingles with a 5″ exposure.** Below, left: **Pavilion and Dressing Rooms/Harbour Beach Club, Westhampton/Long Island, New York. Architects: Whittlesey & Conklin. Sidewalls are of Certi-Split 24″ x 3/4″-1 1/4″ handsplit-resawn shakes with 10″ exposure. Roof is Certi-Split 18″ x 3/4″-1 1/4″ handsplit-resawn shakes with 5 1/2″ exposure.**





THE CROWNING TOUCH OF QUALITY • RED CEDAR SHINGLES & HANDSPLIT SHAKES

*continued from page 89*

Since the work on interior design continues over a considerable period after the building construction is practically concluded, there is likely to be some preference for basing fees on a time charge. Each job, however, is unique in the degree and kinds of interior services it entails; so there are about as many different fee arrangements as there are jobs.

One of the variables in the gamut of interior services, for example, is the degree of original furniture design involved in a particular job. This facet of interior design is an essential part of the SOM approach to whole-building architecture. While many jobs proceed without the need for a single specially designed piece of furniture, the decision to specify from available stock items remains a design decision rather than an expedient. The capability of providing new furniture designs, whether or not they are in fact required, supports the integrity of the whole-building concept.

It also introduces some practical complications.

For example, when it became apparent that only a new desk design could be integrated with interiors for the Union Carbide Building, the problem of manufacture and acceptance of a single prototype model had to be solved without expense to the client and without any commitment for ultimate multiple purchase to any manufacturer. A full-scale handcrafted desk ordered on speculation for the client's approval is not an item readily absorbed in the normal interiors fee structure. Nor could any exclusive rights to future manufacture be offered in lieu of payment for such a model, since that would limit the freedom of bidding in the eventual supply contract. It would also be in the nature of a royalty on a manufactured item and therefore contrary to SOM policy.

The solution was fairly simple, although it involved considerable leg-work on the part of SOM personnel. All manufacturers were offered free access (but not exclusive rights) to the design in exchange for construction of a prototype model. Two accepted and delivered models. Neither of these firms was the successful bidder on the ultimate contract for several thousand desks, but each considered himself well compensated for production of the model.

## Bidding Documents

The normal set of bidding documents for SOM interior designs again parallels those for other architectural services. So also do the contracting procedures. Bidding documents consist of: a set of layout (working) drawings showing each piece of furniture and fabric in place and a code number for each; (2) a supplementary book of working details showing exact dimensions and finishes of each coded item; (3) a sample book of mounted materials and colors coded to correspond to the layout and detail drawings; (4) a set of take-off specifications showing the total number of items of each code designation.

Where the detail book shows a permissible alternative (as in a choice between two different stock chairs), both items are detailed and their manufacturers designated. That is about as far as the "or equal" permissiveness of the specification goes.

All of these documents are submitted to general interiors contractors with the intent that they proceed with estimates and bids in the same way general building contractors do. It might be noted that sometimes the purchasing capability of the client in this area can alter the classic pattern.

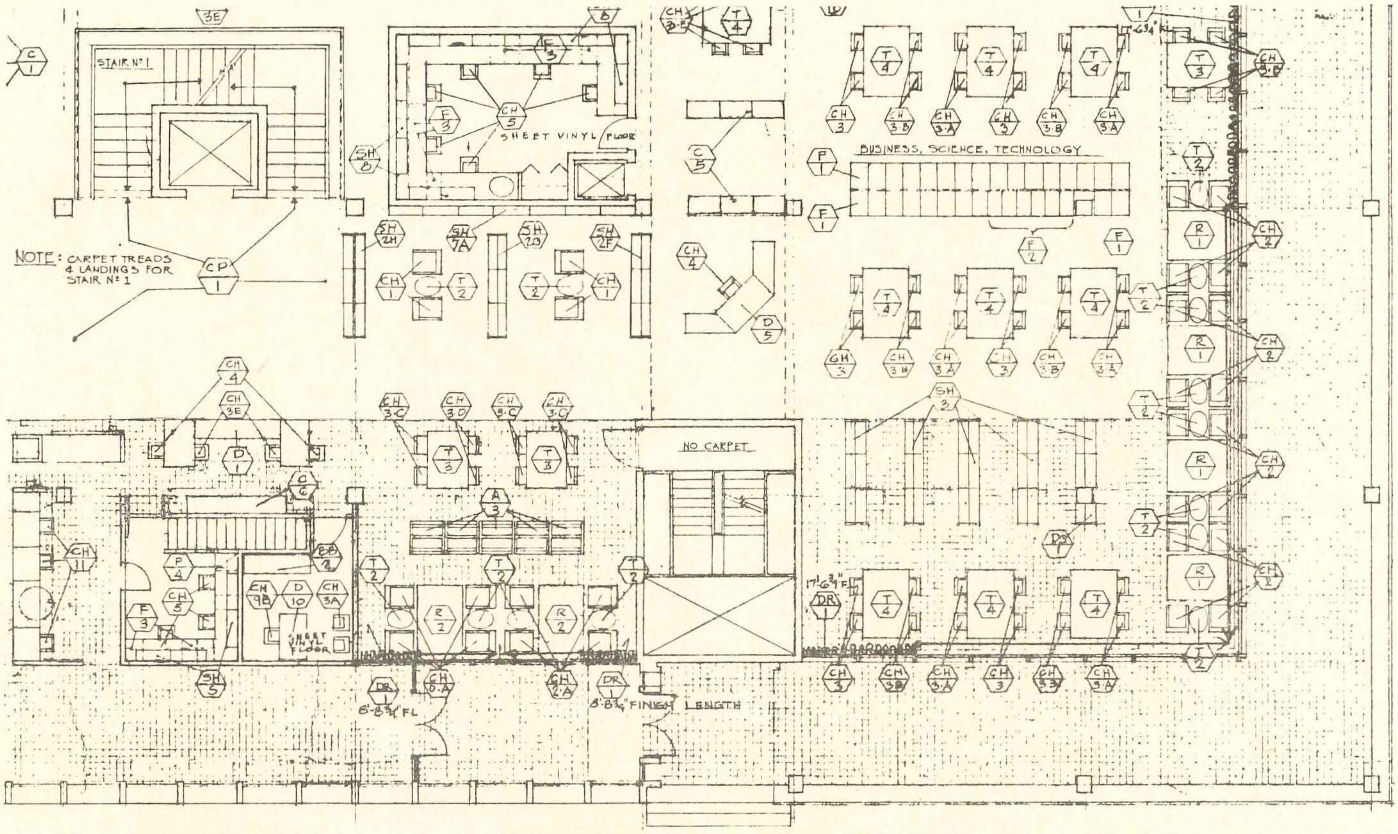
From start to finish of an interiors job, three kinds of presentation meeting may take place between SOM and the client. Once programing has been resolved there is a meeting or series of meetings with the client to establish budget dimensions and show the over-all concept with layout schemes and such visual aids as may be needed. After approval of the concept, a "working phase" meeting is arranged to show specific pieces of furniture, finishes, materials, etc. Swatches, scale models and renderings of furnished rooms may be used here. A formal budget estimate is also presented at this time. A third meeting may be required to resolve finishing details, accessories, paintings, sculpture, etc.

This integration and parallel structure of the firm's interiors practice was not gained overnight by simple resolution. Resolution there was, of course, but the introduction of rigid professional disciplines into a market place so traditionally oriented to retail consumers calls for tact, judgment and unending perseverence.

## The Commercial Venture

Sidney Katz (Katz Waisman Weber Strauss—Joseph Blumenkranz) tells of his firm's experience in this area. Desirable as it is for architects to extend their design influence to the interiors of their buildings, says Mr. Katz, they must be prepared for complications. In government work, for example, interior furnishings are regularly handled by a separate agency, usually a Department of Purchases, different from that which handles architectural negotiations. The architect's influence on government interiors, therefore, usually stops at the color and finishes of walls and the arrangement of attached appurtenances; rarely does he influence the character or placement of movable furnishings in a government building.

In the handling of interiors for private construction, Mr. Katz points out, another complication develops. The established procedures in manufacturers' discounts and pricing of decorator services, almost drive the architect to act in a non-professional




Portion of a detailed layout showing furnishings and draperies in place with coded designations related to specifications detailed elsewhere; from the Worcester (Massachusetts) Library, Curtis & Davis, architects

manner. To cope with the situation, this firm set up a "commercial branch" manned by firm members and duly registered to establish a "resale number," a device which qualifies the branch for a certain rate of discount without haggling.

Discounts must, of course, be passed on to clients without mark-up. This is done either by having the supplier bill the client directly or by pass-along of okayed invoices for payment or by any other convenient means. Whatever the arrangement, Mr. Katz urges, the client must be fully informed as to all details of discounts and fee charges so that he knows his work is proceeding on a professional basis and at reasonable cost.

The architect should not take for granted any client's prior knowledge of the fact that the scale of discounts varies from one buyer to another. For example, a "decorator's discount" may be 33 to 40 per cent on a stock item that a department store may be able to buy at 50 per cent discount. The client himself may have a purchasing ability comparable to any other in the market place. A study by the Katz firm shows that when an architectural office works on interiors on a time rate of 2.5 to 3 times payroll, the fee works out, for the average job, at about 20 per cent of budget cost. Obviously, then, decorators who work at list price, without any fee as such, are not only working to sell goods, which is a conflict of interest at variance with the concept of professional agency, but they are working at an actual fee well in excess of 33 per cent of cost.

But these considerations of commercial structure, while they require understanding, are secondary to the basic element of quality of services rendered. There should be no casual approach to the specialty of interior design. Architects, says Mr. Katz, may not rely entirely on their inherent qualities of taste and perception to guide them through occasional interiors commissions. There is a basic requirement for schooling and a continuing requirement for practice to develop and maintain competence. Demand for the service is a factor in the ability to serve. While he is developing that demand, the architect has access to a wide variety of extremely competent and well-known consulting services which operate on much the same basis as other professions.

## *Business Development*

When Walter Rooney established the New York office of Curtis & Davis, he brought with him a principle of whole-building architecture by which the home office in New Orleans had established its success. Some of the first commissions in New York developed out of the firm's competence in interior design. Soon after completion of interiors for the Charles Center Building in Baltimore, a new look at the role of the architect confirmed a decision to concentrate future interior design work on buildings for which the firm had its own architectural commission.

*continued on page 96*


ATES · POST · OFFICE
401

*continued from page 93*

The interior department is now considered an important adjunct to basic architectural practice. The interiors staff is trained in architecture and although under normal work loads it concentrates on interior design, it is regarded as "ambidextrous" for any design service that is required.

Early experience of working with owners' choices of interior designers when buildings were well along in construction stages demonstrated the fact that "outside" designers introduce a new creative impact which is sometimes in conflict with the architect's concept of a building. Mr. Rooney recalls occasions when a client's interior designer has asked the architect to move columns or perform other impossible requirements to conform with the interior designer's notions of space arrangement. Wherever possible, therefore, the interior design staff is engaged at the preliminary stage of an architectural commission.

Unfortunately, it is not always possible to close a contract for interior design early enough to permit such timely engagement. A workable alternative is to offer the client services in space layout preliminary to a full commission for interior design.

Fees at the Curtis & Davis office are variously arranged. Some are negotiated on a lump sum basis, some as a per cent of cost, some on a time basis. The preferred arrangement is to negotiate a design contract on the building and the interiors at initial conferences and to adjust the total contract to a single rate. Where the interiors contract fee is negotiated as a per cent of cost, the rate must be higher than for building design work. This is because the detailing of interior design is extensive and the installed cost per hour of design time is low.

The firm prefers not to enter into the purchasing of furnishings or fabrics. When direct purchasing is unavoidable, suppliers are asked to bill the client directly at the architect's discount rate. Under the preferred arrangement, plans and specifications for interior designs are drawn up and bid through suppliers and/or contractors and are administered in the same way as construction contracts. Extreme care is taken to avoid putting the firm in the position of retailing furnishings. Where a variety of furnishings is specified, separate bid documents must be made for each kind of furnishing. At the Worcester Library in Massachusetts, for example, separate documents covered special library furnishings, office furniture, chairs, draperies, rugs, etc.

Presentations for Curtis & Davis interior designs are carefully developed. Renderings and scale models supplement display boards for each area upon which colors and fabrics are displayed in arrangements reflecting both juxtapositions of colors and their relative areas in the visual environment. Clients are invited to view samples and prototypes of full scale furnishings at final approval conferences.

## *From Inside Out*

Over many years as resident architects designing interiors for tenants of Rockefeller Center, Carson, Lundin & Shaw have successfully worked the techniques of interior design into a broadly diversified practice. Much of their current work on interiors is for buildings designed by the firm. Recent commissions also include master planning a 350-acre campus for The New York State Agricultural and Technical Institute at Canton, New York, and a civic center in White Plains.

There is no corporate or business separation of the interiors activity from that of the basic partnership. There is an itemized separation of the work for purposes of establishing fees, but fees for both interior and other architectural work are established on similar bases, usually a time charge or whatever is mutually satisfactory.

The firm has not found it necessary to establish a resale number or to set up in a commercial manner.

Discounts are passed on to the client, although with certain contract arrangements there may be a moderate handling charge if the fee basis is other than a straight multiple of time. There are a variety of ways of handling purchasing of furnishings. For smaller tenant clients, this architect usually handles this operation, but where the client himself has a comparable purchasing ability, he may simply place orders according to the specifications.

There are no "bid documents" as such, since orders are placed for specific items without shopping, once the specification has been made.

Presentations are made to clients by renderings and mounted samples of materials and by models of furniture and fixtures. The sample file in the architects office is a compact arrangement of drawers and boxes representing the lines of various manufacturers. Each completed job is filed with layout drawings and samples of fabrics and lists of furniture so that any future re-ordering can be done to match the existing materials.

At the Carson, Lundin & Shaw office, personnel engaged in interiors (currently about 10 people out of a total office force of 87) also do space planning for clients. This service includes help with the examination of leases, making sure that proper allowances are included for construction and furnishing. The firm does not seek out real estate for clients but regularly surveys prospective space before leases are signed.

The lines of all this enterprise are clear, though harried by a working world less perfectly devised than might be wished. Interior design is indeed a respected specialty compatible and in fact integral with the bent and goals of architecture. The related specialty of commercial space planning has similar aspects but sufficiently different elements to warrant further discussion at another time.

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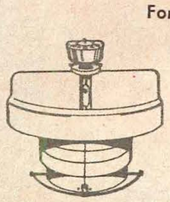
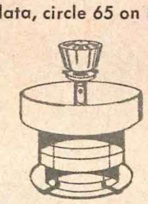
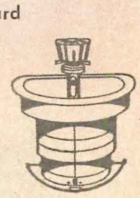


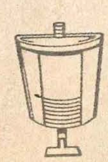
54″ Semi-circular Washfountain



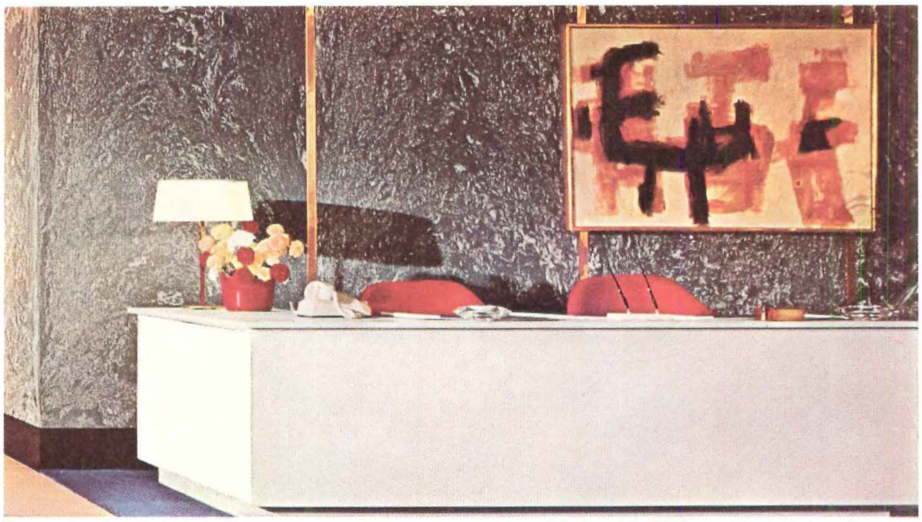
36″ Circular Washfountain



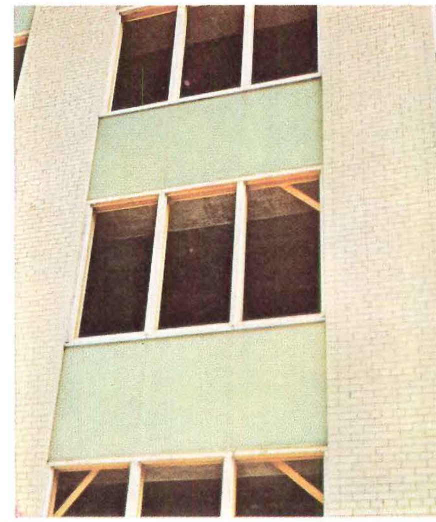
36″ Semi-circular Washfountain



Duo Washfountain

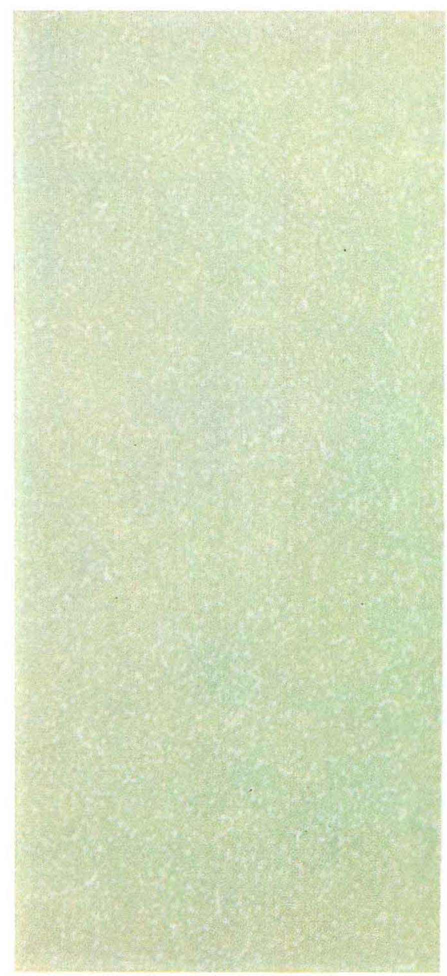


The custom-built desk is Meerschaum White Colorlith. The wall behind is White-in-Black Colorvein.



Spandrels of Surf Green Colorlith with masonry back-up.

COLORVEIN® WHITE-IN-BLACK



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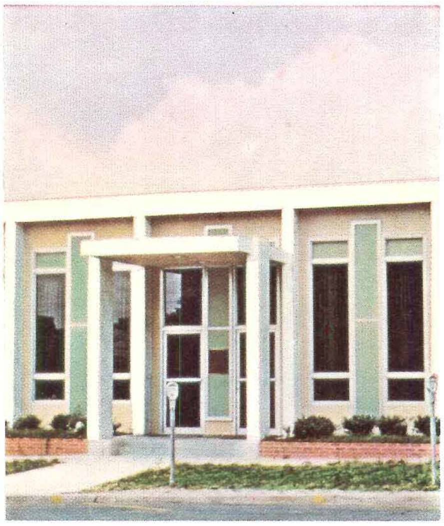
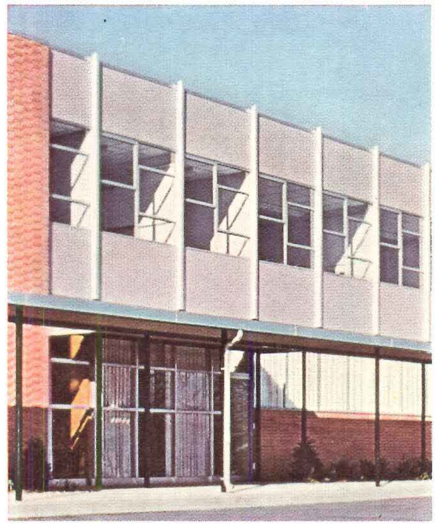
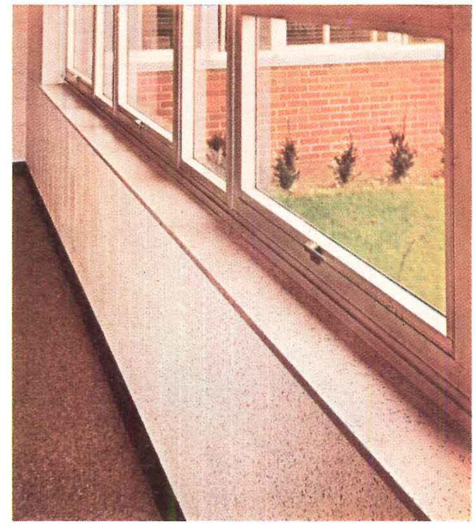


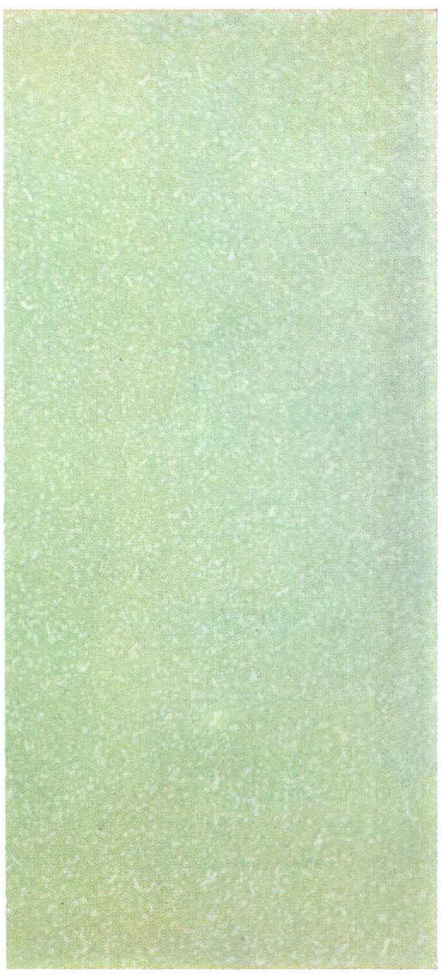
Window wall of glass and Surf Green Colorlith.



Second-story wall uses Carnival Colorchip above and below windows.



Window stool and wainscoting below are Carnival Colorchip.



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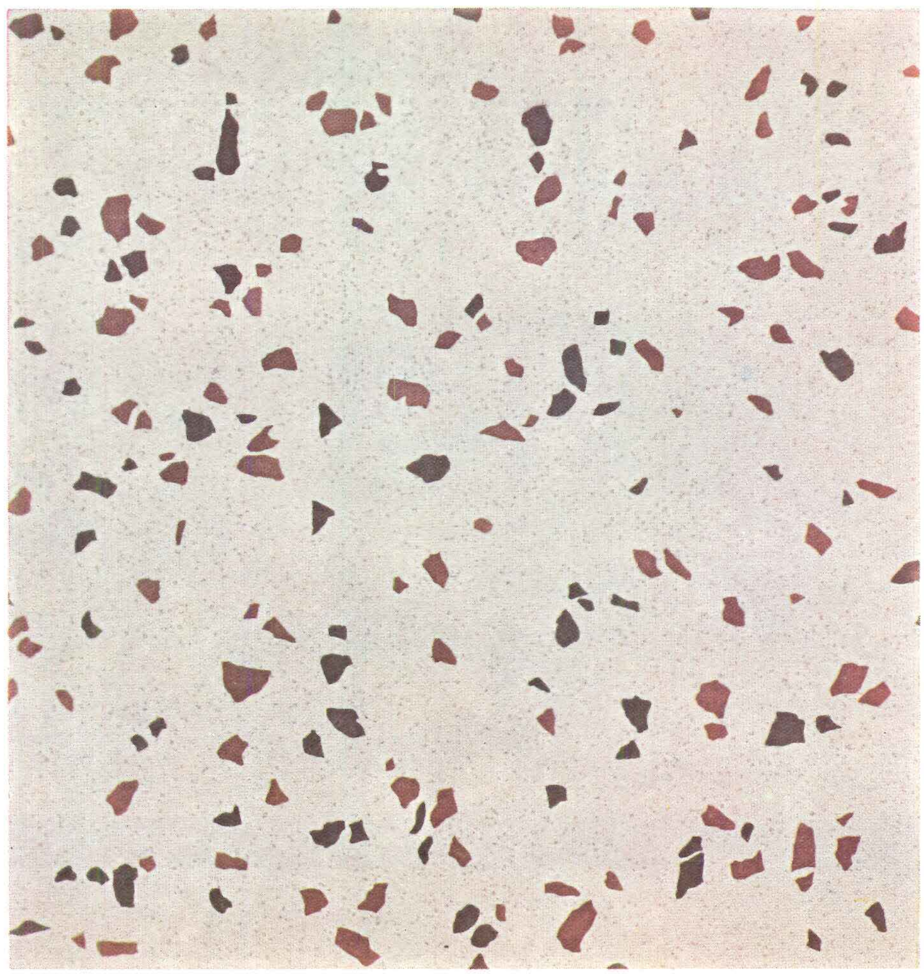

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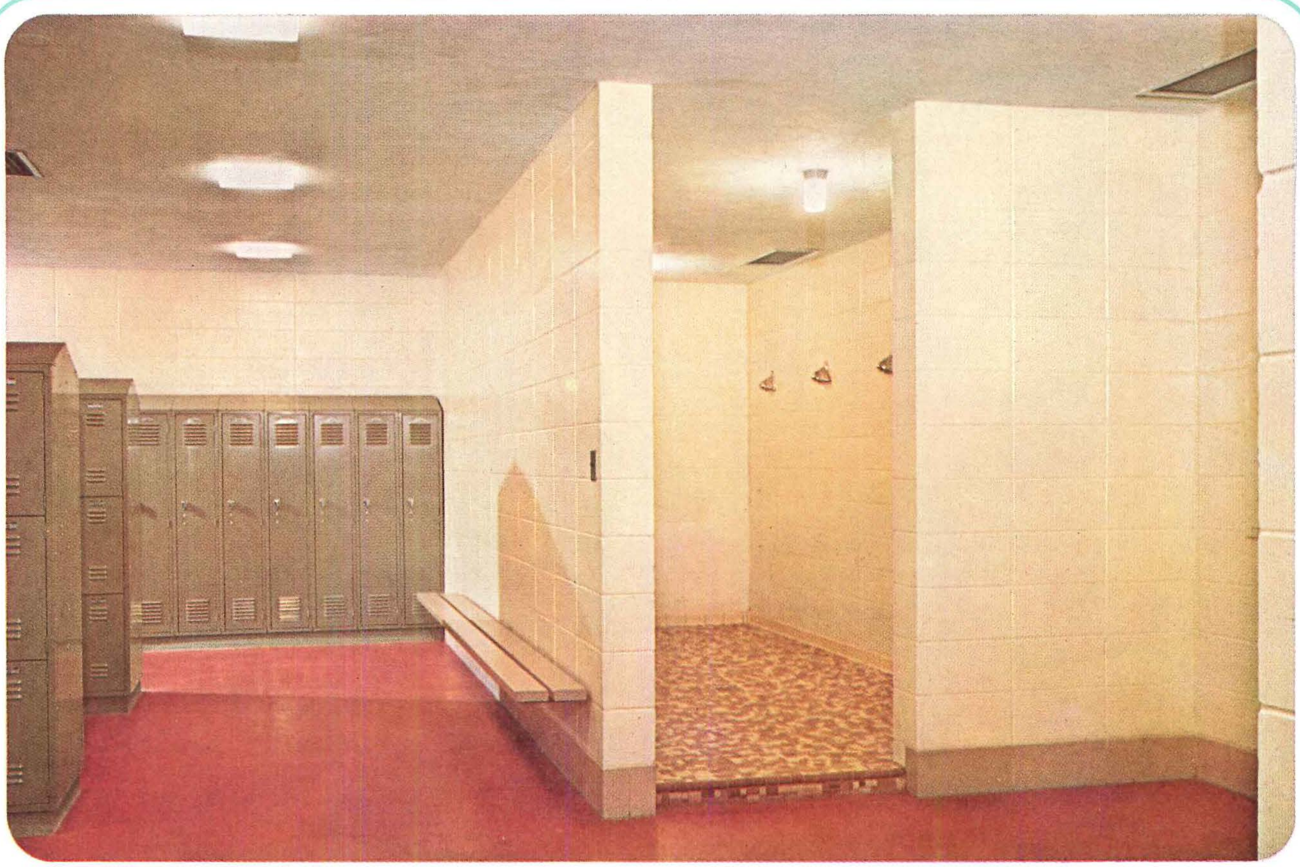
# Devoe Tru-Glaze gets high marks for easy maintenance

You can be sure that when Tru-Glaze is used, someone anticipates rugged living in its vicinity. Certainly a new elementary school fills that bill. Here, Tru-Glaze was used in the corridors, locker rooms, showers and gymnasium. (Can't you see those troops of six to twelve year-olders charging through?)

Tru-Glaze makes sense: it provides a tile-like surface for so much less than the cost of tile. It's a permanent, vitreous-glazed surfacing system, including a filler coat based on a patented water proofer, that makes it ideal for use on masonry. And especially great in the shower!

Once again, benefits resulted from the services of the *Man from Devoe*. He helped in many ways—supplying data on paint performance and costs, helping in color selection and with special formulae. There are many other ways the *Man from Devoe* can help—so for your next job, write or phone the nearest Devoe office to contact him.



Gertrude Scott Smith School, N. Aurora, Ill.; Architect: Robert F. Mall, Aurora, Ill.; Painting Contractor: Thacker Painting & Decorating Co., Inc., Aurora, Ill.

The "egret" white and light brown, used in the shower-locker room area, and the "Bali" blue and "mountain ice" white used in the corridor (right) are among more than 1000 colors available in Tru-Glaze.

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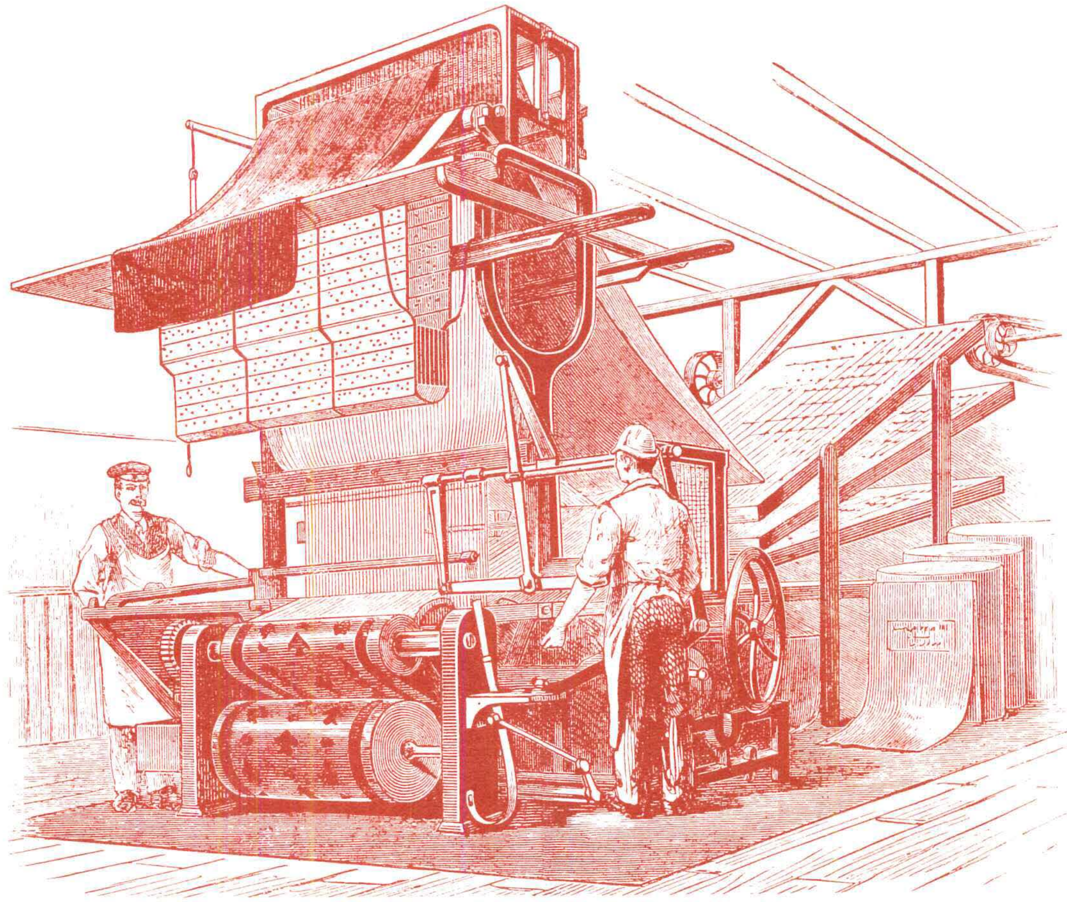

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## On the Calendar

**November**

**4-7** Eighth semi-annual meeting of the Board of Directors of the Consulting Engineers Council — Fort Des Moines Hotel, Des Moines, Iowa.

**9-11** International Symposium on inelastic flexural behavior and mechanics of reinforced concrete, including limit design and analysis, sponsored jointly by the American Concrete Institute, the American Society of Civil Engineers, and the Engineering Experiment Station of the University of Florida—Miami.

**10-12** 1964 Fall Conferences, Building Research Institute—Shoreham Hotel, Washington, D. C.

**30ff** Annual Conference of the Atomic Industrial Forum, through December 3—St. Francis Hotel, San Francisco.

**30ff** 1964 Winter Meeting, American Nuclear Society, through December 3—San Francisco Hilton Hotel, San Francisco.

## Office Notes

*Offices Opened*

**R. L. Anderson** has announced the opening of his office for the practice of contemporary architecture at Dark Hollow Road, Upperco P.O., Md.

**Dwight E. Bennett, A.I.A.,** has established an office at 3913-A Long Beach Boulevard, Long Beach 7, Calif.

**Jack D. Gillum and Associates,** Consulting Structural Engineers, have announced the opening of a branch office under the direction of **Gerald J. Schlegel,** Associate, at 801 Central Bank Building, Denver, Colo.

**Charlie Gaston Taylor** has opened an office for the practice of architecture and structural engineering at 3900 East 42nd St., Odessa, Tex.

*New Firms, Firm Changes*

**Benedict Ade-Richard Ade and Associates,** a new architectural firm, has been established with offices at 11 State St., Pittsford, N. Y.

**Benjamin E. Brewer Jr.,** formerly an associate of the Houston architectural firm of Neuhaus & Taylor, and **Charles R. Sikes Jr.,** a former vice president of the firm of Welton Becket & Associates, have been

*continued on page 118*

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**FOR HOME, OFFICE, STORE, CHURCH, SCHOOL, HOSPITAL, PLANT, RESTAURANT, THEATRE, CLUB, OUTDOOR**

*representative controls and systems on reverse side.* ▶

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### INCANDESCENT DIMMING CONTROLS

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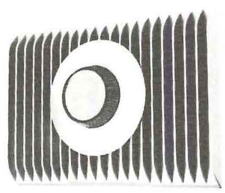
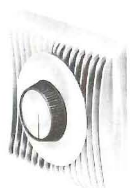


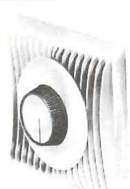
PC15-I



PC10-I-B

PC20-I-R , PC30-I-R

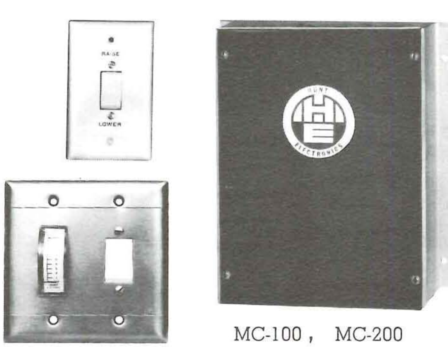
### FLUORESCENT DIMMING CONTROLS



PC10-F-B

PC25-F-R

### MOTORIZED DIMMING SYSTEMS, INCANDESCENT




MC-100 , MC-200

| MODEL | RATED CAPACITY | DESCRIPTION | CONTROL |
|---|---|---|---|
| **INCANDESCENT DIMMING CONTROLS** | | | |
| **PC6-I-B** | 600 WATTS | Fits standard single-gang switch box. Two-wire connection. 120v, 60 cycle AC. 5 amps. | Tap on, tap off and full dimming range. |
| **PC10-I-B** | 1000 WATTS | Fits standard double-gang switch box. Two-wire connection. 120v, 60 cycle AC. 8.35 amps. | Positive ON/OFF and full dimming range. |
| **PC15-I** | 1500 WATTS | Fits standard double-gang switch box. Two-wire connection. 120v, 60 cycle AC. 12.5 amps. | Positive ON/OFF and full dimming range. |
| **PC20-I-R** | 2000 WATTS | Dimmer may be remote mounted anywhere within 2000 feet of control. 120v, 60 cycle AC. 16.6 amps. | Fits single-gang box. Positive ON/OFF and full dimming range. |
| **PC30-I-R** | 3000 WATTS | Dimmer may be remote mounted anywhere within 2000 feet of control. 120v, 60 cycle AC. 25 amps. | Fits single-gang box. Positive ON/OFF and full dimming range. |
| **FLUORESCENT DIMMING CONTROLS** | | | |
| **PC10-F-B** | 1000 WATTS | Controls from two to twenty forty-watt rapid start lamps. Fits standard double-gang box. 120v, 60 cycle AC. 8.33 amps. | Positive ON/OFF and full dimming range. No flicker, no striation. |
| **PC25-F-R** | 2500 WATTS | Controls from two to fifty forty-watt rapid start lamps. Dimmer remote mounted within 2000 feet of control. 120v, 60 cycle AC. 20.83 amps. | Fits single-gang switchbox. Tap on and off. Full dimming range — no flicker or striations. |
| **MOTORIZED DIMMING SYSTEMS, INCANDESCENT** | | | |
| **MC-100** | 12,000 WATTS | Combines with control station and one to four PC20-I-R or PC30-I-R dimmers to provide remote motorized control. | Uses one or more stations, as needed. May be increase/decrease type, or with calibration. |
| **MC-200** | 24,000 WATTS | Combines with control station and four to eight PC20-I-R or PC30-I-R dimmers, to provide remote motorized control. | Uses one or more stations as needed. May be increase/decrease type or with calibration. |

**For specifications, wiring diagrams and information on these and other Hunt Electronic Dimming Controls and Systems, contact your Hunt Representative or the factory.**

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**HUNT ELECTRONICS COMPANY**

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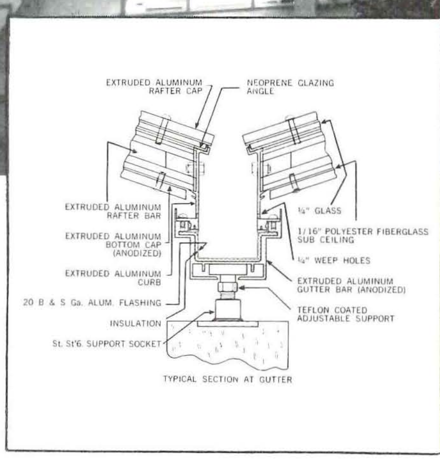
# SUPER *Skylighting*


Super Skylighting creatively uses natural light to put mood, beauty and function into the total design of a building — gives a new shape to space within the visual environment. Consider its imaginative possibilities on your next project — whether in a standard or custom dome, ridge or pyramid, or a highly specialized unit. From *your* plans Super Sky will design, fabricate, erect and even *guarantee* the skylight. Write for detailed drawings, engineering data, estimates and suggestions. No obligation.

**Engineering Features:**

- Fifteen 11 x 11 ft. extruded aluminum pyramids
- 1900 sq. ft. of skylight
- Double glazed
- Complete skylight bears on Teflon for noise-free expansion and contraction
- Supported by precast concrete beams
- Light fixtures suspended from skylight

*Write direct or contact representatives listed:*

**Don Endres**
18514 Mack Avenue
Grosse Pointe Farms 36, Mich.
Phone: TU 1-3496

**Frederic N. Dodge**
2648 Marion Drive
Ft. Lauderdale, Florida
Phone: 524-9169

**Dekkers Davidson**
101 Park Avenue
New York, New York
Phone: MU 3-6740

**Earl Ham**
819 Dietz Street
Marengo, Illinois
Phone: 568-7113

**Jack Perling**
8947 Terrace Rd. N.E.
Minneapolis, Minnesota
Phone: 927-8465

SUPER Sky PRODUCTS INC.

BOX 113-F, THIENSVILLE, WISCONSIN 53092
PHONE: CHestnut 2-2000
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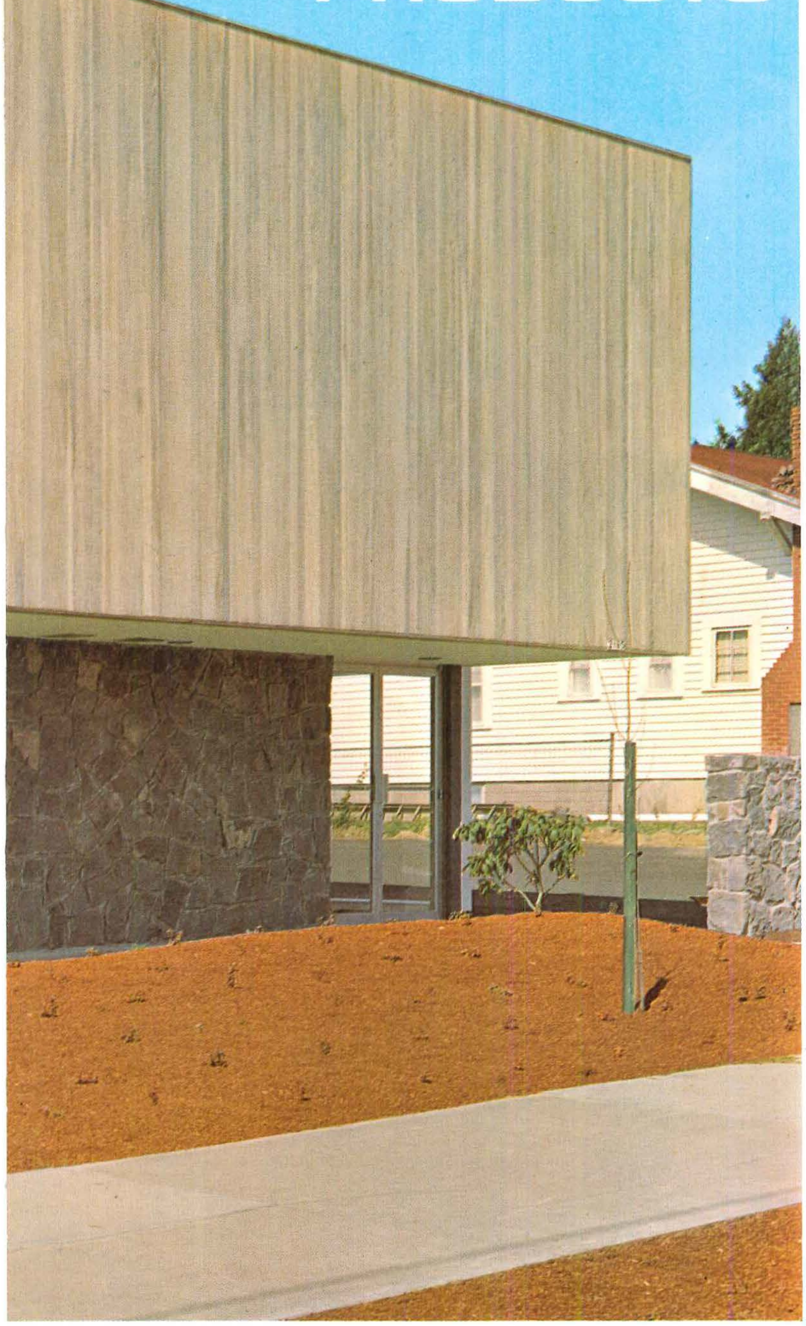
TILLAMOOK
BUILDING

# MODERN DESIGN Uses WESTERN WOOD PRODUCTS

## For OFFICE BUILDINGS



This modern, highly functional office building was constructed at a surprisingly low cost in Portland, Oregon, near a residential shopping center. The architect used Western Lumber to blend the building with its surroundings, yet provide a striking, inviting appearance.

Designed to expand on the site or onto adjoining property, the two-story building has 3,758 sq. ft. on the first floor and 4,294 on the second. Total cost, including air conditioning, was $10.00 a sq. ft. The building complies with fire code type 5, one-hour fire resistance.

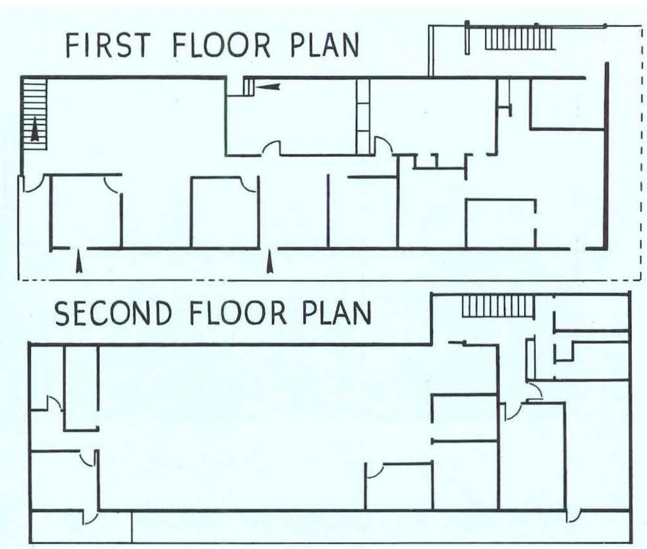
All framing lumber is Douglas Fir in various sizes. Glued laminated beams, fabricated of Select Structural and Standard grades of lumber, support the first and second floors and the roof. First floor beam dimensions are: $5\frac{1}{4}'' \times 19\frac{1}{2}'' \times 118'$ and $7'' \times 14\frac{5}{8}'' \times 118'$; second floor $5\frac{1}{4}'' \times 11\frac{3}{8}'' \times 118'$ and $5\frac{1}{4}'' \times 8\frac{1}{8}'' \times 118'$ with a smaller beam—$5\frac{1}{4}'' \times 9\frac{3}{4}'' \times 40'$—used to support the off-street entrance and stairway. Glued laminated posts, $6\frac{1}{2}'' \times 7'' \times 22'$, preservatively treated support the balcony on the front of the building.

Manufactured joists, using Select Structural grade, span the width of the building, 32′ and spaced 32″. Decking, 2″ x 6″ tongue and groove, is laid on the joists and sub-flooring. All interior wall partitions are non-bearing to permit the adjustment of room sizes to tenant needs.

Two sizes of Western Red Cedar siding add interest to the exterior. Horizontally applied 1″ x 4″ tongue and groove is used on the front and 1″ x 3″ of the same pattern is applied vertically on the end of the building.

The attractive simplicity of this office building is a practical example of design achievement possibilities with the standard grades and sizes of Western Lumber. Ask your retail lumber dealer about Western Lumber.

ARCHITECT: H. J. Voderberg, A.I.A.




The following grades of Western Lumber were used in the construction of this office building:

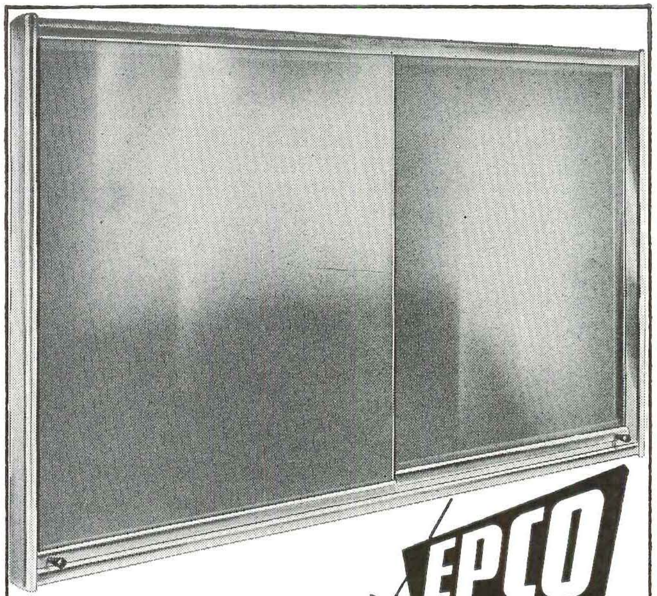
**DOUGLAS FIR Standard Grade** 2″x4″, 2″x6″ for sills, plates, studding and other light framing.

**DOUGLAS FIR Select Structural Grade** 2″x4″ for chords of manufactured trusses and 2″x8″ for window mullions.

**DOUGLAS FIR Utility Grade** 2″x6″ tongue and groove decking.

**DOUGLAS FIR B&Btr Grade** V. G. for all millwork and trim.

**WESTERN RED CEDAR C&Btr Grade,** 1″x4″ and 1″x3″ tongue and groove siding.



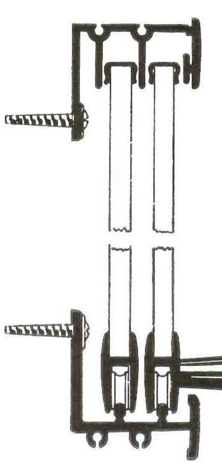
EPCO®

## New Wall Hung Track and Frame Assembly For 1/4″ By-Passing Doors

**A versatile wall-hung track and frame assembly for 1/4″ sliding panels that customize to the needs of residential and commercial installations.**

**The assembly mounts directly onto the wall to cover a spacious recessed area or wall opening. The use and versatility of applications are unlimited.**

**Book cases, trophy cases, gun racks, merchandise and medical cases, bathroom cabinets and kitchen cupboards are only a few of the many uses possible using glass, mirrors or 1/4-inch panels for by-passing doors.**



- Track and upper guide are both one-piece aluminum extrusions that include the exterior frame and mounting flanges.
- Entire assembly surface mounts quickly and easily on the wall.
- Exposed surfaces are highly polished. Other surfaces are anodized finishes.
- Aluminum shoe and nylon roller assembly glides smoothly and quietly on extruded track.
- Paneled or glass doors are easily removed simply by lifting up and out.
- In 3-foot, 4-foot and 5-foot lengths . . . Highly polished extruded Aluminum in anodized clear or brass. Special lengths and anodized colors are available on quotation.

#3503 3 ft. track length max. opening 28 3/8″ H x 37 7/8″ W
#3504 4 ft. track length max. opening 28 3/8″ H x 47 7/8″ W
#3505 5 ft. track length max. opening 34 3/8″ H x 59 7/8″ W

**Free 32 page catalog on all EPCO sliding door hardware, pulls and magnetic catches available on request.**

See Sweet's catalog under Arch-file 19g-En and Light Const file 7b-En.

**The Engineered Products Co.**

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**TELEPHONE 239-8689 AREA 313**

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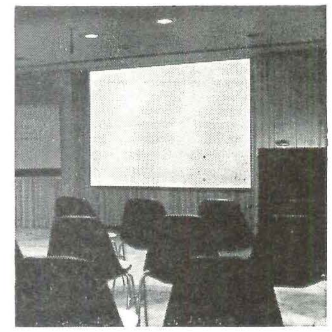
## when architects buy audio-visual equipment the screen, most often, is



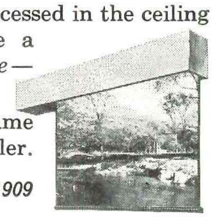
DA-LITE®

Shown is the 8 ft. electrically operated Da-Lite Electrol® projection screen installed recently in a conference room in the Apollo Support Department of General Electric's Daytona Beach plant.

For important conferences, the Da-Lite projection screen at General Electric plays a useful role. Out of sight when not in use, the electrically operated screen lowers automatically at the touch of a button. Superb reproduction of projected pictures on Da-Lite's White Magic II® Chemi-Cote® glass beaded surface is assurance of effective visual presentations.

Experts in the audio-visual field recommend the Da-Lite Electrol for unsurpassed performance. Electrols have been giving trouble-free service for over 26 years.

Da-Lite Electrol screens are available in a wide selection of sizes to fit your needs. They can be recessed in the ceiling or installed on wall or ceiling. Choose a Da-Lite screen—get the *Big Difference*—and the difference costs you nothing.



Write for specifications, prices and name of nearest franchised Audio-Visual dealer.

*perfection in projection since 1909*

**Da-Lite Screen Co., Inc., Warsaw, Indiana**

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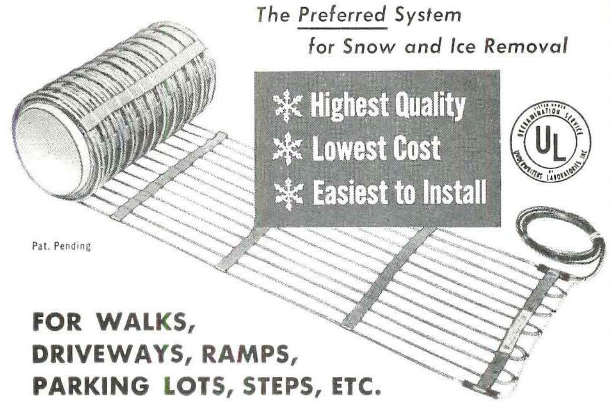
SMITH-GATES EMBEDDED ELECTRIC

# SNOW ❄ MATS®

*The Preferred System for Snow and Ice Removal*




**FOR WALKS, DRIVEWAYS, RAMPS, PARKING LOTS, STEPS, ETC.**

Embedded in Blacktop or Concrete, Smith-Gates Snow*Mats remove ice and snow efficiently and economically. Snow*Mats are fastest, easiest and least expensive to install because they come in a variety of PREFORMED lengths up to 60′ in 6 voltages and 4 heat densities. Snow*Mats are quality-produced with finest materials by the world's largest manufacturer of electric heating tape. And Smith-Gates offers you complete engineering service.

SEECO-HEAT Mats, same as Snow*Mats except for lower wattages, are perfect to remove dampness and chill from concrete floors in basements, garages, bathrooms, kindergartens, etc.

**"EMBEDDED IS FOR KEEPS . . . SO KEEP IT SMITH-GATES"**

SMITH-GATES CORPORATION
FARMINGTON
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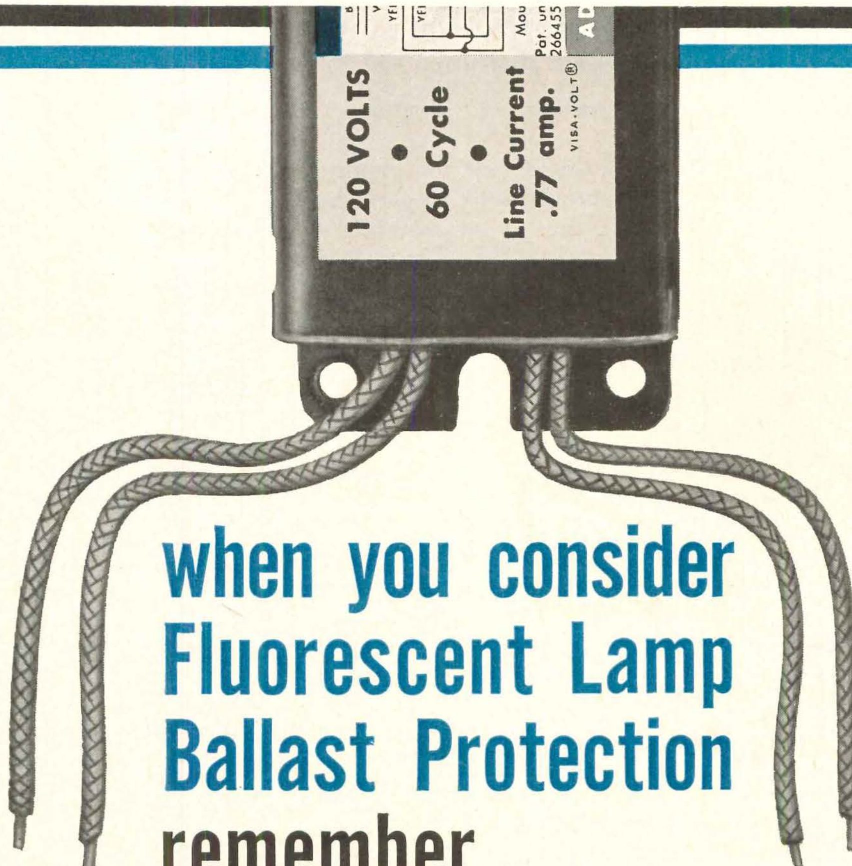


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# when you consider Fluorescent Lamp Ballast Protection remember . . . . . only ADVAN-guard®

**Protects Fluorescent Lighting Installations Against . . . Incorrect voltage supply . . . Excessive current . . . Internal ballast short circuiting . . . Inadequate lamp maintenance . . . Improper fixture application . . . Operation at abnormal temperatures . . . End-of-life hazards . . . The need for individual fusing.**

Only ADVAN-guard®, a thermally actuated protective thermostat sealed in the ballast housing, is preset to automatically "trip-out" whenever the ballast operates at abnormal temperatures from any internal or external cause. Unlike other protective devices which permit premature ballast destruction by cutting the ballast out of the line only after it has been destroyed, ADVAN-guard® cuts out before heat can cause premature destruction, resets automatically when the trouble has been corrected and permits the ballast to resume normal operation. Insist on ADVAN-guard® equipped fluorescent lamp ballasts for safety and longer life.

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## *Office Notes*

*continued from page 110*

named partners by **Neuhaus & Taylor.**

A new architectural and planning firm, **Ellerbroek, Koteles, Fox and Associates,** has been established with offices at 320 West Coast Highway, Newport Beach, Calif.

**James R. Livingston** has been elected executive vice president and **Adolf H. Roessling** has been elected vice president and secretary in the Detroit-based firm of **Smith, Hinchman and Grylls, Associates, Inc.**

**Lin Y. Huang, William C. Louie, Jack E. Mildner, Ross W. Pursifull** and **John A. Sheoris** have been named associates in the Detroit-based firm of **Smith, Hinchman and Grylls, Associates, Inc.**

**Leroy F. Owens, A.I.A.,** and **Antonio C. Ramos, A.I.A.,** have joined the firm of A. R. Clas, F.A.I.A. and George H. Riggs, Jr., A.I.A., henceforth to be known as **Clas, Riggs, Owens and Ramos, Architects,** of Washington, D.C.

The appointment of **Edward Paul** as chief architect, **Jack Goorskey** as chief of design, and **Melvin Kupperman** as assistant chief structural engineer has been announced by the Chicago-based architectural and engineering firm of **A. Epstein and Sons, Inc.**

**Cesar Pelli,** architect, has been appointed Director of Design for the architecture-engineering firm of **Daniel, Mann, Johnson & Mendenhall** in Los Angeles.

A new firm for the practice of architecture and engineering, **Sample-Mullins,** has been established with offices at 115 N. Carroll St., Madison, Wis., 53703.

**Rolland D. Thompson, A.I.A.,** has been appointed an associate in the architectural and engineering firm of **Kelly & Gruzen** of New York.

### *New Addresses*

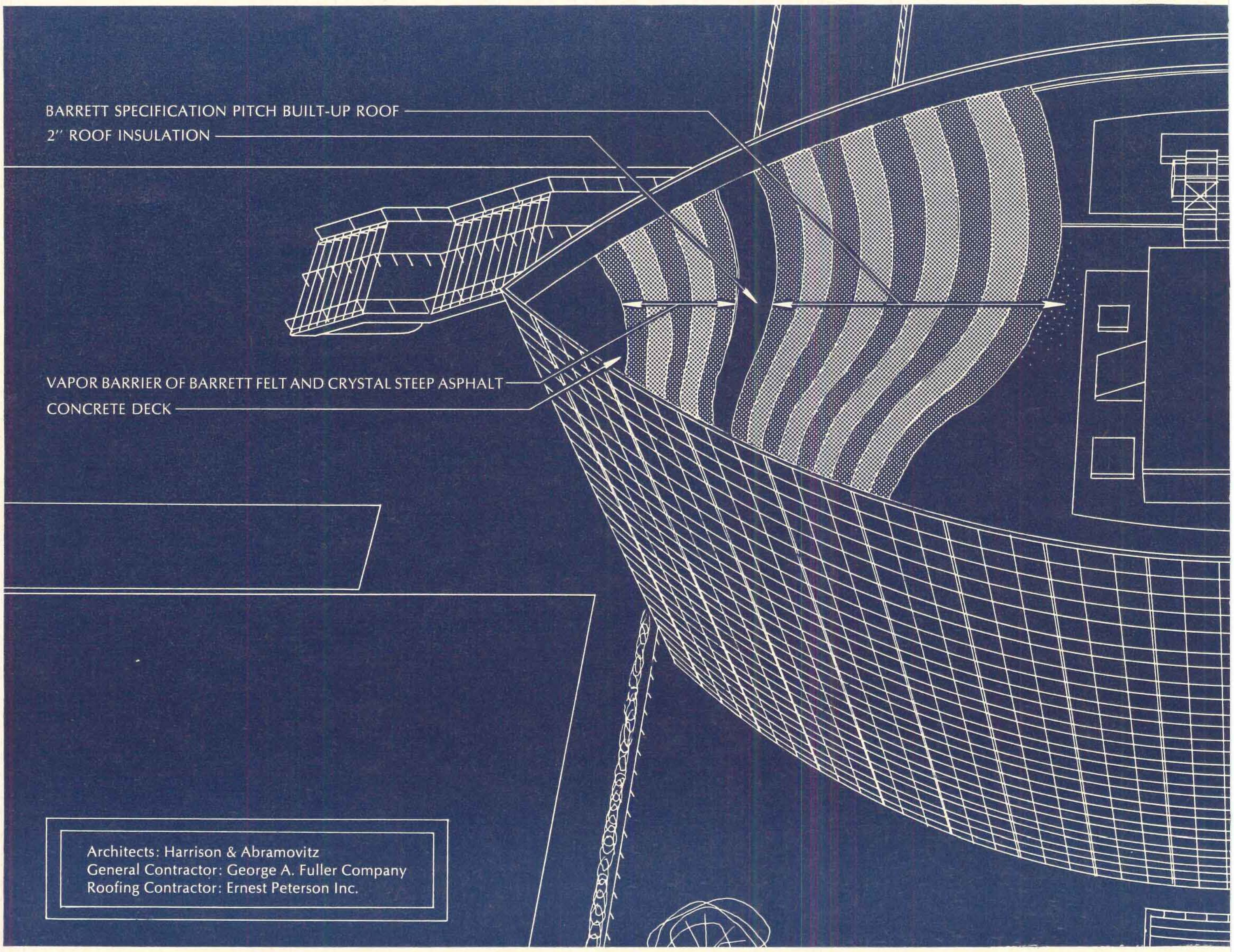
**Edward J. Aisner,** 250 Stuart St., Boston, Mass., 02116.

**Bushnell, Jessup, Murphy & Van De Weghe, Architects,** 345 Vallejo St., San Francisco, Calif.

**Francis Pisani Associates,** 235½ E. 78th St., New York, N. Y., 10021

**Harry B. Carter & Associates,** 645 N. Michigan, Rm. 430, Chicago, Ill.

# Barrett...exciting new building materials from chemistry



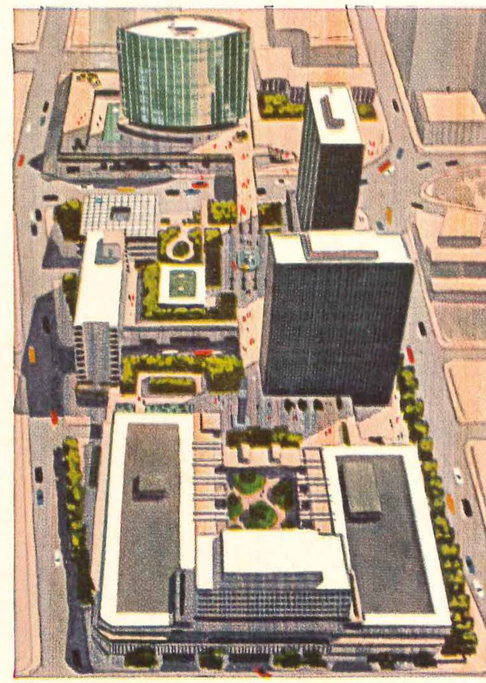
# "Package" of Barrett products wraps up exciting design of new Phoenix Mutual Building

When Harrison & Abramovitz were designing this unusual building for Hartford's A.I.A. award-winning Constitution Plaza, they specified a Barrett built-up roof to assure lasting protection against New England's changeable climate.

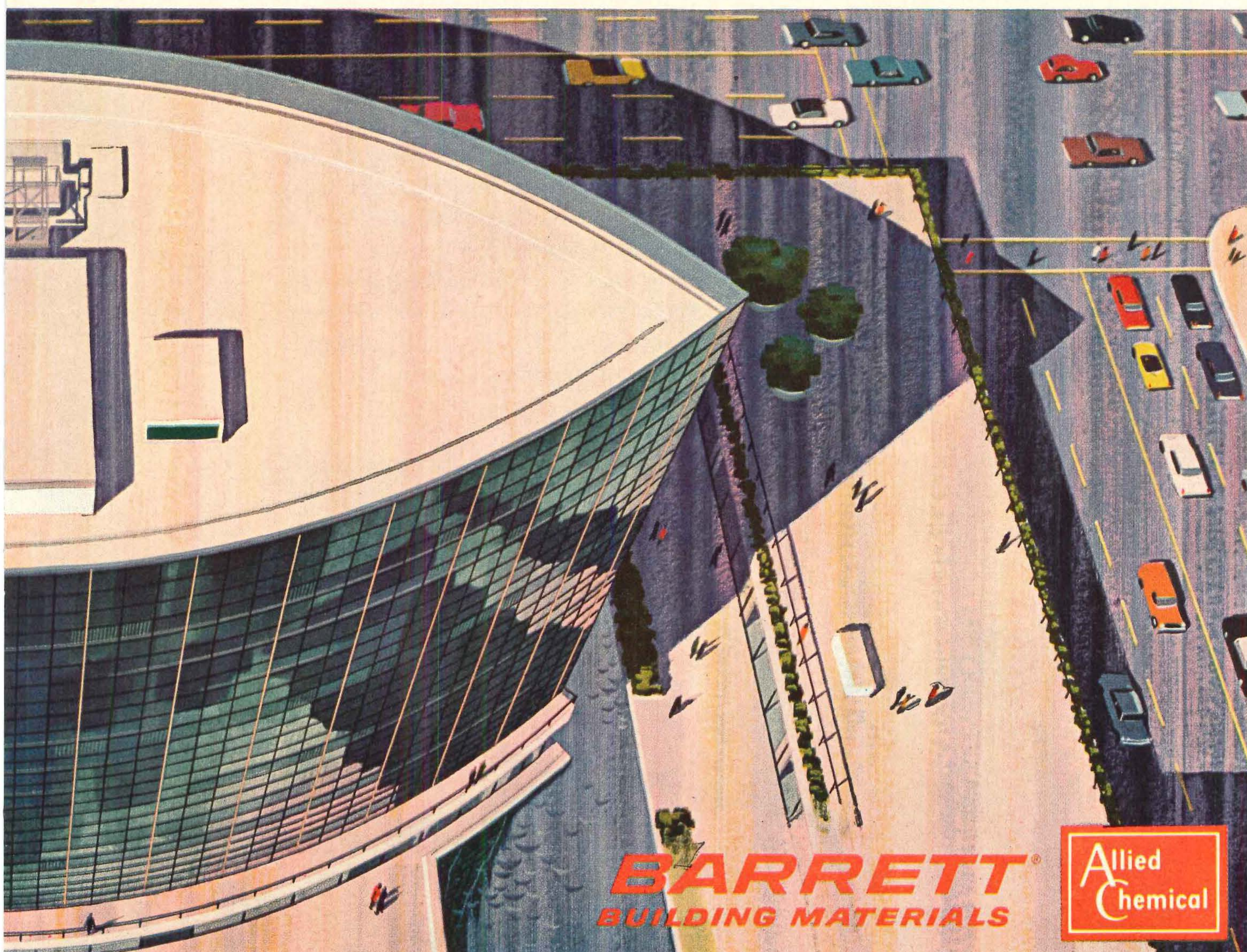
The unusual elliptical design of this building called for easy-to-handle, versatile interior partitions. Here Barrett Gypsum Wallboard was the choice because it provided the perfect material for durable, attractive walls that could easily be fabricated to unusual shapes.

The entire spacious promenade of Constitution Plaza employs Barrett Urethane Expansion Joint Filler which was specified to assure crack-free, resilient joints throughout the entire project.

What can a Barrett "package" of building materials do to improve your next building project? Plenty! Why not find out by calling our local representative or write Barrett Division, Allied Chemical Corporation, Department AR5, 40 Rector Street, New York, N.Y. 10006.



The entire Constitution Plaza was constructed over a modern 1800 car underground garage which is completely protected by Barrett waterproofing products.

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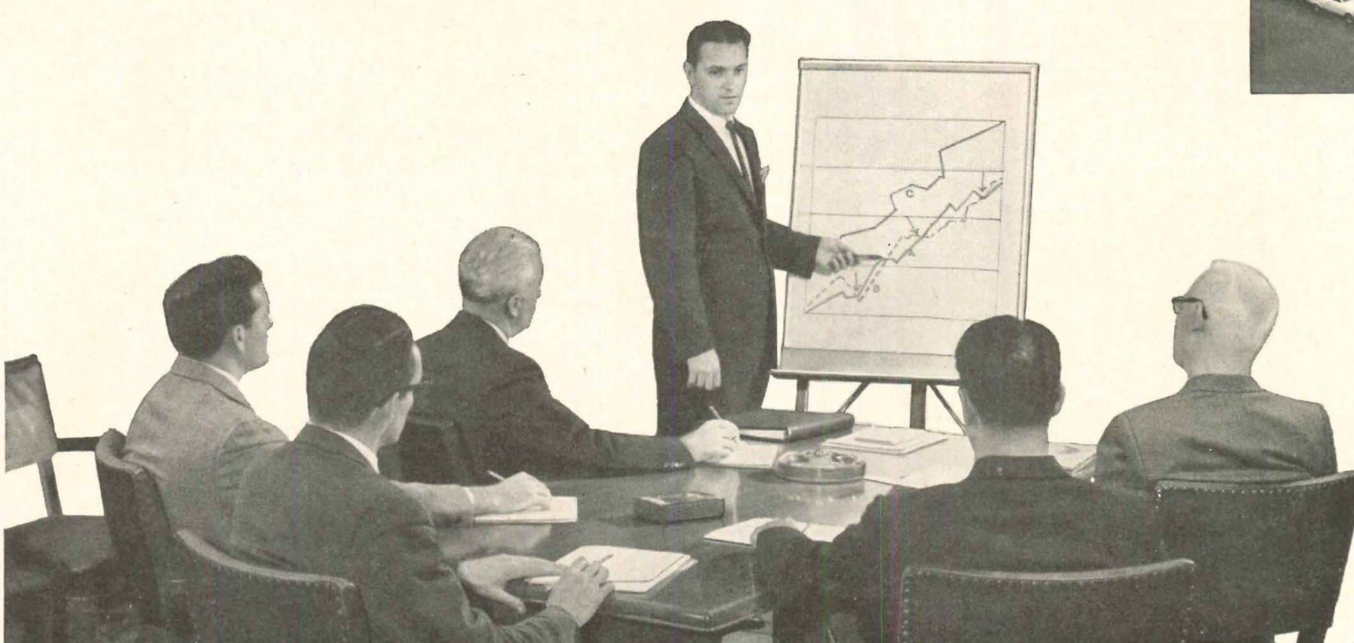
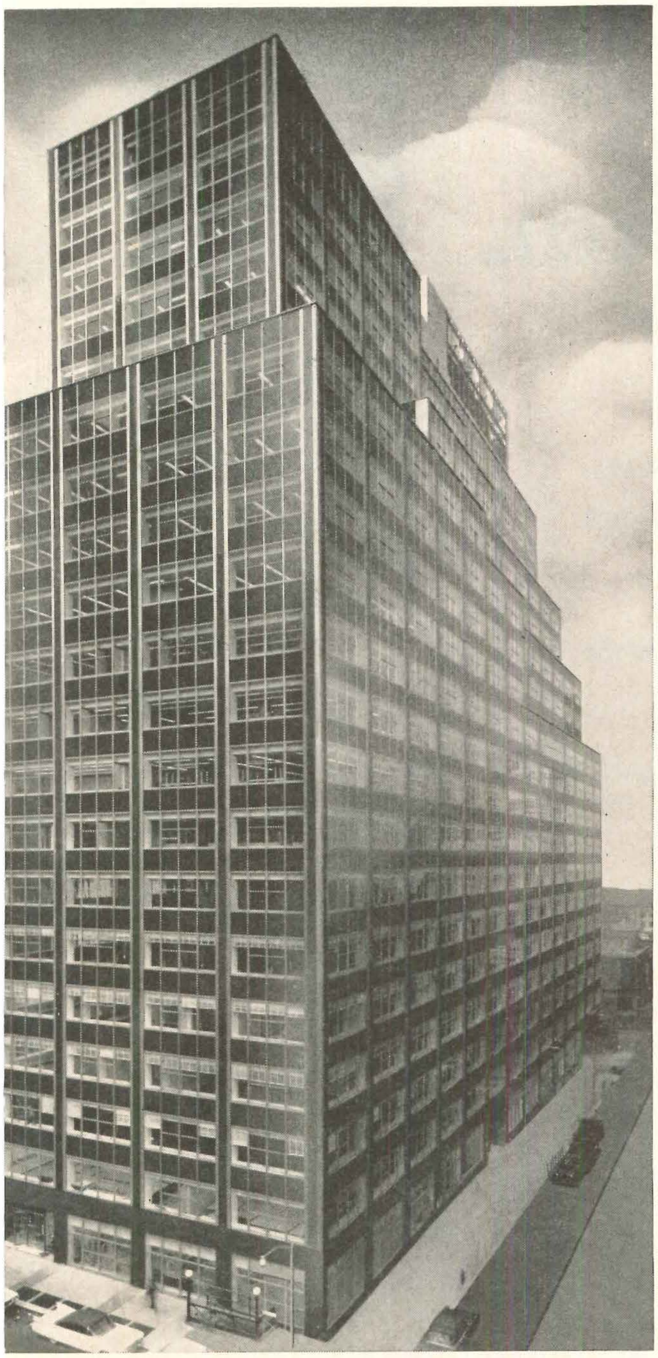


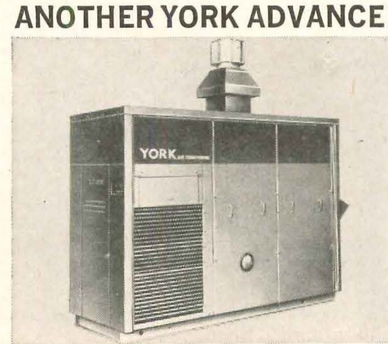


**120 Church Street,** New York, N. Y. This new 21-story office building is completely air conditioned by York equipment. 1,072 York Hi-I Induction units air condition individual offices; chilled water for cooling is furnished by two York steam absorption systems. Owner and builder, Dewey Carver. General Contractor, Irons & Reynolds. Mechanical Contractor, Kerby Saunders, Inc. Architect, Robert L. Bien. Consultants, Sears & Kopf and Michael S. Carver—all of New York, N. Y.

**Continental-Houston Motor Hotel,** Houston, Texas. 228 York Fan-coil units provide air conditioned comfort for guests of this motor hotel. Chilled water for cooling is furnished by two York Hermetic Turbopaks. Owner, Continental-Houston Motor Hotel Co., Inc. Builder, Manhattan Construction Co., Houston. Architect, William Hirsch, Los Angeles. Structural Engineers, Manhattan Industrial Corp., Houston. Mechanical Contractor, Barber Co., Inc., Houston. Mechanical Engineer, Roy F. Williams, Houston.


**Broadway Department Store,** West Covina, California. Chilled water for air conditioning is provided by a York Hermetic Centrifugal system. Building owner, New York Life Insurance Company. Architect, Charles Luckman & Associates, Beverly Hills, California. Structural Consultants, Brandow and Johnson, Los Angeles. Mechanical Consultants, J. L. Hengstler, Los Angeles. Mechanical Contractor, Cal-Aire Conditioning Company, Los Angeles. General Contractor, Steed Bros., Alhambra, California.

## ANOTHER YORK ADVANCE!




York SUNLINE Rooftop Air Conditioner heats, cools, ventilates . . . takes no floor space.

**YORK**® CORPORATION
Subsidiary of Borg-Warner Corp.
YORK, PENNSYLVANIA

York® BW BORG-WARNER

THE QUALITY NAME IN AIR CONDITIONING AND REFRIGERATION

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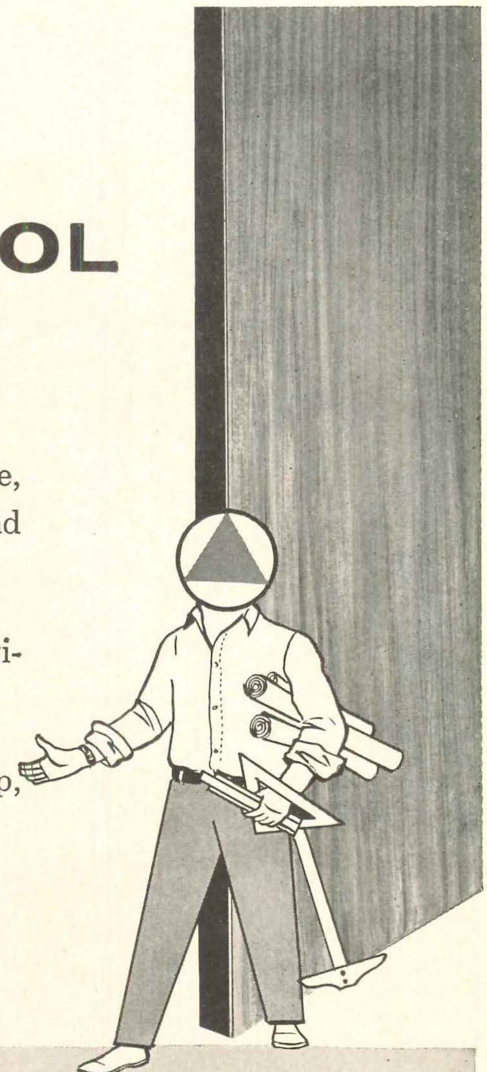
*from your*

# GJ DOOR CONTROL SPECIALIST

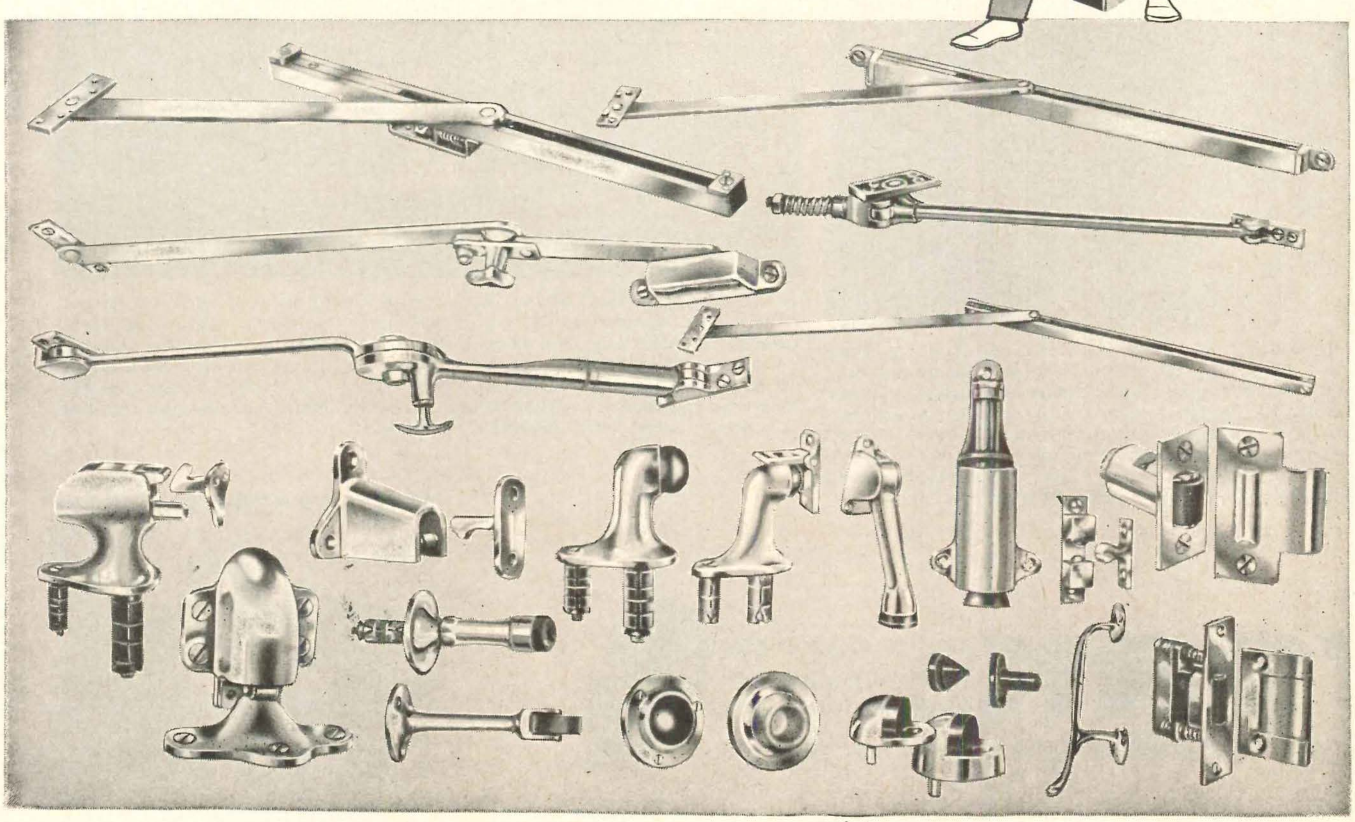


. . . the only complete line of door control hardware, enabling you to select to fit your exact functional and budget requirements.

. . . experienced analysis of every order with engineering aid when required.

. . . quality, the finest in materials and workmanship, consistent for over 35 years.

Your specification means more when you write in
***" . . . shall be GJ."***



**GLYNN·JOHNSON CORPORATION**

4422 n. ravenswood avenue
chicago 40, illinois

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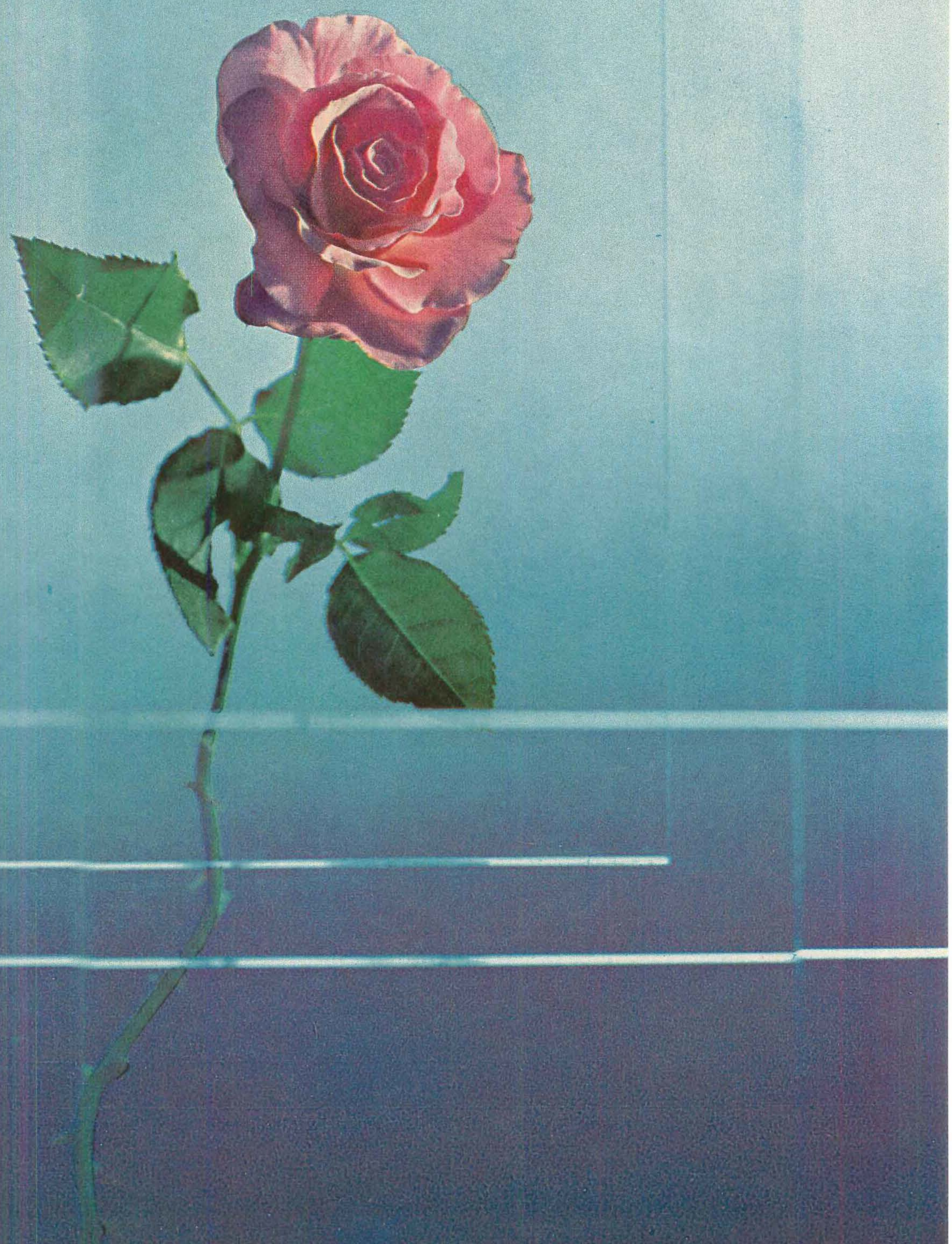
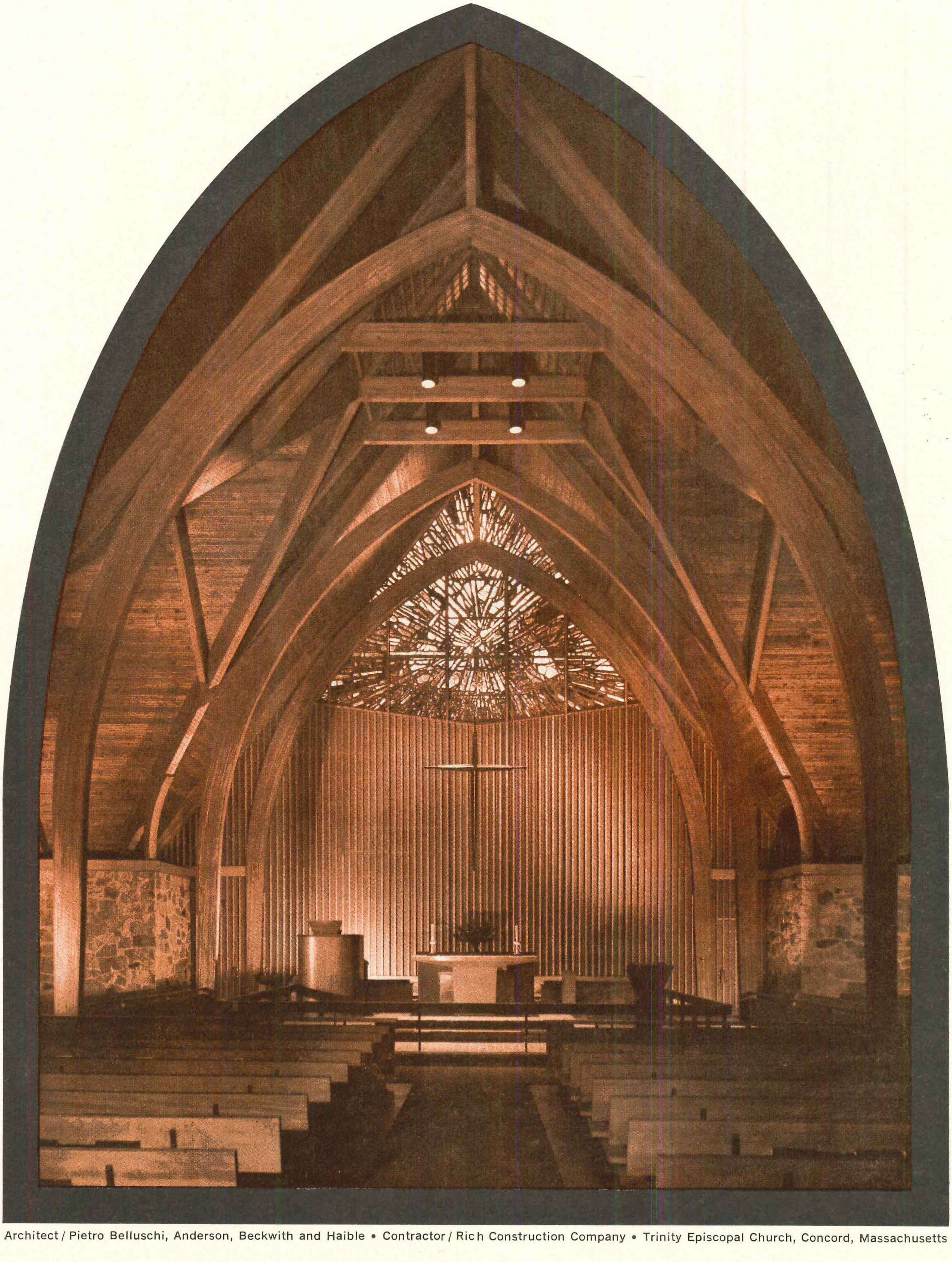
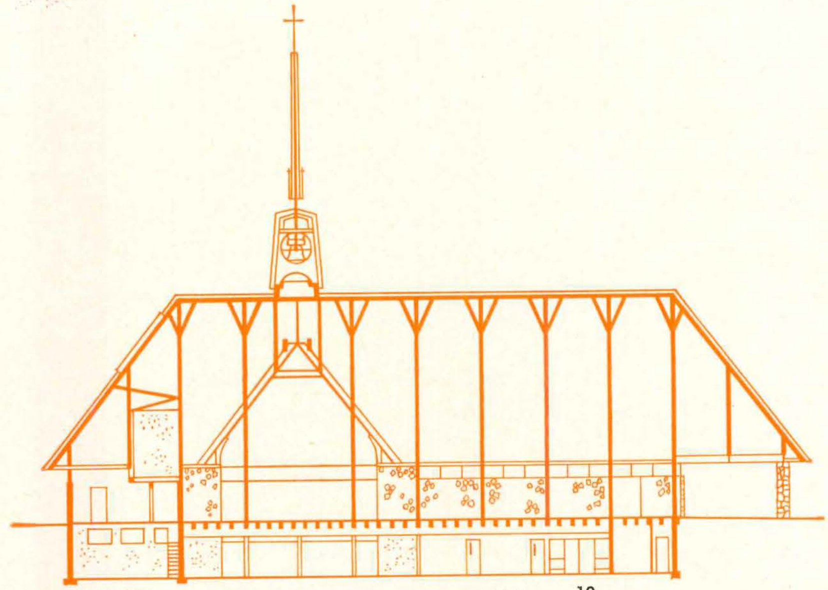
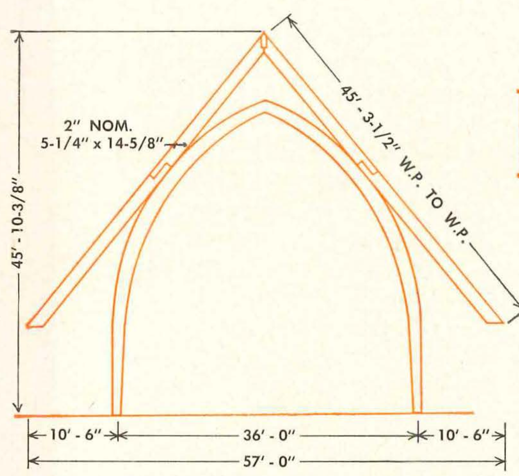




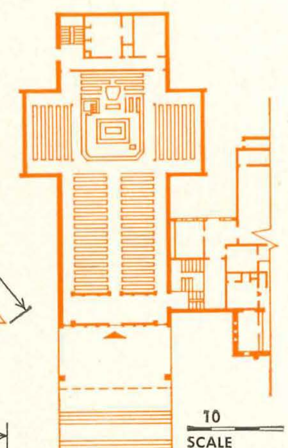
Architect / Pietro Belluschi, Anderson, Beckwith and Haible • Contractor / Rich Construction Company • Trinity Episcopal Church, Concord, Massachusetts



SECTION SCALE 10




ARCH AND RAFTER DETAIL




PLAN

## Rilco Laminated Wood . . . the span between imaginative design and economical construction

Pietro Belluschi had the difficult design problem of blending a new 400-seat addition with a 67-year-old rural New England Gothic design. Simple continuity in the church was essential. So was economy. For these reasons, he specified laminated wood beams, arches, solid sawn members and decking for the framing plan. And a 57-foot Rilco wood truss was used in the sacristy. Most of the Rilco structural members were pre-drilled to fit hardware provided. The job went fast. Labor costs were kept down with simple erection procedures. You can put the same advantages to work for you on your next job. See Sweet's Architectural Catalog File, 2bRi and AIA File 19-B-3, or write Weyerhaeuser Company, Box B-24, Tacoma, Washington.

**Weyerhaeuser Company**
Laminated Wood Products

AITC QUALITY INSPECTED

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# ARCHITECTURAL LEAGUE AND A.I.A. SPONSOR PROGRAM AND EXHIBIT ON PENNSYLVANIA AVENUE

When New York architects met for the first time to discuss the Pennsylvania Avenue Redevelopment project, the prevailing atmosphere of the meeting seemed to be one of general approval and optimism. The meeting, which was sponsored by the New York Chapter of the American Institute of Architects and The Architectural League of New York, was held on September 9 at the Museum of Modern Art, along with an exhibition of the project.

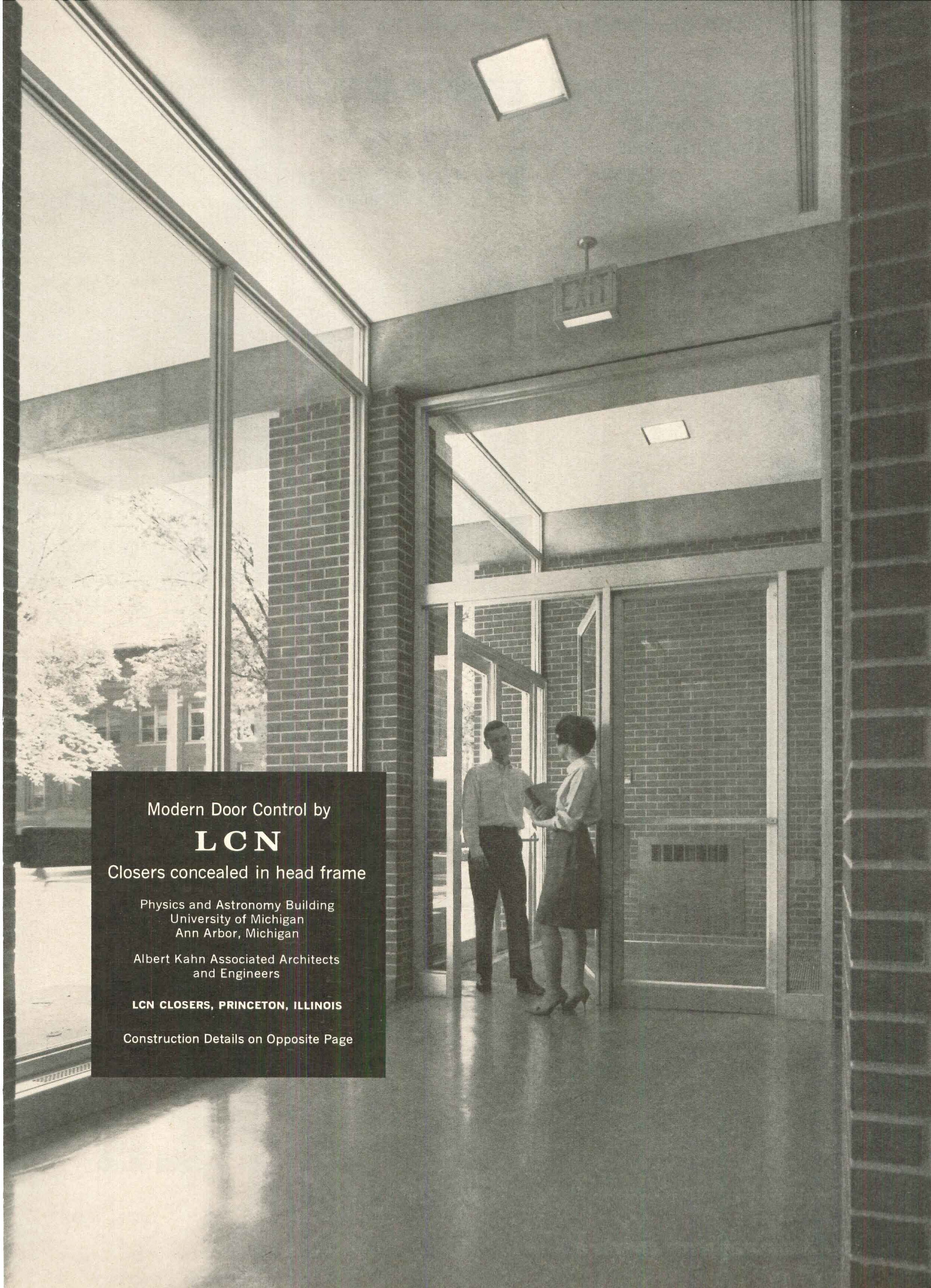
Morris Ketchum, first vice president and president-elect of the national A.I.A., opened the meeting by expressing the wholehearted approval of the A.I.A. for this scheme whose aim was "to improve the total environment of architecture." He said that all things considered, the scheme was not really as expensive as many had expected.

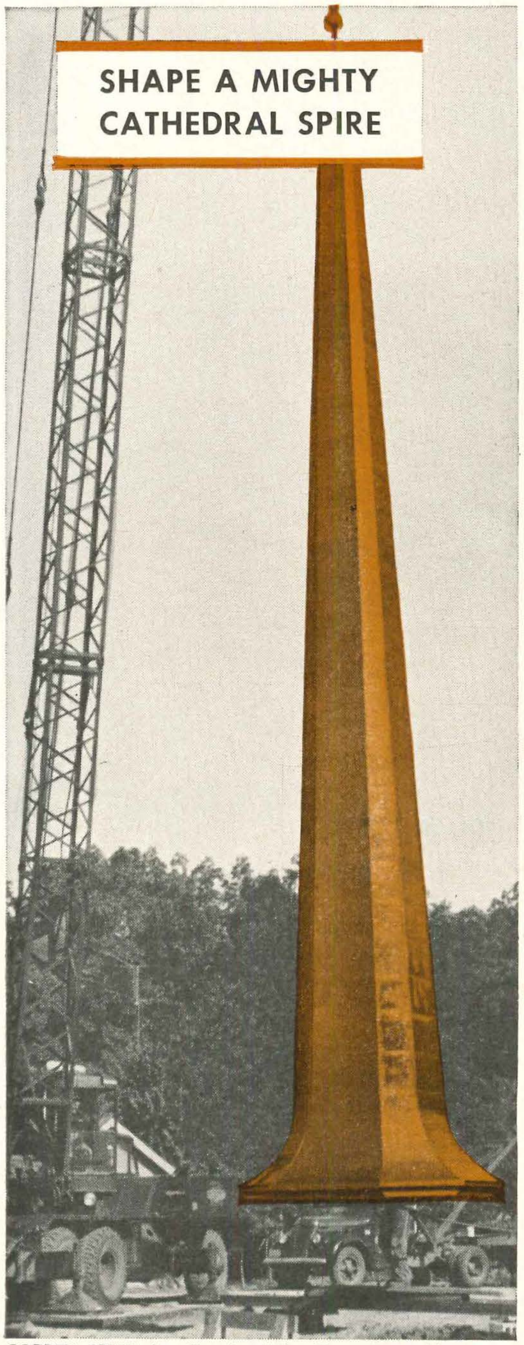
Nathaniel Owings, of Skidmore, Owings and Merrill, chairman of the President's Council on Pennsylvania Avenue, introduced the scheme to the audience with the aid of some colored slides. He emphasized that the scheme he was presenting was fully a team effort and that every decision adopted had been discussed and agreed by the Council as a whole. The experience of chairing this Council had been a most rewarding one and had convinced him that great things were possible from team design.

Daniel Kiley, landscape architect and also a member of the Council, echoed Mr. Owings' sentiments about the work of the Council, and talked a little about the landscaping of the scheme. He said that as the White House was primarily a domestic building, it was felt that it would be wrong for the avenue to lead right up to its entrance. They had therefore planned an informal "national square" as the culmination of the avenue at this end. The paved square would be a place for people to gather and stroll around, and would be rather like the squares one finds all over Europe.

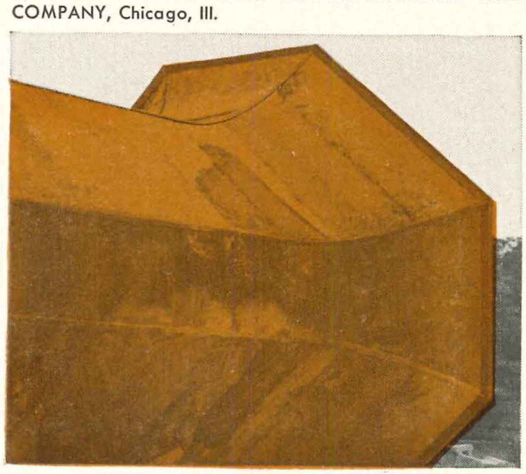
Discussion moderated by Douglas Haskell revolved around the traffic flow, the effect of the scheme on the area as a whole and the question of visual orientation, which was felt to be at present rather poor. Asked whether the introduction of Renaissance "bric-a-brac" such as the fountains and pillars shown on the scheme was an appropriate expression of the 20th-century American image, Mr. Owings said that the scheme was intended to express the total spirit of the United States, not just 20th century America. He felt therefore that it would be inappropriate to introduce ultra-modern art forms which might become completely outdated.

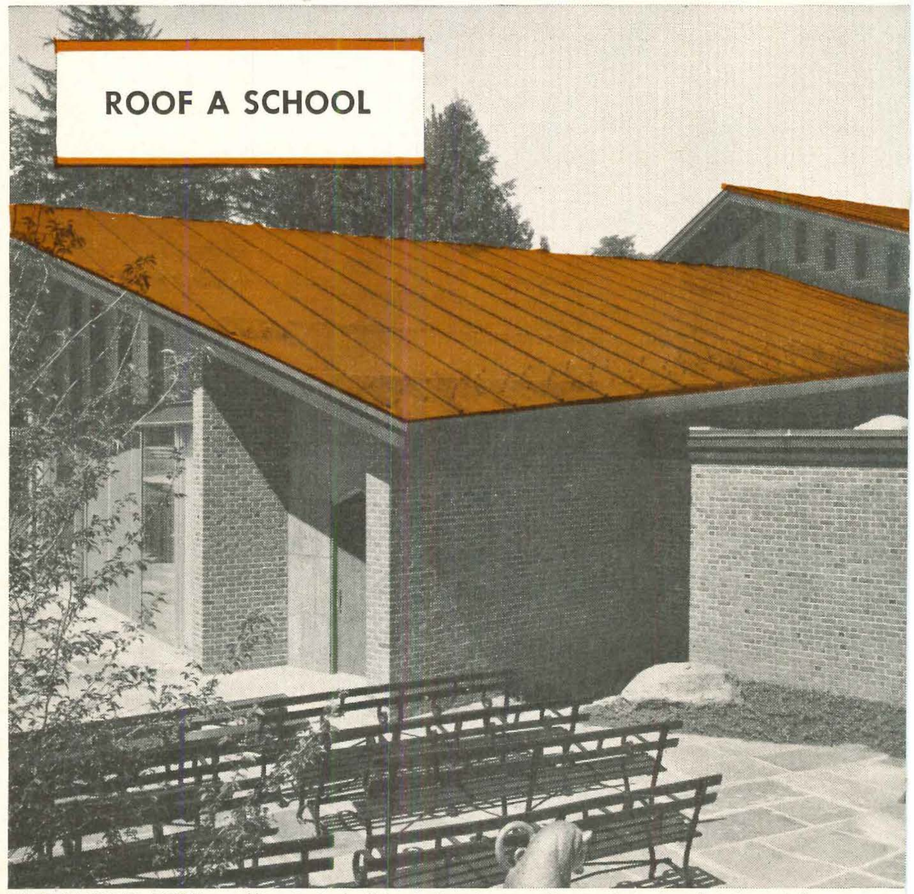
Relying to a question as to what would be the next step towards getting the necessary governmental approval to the execution of the scheme, Mr. Owings said that at present members of Congress were individually studying the project and so far their reaction had been very favorable. The basic material was now awaiting the President's consideration, and procedures for further action would be developed after the Presidential decision, which was not expected until after the election.


Modern Door Control by
LCN
Closers concealed in head frame
Physics and Astronomy Building
University of Michigan
Ann Arbor, Michigan
Albert Kahn Associated Architects
and Engineers
LCN CLOSERS, PRINCETON, ILLINOIS
Construction Details on Opposite Page




**COPPER SPIRE** for Church of the Open Door, Muskegon, Mich. It was fabricated from 5,000 lbs. of 16 oz. Cold Rolled Revere Copper by LIVINGSTON SHEET METAL CO., Muskegon. Spire is 81 feet high and 19 feet in diameter at the base. Revere Distributor: CENTRAL STEEL AND WIRE COMPANY, Chicago, Ill.






**BATTEN SEAM ROOF** on Miss Porter's School, Farmington, Connecticut, was fabricated from 30,000 lbs. of Revere Sheet Copper. Architect: MOORE & SALSBURY, West Hartford, Conn. General Contractor: FELIX BUZZI & SON, INC., Torrington, Conn. Sheet Metal Contractor: EARNEST PETERSON, INC., Hartford, Conn.

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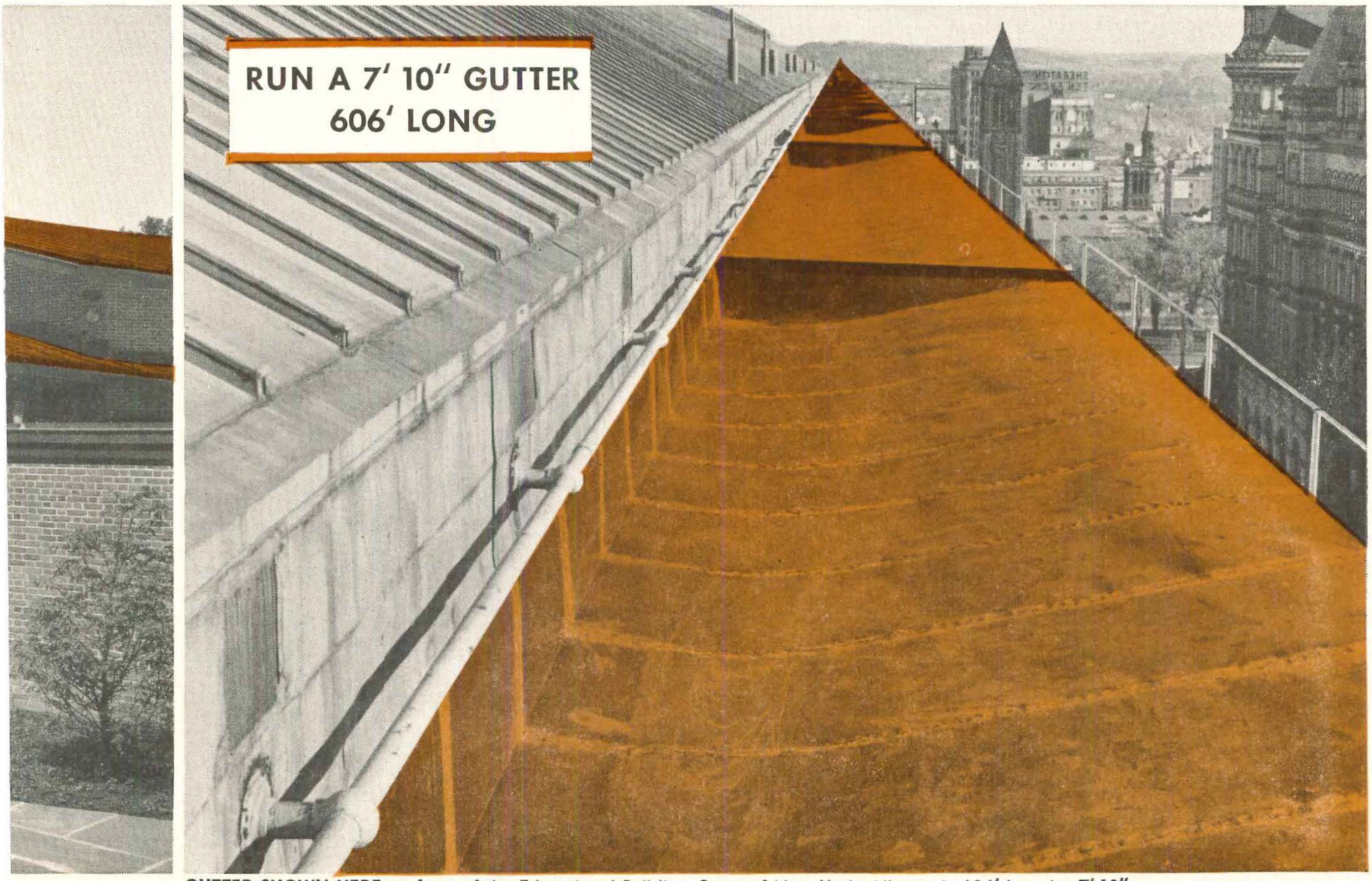


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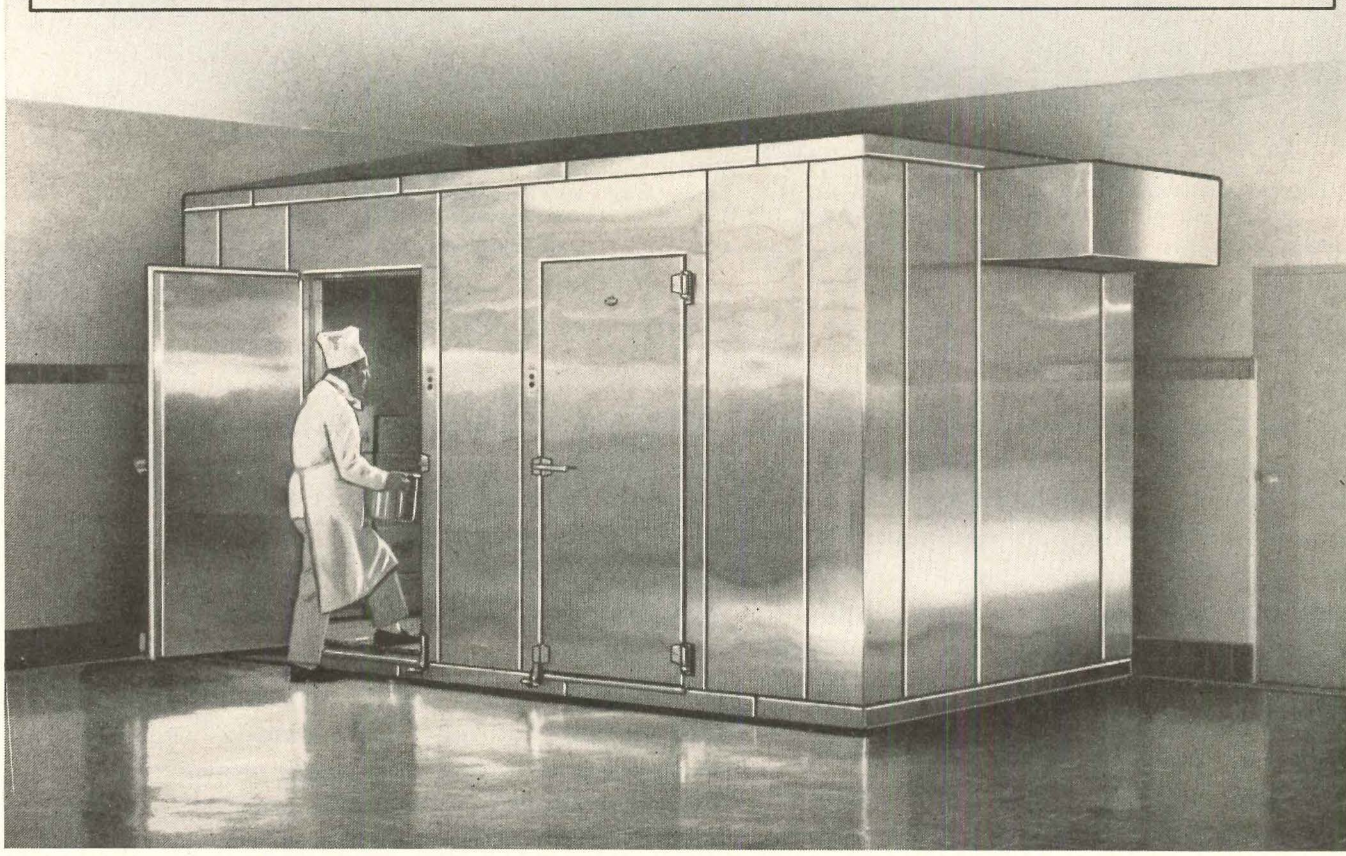

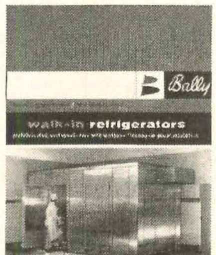


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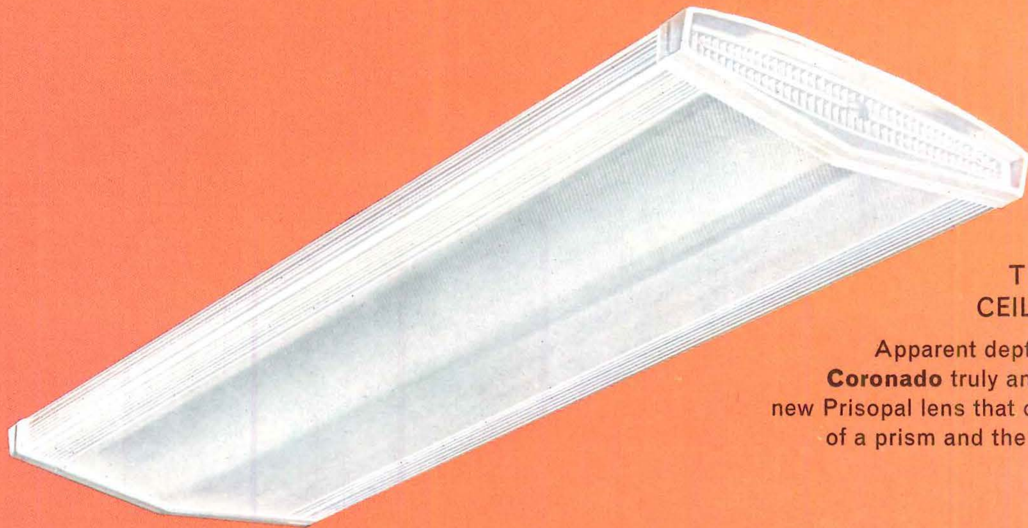

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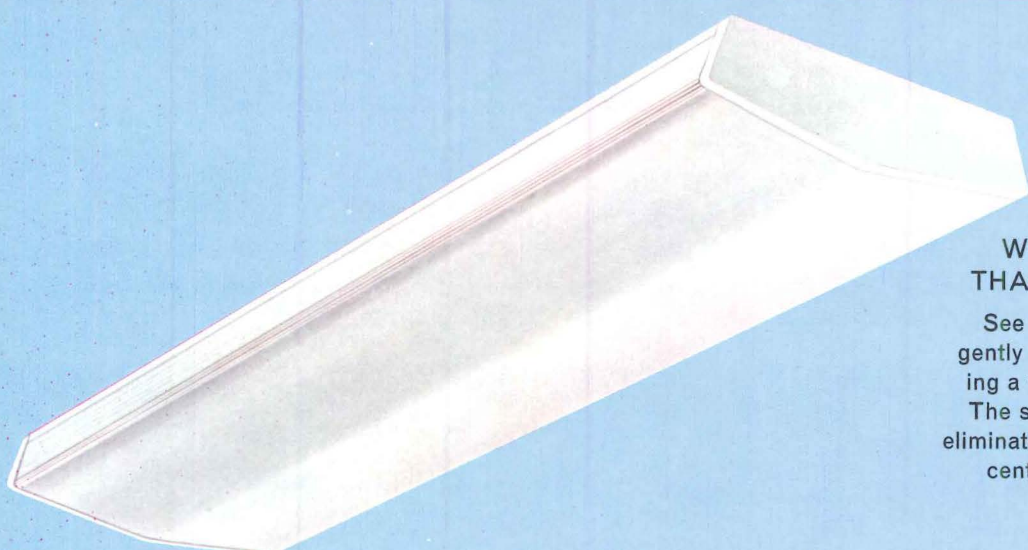

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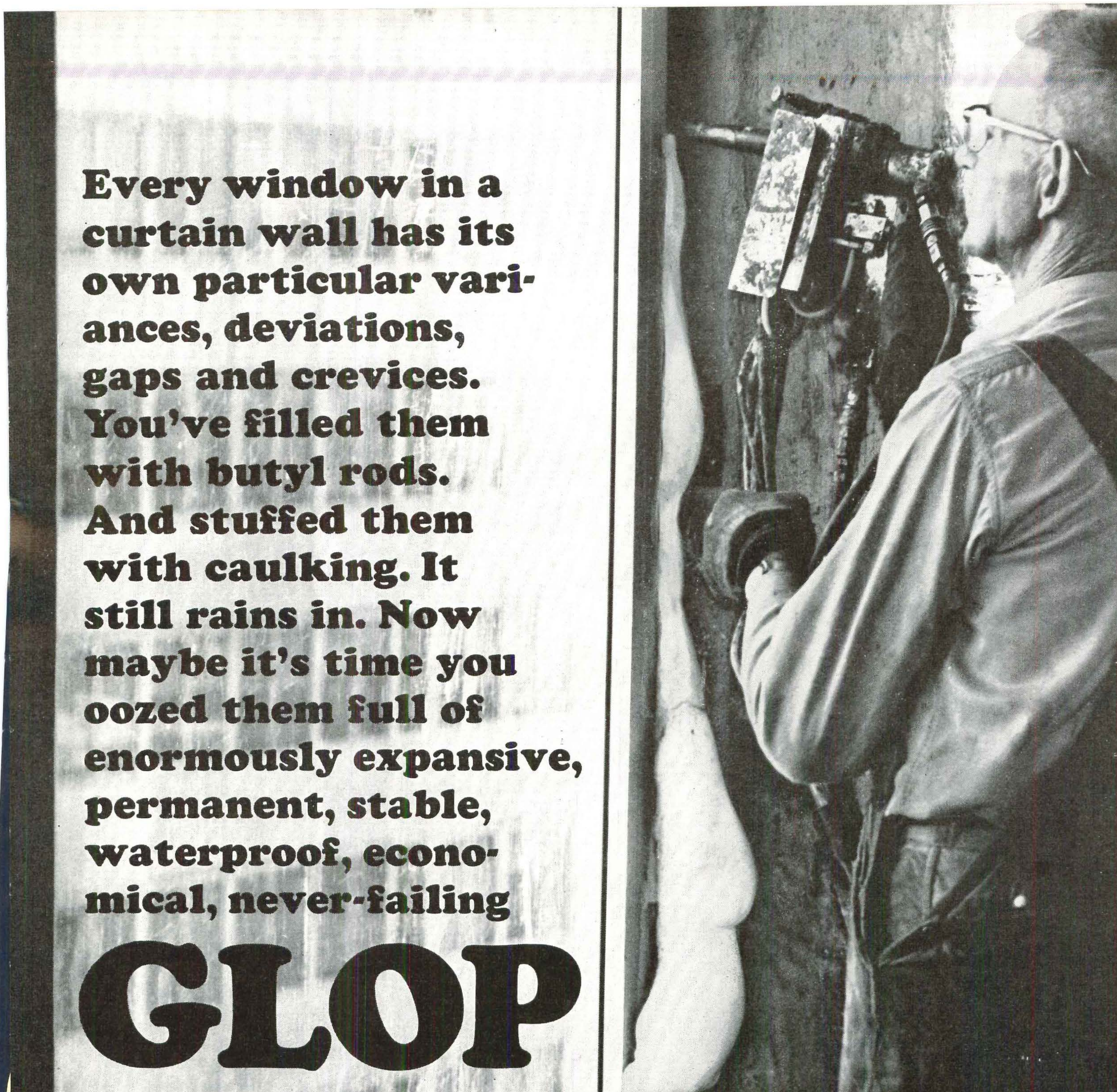


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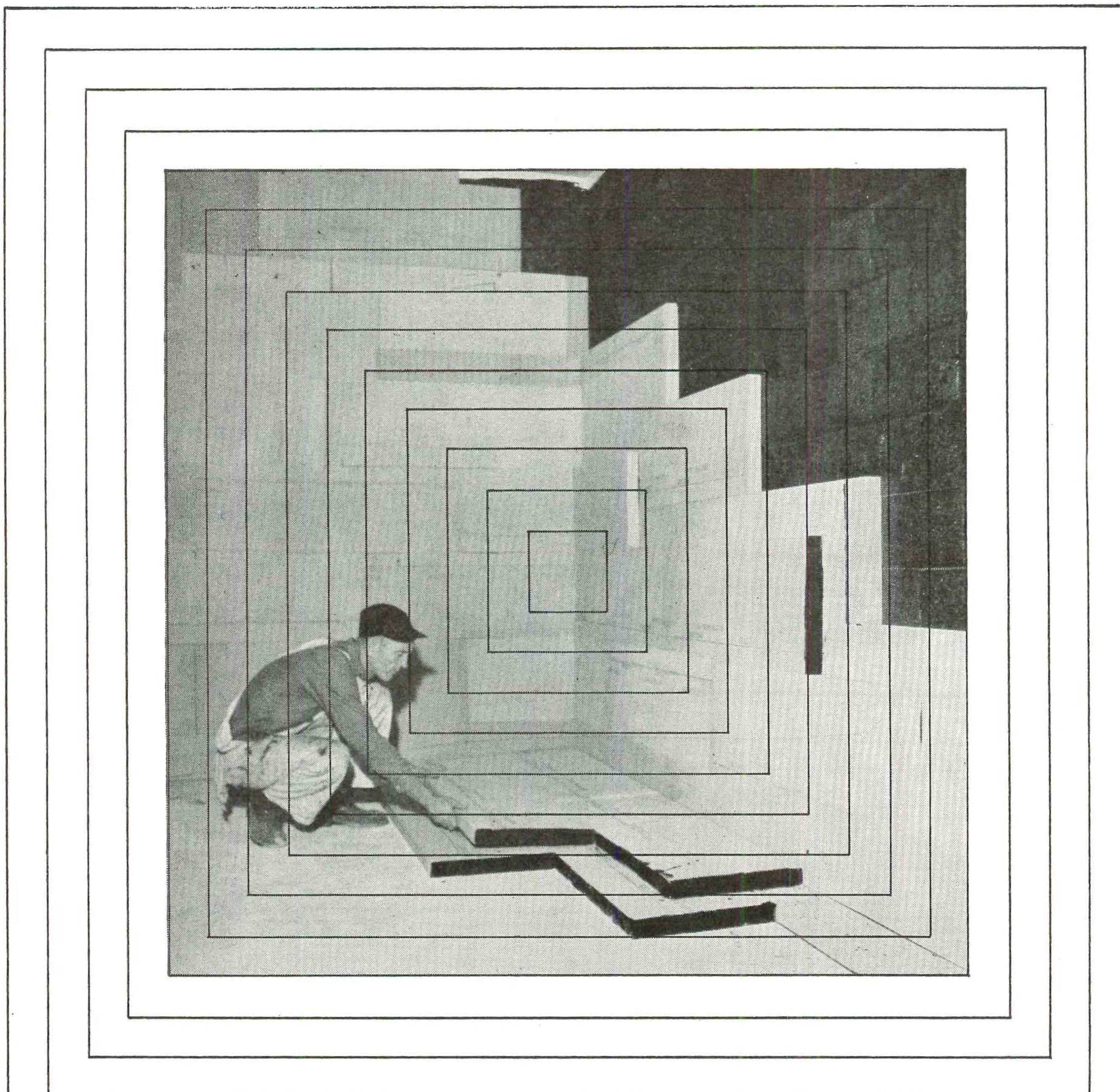
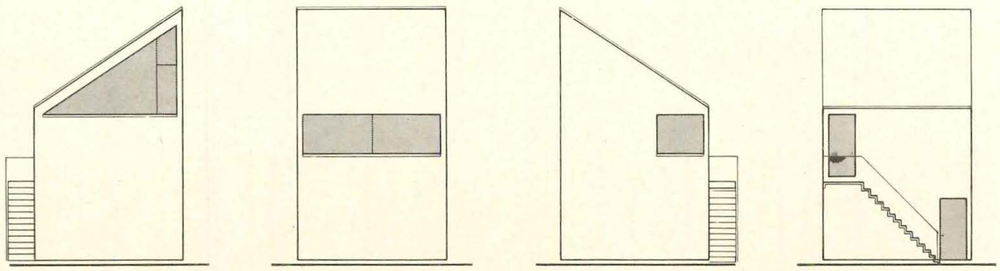
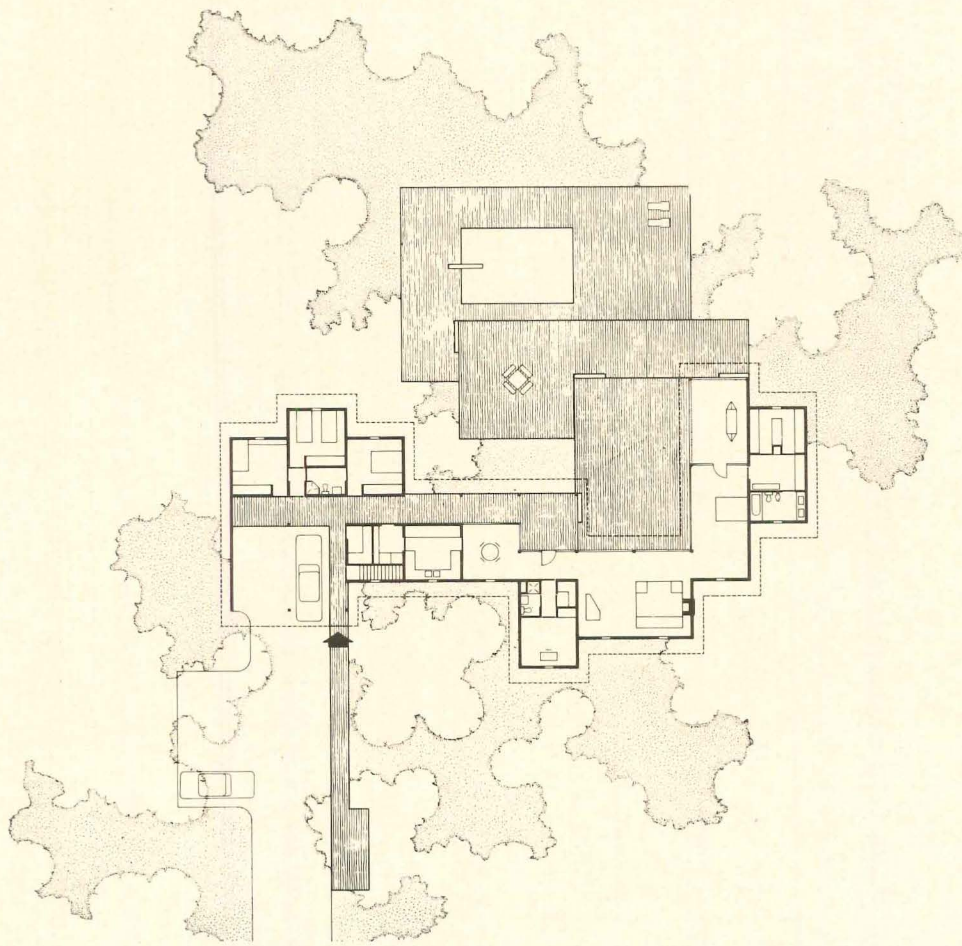


Zer-O-Cel insulation, based on a Hetrofoam polyol system, saves space in this built-in freezer at Revere Smoked Fish Company.



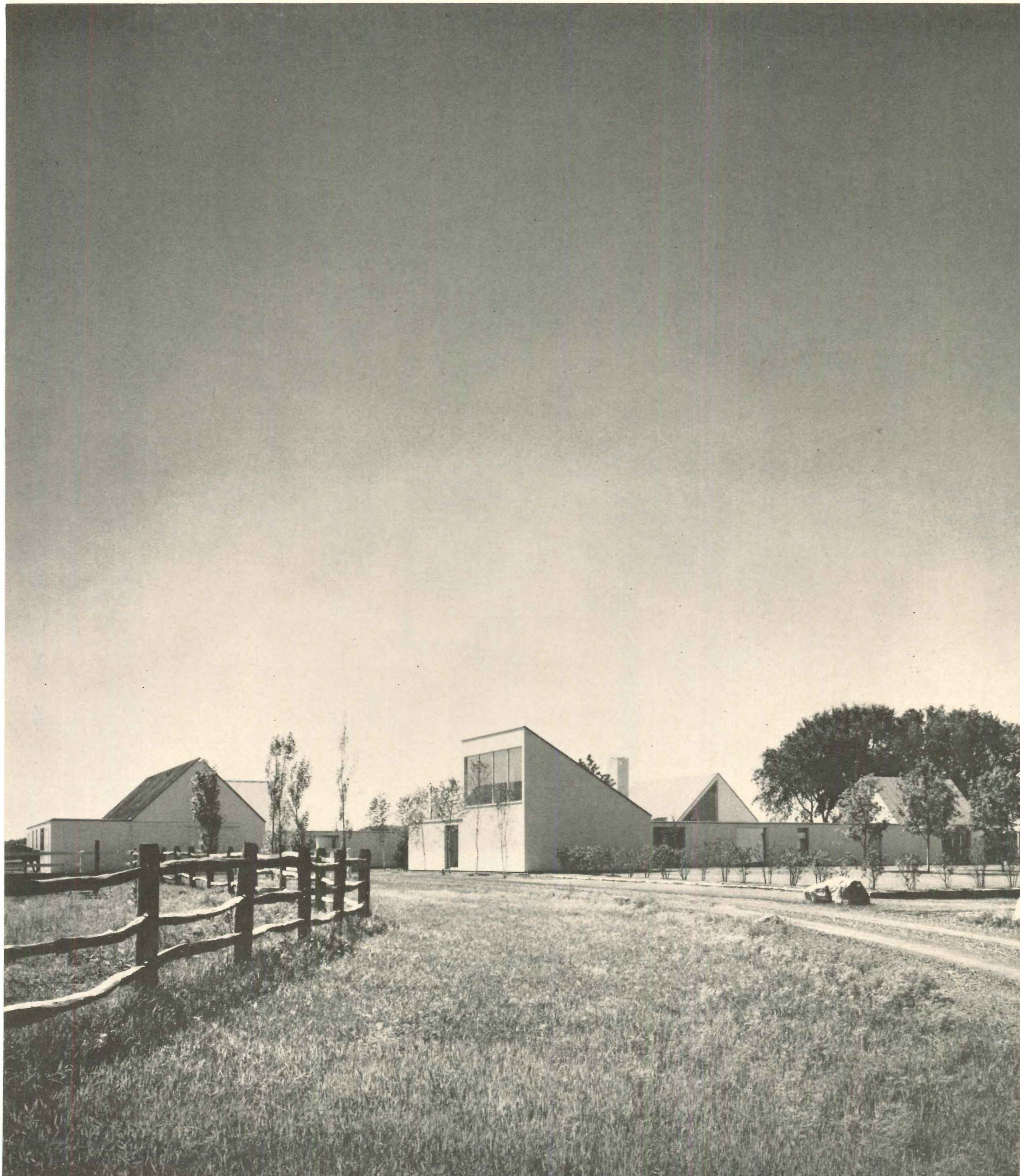
"GEOMETRY, MASS, VOLUME"
*Osborn Studio—1950*



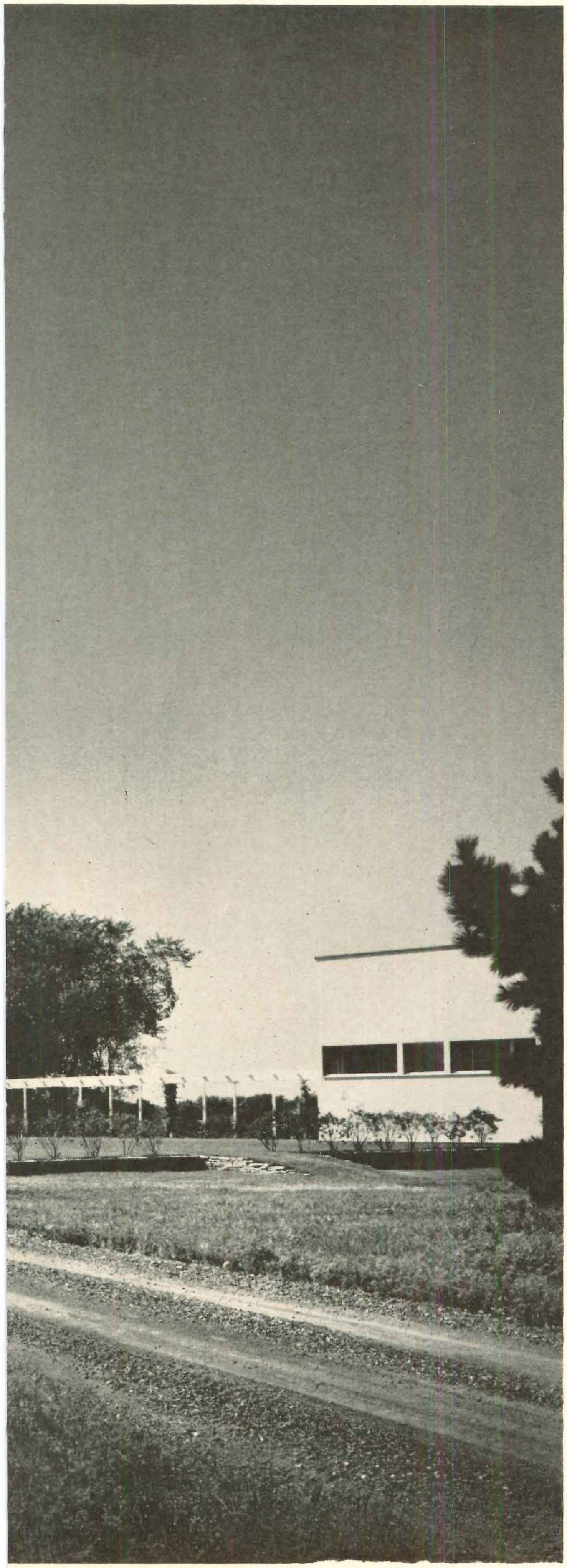
"CONTINUITY, PROGRESSION, SEQUENCE"
*Dooneief House—(project)—1960*

# *New Houses by*
# EDWARD LARRABEE BARNES

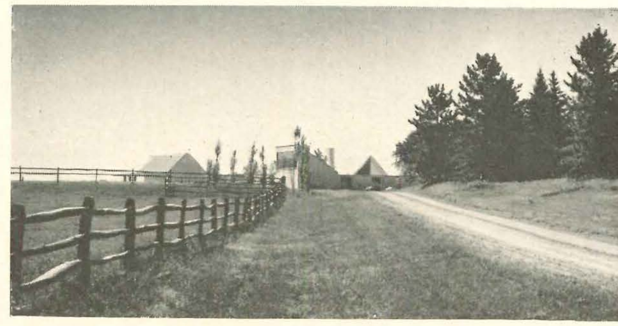
Barnes' personal "design impulses," noted above,
are illustrated in a group of new houses which progress
from simple geometric patterns to an enlargement
into village-like complexes of roof shapes and glazed voids

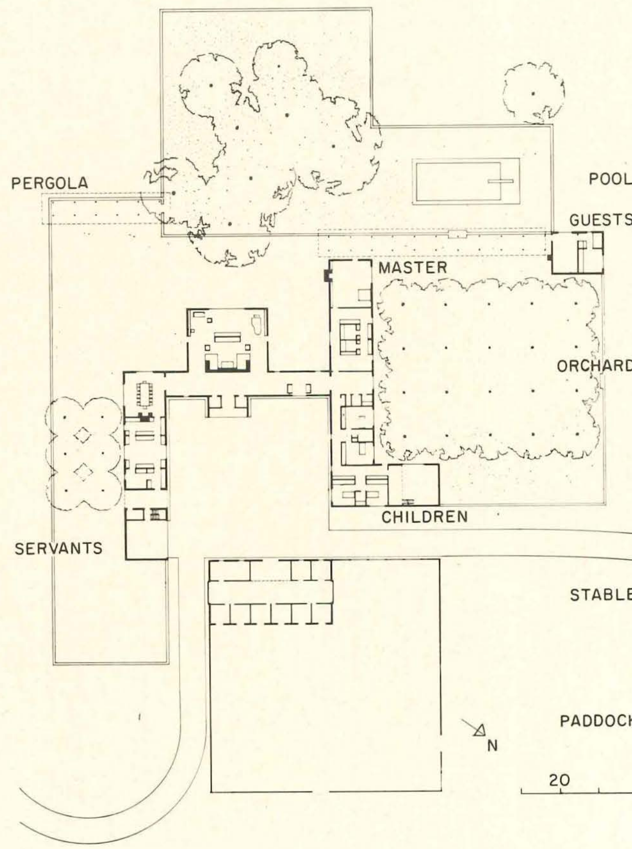


MIDDLE WESTERN COUNTRY HOUSE—1963–1964



Warren Reynolds & Associates photos

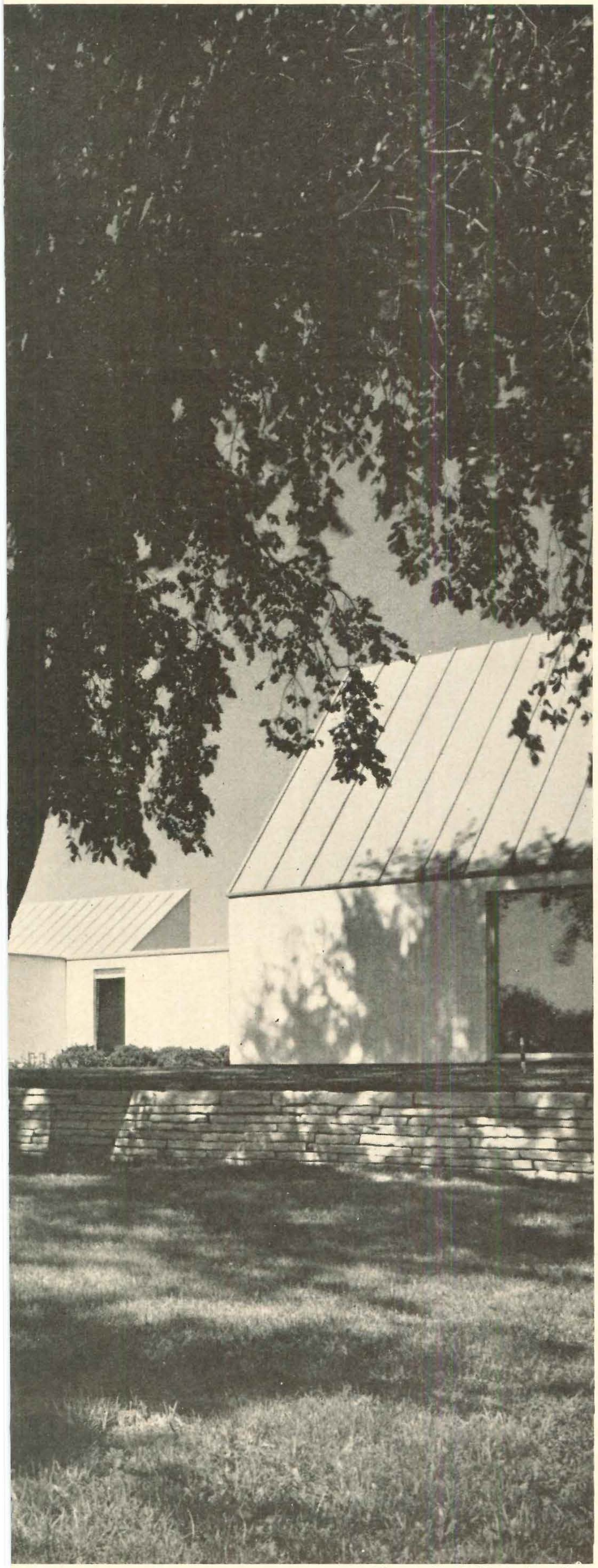




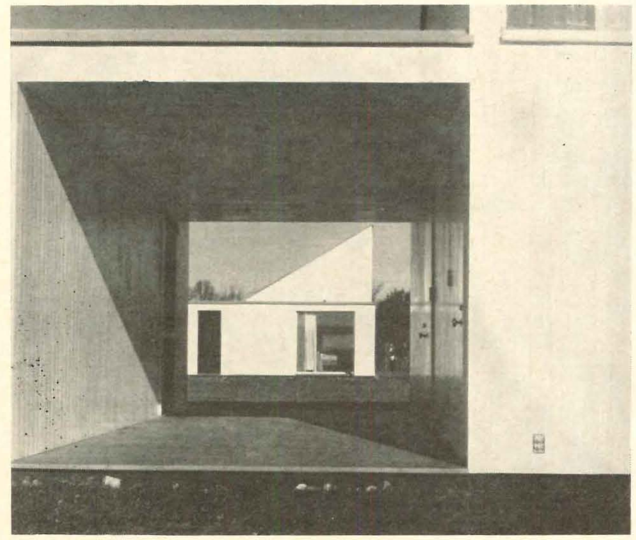

"Coming in the front entrance road or up the farm service road, this house looks like a village on a hill. One enters a square central courtyard surrounded by low white walls and scattered peaked roofs. The great living room, master bedroom, and the two-story guest house and servants quarters all have studio peaks. The rest of the house moves quietly under a low flat roof. The materials—white siding, gray-green terne roofing and great sheets of glass—are simple, even austere. It is the sunlight and shadow on the masses, and the reflection and transparency in the openings that illuminate the architecture.

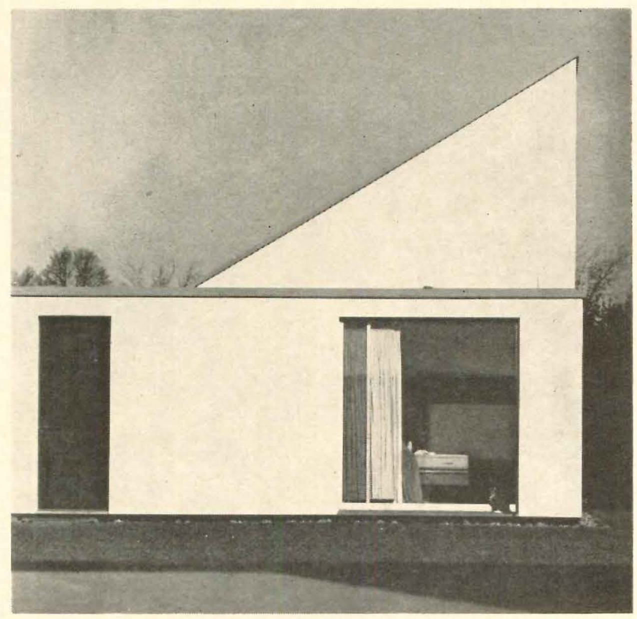
The outdoor spaces are an outgrowth of zones within the house. There is the terraced lawn and sheltered side courts all related to the living room. There is the square orchard related to the bedroom, playroom and guest house. There is the long terrace related to dining and kitchen. And there is the square paddock abutting the stable. These outdoor spaces are defined with low limestone walls, white farm fencing and long low arbors."

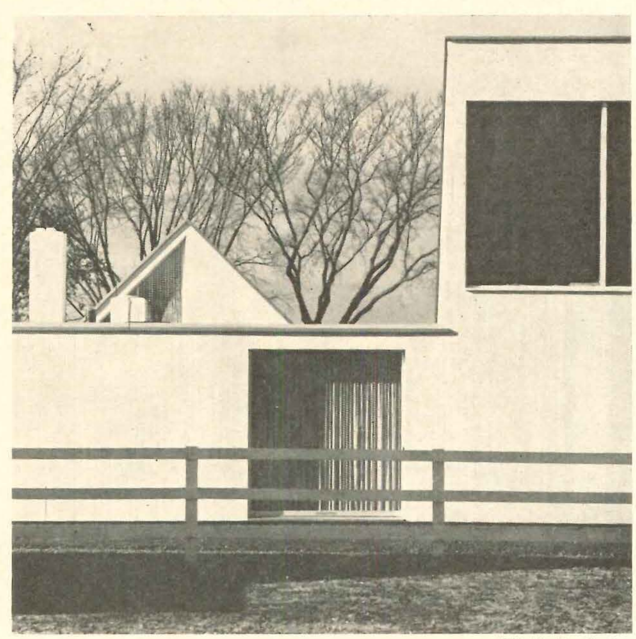
MIDDLE WESTERN COUNTRY HOUSE—1963–1964



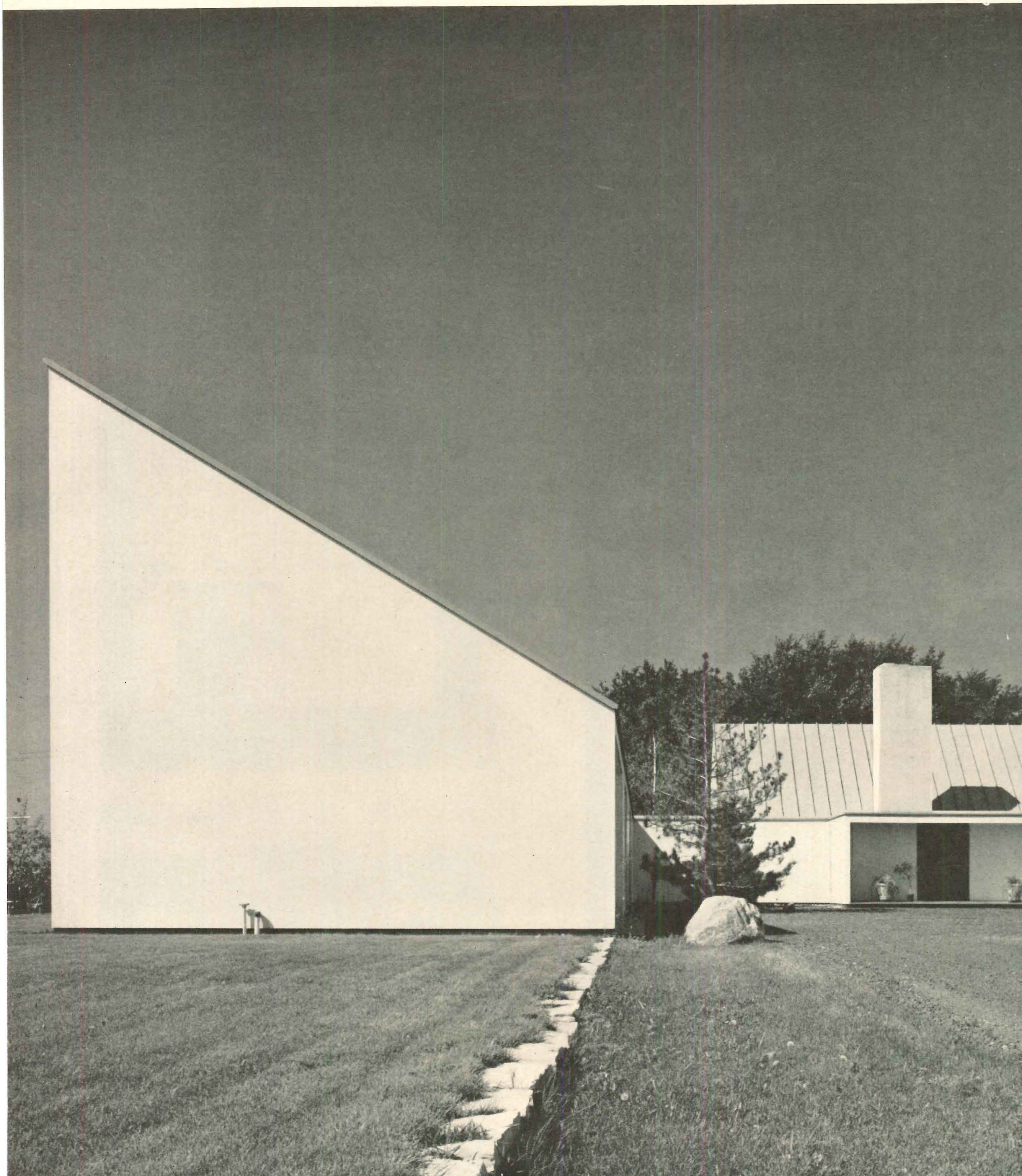
*Warren Reynolds & Associates*



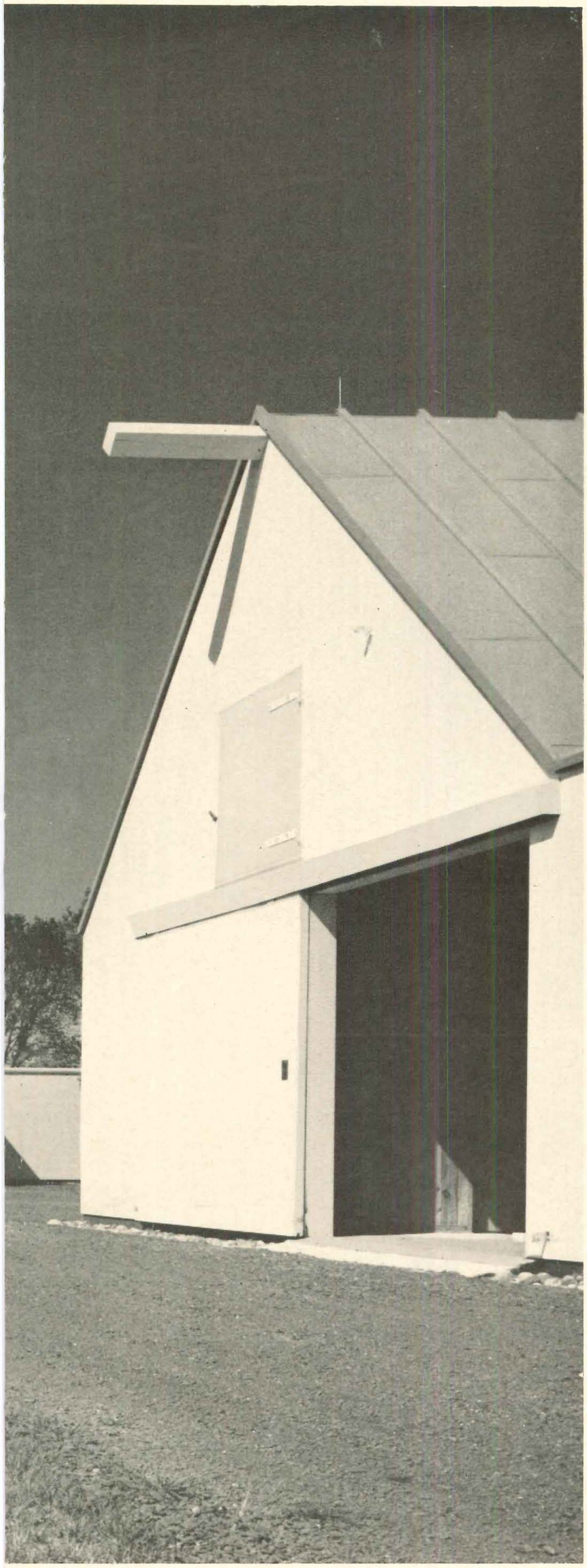




*Uli Roth photos*



MIDDLE WESTERN COUNTRY HOUSE—1963–1964



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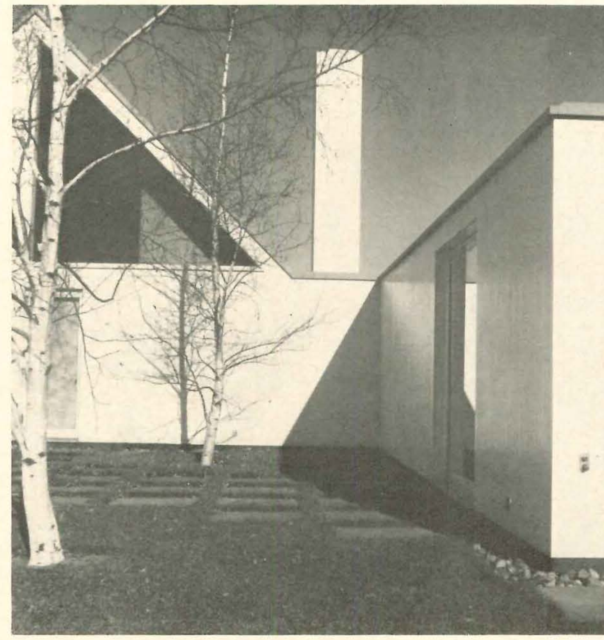
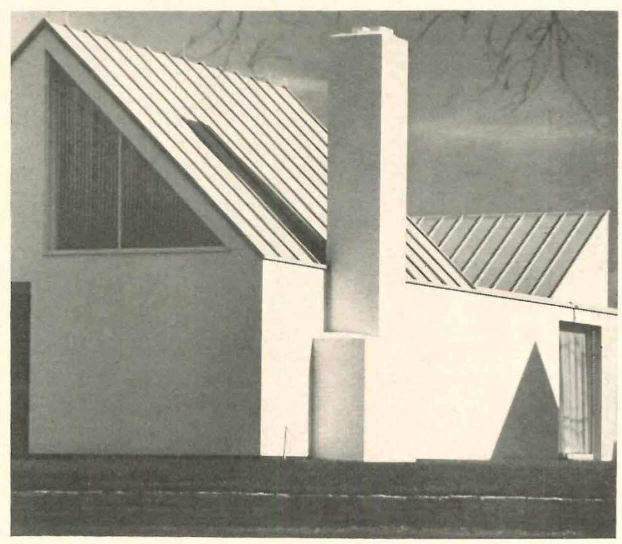
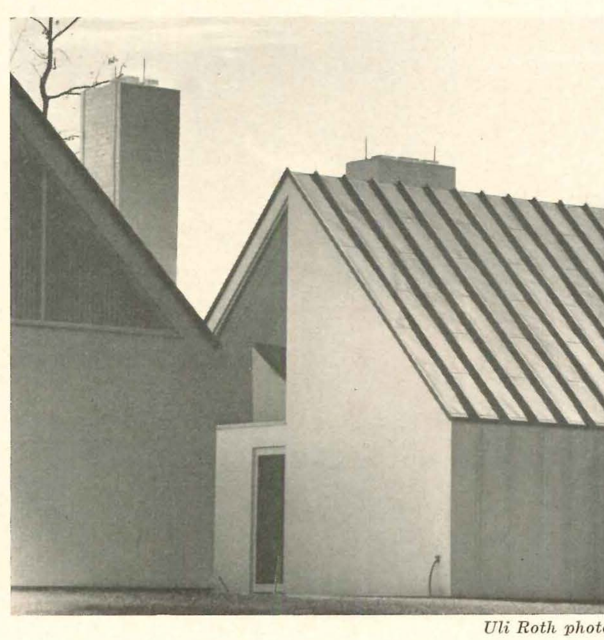
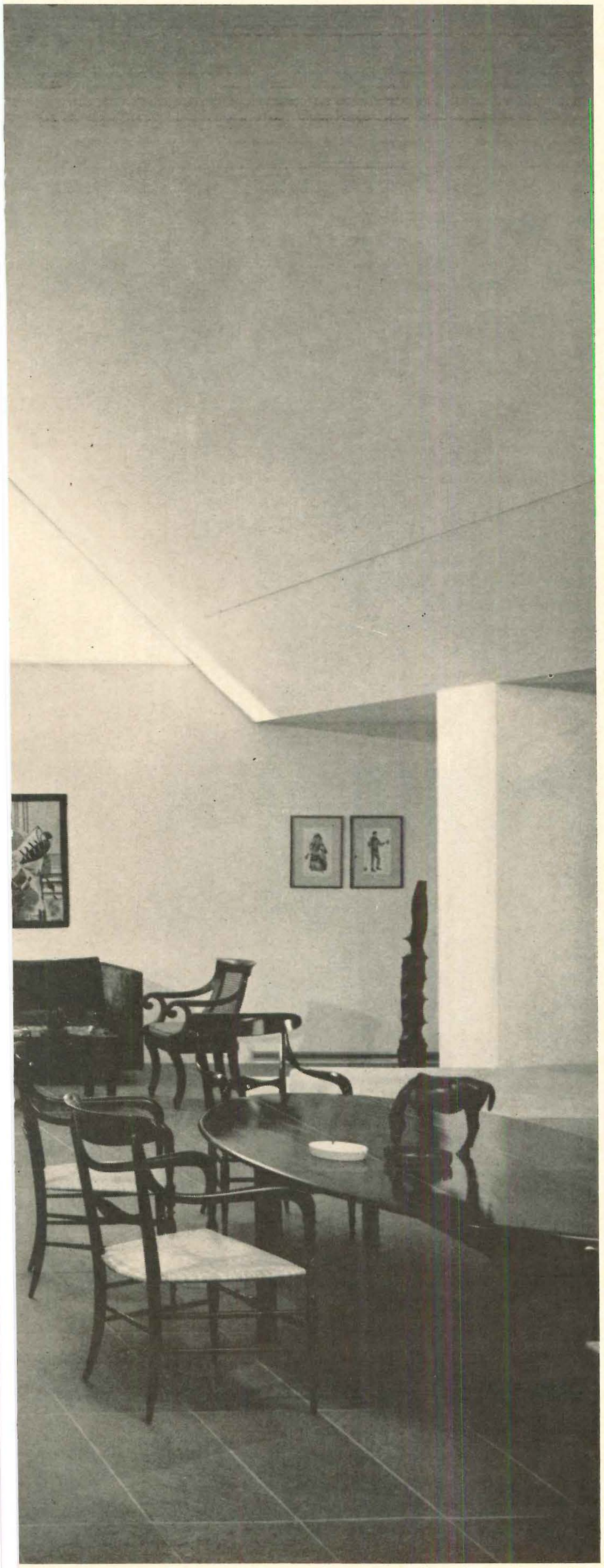




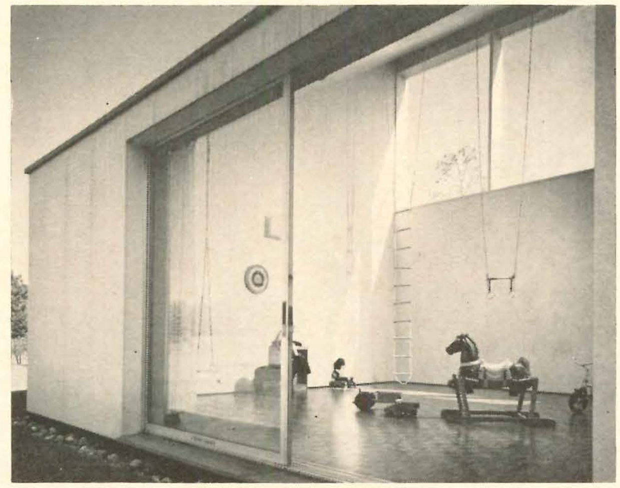


Uli Roth photos

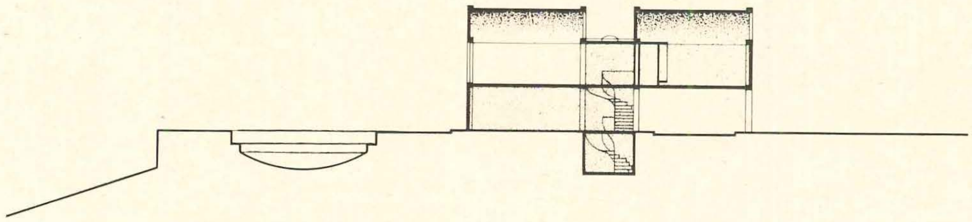
MIDDLE WESTERN COUNTRY HOUSE—1963–1964



Warren Reynolds and Associates photos

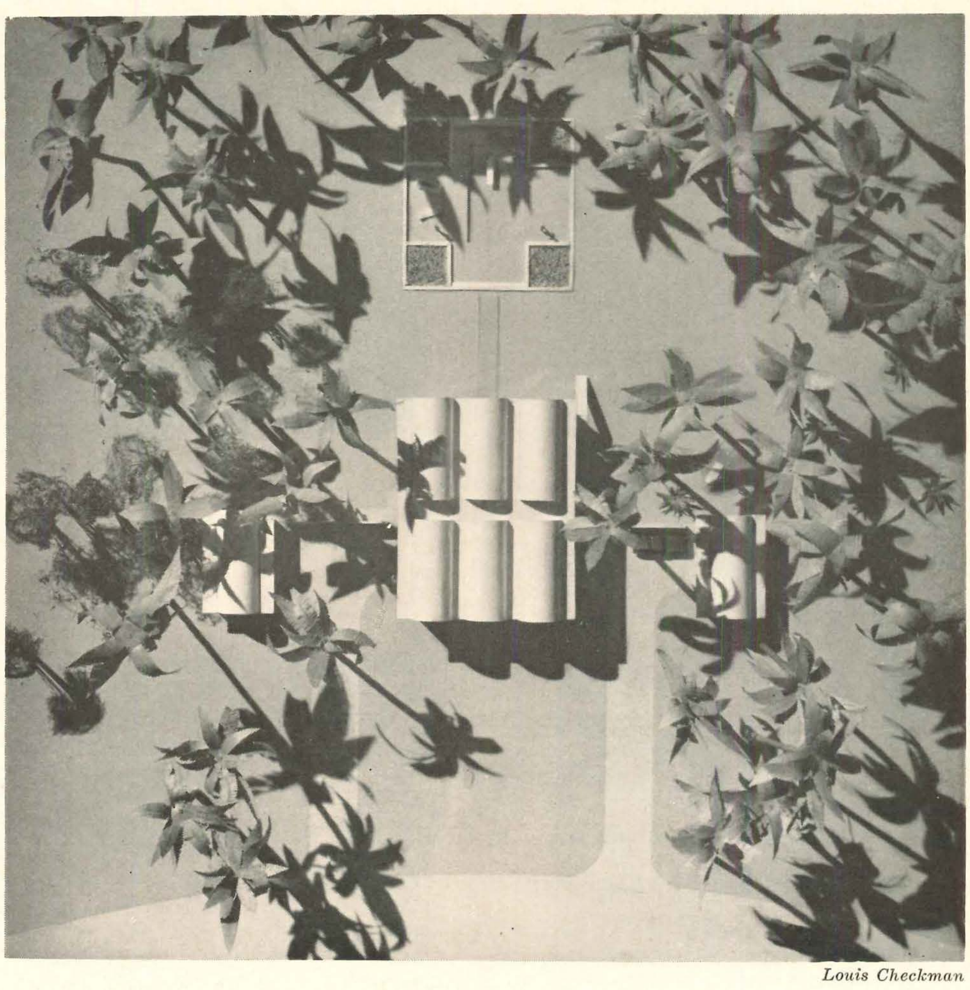


"Great sheets of glass in the peaked roofs admit light from the sky. Most of the other windows are 'pocket' windows so that the glass, frame, screen, and all can disappear in the wall leaving clear naked openings. The interior materials are as pure and continuous as the exterior ones. Walls and ceilings are planks. The floor is gray-green slate." Architect: Edward Larrabee Barnes; associate architects: Cavin and Page; job captain: Hildegarde Bergeim; structural engineer: John Mascioni; mechanical engineers: Gausman and Moore; landscape architect: James Fanning; interiors: Benjamin Baldwin; contractor: Carl N. Peterson and Son



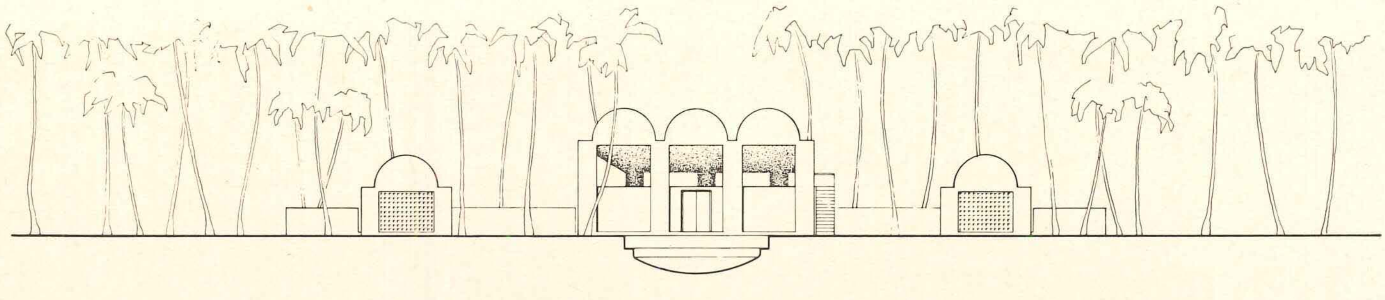
"This formal tropical house was designed to stand in a cocoanut grove overlooking the sea. The entrance is through an open *port cochère* or car port. Dining, service, and guest quarters are all on the ground floor related to the terrace and circular pool. The living room is a sort of open porch on the second floor with bedrooms behind. The structure—poured concrete columns and vaults—is clearly articulated.

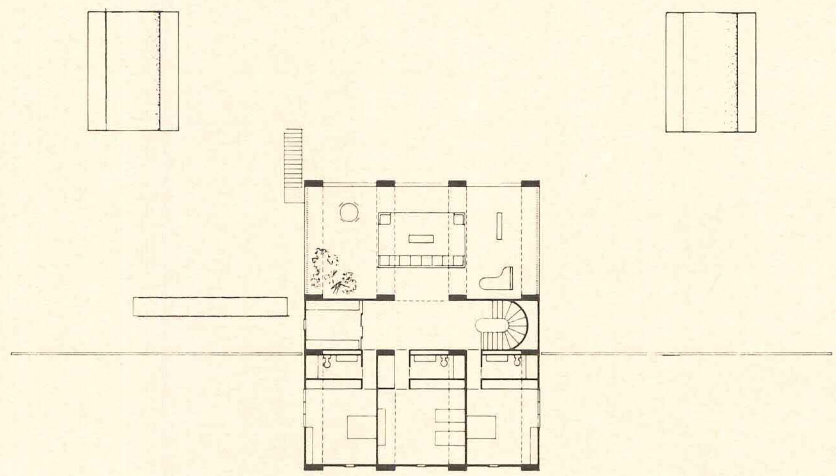
The section shows how the plan reverses—how the ground floor open space occurs on the entrance side and the second floor open space occurs on the view side." Architect: Edward Larrabee Barnes; assistant; Giovanni Pasanella

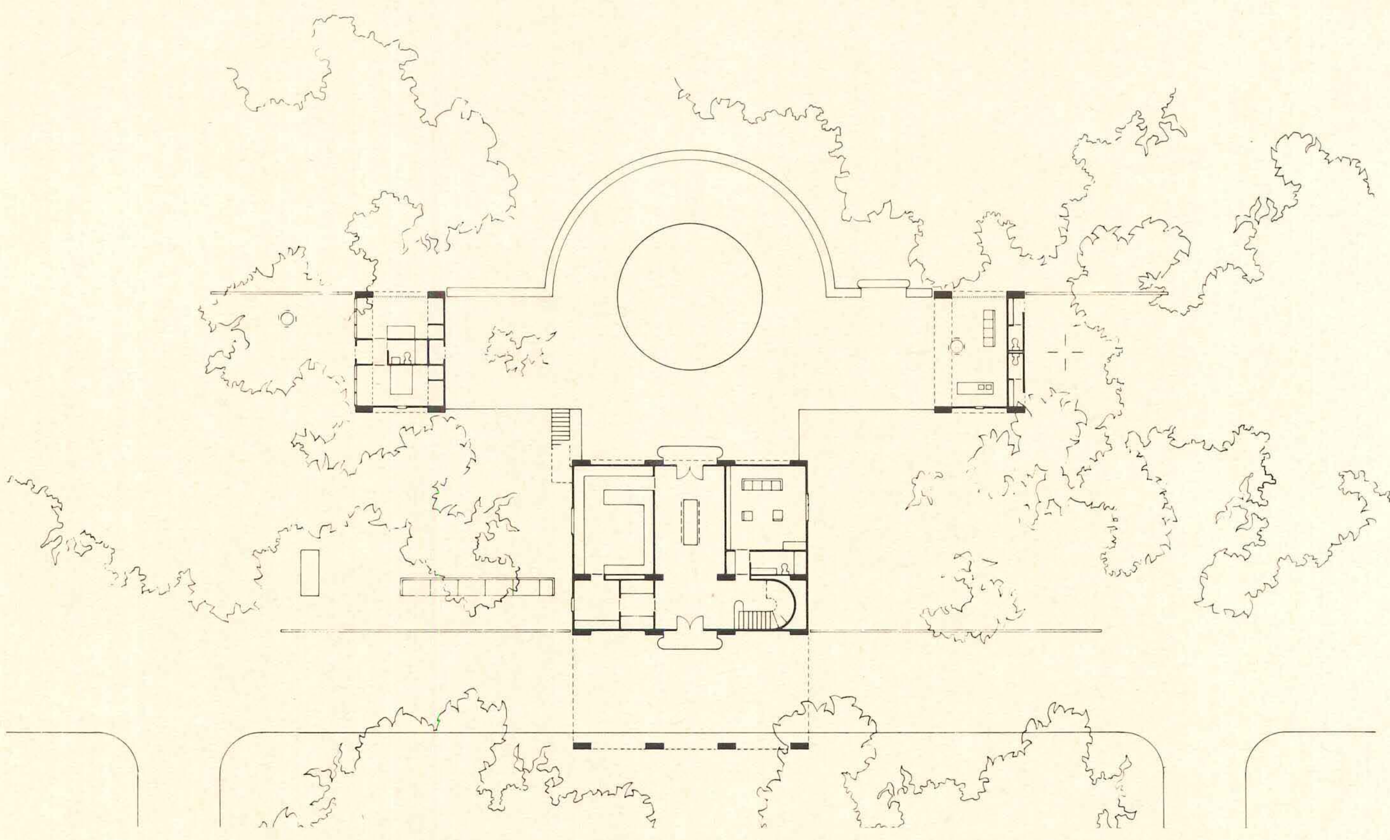


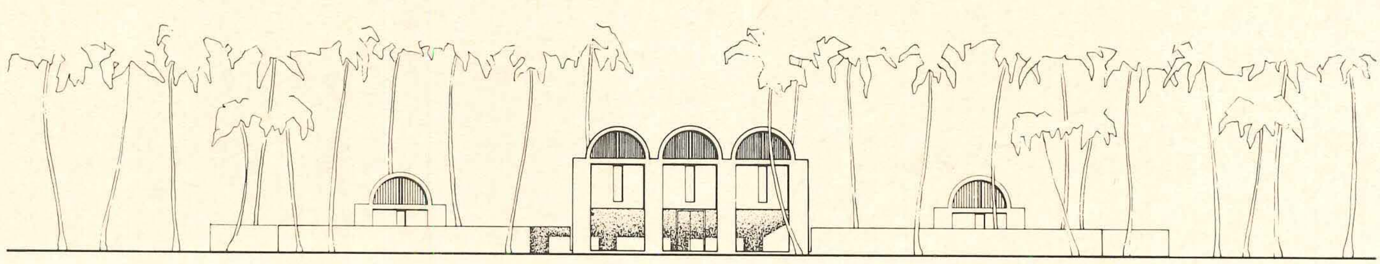
*Louis Checkman*

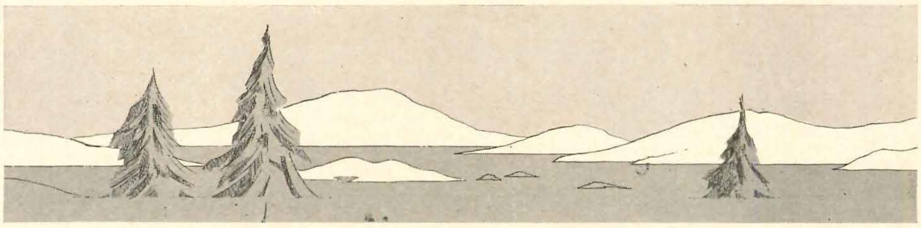
CARIBBEAN HOUSE—(project)—1962

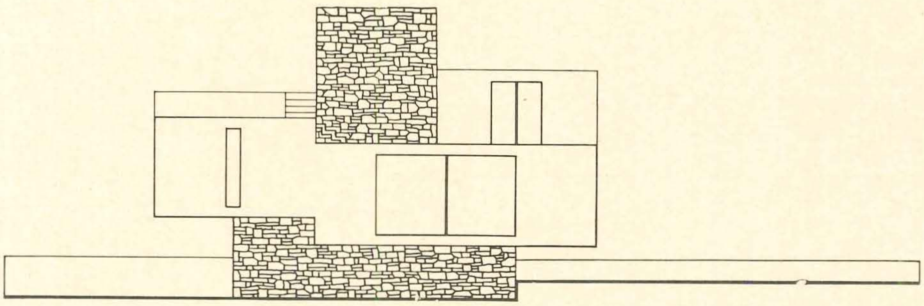






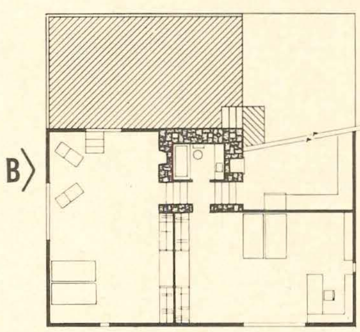




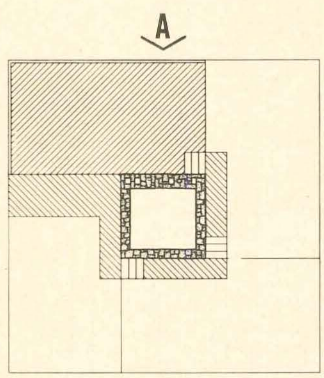


**A** ELEVATION FROM LAKE

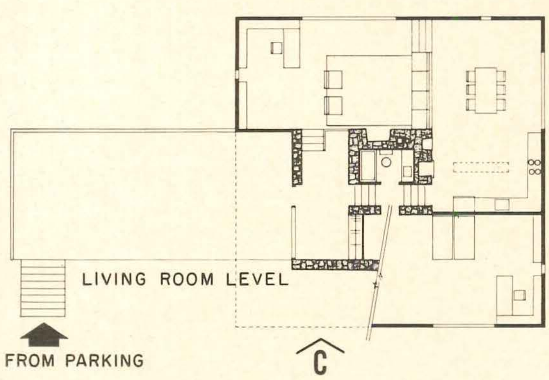
"A spiral plan. One enters the stone base from a lake path or one level up from the entrance road. Then one climbs through a succession of rooms as on a circular staircase until reaching the roof. Still climbing from one roof to the next, one finally comes to an upper lookout with a view over all the lake. The stone core contains all the utilities, vents and flues. The other rooms cantilever out from this core." Architect: Edward Larrabee Barnes; assistant: Noel Yauch

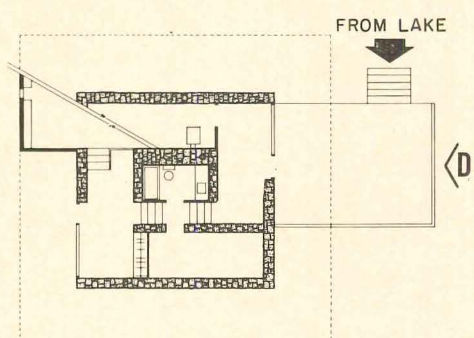



BEDROOMS

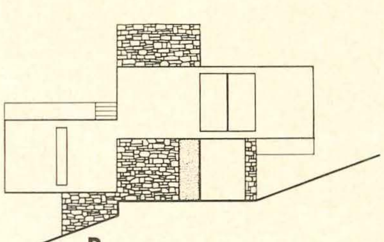



ROOF

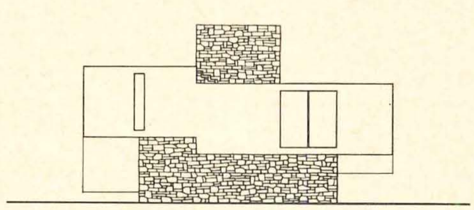


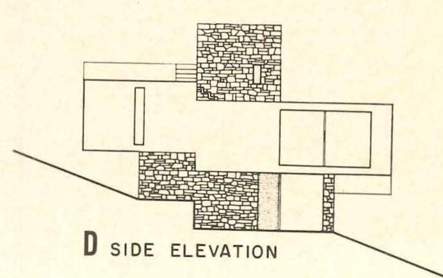

LOWER LEVEL



**B** SIDE ELEVATION

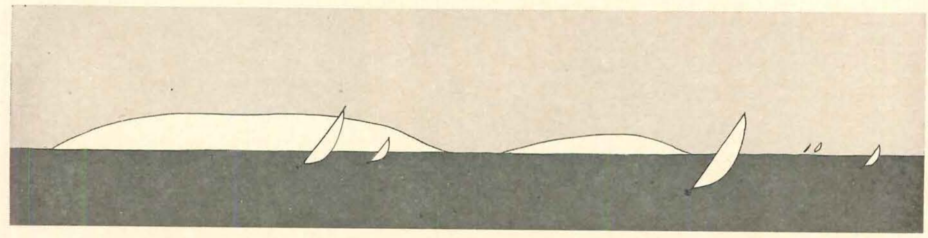


**C** ELEVATION FROM ROAD

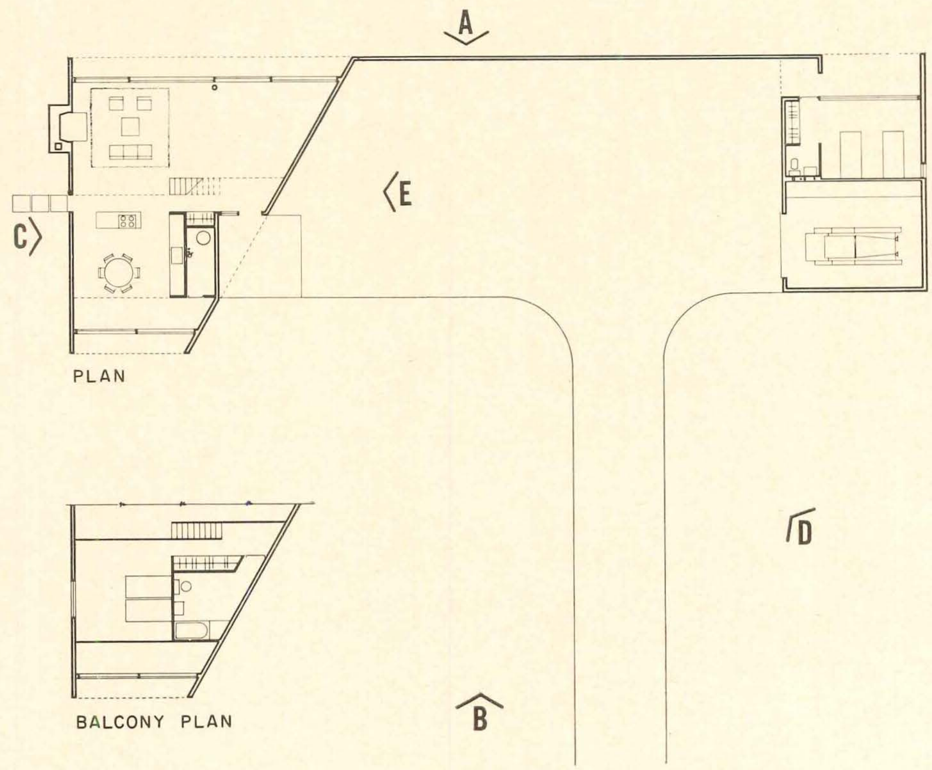


**D** SIDE ELEVATION

ADIRONDACK HOUSE—(project)—1963



**A** ELEVATION FROM SEA



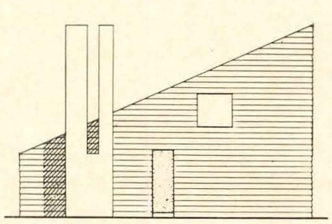

PLAN

BALCONY PLAN

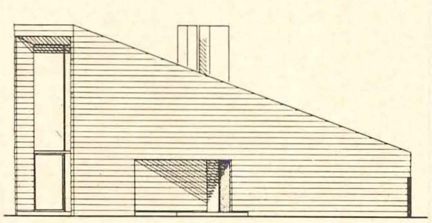
"This house has a wide low window looking north to the water, and a tall window looking south to the woods. Thus the form is a kind of wedge—flaring in plan toward the sea and flaring in section toward the land. The bedroom is on a balcony bridge. Under it is the kitchen-dining room.

A long fence ties the guest room and garage to the house, and defines the entrance court. Cedar shingles make the forms monolithic and the surfaces continuous." Architect: Edward Larrabee Barnes; assistant: Siglinde Stern

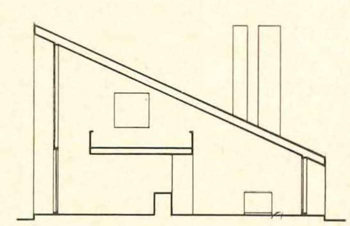
**B** ELEVATION FROM WOODS



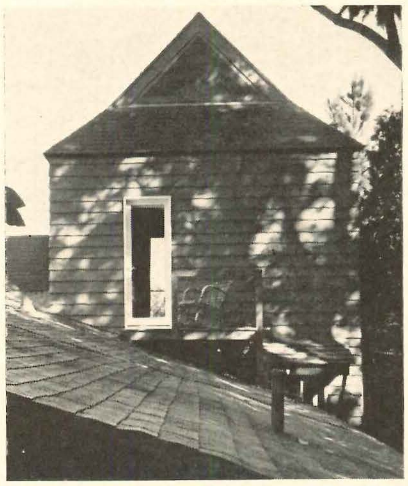
**C** SIDE ELEVATION

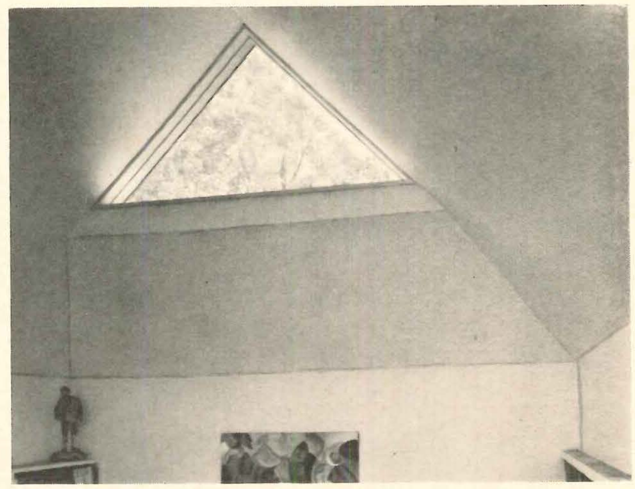


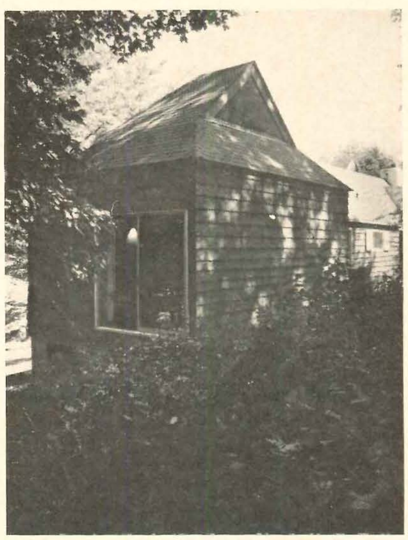
**D** ENTRANCE ELEVATION

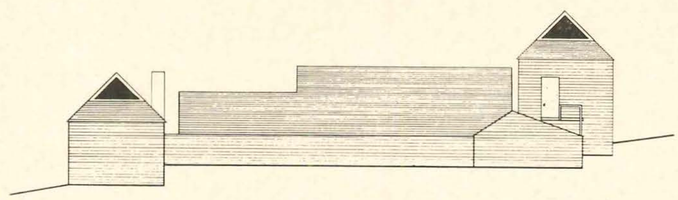


**E** SECTION





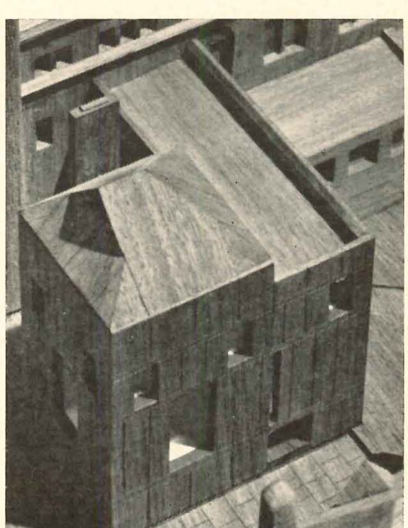




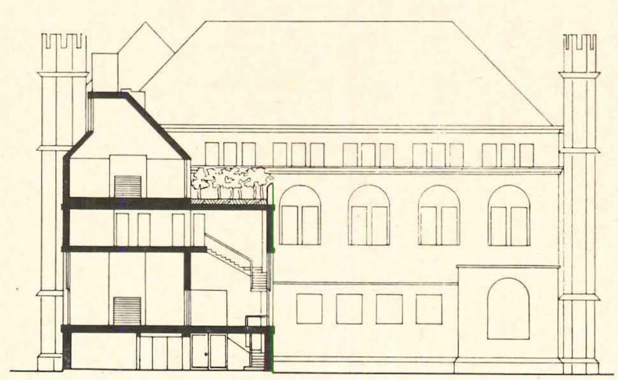
*David Hirsch photos*

"The problem was to add studios onto an old rambling house. The solution was these box-like towers—one in the woods at one end, one on the roof at the other. The existing house materials were carried through. The interest is in the form—cube-like rooms with pyramidal roofs and high triangular dormers. It is a volumetric architecture where exterior mass and interior space are closely related." Architect: Edward Larrabee Barnes; assistant: Giovanni Pasanella; structural engineers: Severud Elsted & Kruger; contractor: O'Brien and Kinkel

## STUDIOS FOR TWO COMPOSERS—1963



*Louis Checkman*

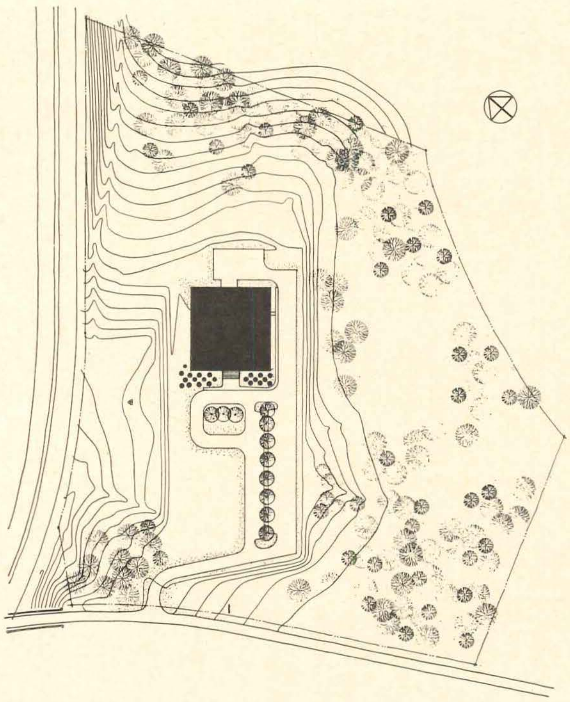


"This project utilizes the same pyramidal roof and triangular dormer to top a town house." (ARCHITECTURAL RECORD April 1962, page 131)

## YALE HOUSE—(project)—1962

# THE COMPUTER CENTER: NEW BUILDING TYPE?

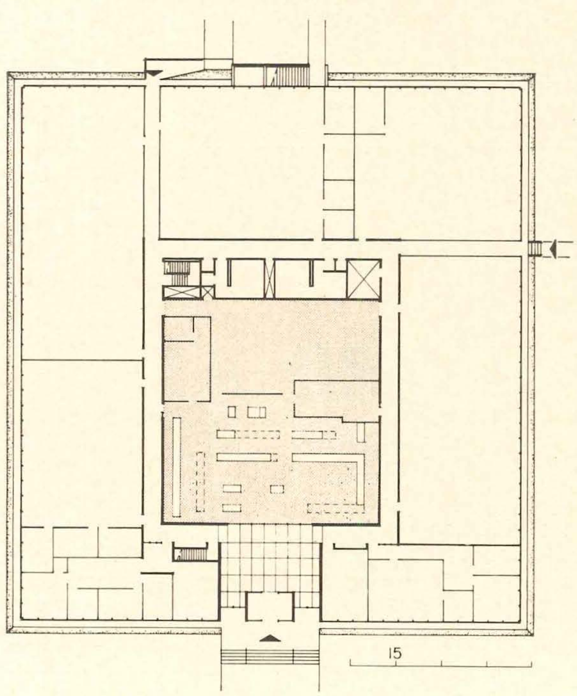
Designed by architect Eliot Noyes,
the new Westinghouse Center near Pittsburgh has a "spider web" plan
centering on the computer area — a prototype?

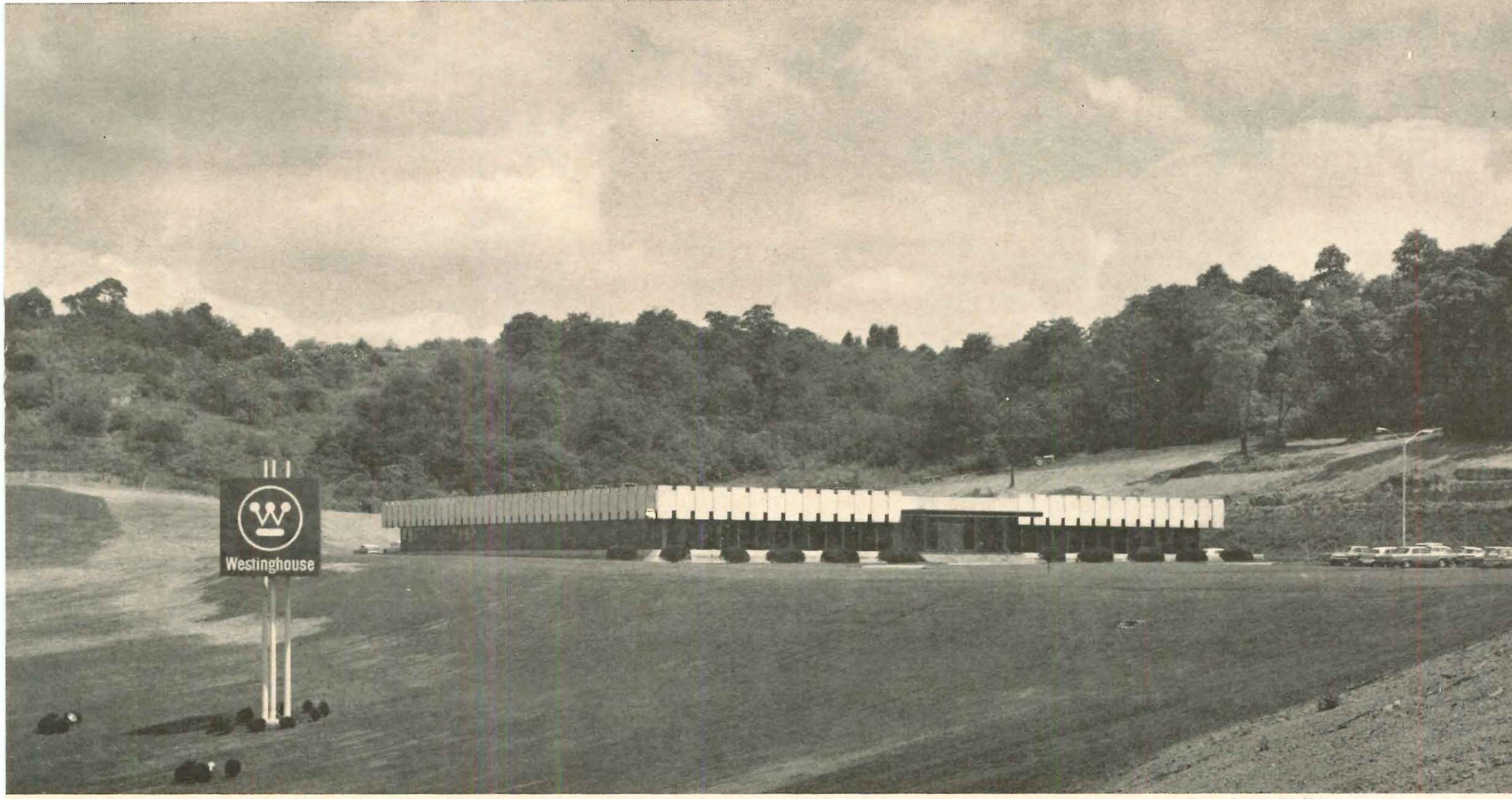


The plan of this Westinghouse building for machines resembles a spider's web; all the elements and functions focus on and revolve about the working center, the computer area (shown shaded in the plan below). The building serves as a corporate financial and communications heart; with spaces for accounting, marketing services, consolidated statements, technical staff, etc. grouped about the computer and tabulations area. The entrance lobby—located on axis—which features a view through a glass wall into the world of the machine—also offers access to the offices in the front of the building.

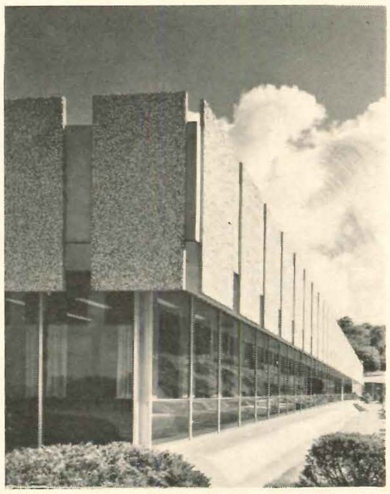
The site—a rolling, wooded area on Route 22 about five miles east of Pittsburgh—played a part in the design of this striking building. The architects explain: "We wanted a vigorous exterior, which would be seen and identified by cars passing by on the highway." The building rests on a sloping concrete base reminiscent of a podium; the three-sided sign—which is 40 feet high—was designed by the architects, with graphics by Paul Rand. Details of the exterior wall are shown on the following spread.

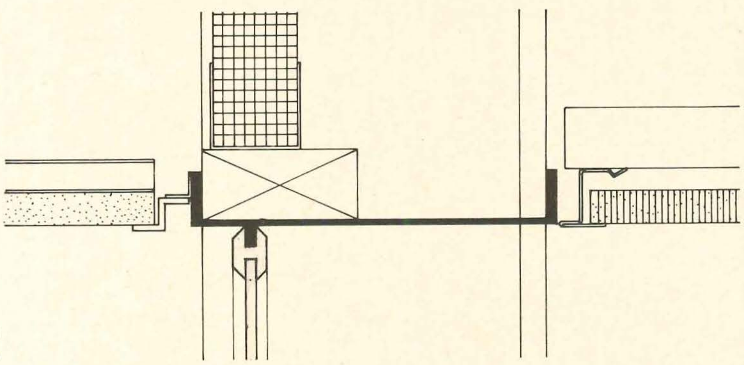
Architect Eliot Noyes points out this building as a part of his work on a comprehensive corporate design project for Westinghouse; one which seeks appropriate expression in all the visual arts.






*Joseph W. Molitor photos*





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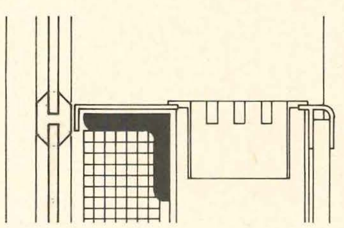

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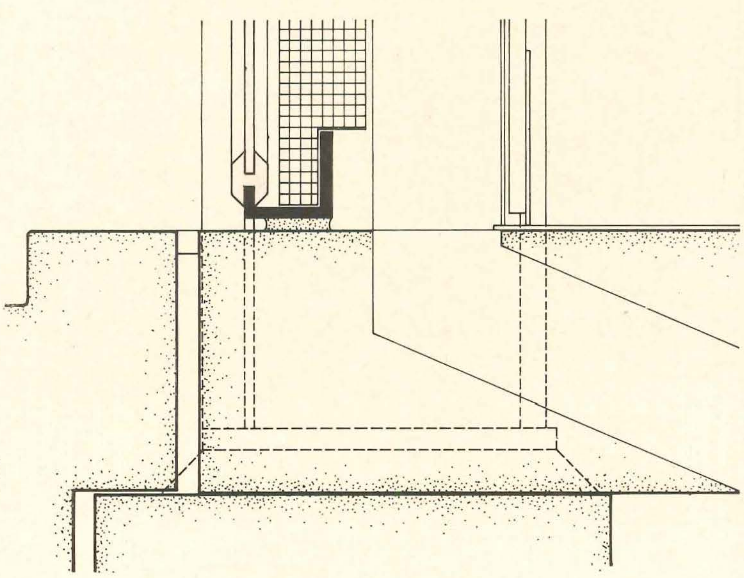

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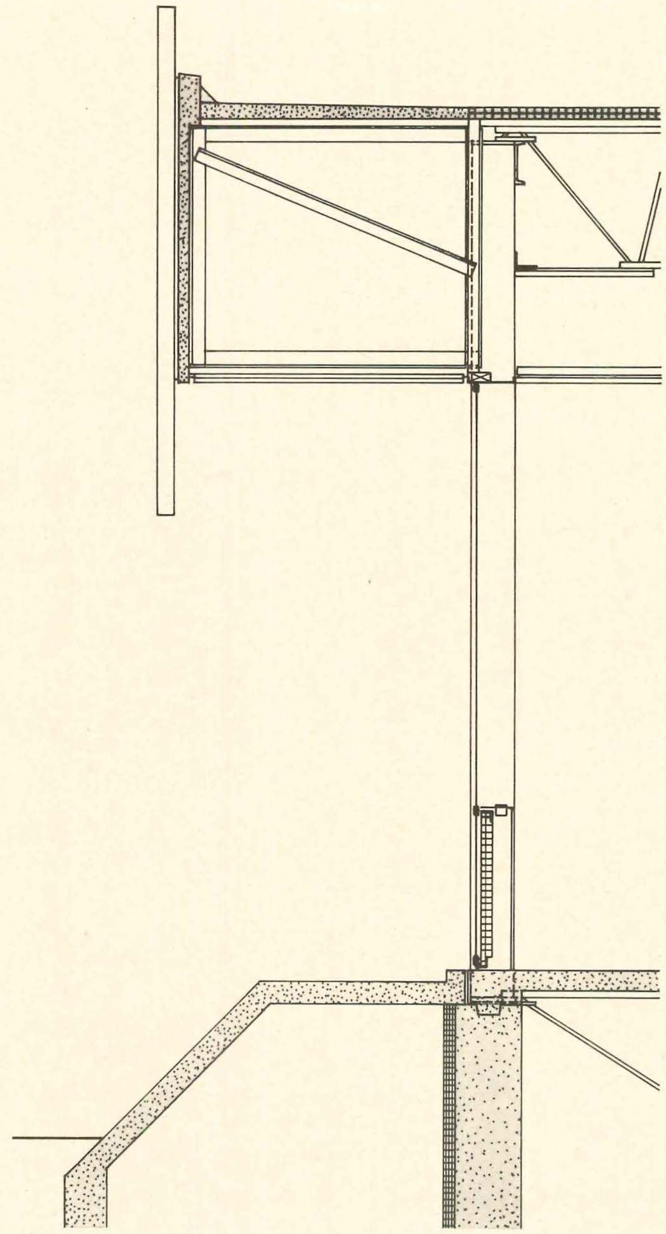
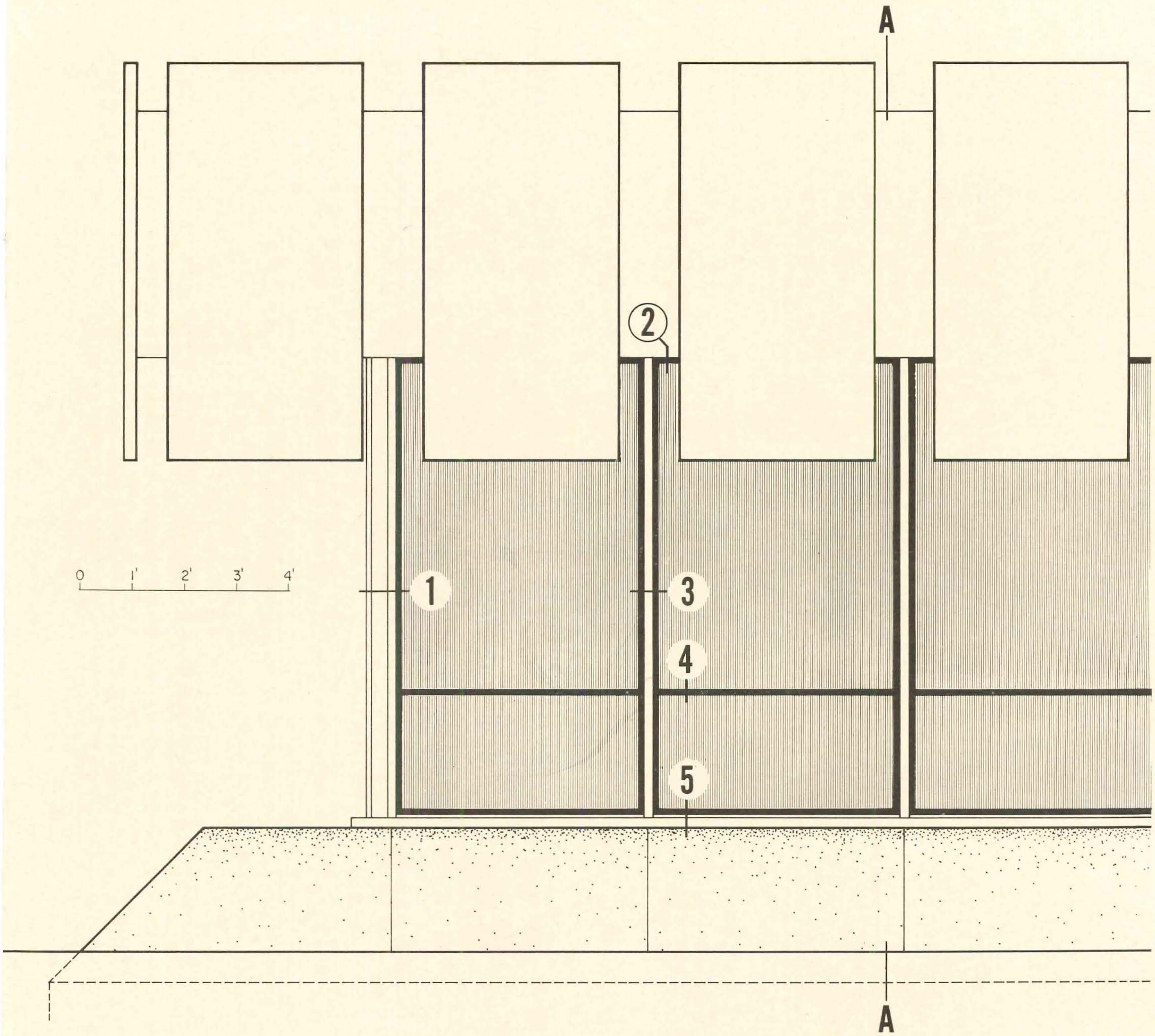
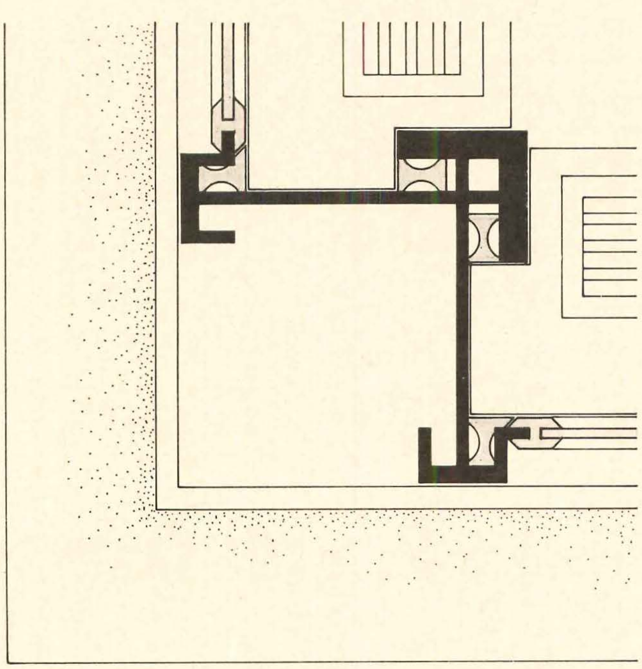


A-A

The structural peripheral wall is of aluminum and glass, with suspended precast panels—of plastic cement with white quartz aggregate—serving as sun breakers. Aluminum mullion-columns are a special extrusion designed by the architects; note how they are adapted to turn the corner. Clear plate glass is set in vinyl glazing channels above the sill line; gray-coated glass below

SCALE FOR DETAILS 0 3" 6" 9" 12"



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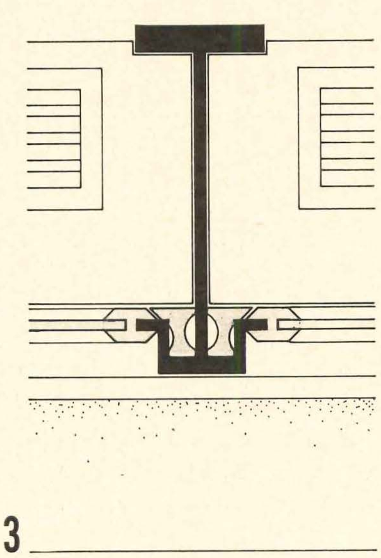
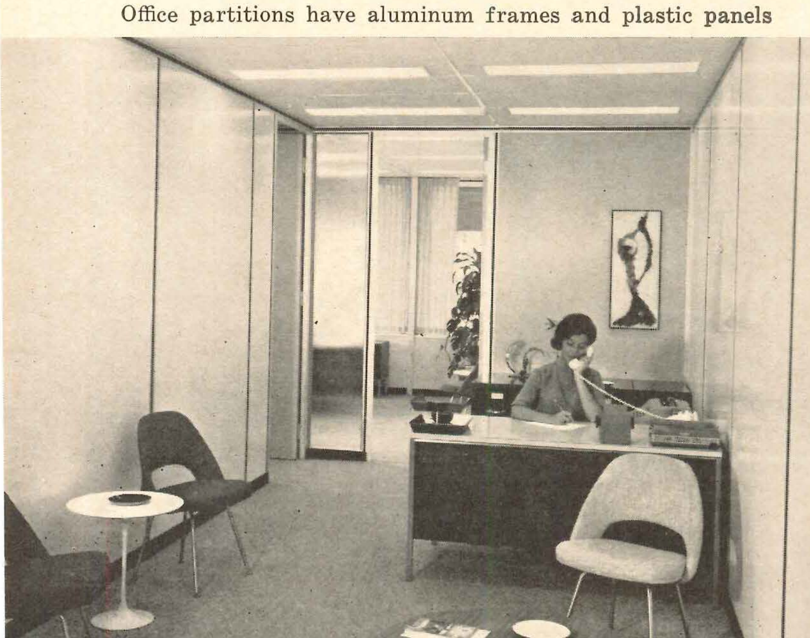


3

A view of the computer center from the entrance lobby

Office partitions have aluminum frames and plastic panels



*Telecomputer Center*
*Westinghouse Electric Corporation*
*Braddock Hills, Pennsylvania*

ARCHITECTS: *Deeter & Ritchey*

ARCHITECTS FOR DESIGN:
*Eliot Noyes & Associates*

STRUCTURAL ENGINEERS:
*Martin C. Knabe, Inc.*

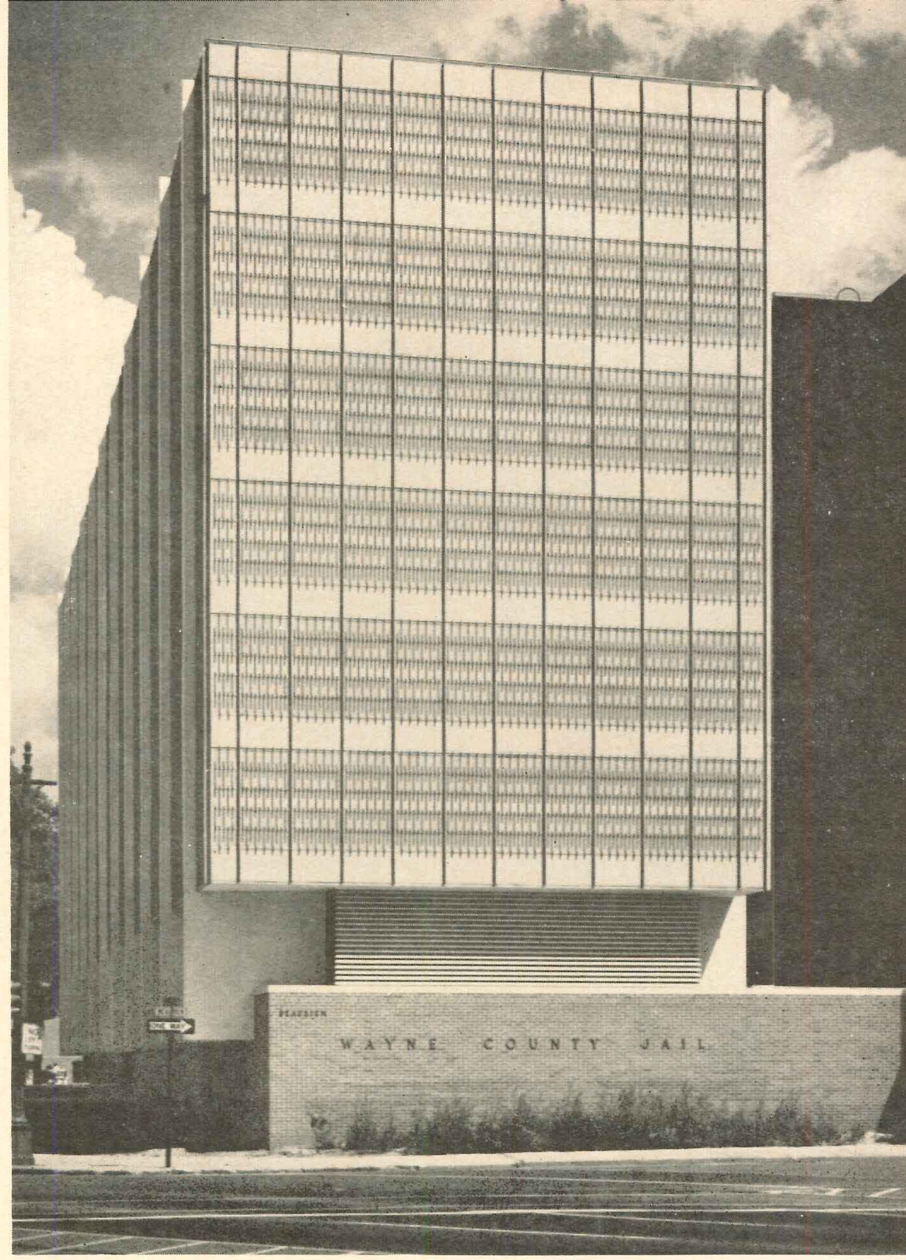
ELECTRICAL ENGINEERS:
*Carl J. Long Associates*

LANDSCAPE ARCHITECTS:
*Simonds & Simonds*

AIR-CONDITIONING CONSULTANTS:
*Westinghouse Headquarters Works Engineering Department*

GENERAL CONTRACTOR:
*F. H. McGraw*

# JAIL ADDITION DESIGNED FOR MAXIMUM SECURITY

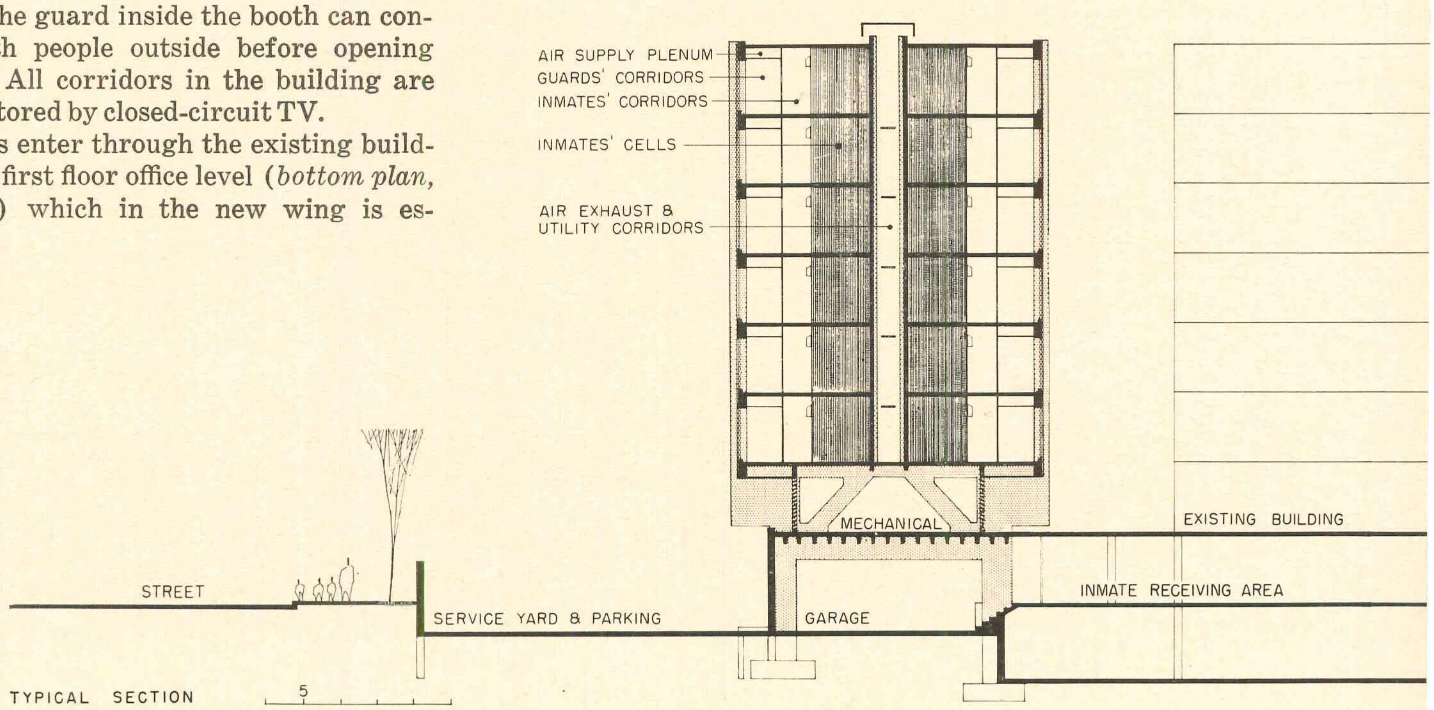



*Lens-Art*

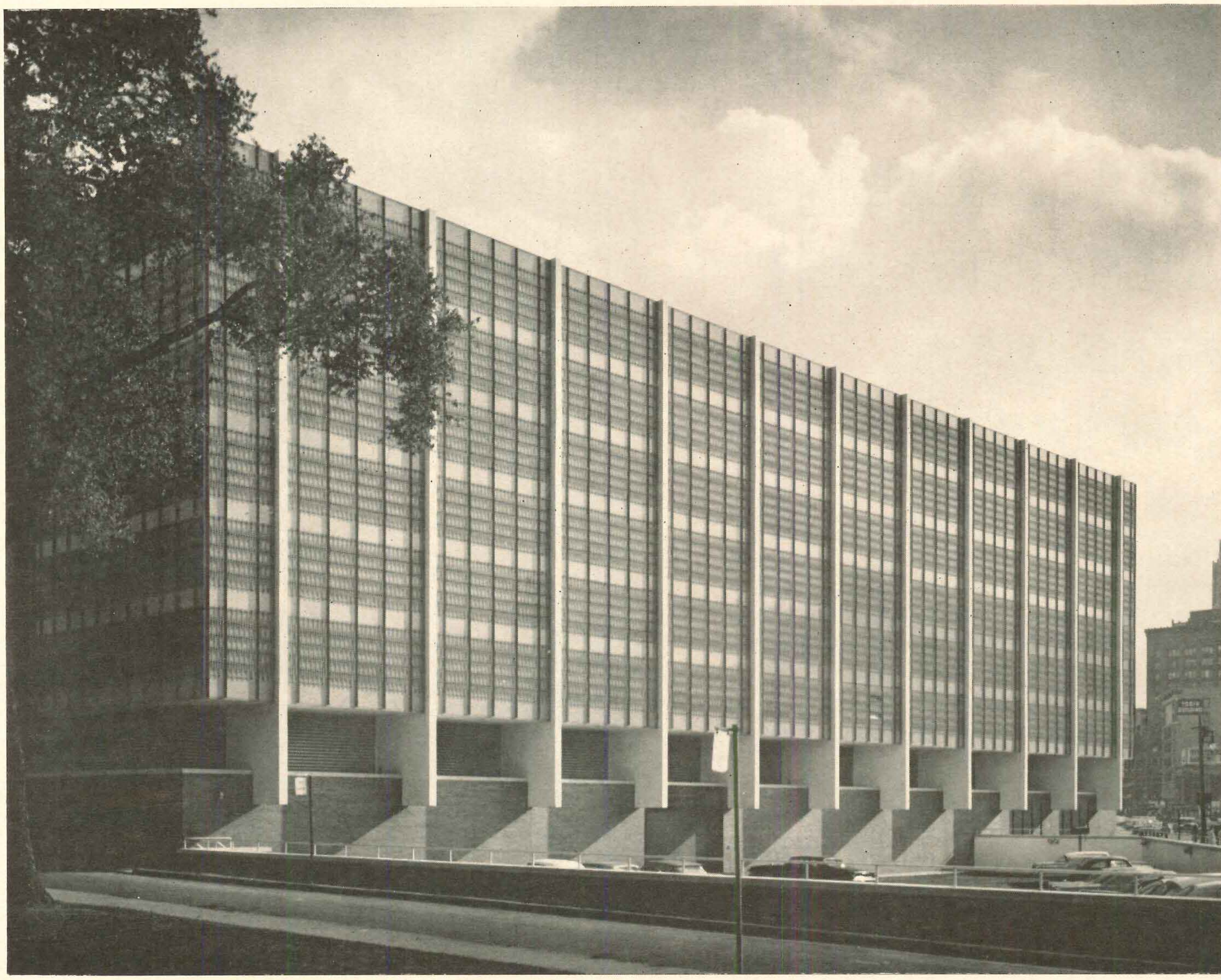
This addition to the Wayne County Jail in Detroit provides maximum security accommodation for 371 inmates. A link containing elevators and a stair connects to every floor of the existing building, fully integrating the new wing with the rest of the facility. A guard room, also located in the link, contains a control panel that permits the guard on duty to open any or all of the doors in the cell block. In this way, the guard who operates the doors can always be isolated from the inmates.

A parking and service yard is located below grade, and prisoners are transferred in and out of the jail via a vehicle vestibule located at this level. The reception control booth at this point is enclosed in bulletproof glass two inches thick, the entire approach area is covered by remote-control TV, and the guard inside the booth can converse with people outside before opening the door. All corridors in the building are also monitored by closed-circuit TV.

Visitors enter through the existing building at the first floor office level (*bottom plan, page 161*) which in the new wing is es-

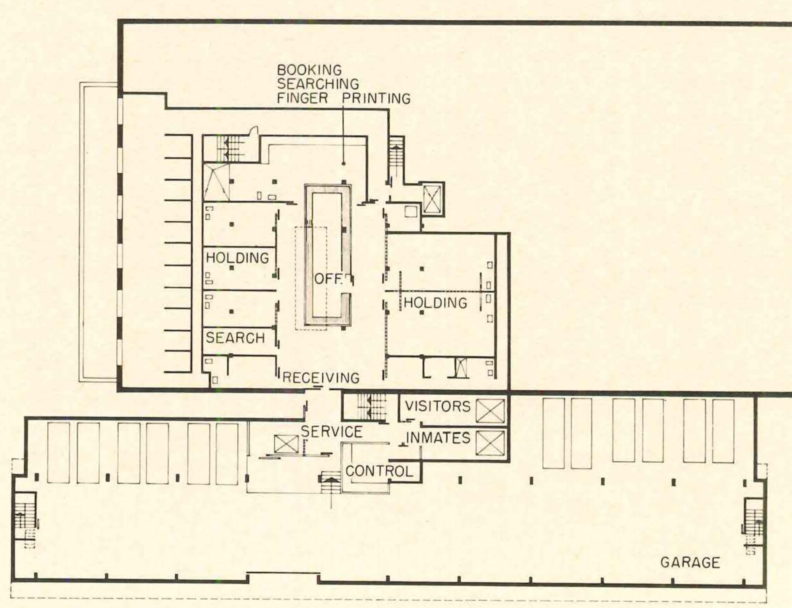



TYPICAL SECTION

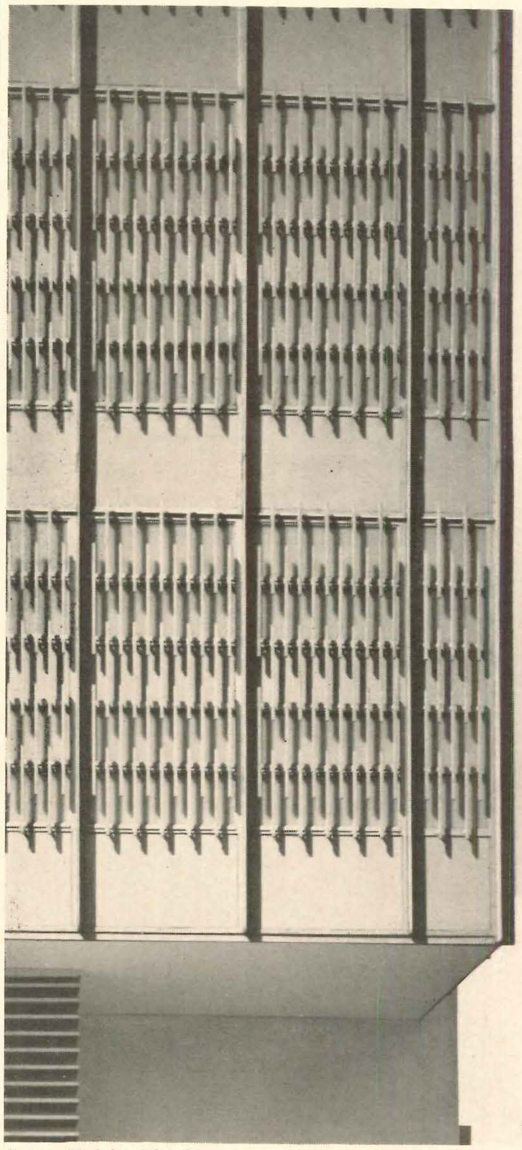


*Lens-Art*

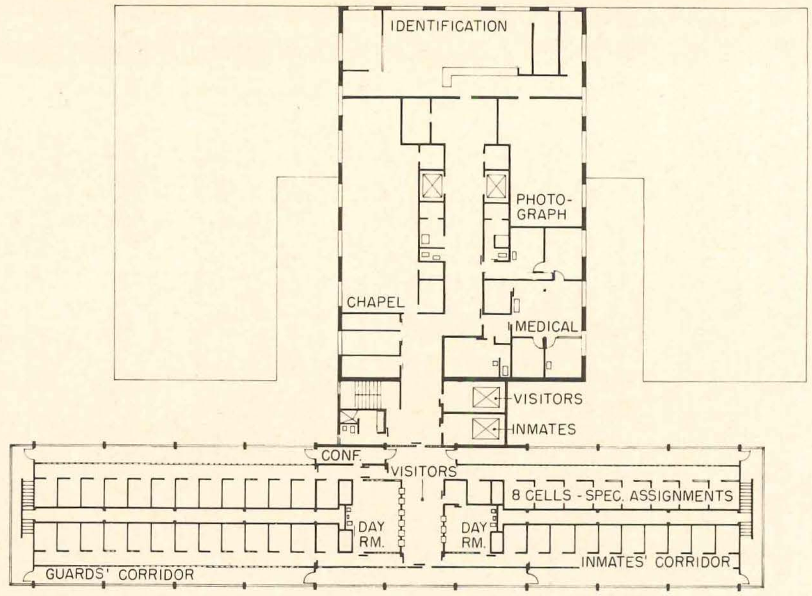
sentially a mechanical floor. The typical floors (*middle, opposite page*) contain the cell blocks, units of nine and 12 cells placed back to back against a central utility corridor. The peripheral corridors are for the use of guards and provide circulation completely around the wing. The inner corridor is for inmate circulation and for observation and control. The cells receive borrowed light from the translucent glass in the exterior wall. The glass is set in a standard steel sash, of a type designed for psychiatric institutions, which has horizontal mullions 16 inches apart. The galvanized steel bars welded to the outside of the sash serve as an extra security precaution, and are arranged in a decorative pattern whose openings are no larger than those in conventional barred jail windows.



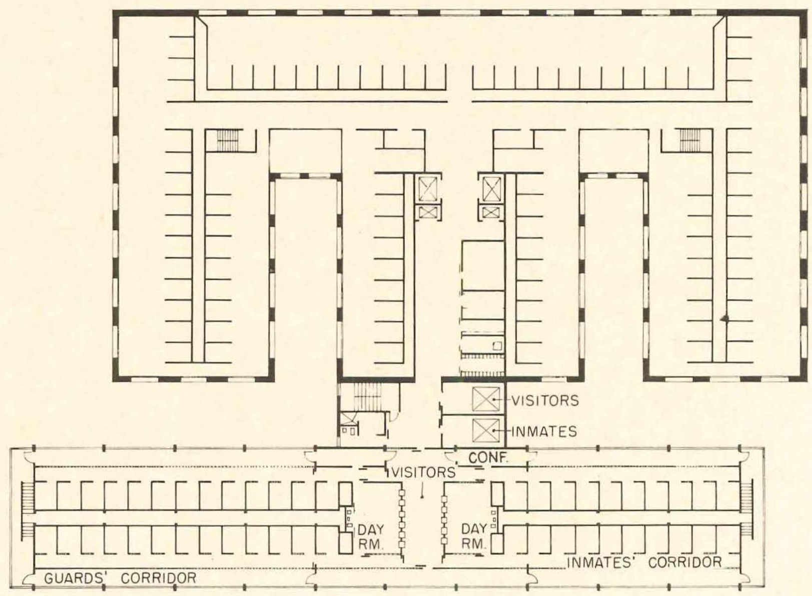

GARAGE AND RECEIVING FLOOR



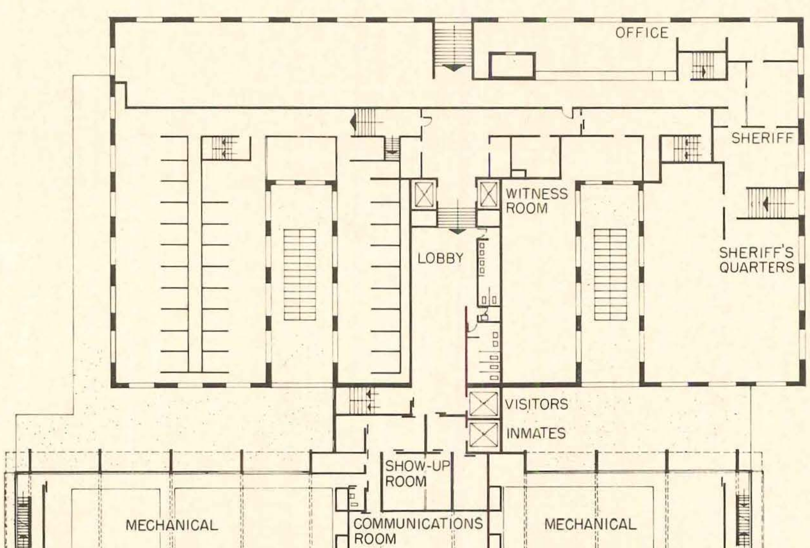
*Suter, Hedrich-Blessing*




SEVENTH FLOOR




TYPICAL FLOOR




FIRST FLOOR

*Addition to Wayne County Jail*
*Detroit, Michigan*

ARCHITECTS AND ENGINEERS:
*Eberle M. Smith Associates, Inc.*

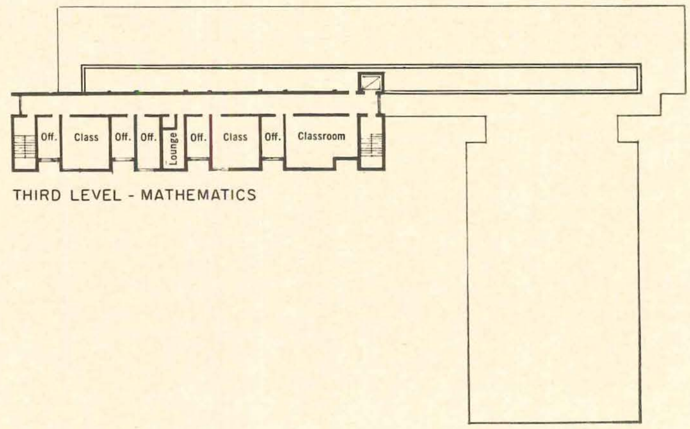
GENERAL CONTRACTOR:
*Darin and Armstrong*

# SCIENCE BUILDING FOR SMALL LIBERAL ARTS COLLEGE

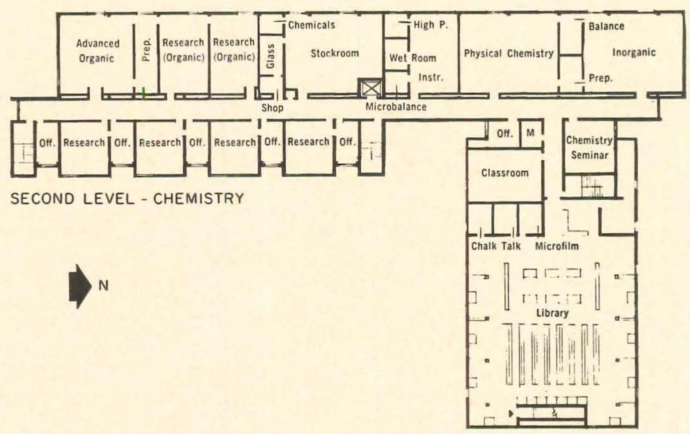
This building houses the departments of chemistry, physics and mathematics at Haverford College, a small liberal arts college near Philadelphia. The design is probably most easily understood by considering it as consisting of three parts. One houses office space in association with research laboratories and small classrooms. This is the area that rises a story above the rest of the building and is contained between the two stair towers. The second element, sharing a central corridor with the first, is a two-story block which contains the teaching laboratories; and it takes advantage of a slight change in the grade to provide additional laboratory space in the basement. The auditorium and library make a third element, placed at right angles to the other two. The resulting L shape creates a new courtyard to the northwest of Haverford's main academic quadrangle; and the architectural expression is designed to disguise the size and essential horizontality of the building, bringing it into closer harmony with the other sides of the court.

The building is constructed of reinforced concrete, with walls of gray brick chosen to harmonize with the Pennsylvania stone used in the older campus buildings; and exposed concrete surfaces are bush-hammered. Distribution lines for laboratory utilities occupy the space between the double walls along the central corridor. Heating is provided by a perimeter hot water convection system utilizing steam from the college's central boiler plant. The building is fully air-conditioned.

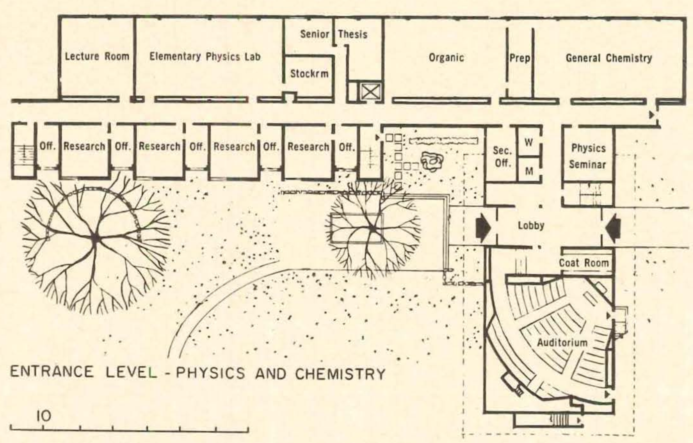
*Stokes Hall, Haverford College, Haverford, Pennsylvania*
ARCHITECT: *Vincent G. Kling*
*Donald O. Macfarlane, project architect*
*Robert Kear, team designer*
STRUCTURAL ENGINEERS: *Allabach & Rennis*
MECHANICAL AND ELECTRICAL ENGINEER: *Louis T. Klauder*
ACOUSTICAL CONSULTANT: *Michael J. Kodaras*
GENERAL CONTRACTOR: *Nason & Cullen, Inc.*



THIRD LEVEL - MATHEMATICS

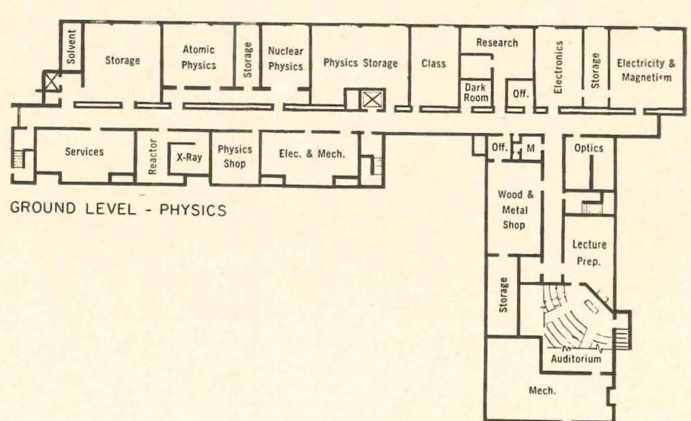


SECOND LEVEL - CHEMISTRY

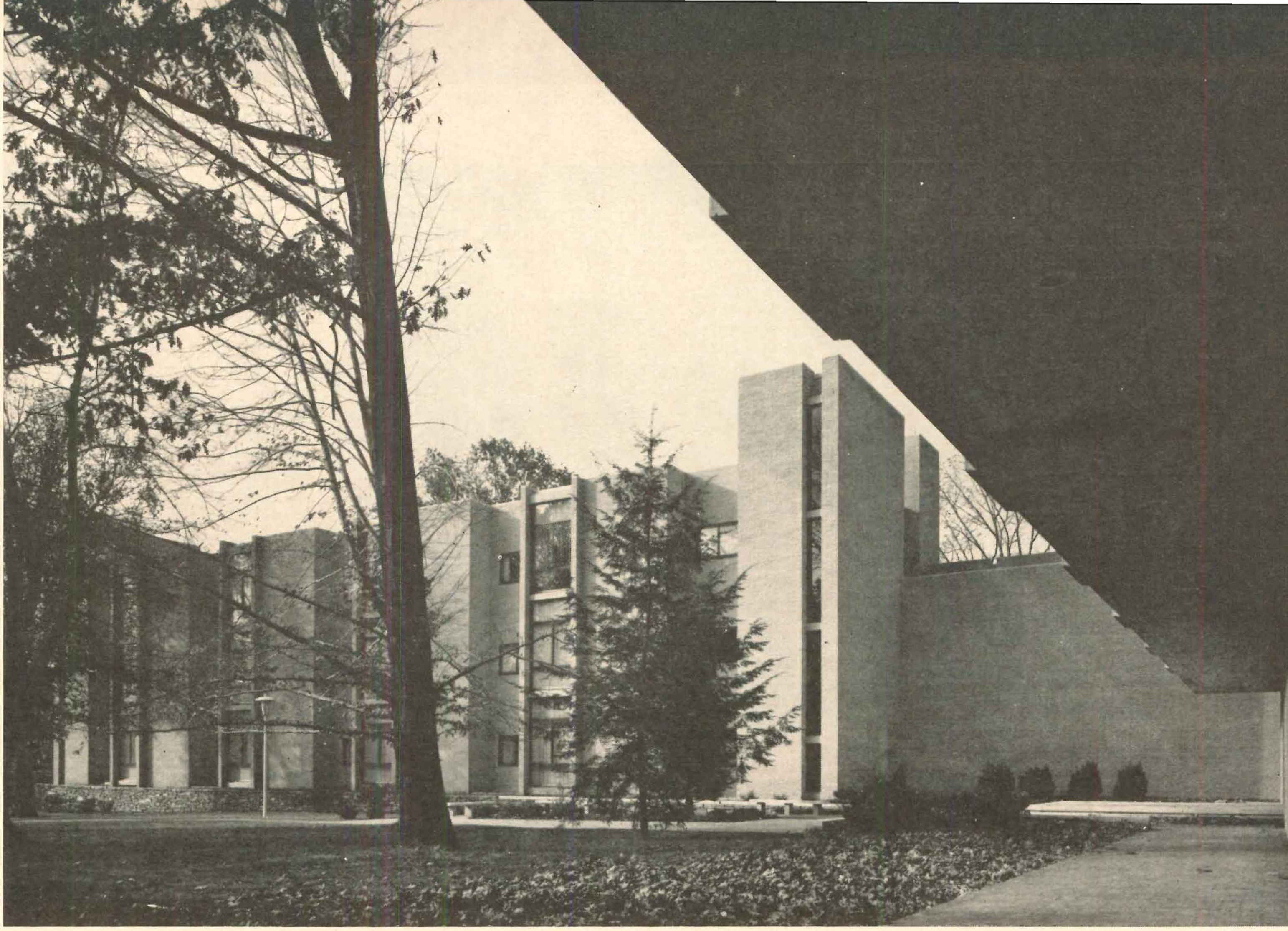


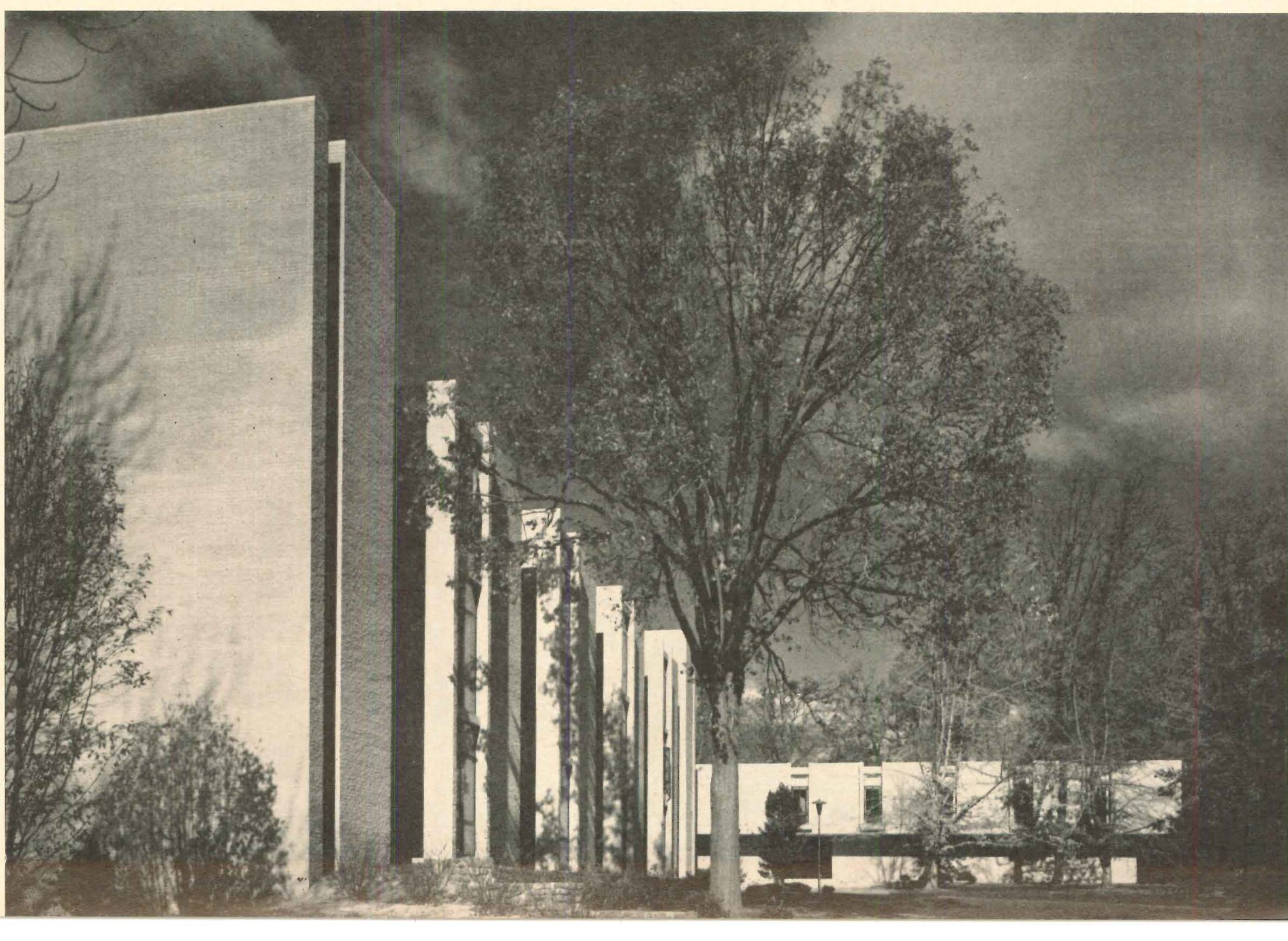
ENTRANCE LEVEL - PHYSICS AND CHEMISTRY

10

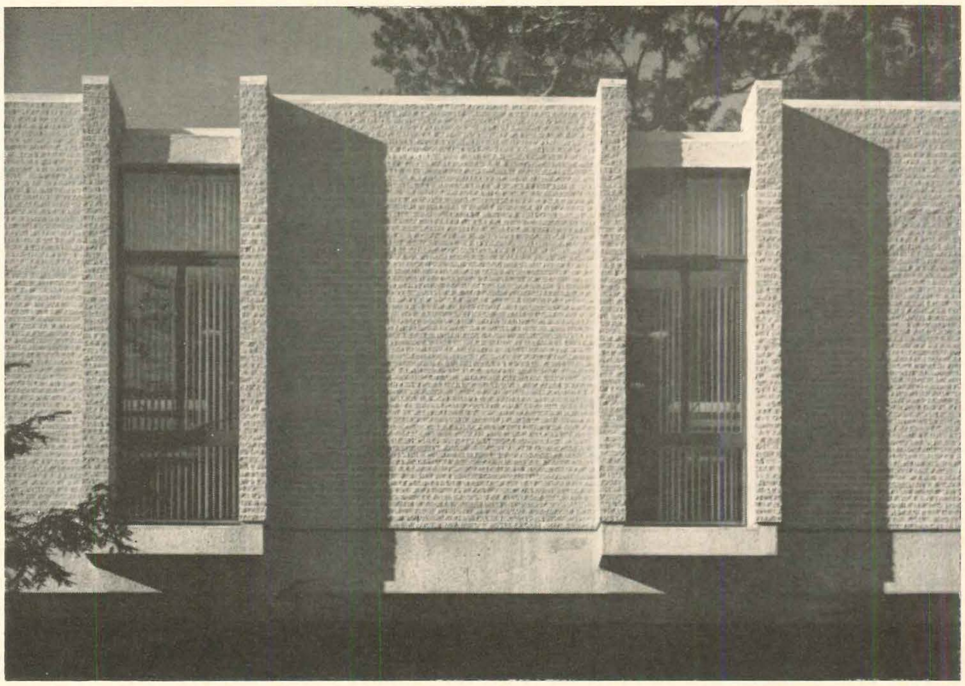


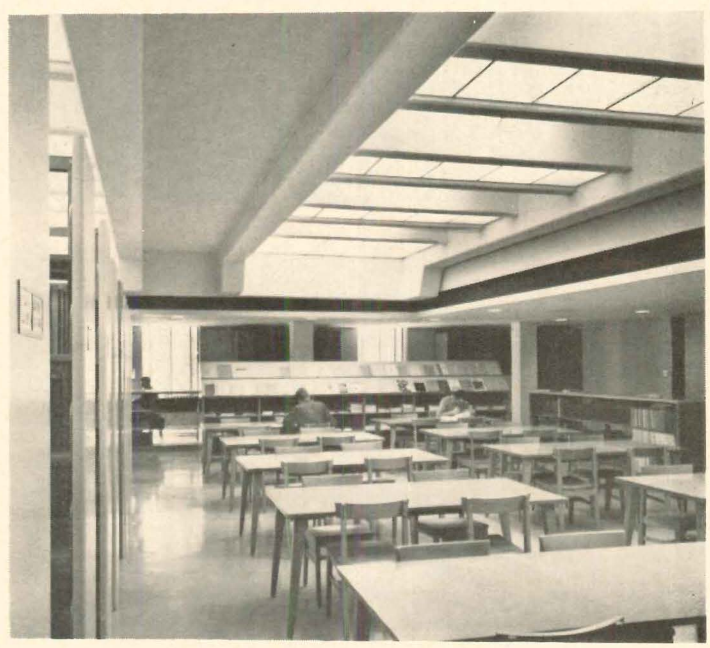
GROUND LEVEL - PHYSICS





Lawrence S. Williams photos





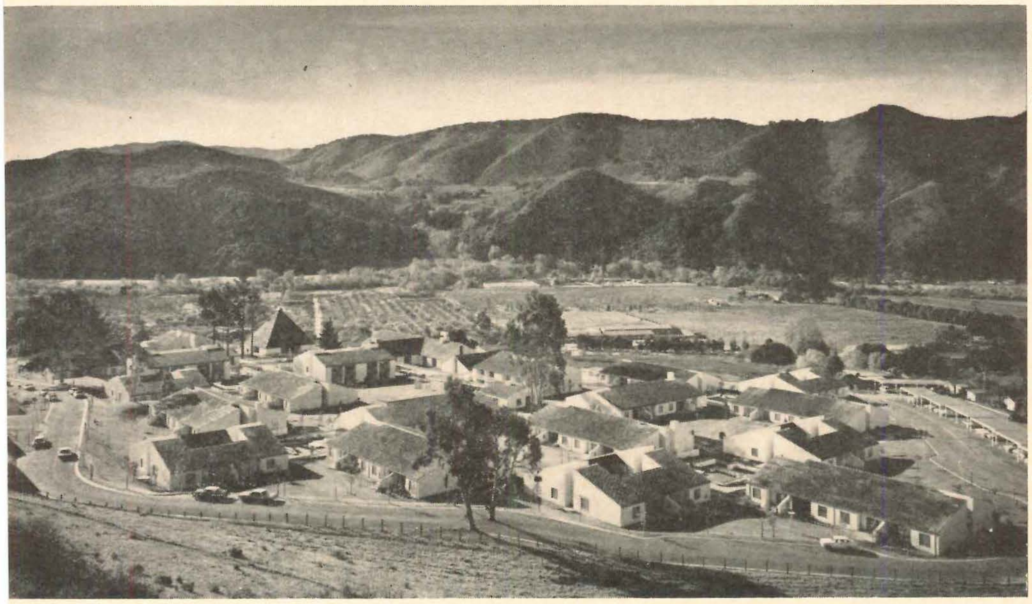
*Above:* Detail of Library windows. *Right:* Sky-lit reading area of the second floor library. The library has space for 20,000 volumes

*Below:* The lecture hall is designed to serve as a general auditorium as well as for science instruction. It seats 205

# HHFA HONOR AWARDS 1964

The Federal Government's interest in promoting and sponsoring good design—evidenced by last year's successful FHA Honor Awards Program—has been reinforced and broadened by this year's HHFA program. Four constituent lending agencies of HHFA—the Federal Housing Administration, the Public Housing Administration, the Urban Renewal Administration and the Community Facilities Administration—set up simultaneous Honor Awards Programs this year, with felicitous results. One is struck by the generally high level of design achieved by the First Honor Award winners, presented on the following nine pages.

In a letter to Robert C. Weaver, President Johnson said of the HHFA program: "This program carries beyond the immediate recognition of creative architects, designers, planners and builders. It gives us in the Federal Government an opportunity to stimulate better design in all housing and community development. Providing improved housing for our people is a challenge of great magnitude, and better design is an integral part of better housing."



*Morley Baer*

**FIRST HONOR AWARD**
**Federal Housing Administration**

Carmel Valley Manor, California; Housing for the Elderly. ARCHITECTS: Skidmore, Owings & Merrill; LANDSCAPE ARCHITECTS: Sasaki, Walker & Associates; BUILDER: Williams & Burrows. The Jury: "A handsome project in which the dwelling units are organized about a little courtyard and are attractively equipped with furniture. The landscaping, site development, and building orientation are excellent and complement the buildings."

**FIRST HONOR AWARD**
**Federal Housing Administration**

Monterrey Homes, Floral Park, Hato Rey, Puerto Rico. ARCHITECT: Pablo Simon Felico; DESIGNERS: Richard Kaplan, Manuel R. Gutierrez, Daniel Alvarez; LANDSCAPE ARCHITECT: Gabriel Berriz; BUILDER: Manuel R. Gutierrez. The Jury: "We should indicate that this was the only entry that will receive compliments on the solution of both site plan handling and solving the problem of a tropical climate."

*Robert C. Lautman*

**FIRST HONOR AWARD**
**Federal Housing Administration**

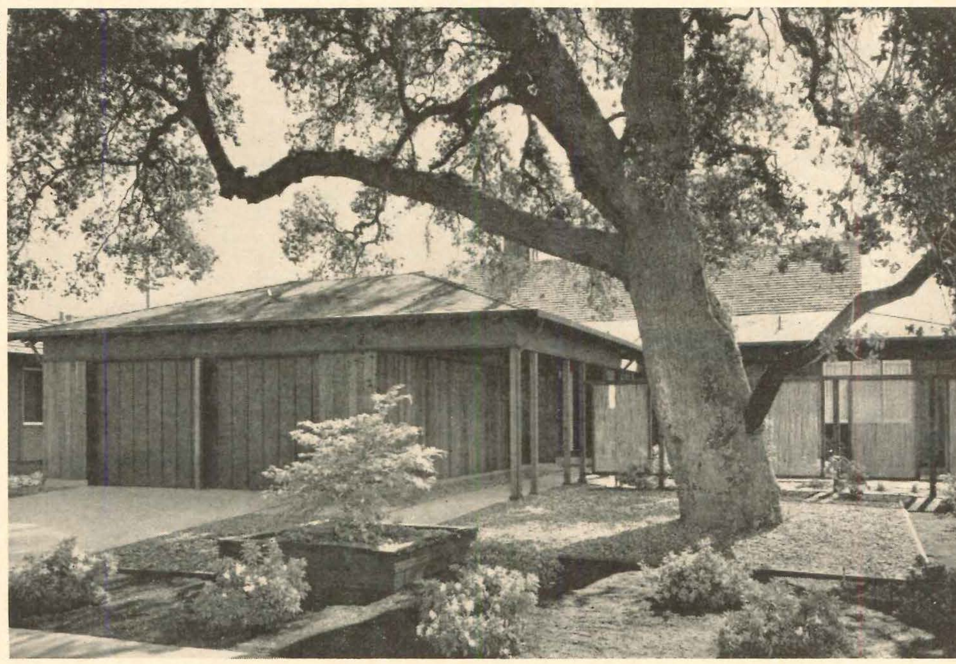
River Park, Delaware Avenue, SW, Washington, D.C. ARCHITECTS: Charles M. Goodman Associates; LANDSCAPE ARCHITECT: Eric Paepcke; BUILDER: Standard Construction Company. The Jury: "The roofs and the spaces they contain are attractive. Commendable solution of high- and low-rise."

G. Wade Swicord

**FIRST HONOR AWARD**
**Federal Housing Administration**

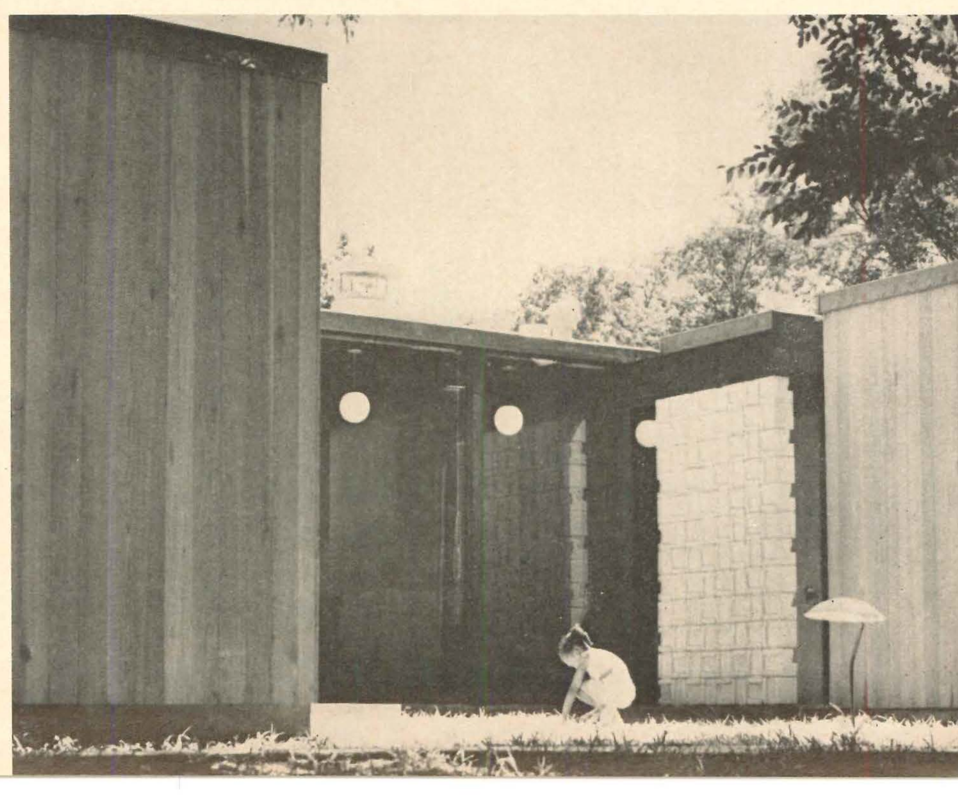
Wesley Manor Retirement Village, St. John's County, Florida; Housing for the Elderly. ARCHITECTS: Broward and Warner; LANDSCAPE ARCHITECT: Edward L. Daugherty; BUILDER: The Auchter Company. The Jury: "The creative quality of the design is carried through in every detail—interiors show the same sense of form. Selection and use of materials are excellent for the location."

Don Meacham



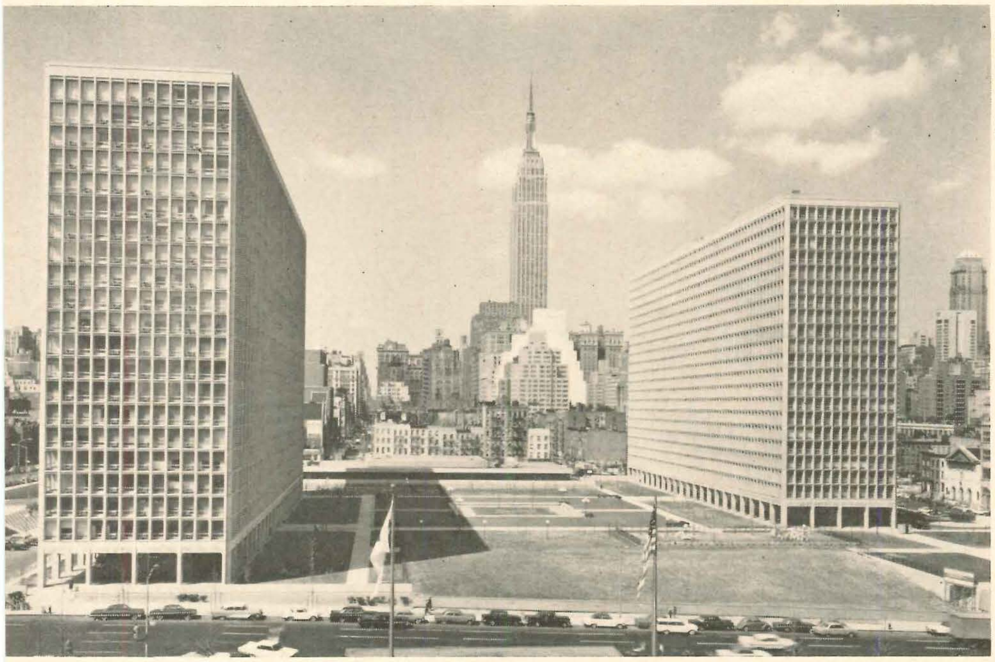
**FIRST HONOR AWARD**
**Federal Housing Administration**

Montclair West, San Jose, California. ARCHITECT: A. Robert Fisher; LANDSCAPE ARCHITECT: Ernest Wertheim; BUILDER: Stoneson Development Corporation. The Jury: "Materials are well chosen and of interesting texture. The plan is excellent and works well."



**FIRST HONOR AWARD**
**Federal Housing Administration**

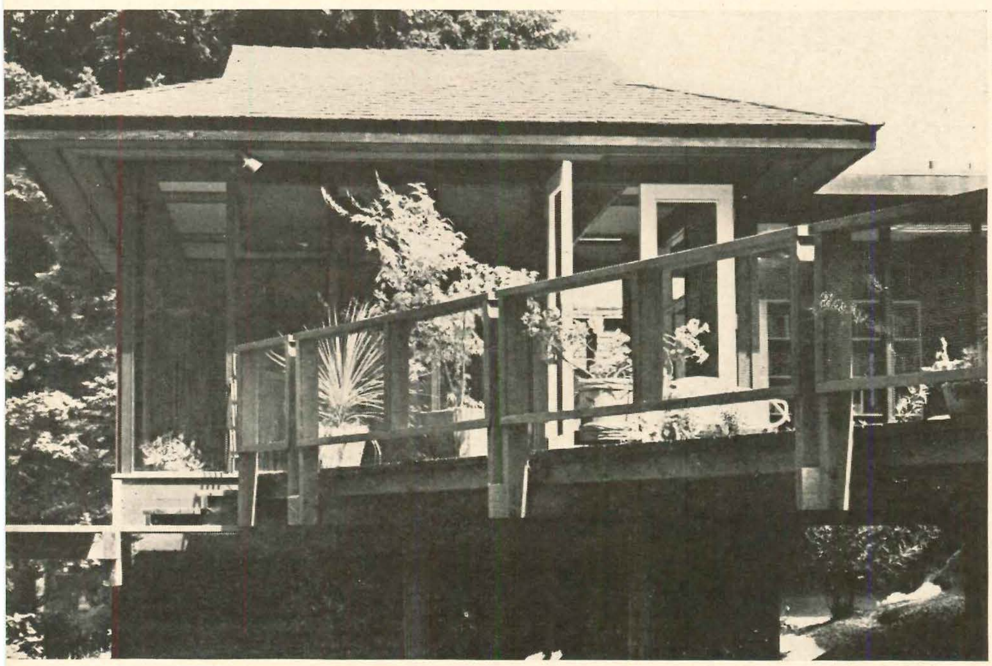
R. A. Eubanks Residence, Wichita, Kansas. ARCHITECT: Charles F. McAfee; BUILDER: Thornton Clark. The Jury: "A simple house of interesting design. Privacy from the street side is very well handled."



Wurts Brothers

FIRST HONOR AWARD
**Federal Housing Administration**

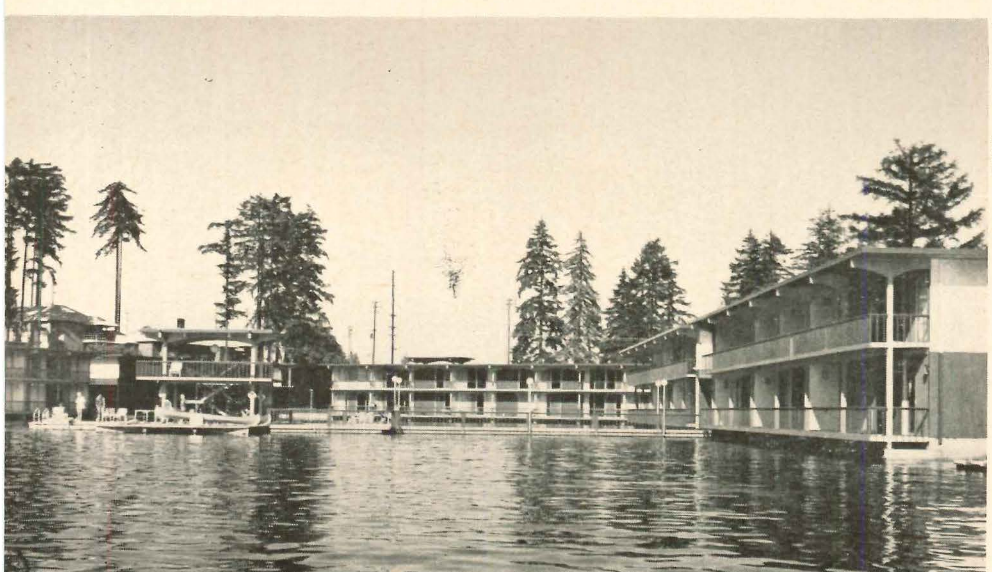
Kips Bay Plaza, New York City. ARCHITECTS: I. M. Pei & Associates; ASSOCIATE ARCHITECTS: S. J. Kessler & Sons; LANDSCAPE ARCHITECT: Leo A. Novick; BUILDER: ARI Construction Corporation. The Jury: "The use of the site and control of space and openness are good. Orientation will be maintained regardless of surrounding future developments."



Thomas Knight

FIRST HONOR AWARD
**Federal Housing Administration**

Lee Residence, Bayside Heights, Arcata, California. ARCHITECT: William M. Van Fleet; BUILDER: Ole Antonsen. The Jury: "Family room, kitchen and dining are organized as one pavilion, and the living room as a separate pavilion with privacy between and a good combination of bedrooms and baths."

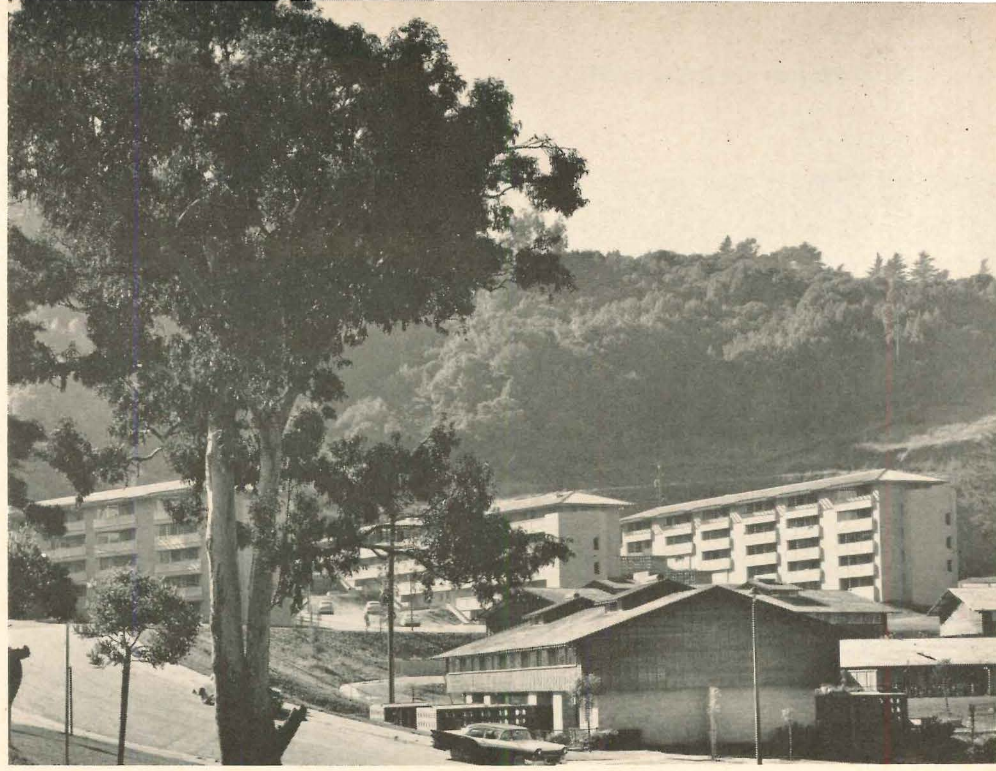


William H. Grand

FIRST HONOR AWARD
**Federal Housing Administration**

Bay Roc Apartments, Lake Oswego, Oregon. ARCHITECTS: Broome, Selig & Oringdulph; LANDSCAPE ARCHITECTS: Hunnington & Roth; BUILDER: Hallberg Homes. The Jury: "A good example of truly functional, totally livable architecture; the relationship of living units and site is very good."

Gerald Ratte



FIRST HONOR AWARD
**Public Housing Administration**

Low Rent Housing, Marin City, California. ASSOCIATED ARCHITECTS: Aaron G. Green and John Carl Warnecke; CIVIL ENGINEERS: Bryan and Murphy; LANDSCAPE ARCHITECT: Lawrence Halprin; CITY PLANNING CONSULTANTS: Livingston & Blaney; BUILDER: Williams and Burrows. The Jury: "This highly original design meets the challenge of the site's topography and situation."

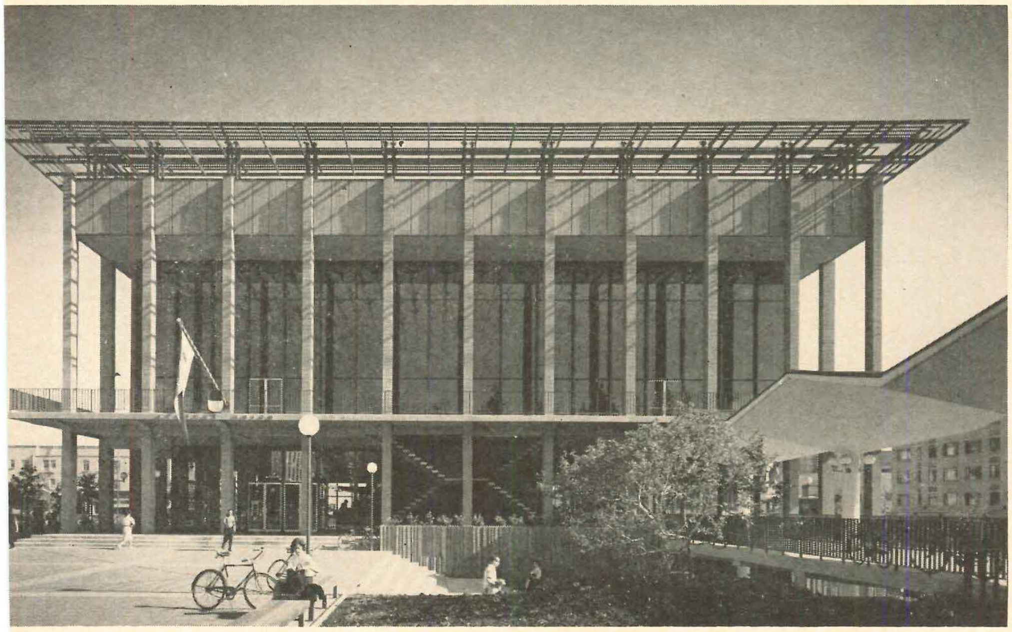
FIRST HONOR AWARD
**Public Housing Administration**

Elliot Twin Apartments, Minneapolis, Minnesota. ARCHITECTS: Thorsen & Thorshov; STRUCTURAL ENGINEERS: Meyers and Borgman; LANDSCAPE ARCHITECTS: Nason, Law, Wehrman & Knight; BUILDER: George F. Cook Construction Company. The Jury: "These economical and well proportioned high-rise apartments gain identity and serenity from their location among single family detached houses."

Lawrence S. Williams

FIRST HONOR AWARD
**Public Housing Administration**

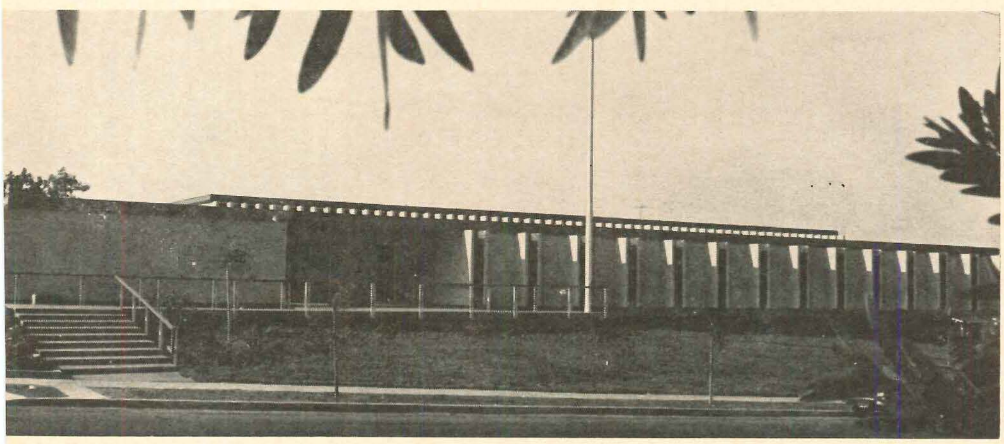
Westpark, Philadelphia, Pennsylvania. ARCHITECTS: Harbeson Hough Livingston & Larson; STRUCTURAL ENGINEERS: Sauter & Castor; MECHANICAL AND ELECTRICAL ENGINEERS: Stewart Jellet Company; CIVIL ENGINEERS: Barton & Martin; LANDSCAPE ARCHITECT: Horace Fleisher; BUILDER: McNichol Paving and Construction Company. The Jury: "Tall, tranquil buildings subtly dispersed over a magnificent, park-like site."



Morley Baer

FIRST HONOR AWARD
**Community Facilities Administration**

Student Union, University of California, Berkeley, California. ARCHITECTS: Hardison & De Mars; LANDSCAPE ARCHITECTS: Lawrence Halprin & Associates; BUILDER: M & K Corporation. The Jury: "Skillful exploitation of natural grade changes; use of terraces for dining and relaxing impressive."



FIRST HONOR AWARD
**Community Facilities Administration**

Southeast Branch Welfare Building, San Diego, California. ARCHITECT: William S. Lewis Jr., Deems-Martin Associates; BUILDER: Ries Construction Company. The Jury: "An extraordinarily handsome public structure successfully blending—in contemporary idiom—materials and techniques of Spanish Colonial architecture indigenous to the area."

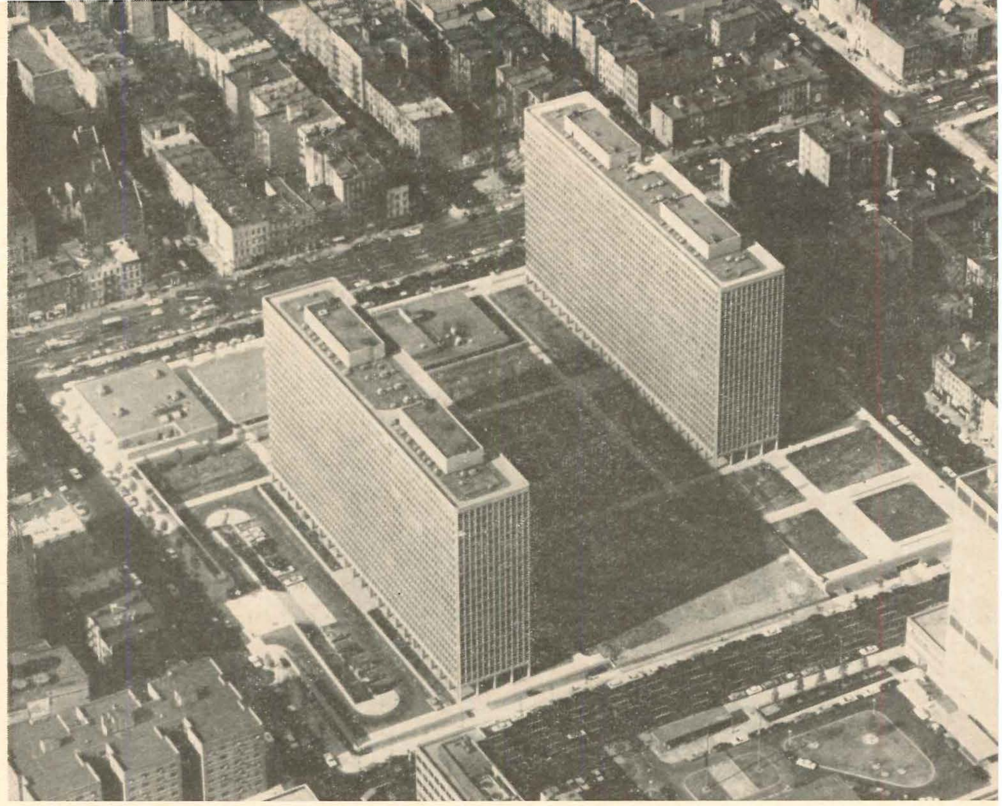
Hugh N. Stratford

FIRST HONOR AWARD
**Community Facilities Administration**

Ridgeway Dormitories, Western Washington State College, Bellingham, Washington. ARCHITECTS: Bassetti & Morse—Fred Bassetti, designer; LANDSCAPE ARCHITECTS: Richard Haag Associates; BUILDER: Gaasland Company. The Jury: "Has to a unique degree provided a kind of environment which will make the college years an experience to be remembered by the student."

**FIRST HONOR AWARD**
**Urban Renewal Administration**

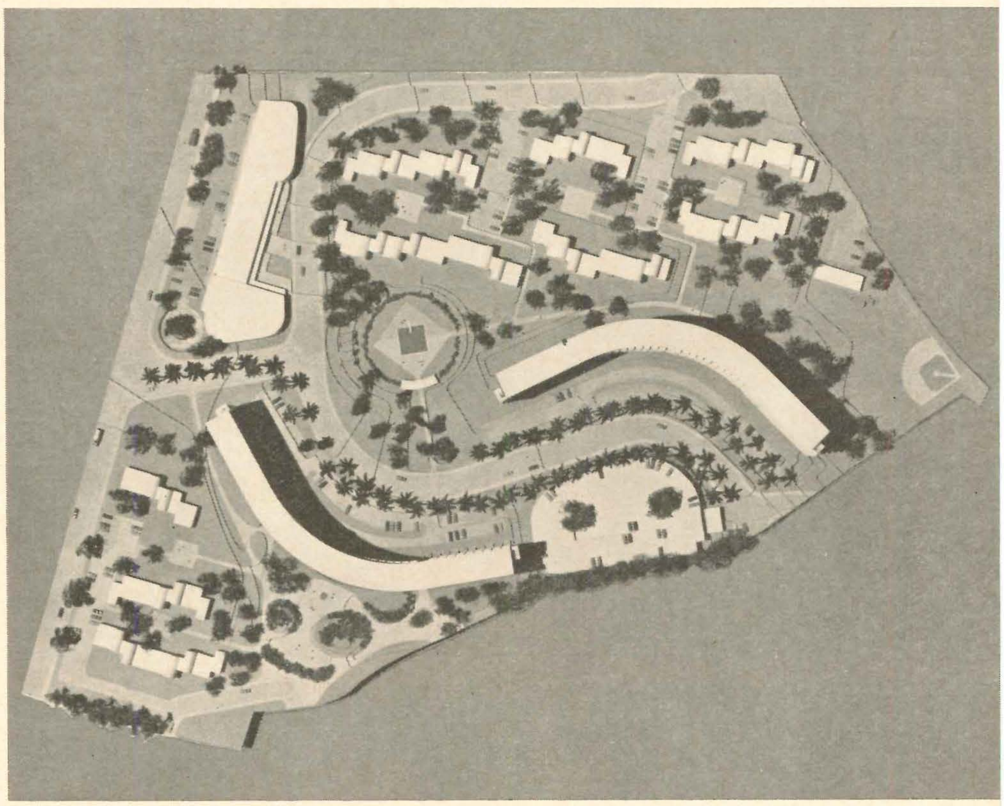
New York University—Bellevue Urban Renewal Project, New York City. ARCHITECTS: I. M. Pei & Associates; URBAN PLANNERS: Skidmore, Owings & Merrill; LANDSCAPE ARCHITECT: Leo Novick. The Jury: "A design concept especially appropriate to high density urban living. Fine sense of space."



*Louis Checkman*

**FIRST HONOR AWARD**
**Urban Renewal Administration**

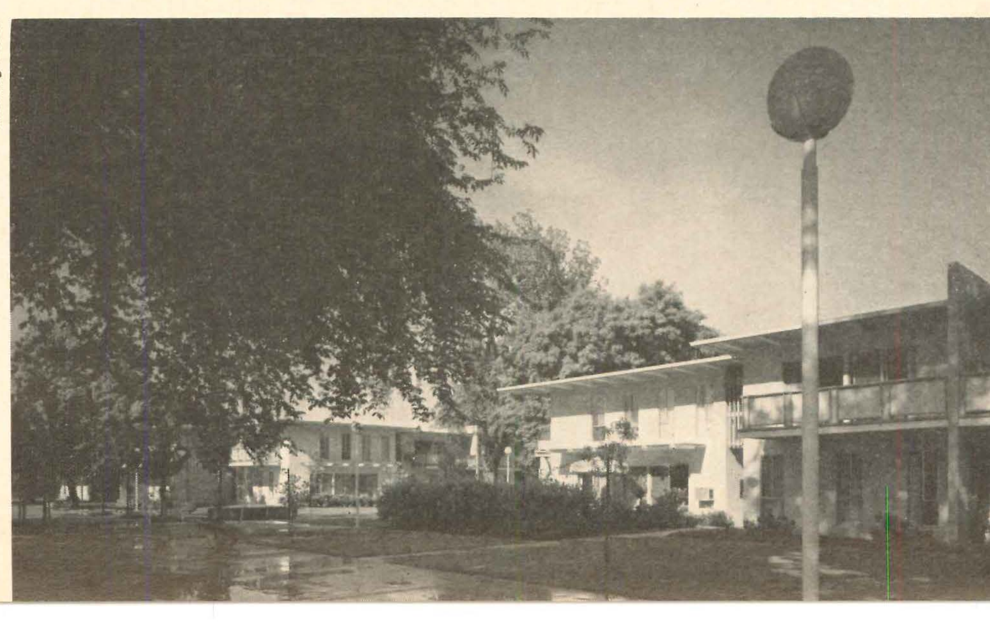
El Monte Urban Renewal Project, Rio Piedras, Puerto Rico. URBAN PLANNERS: Edward L. Barnes, Reed-Basora-Menendez; ARCHITECT: William V. Reed; LANDSCAPE ARCHITECT: Hideo Sasaki. The Jury: "The site plan is apparently successful; the buildings represent a well considered response to local climate and design tradition."



*Morley Baer*

**FIRST HONOR AWARD**
**Urban Renewal Administration**

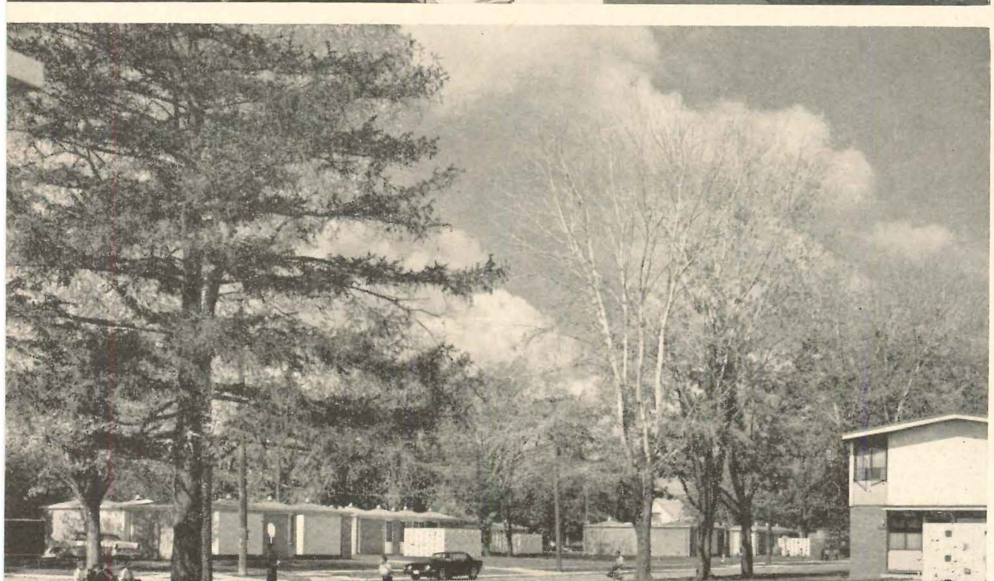
Capitol Towers Garden Apartments, Capitol Mall Urban Renewal Project, Sacramento, California. ARCHITECTS: Wurster, Bernardi & Emmons, Edward L. Barnes, DeMars & Reay; LANDSCAPE ARCHITECTS: Lawrence Halprin & Associates. The Jury: "A subtle yet rich landscape design greatly enhances the site and the simple, direct buildings."



Hedrich-Blessing

FIRST HONOR AWARD
**Urban Renewal Administration**

One Charles Center, Baltimore, Maryland, ARCHITECT: Mies van der Rohe. The Jury: "Simple, direct building design. It sets a high precedent for the design of subsequent office buildings in the development."

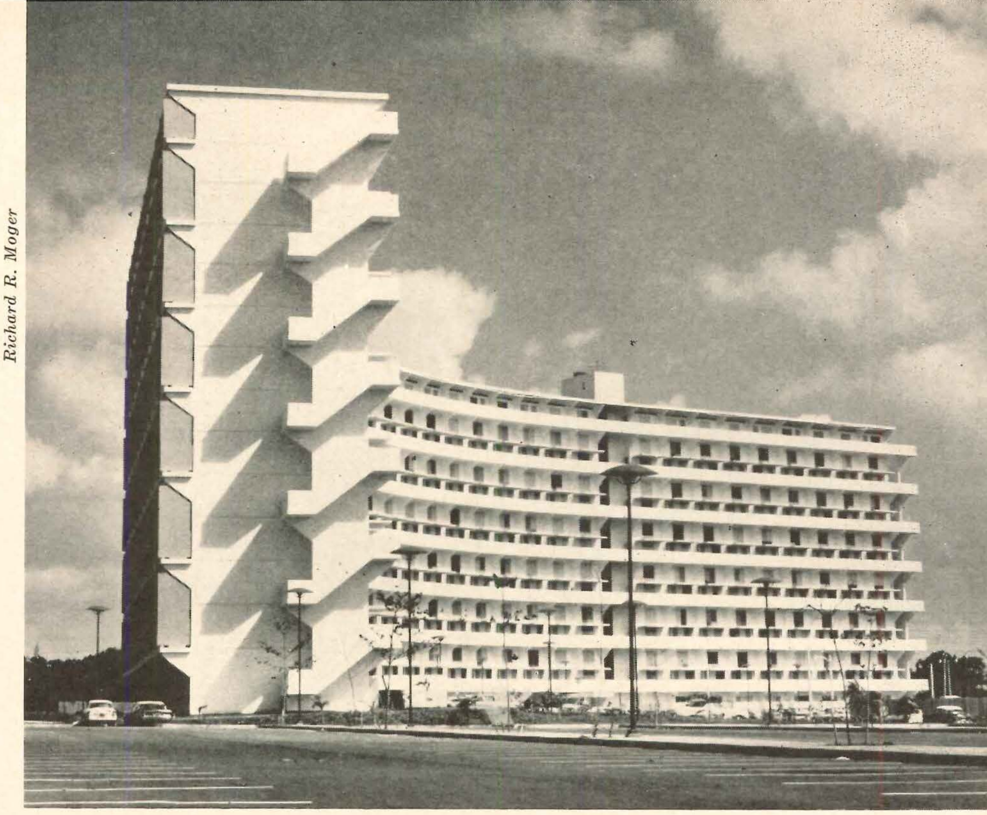


Balthazar

FIRST HONOR AWARD
**Urban Renewal Administration**

Clemens Homes, Mount Clemens, Michigan. ARCHITECTS: Meathe, Kessler and Associates; LANDSCAPE ARCHITECTS: Eichstedt-Johnson Associates; PLANNERS: Geer Associates. The Jury: "Admired the concept of 'scattered site' public housing for its own sake, and for being well executed. The scale and warmth of the buildings is good."

Richard R. Moger



**FIRST HONOR AWARD**
**Urban Renewal Administration**

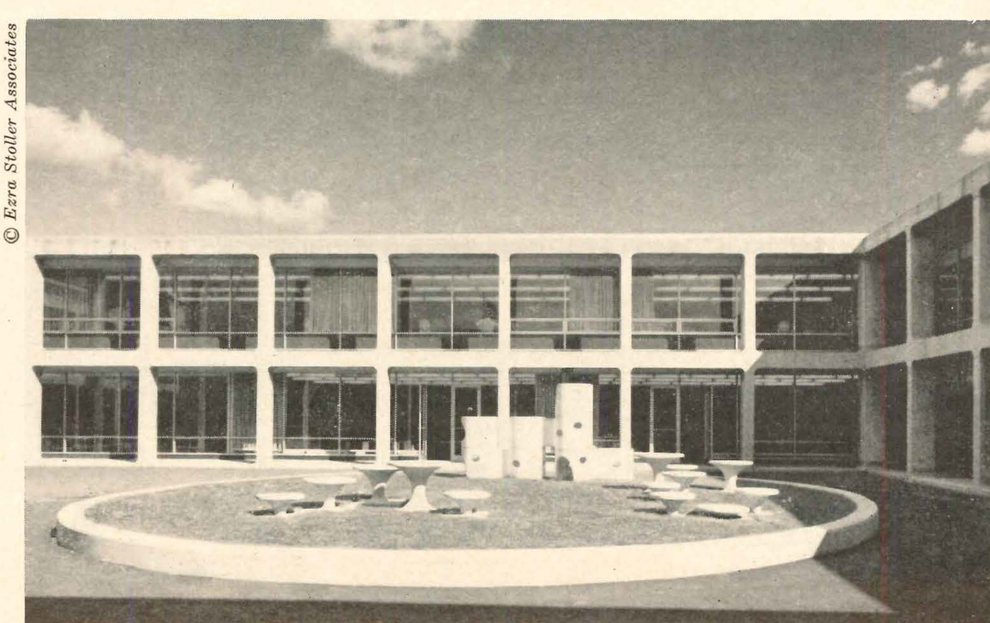
El Monte Apartment Building, Rio Piedras, Puerto Rico. ARCHITECTS: Edward L. Barnes, Reed-Basora-Menendez; LANDSCAPE ARCHITECT: Hideo Sasaki. The Jury: "Admired the bold use of concrete and the designer's response to the local climate. The curved form provides better earthquake stability and seems appropriate in the locale."

Hedrich-Blessing

**FIRST HONOR AWARD**
**Urban Renewal Administration**

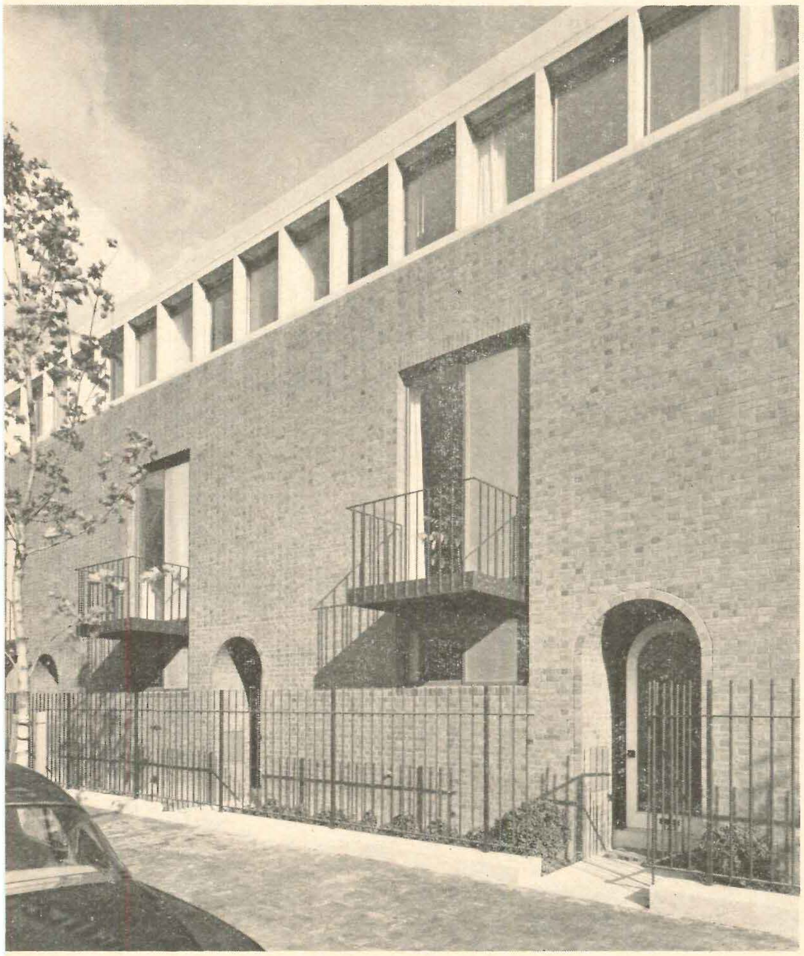
Lafayette Residential Redevelopment, Detroit, Michigan. ARCHITECT: Mies van der Rohe; LANDSCAPE ARCHITECT: Alfred Caldwell. The Jury: "Successful relationships between high and low structures were thought to exist, in part, due to the generous open spaces between the buildings."

© Ezra Stoller Associates



**FIRST HONOR AWARD**
**Urban Renewal Administration**

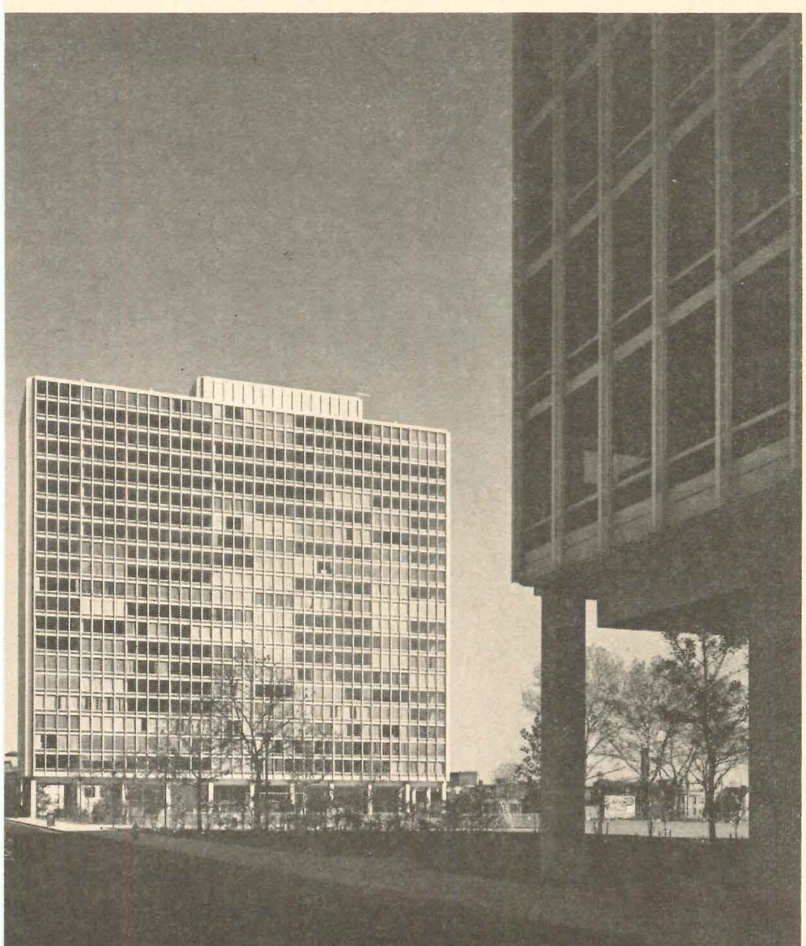
Harry A. Conte Community School, Wooster Square Project, New Haven, Connecticut. ARCHITECTS AND LANDSCAPE ARCHITECTS: Skidmore, Owings & Merrill. The Jury: "The open areas are to be commended, not only for their design contribution as spaces, but also for the details which make them accepted and well used by the community."



Wurts Brothers

**FIRST HONOR AWARD**
**Urban Renewal Administration**

Washington Square East Town Houses, Philadelphia, Pennsylvania. ARCHITECT: I. M. Pei; LANDSCAPE ARCHITECTS: Robert Zion, Harold Breen. The Jury: "The visual transition from the 18th-century brick buildings to the 20th century seems successful."



Joseph W. Molitor

**FIRST HONOR AWARD**
**Urban Renewal Administration**

Colonnade and Pavillion Apartments, Newark, New Jersey. ARCHITECT: Mies van der Rohe; LANDSCAPE ARCHITECT: Alfred Caldwell. The Jury: "Admired the serene quality evoked by the fine proportions and regularity of the facades. The spaces between the buildings become an integral part of the visual experience, and are also usable."

# CALIFORNIA'S NEW CAMPUSES

## Building Big While Seeming Small

Most of the public systems of higher education in the United States today face unprecedented problems of growth. California, now the most populous of the states, epitomizes those problems. The major share of higher education in California is borne by the state's public institutions. Next year, for instance, 175,000 students are expected to enroll on the nine university campuses and 18 state college campuses, while independent colleges and universities in the state will provide for 68,500. If junior colleges are added, the figure for students on publicly owned campuses will be 347,000.

We have known that this situation was coming and we have tried to plan for it. As long ago as 1947, the California State Legislature authorized a survey of the state's needs in higher education, and in 1955 the Liaison Committee of the Regents of the University and the State Board of Education undertook a study of the need for additional centers of higher education. In 1957 the Legislature authorized three new university campuses and four new state college campuses. The adoption by the state in 1960 of a Master Plan for Higher Education 1960-1975, which precisely defined the roles of the university, state colleges and junior colleges, and by the Regents in the same year of a Growth Plan for the University, gave clear direction to the expansion of the state's public institutions of higher education.

Two new university campuses—at Santa Cruz and Irvine—will receive their first students in the fall of 1965. At the third—in San Diego—the first freshman class enrolled this year. By the time next year's entering students celebrate the 25th anniversary of their graduation, the campuses they knew as small and intimate will have reached their ultimate planned growth and will be serving student populations of 27,500. The Berkeley campus is this year within 100 students of that figure, a year ahead of schedule. The Los Angeles campus will undoubtedly reach that limit within the next few years. Four other university campuses—Santa Barbara, Davis, Riverside and San Francisco—will continue to expand until they reach their stated limits, somewhat lower than for the others.

There is no denying that a campus of 27,500—plus faculty and staff—is a fair-sized community in itself. By its size, it can have certain advantages that are impossible of attainment by the smaller college or university. Its library, laboratories, cultural facilities and faculty are of a scope and capacity unmatched in smaller institutions. But the big campus lacks the inestimable virtue which the small liberal arts college counts as its hallmark: the emphasis on the individual which small classes, a residential environment and a strong sense of relationship to others on the campus can and do give.

Each of the university's new campuses is an experiment in combining the advantages of the large and the small. Each will offer a different answer to the problems of preserving a sense of individual worth in a world of increasing numbers and of maintaining quality in the face of such numbers.

For us in California the numbers are impressive. By 1975, the present estimate of students in four year colleges in California, both public and private, is 382,725. Of these, 291,625 will be attending public institutions. If the junior colleges are included, by 1975 the figure will stand at 649,825. These may well turn out to be conservative estimates; the projections of four years ago have already been revised upward. New York State faces a comparable problem in its state university system, and other states to a lesser degree must also find ways of solving these problems.

The Regents of this university are already thinking ahead to the time when further new campuses in other sections of the state will be established to meet the need of a day which is not too far away.

In the meantime, the physical plans and academic programs of the campuses at Santa Cruz, Irvine and San Diego are an indication of our belief that there can be many answers to these problems and that, given opportunity and imagination, the attributes of great size and the virtues of smallness need not be strangers to each other.

—CLARK KERR, *President*
*University of California*


*Vesper Dick*

# SANTA CRUZ CAMPUS

*University of California*

## Diversity with Unity: Architecture Integral with Academic Planning

At Santa Cruz we are frankly trying new departures. Our goal is to find a way to combine the advantages of the small college with those of the large university, to seem small even while we grow large. We want to use bigness for all the advantages that it offers at the same time that we retain a scale, physically and socially, educationally and administratively, that is human and, therefore, in the highest sense, individual.

The undergraduate part of the campus will be organized to that end as a series of small semi-independent colleges providing a general education for their members. Each college will also have a special curricular emphasis, imparted to it by the interests and research of its provost, which will be available to students of all colleges. But students in a college will have most of their courses in that college. Thus the college itself will become, we expect, a focal point for its members, students and faculty, both in curricular and non-curricular activities.

Another unique aspect of the campus at Santa Cruz is that these colleges will be residential colleges, educational units in which students and faculty will live in close association. Approximately a dozen faculty members will live in the college, eating with the students and engaging in informal discussion at other times. Some 300 to 500 students will be resident in each

*continued on page 180*

MASTER PLAN. Architects and planning consultants: John Carl Warnecke and Associates; consulting architects: Anshen and Allen, Theodore C. Bernardi, Ernest J. Kump; landscape architect: Thomas D. Church


1. University Center
2. Meadow
3. Cowell College (College I)
4. College II
5. College III
6. Future Colleges
7. Professional School
8. Research Center
9. Student Housing
10. Staff Housing
11. Graduate Housing
12. University Community
13. Field House

*Vesper Dick*

*continued from page 176*

college, and 200 or more additional students will be commuter members of it, sharing in the life of the college almost as fully as the residents.

Although the colleges will be student oriented, the atmosphere will be seriously intellectual. We shall aim at engaging the full attention and time of each student by a well-rounded program—including athletics for both men and women—or activities focused on the college. We do not contemplate for that reason any central student activities center such as is common to most campuses.

Although some courses will be given as large lectures, much of staff time will be devoted to seminars and tutorials of no more than 15 students. This close association of student and instructor is the heart of the concept of the residential college. We shall use the large lecture course to free our staff for more small group instruction.

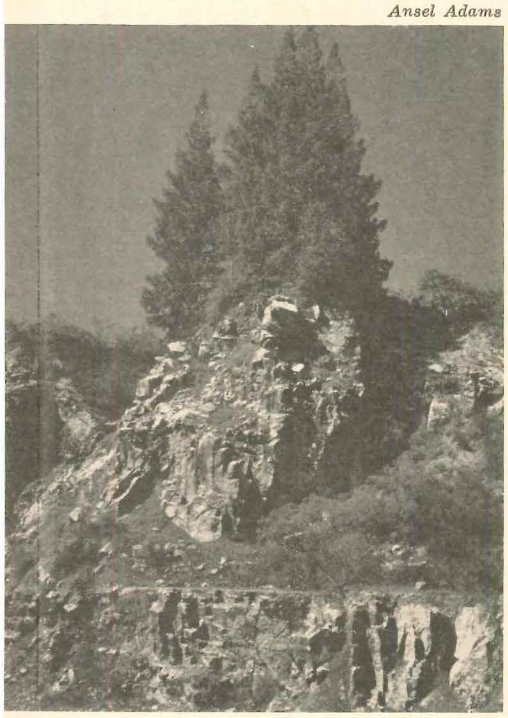
The architectural character of this campus is overwhelmingly important in effecting our goals, for while the design of the colleges may—and we hope that it will—express diversity, the whole must express unity. The magnificent site at Santa Cruz is an undeniable aid to achieving such an environment. Further, the architectural statement of each college must in itself convey to its members, both students and faculty, a sense of the place which will enhance the educational experience and deepen the cultural implications.

The long range development plan recognizes that in the years ahead, when we shall be growing toward our planned ultimate student enrollment of 27,500, there must be opportunity for some changes, and the plan is flexible to that degree. But it is based on a splendid premise that the great meadow opening out from the forests on the crest of the hill shall remain open space and that the development of future colleges (we expect to have 20 to 25 residential colleges and additional professional and graduate schools, research centers and institutes) will take place around it. It will be important for future generations to preserve this concept as an inherent part of the character of the Santa Cruz campus.

A year from now we shall be in operation with our first students. Cowell College will be nearing completion, and colleges two and three will be under construction. As we grow in numbers and in experience of operation, and as the needs of the state require, we will add other colleges and, in time, graduate and professional schools as well. But in the meantime, we shall have learned to liberally educate students influenced by the educational and architectural concept of this campus.

—DEAN E. McHENRY, *Chancellor*
*University of California, Santa Cruz*

*Ansel Adams*



Open meadows and forest groves are notable characteristics of the campus, but ravines cut across its rolling meadows and steep canyons border them in some areas. The cliff (*above*) is part of an old limestone quarry, a possible future amphitheater

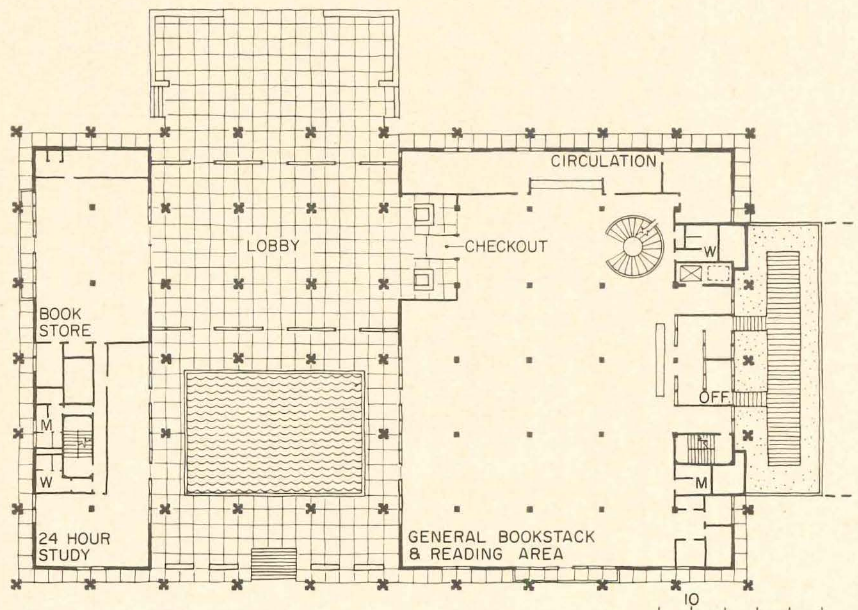
## SITE AND CAMPUS

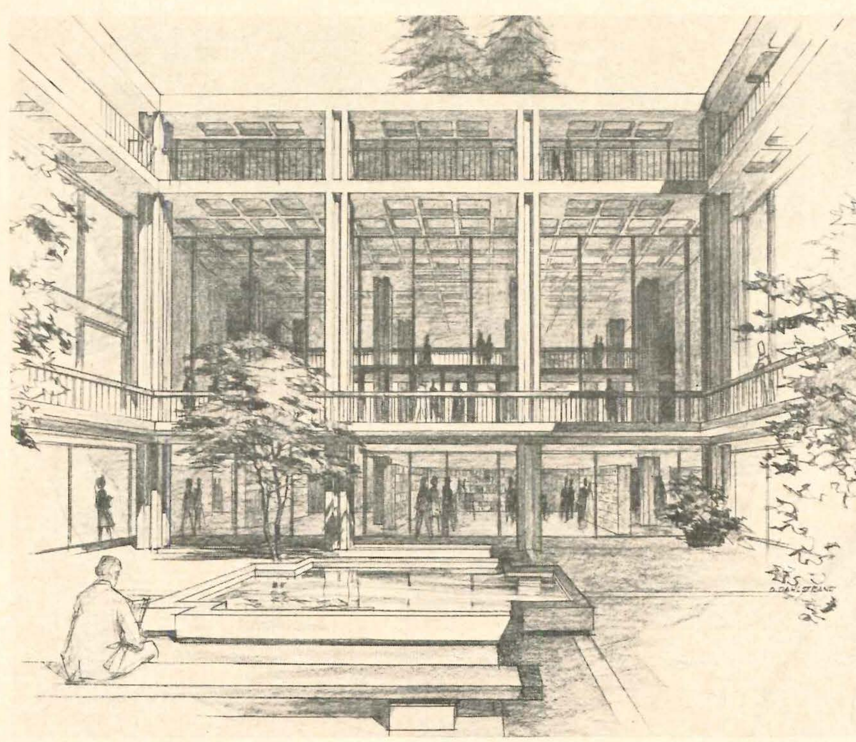
The Santa Cruz campus of the University of California is 75 miles south of San Francisco in an area of relatively slow population growth. Its site is an extraordinarily beautiful 2,000-acre tract of ranchland on rolling, and sometimes steep, hills overlooking the town of Santa Cruz, Monterey Bay and the Pacific Ocean. Open meadows are surrounded by forests of redwood, oak and pine trees, and native shrubs. Canyons and gullies cross its land, old quarries are rugged scars on hillsides, cattle still graze—and will continue to do so—in the meadows. To retain the essential beauty of the site and still to provide for 27,500 students, and the faculty and staff they will require, and to "seem small while growing large," was the challenge to the architect, landscape architect and consultants. Their early decision to keep the meadows open and to place the buildings under the trees makes possible the architectural diversity which reflects the "unity in diversity" of the academic plan, for only rarely will one building group be seen from another. The trees and the topography become the unifying factors, the buildings the expression of individual identity. One facet of concern to many in both the university and in the town of Santa Cruz is the lack of a policy for the environs of the campus. Since many faculty and staff will need housing outside the campus, what happens next to the campus is closely related to the development of the campus.

## CENTRAL LIBRARY

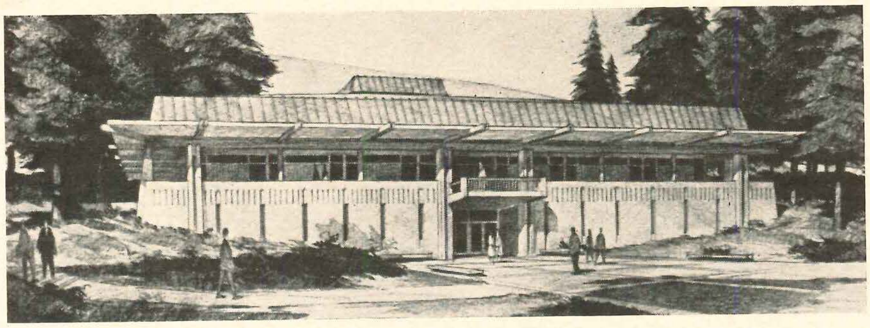
Since the central library *(right)* will serve all colleges and professional schools, it is located within 10 to 15 minutes walking time of most college and school sites. Surrounding it are some of the finest redwood trees on the campus, including circles of 150-foot second-growth trees which Chancellor McHenry calls "cathedrals of redwoods" and which may be used as outdoor reading rooms. The building will be four stories high with a central court which not only admits light to the center of the building but is an enclosed reading court.

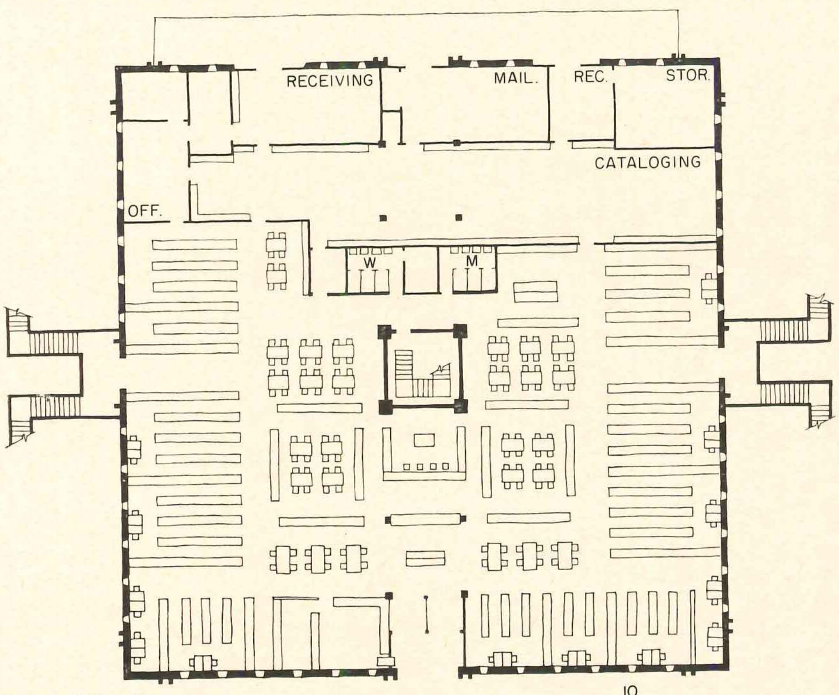
Architects: Ernest J. Kump and Associates; contractors: King-Hannan Corp.



*Vesper Dick*





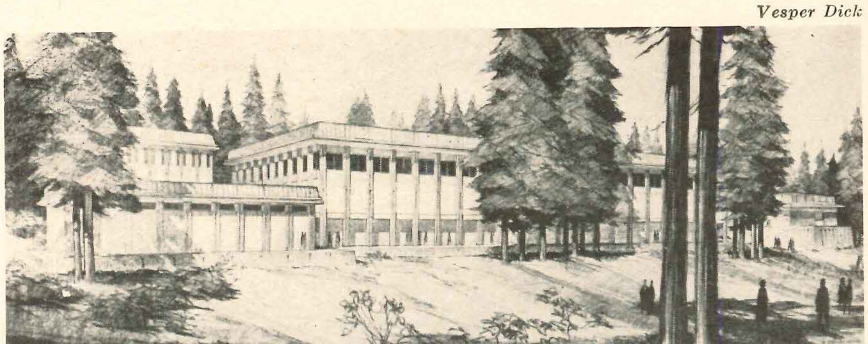

Central Services

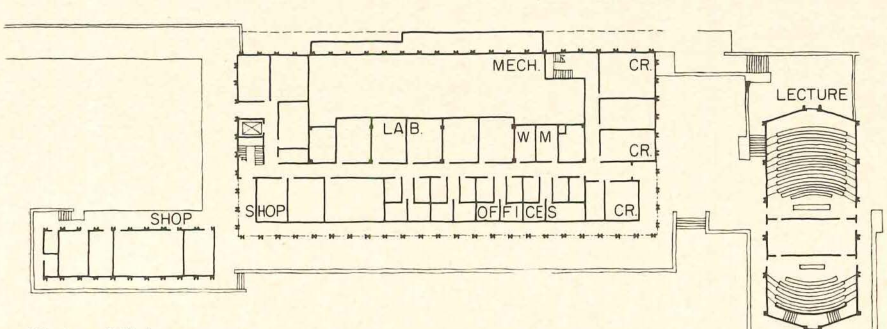
## CENTRAL SERVICES

While the campus develops, this building will serve as the administrative center, with the chancellor's office, business offices and Student Services on the second floor, and a central library on the ground floor. The library will be moved from this building upon completion of the Central Library, freeing the ground floor for increasing administrative needs. The buildings in the central area are being designed by various architects but will all use the same palette of materials: concrete, redwood, copper. This building has a concrete frame with massive columns widely spaced, tilt-up concrete filler panels, redwood details and copper sheathing for the roof parapet. It is scheduled for occupation in March 1965.

Architects: Ernest J. Kump Associates; consultants: Creegan & D'Angelo (structural), Yanow & Bauer (mechanical), Smith and Garthorne (electrical); landscape architects: Lawrence Halprin & Associates; contractor: King-Hannan Corp.

*Vesper Dick*






Natural Sciences

## NATURAL SCIENCES

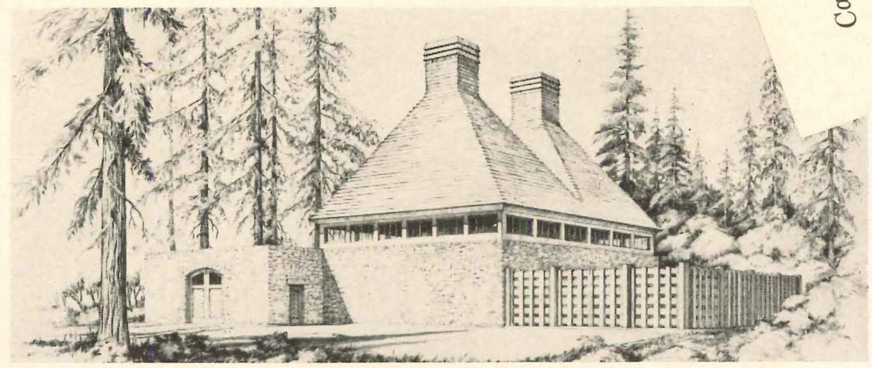
The first unit of the sciences complex in the central campus area is to be used during the first years for undergraduate courses in the Natural Sciences. Since it will be converted later to use in one scientific field only, it has been designed for flexibility in use of its spaces and its mechanical services. The present unit consists of three parts: a three-story laboratory, classroom and faculty office building; a one-story building containing two lecture halls; and another one-story building for shop and storage needs. Like other central campus buildings, these are of concrete, columns and wall panels of precast concrete, and floor slabs of post-tensioned lightweight concrete. Copper clad parapets hide equipment on the laboratory roof, and copper sheathes the lecture hall roof.

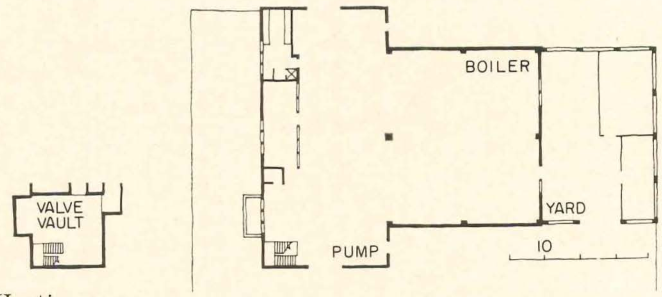
Architects: Anshen and Allen; consultants: T. Y. Lin & Associates International (structural), Gayner Engineers (mechanical and electrical); landscape architect: Douglas Baylis; contractor: Nomellini Construction Co.

## CENTRAL HEATING

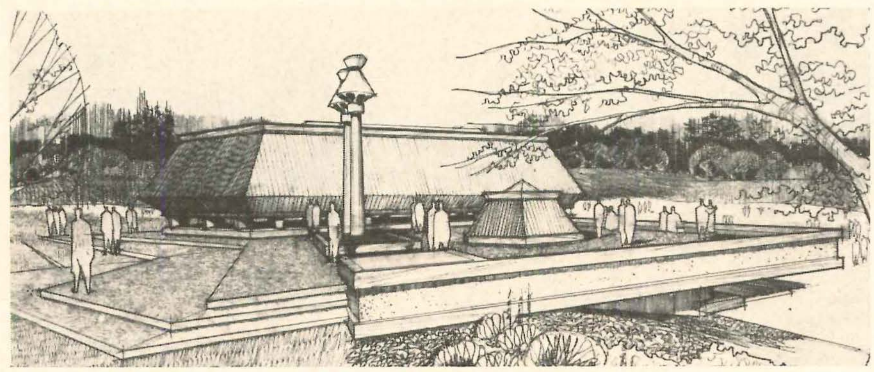
The twin towers of the central heating plant, rising from hipped roofs, recall the hops oasts of the Sonoma County countryside north of San Francisco Bay. Concrete block is the basic building material. The plant will serve the whole campus.

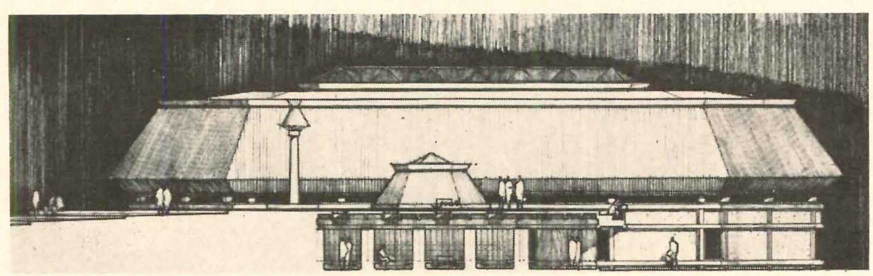
Architects: Spencer, Lee and Busse; consultants: Pregnoff & Matheu (structural), Kennedy Engineers (mechanical and electrical)






Central Heating

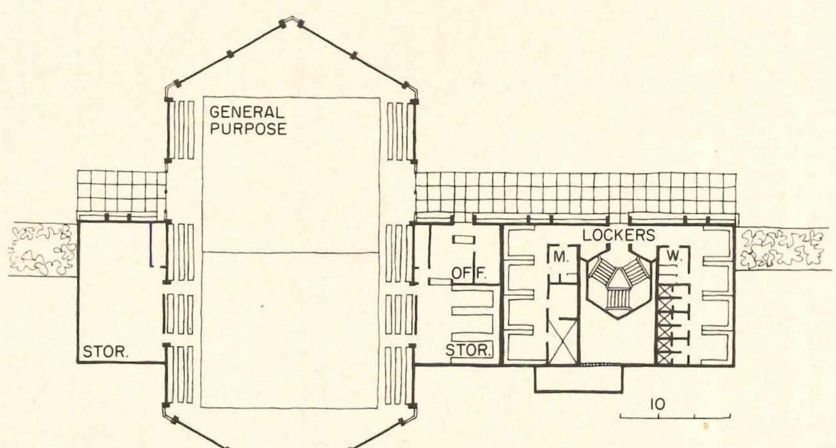




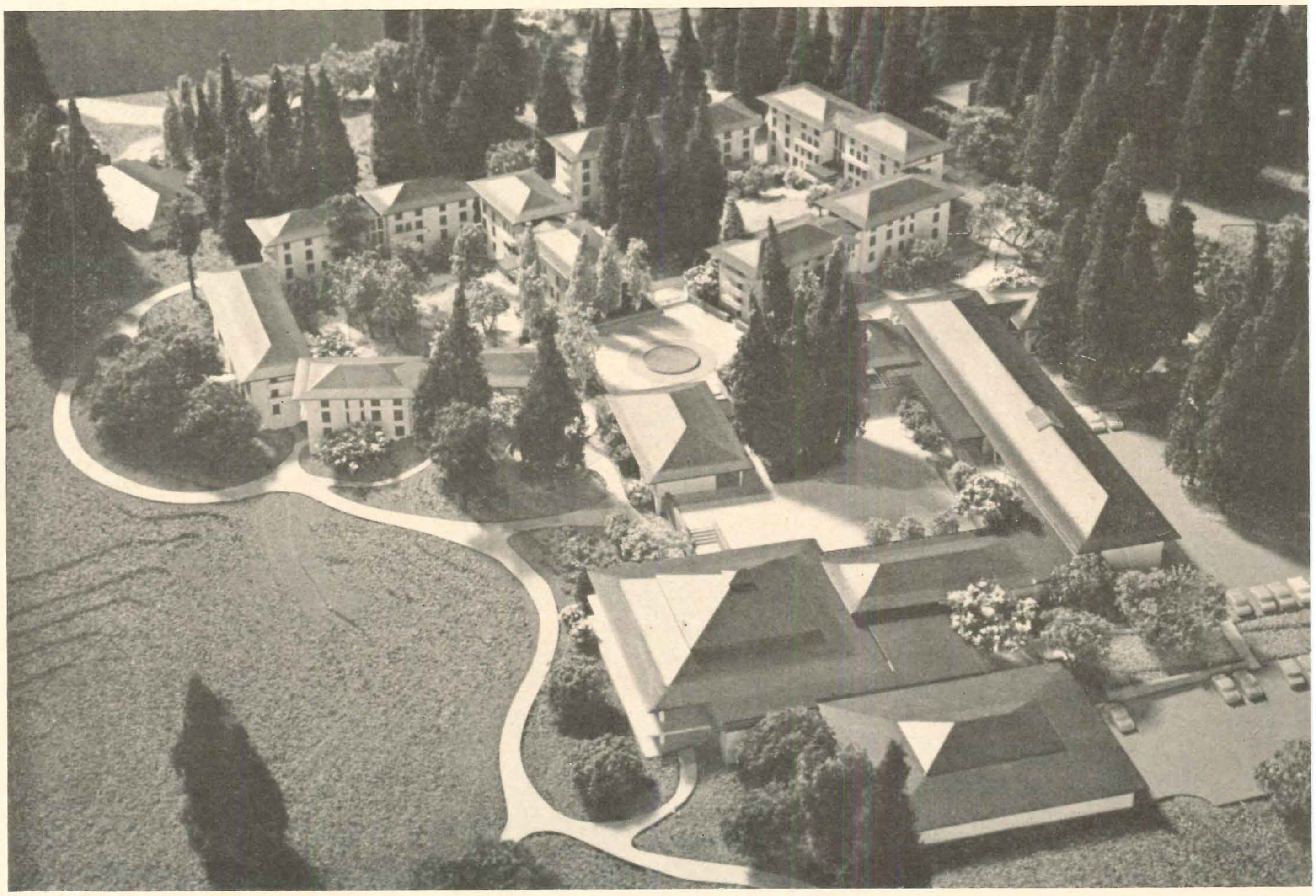
## FIELD HOUSE

This unusual building is the Field House, now under construction on a site south of and below Cowell College. It will be used by all students of the early colleges not only for indoor athletic activities but for all campus assemblies. Since it uses its hilly site to advantage, by building into the hillside and opening out on the low side, the great copper-sheathed roof of the field house proper dominates the building completely from the west side. The side wings, housing showers, offices and lockers, are flat roofed, with terraces on top which flank the field house roof. From the terraces rise the boiler vents, treated in design as an integral part of the composition.

Architects: Callister, Payne and Rosse; consultants: Stefan Medwadowski (structural), Casin, Guttman & Associates (mechanical), Mel Cammisa (electrical)




Field House

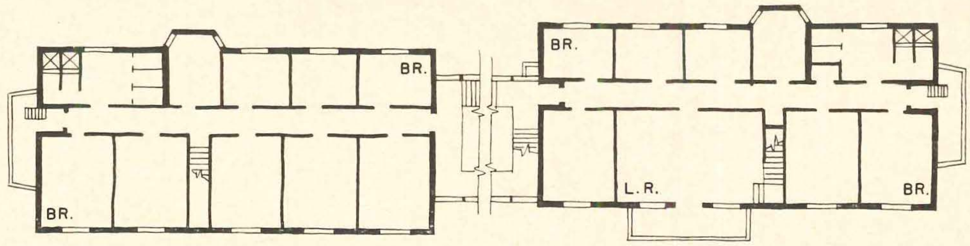


*Jerry Stoll*

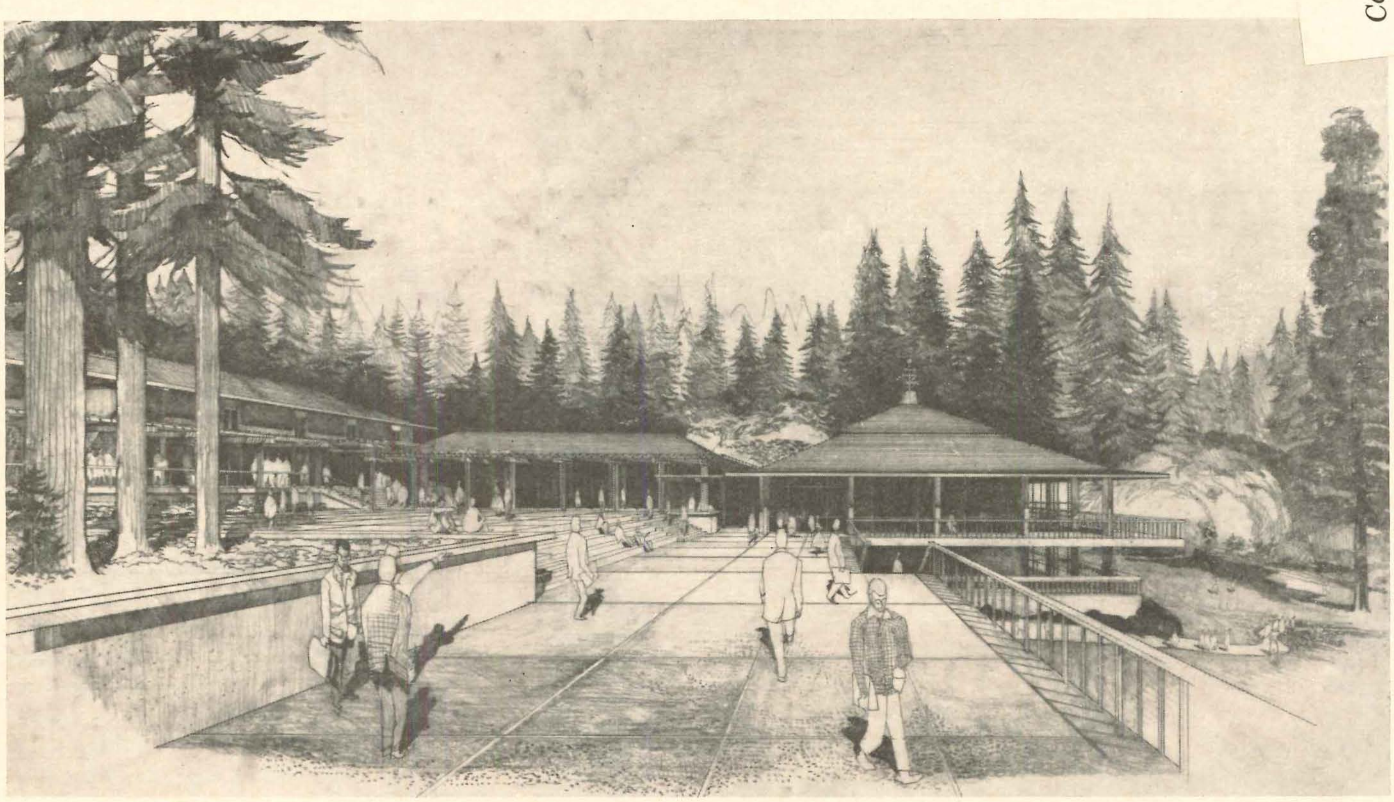
## RESIDENTIAL COLLEGE I —COWELL COLLEGE

Cowell College, named for the former owners of the campus site, is the first of the undergraduate residential colleges. Its liberal arts in time will stress the humanities. Of its 600 student members, 400 will be residents in the college. The other 200, although commuters, will be encouraged to participate fully in the life of the college. Some faculty members will live in the college; in two halls, married perceptors and their families will be residents; in the other halls, unmarried perceptors will be assigned as resident faculty members. The provost of the college will live in a house adjacent to the college. The scale of the buildings reflects the nature of the college; the hipped tile roofs and the sloping wooded site are important elements in the overall residential effect. Residence halls are placed informally around courts, one group for men, the other for women. The academic and student activities building surround a more formal court, open on one side, with the dining commons at the end of one wing. Kitchen facilities are shared with College II. A small library will serve college needs.

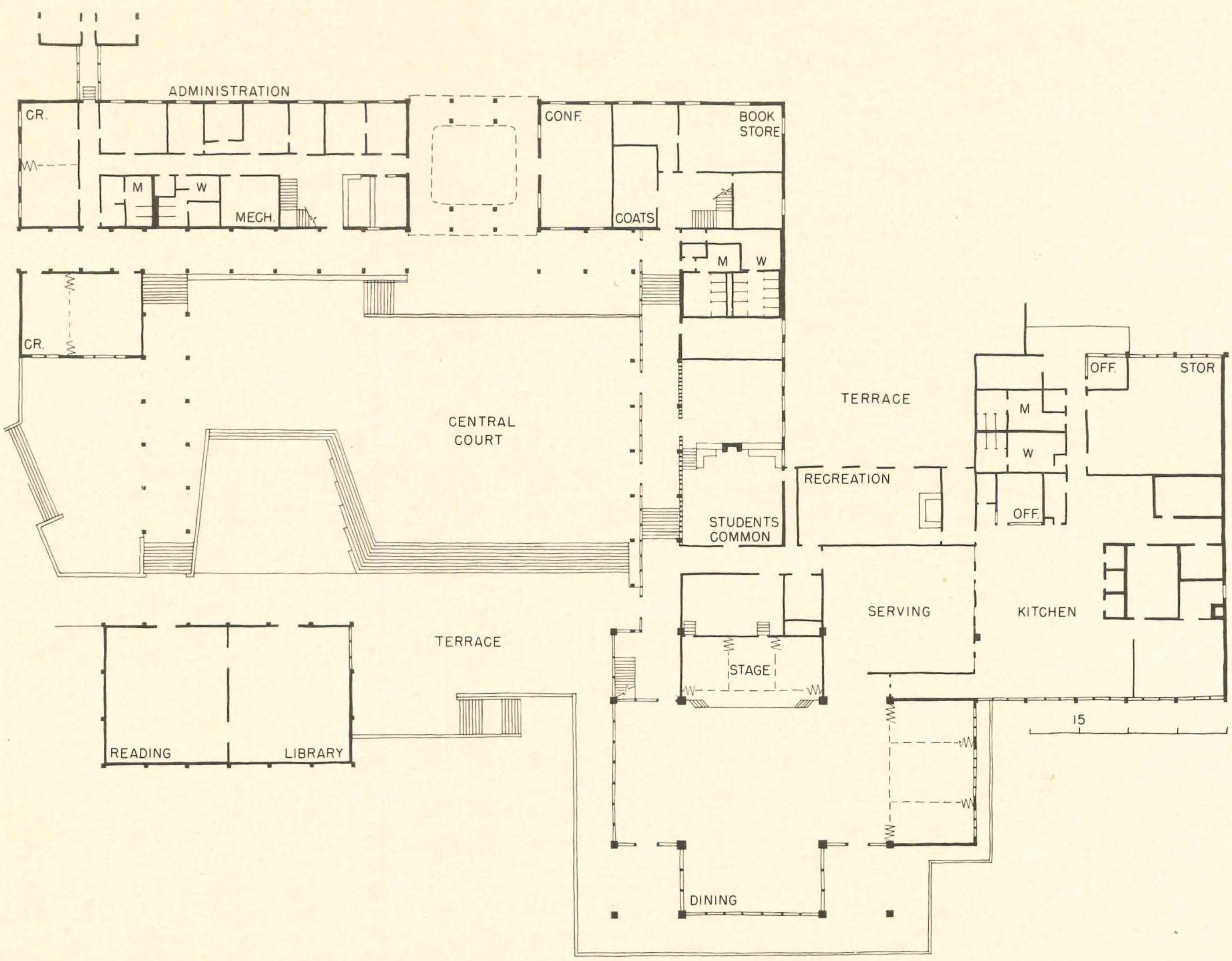
Architects: Wurster, Bernardi and Emmons; structural engineers: Gilbert Forsberg Diekmann Schmidt; mechanical engineers: Gayner Engineers (mechanical); landscape architects: Lawrence Halprin and Associates

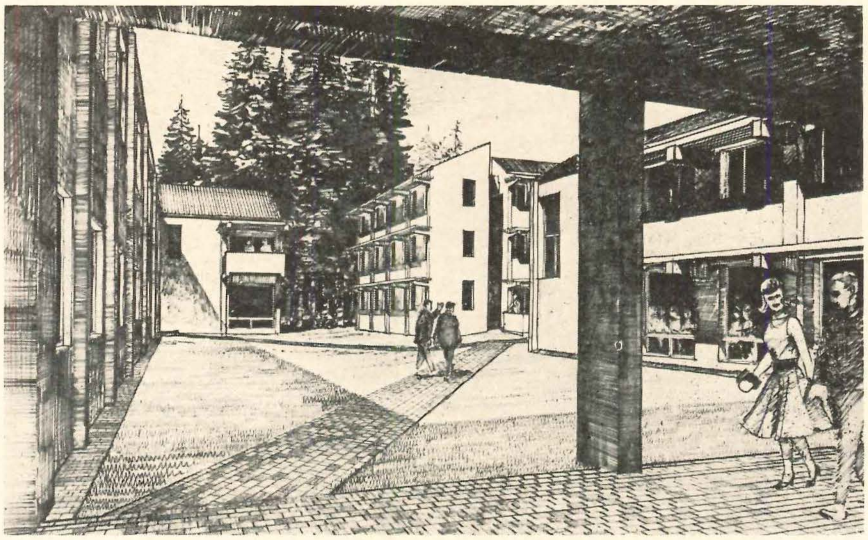


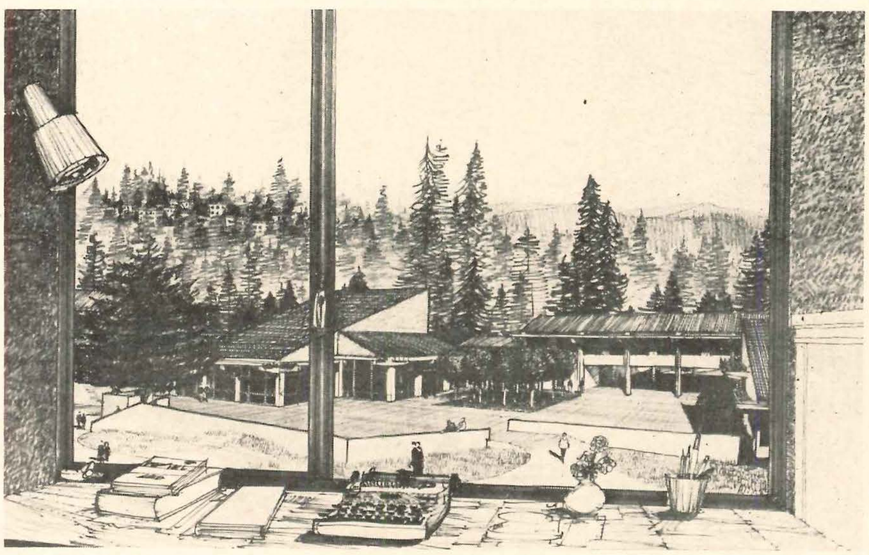

RESIDENCE HALL—TYPICAL FLOORS



Academic court is surrounded by classroom and student activity wings, with dining hall at far right



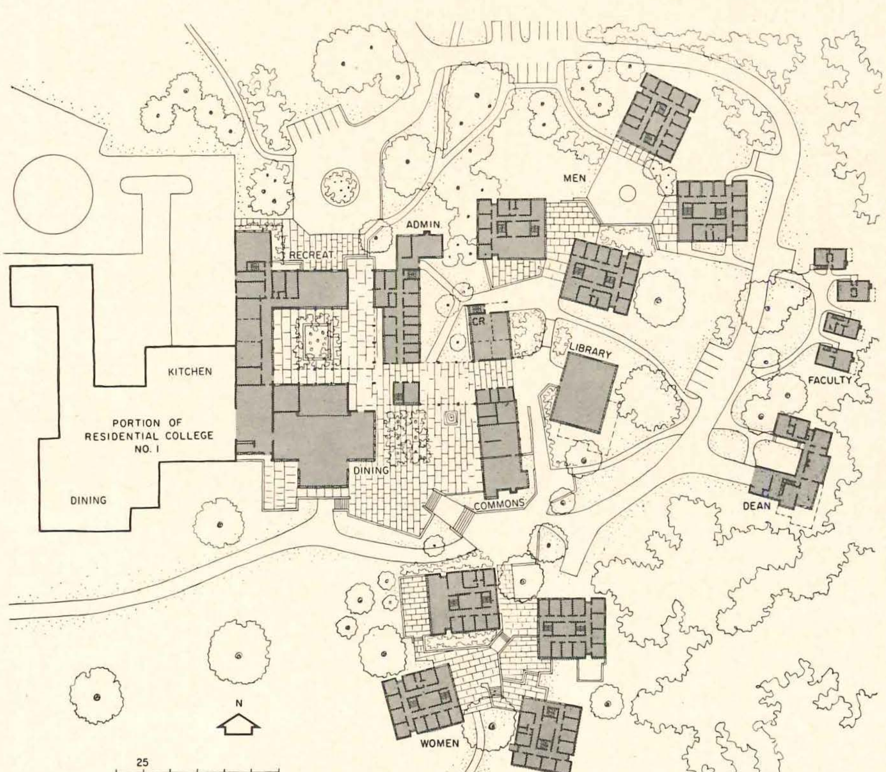




## RESIDENTIAL COLLEGE II

The second undergraduate residential college *(left)*, as yet unnamed, immediately adjoins Cowell College. It provides for 450 resident and 250 commuter members and will give emphasis to the social sciences in the liberal arts curriculum. In other respects its program, architectural and academic, is not unlike that of Cowell. Thirteen preceptors and fellows will live in, and the provost adjacent to, the college, classes for the most part will be small, held in seminar and tutorial rooms, with lectures in larger classrooms, and a small library will serve college needs. Its expression of the architectural program differs, however, in all but scale and the beauty of its site from the first college. In these schematic drawings approved by the Regents, shed roofs, crisp lines, and a more dispersed plan impart the individuality called for by the over-all campus design objectives.

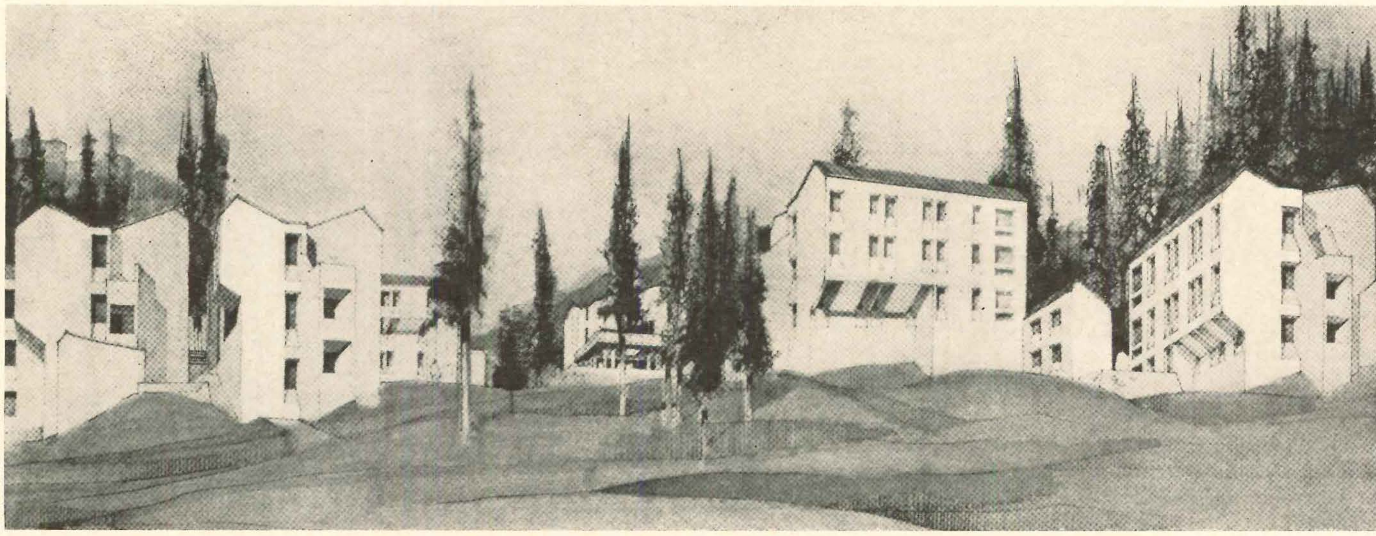
Architect: Joseph Esherick; engineers: Rutherford and Chekene (structural), G. L. Gensler & Associates (mechanical and electrical); landscape architects: Lawrence Halprin and Associates

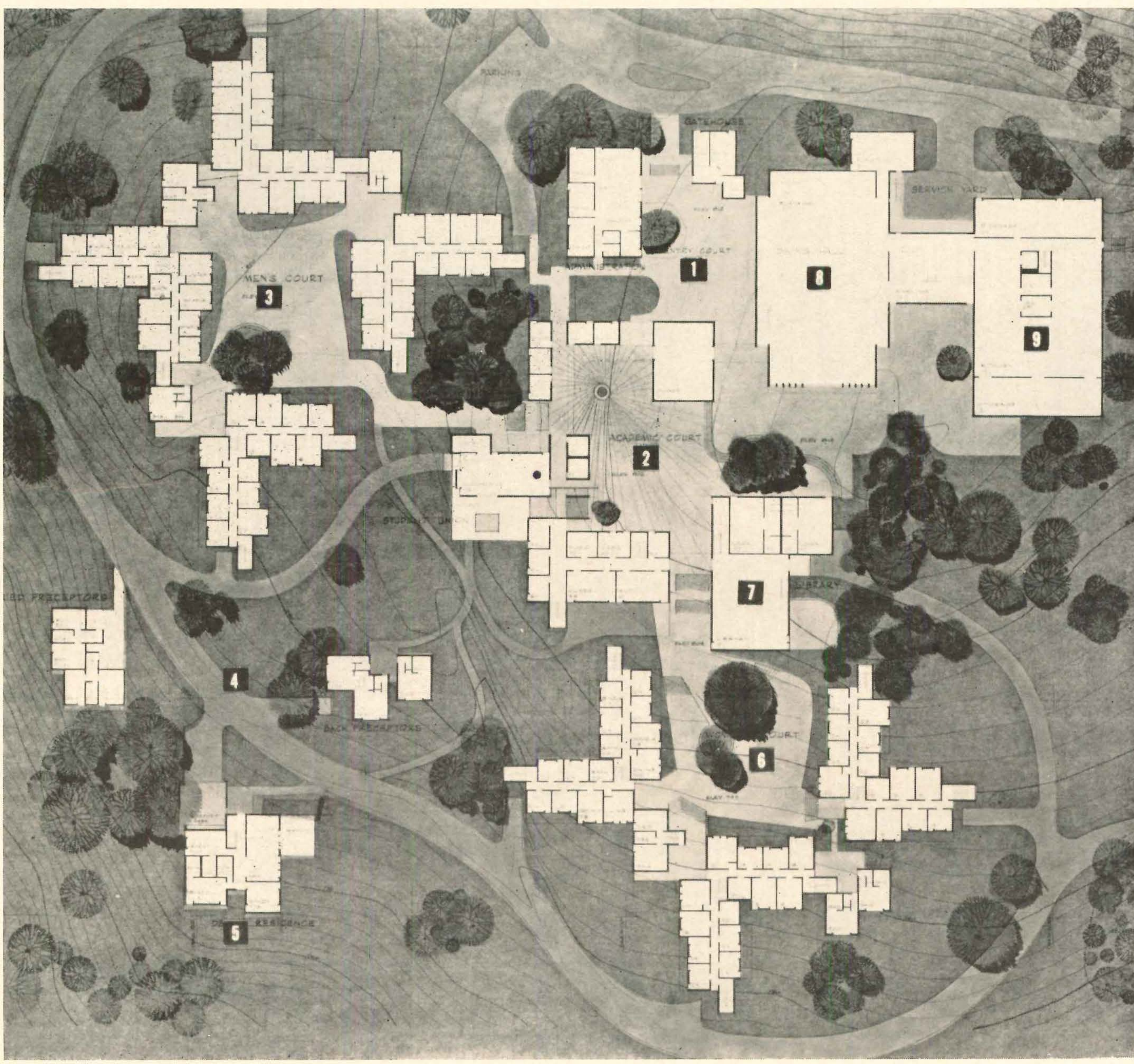



## RESIDENTIAL COLLEGE III

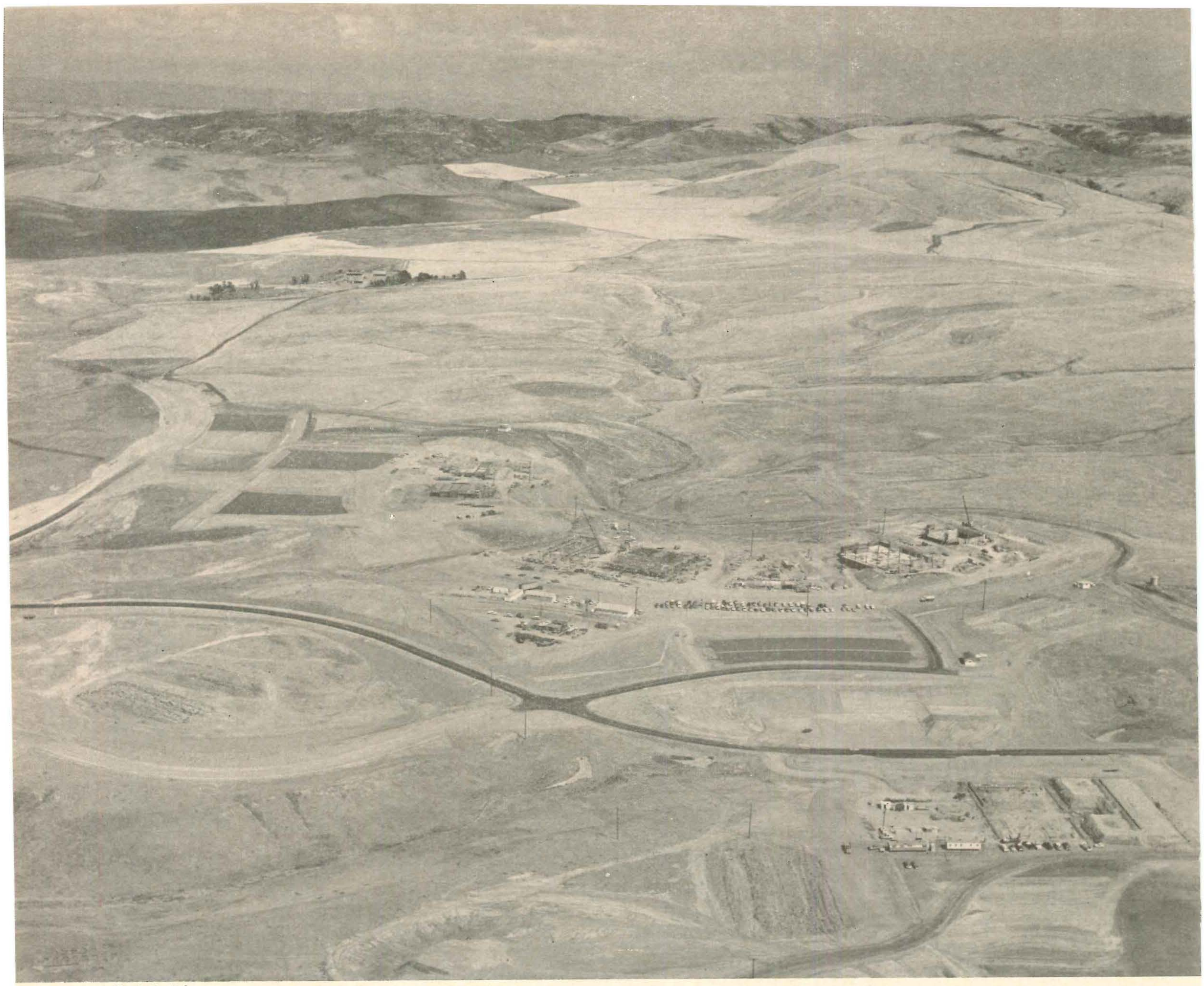
The third residential college *(right)*, with an undergraduate curriculum which will stress science, is to be located on another wooded knoll to the north of the first two colleges. This physical separation,, and the full grown trees and shrubs on the site, permit architectural diversity without violating an over-all sense of unity on the campus. College III will have some resemblance to an Italian hill village but will be architecturally unlike colleges I and II in specific character. It will be like them, however, in that it is a self-contained unit, an inward-looking community which fosters the sense of belonging which is essential to the Santa Cruz program.

Architects: Ernest J. Kump Associates; engineers: Clarence Rinne (structural), Alexander Boome Consulting Engineers, Inc. (mechanical), Smith & Garthorne (electrical); landscape architects: Lawrence Halprin and Associates






1. Entry Court
2. Academic Court
3. Men's Court
4. Preceptors' Apartments
5. Dean's Residence
6. Women's Court
7. Library
8. Dining Hall
9. Kitchen



*Pacific Air Industries*

# IRVINE CAMPUS

*University of California*

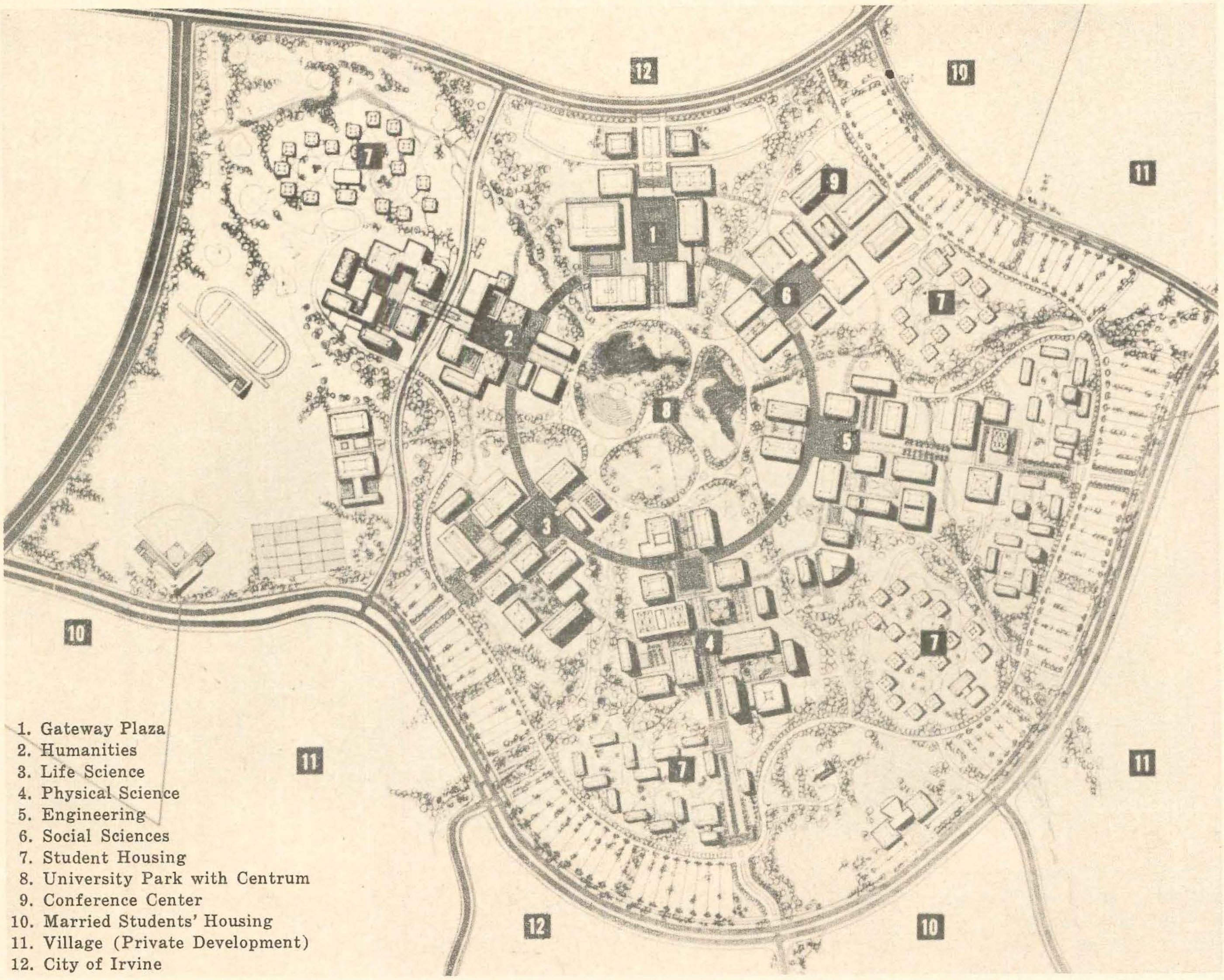
## Resources and Space: The Academic and Physical Plans

The Irvine campus of the University of California is located at the edge of a vast land resource—the Irvine Ranch, most of which is presently devoted primarily to agriculture—in the center of Orange County, known as the "fastest growing county of the United States." This location creates special conditions and unique opportunities for planning, academically and architecturally, a campus both distinctive in itself and distinguished as a member of the university family.

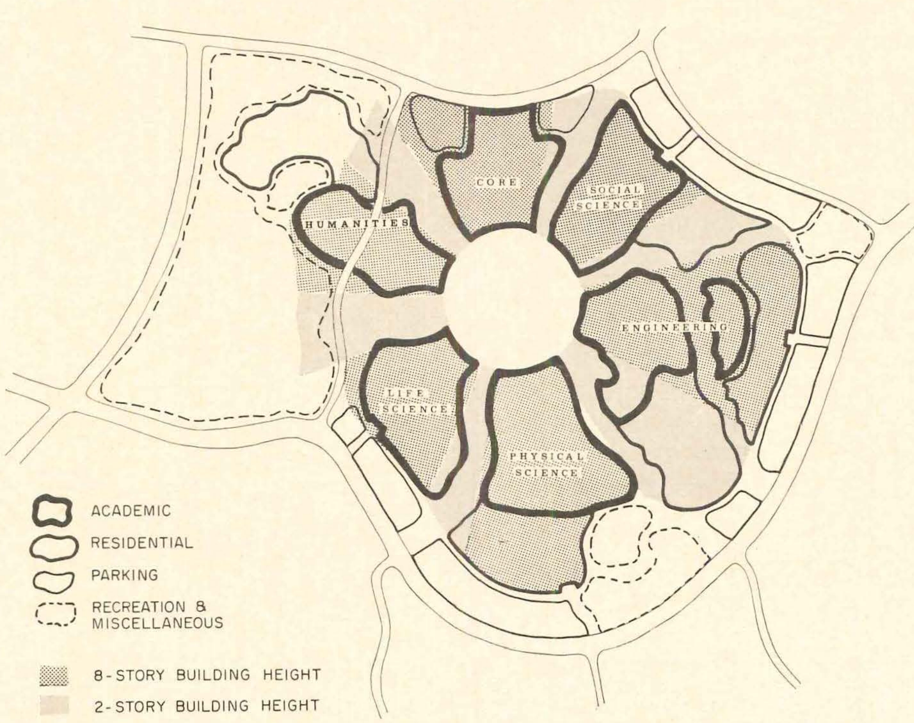
The academic plan for this campus is founded in two factors: the land-grant origin of the University of California with its mandate for such institutions to serve the people of the state which creates them, and the responsibility of the university for coping with large numbers in providing educational opportunity for all who qualify. It has been our intention at Irvine to try to capture, at the beginning of the second century of land-grant colleges, the spirit of service to the people for which they are founded, and to build a campus with a capability for instruction and research that will be particularly suited to the needs of society as we enter the 21st century.

If a single theme were to be selected to identify the research program at Irvine it might well be "Man in Relation to His Environment," in which

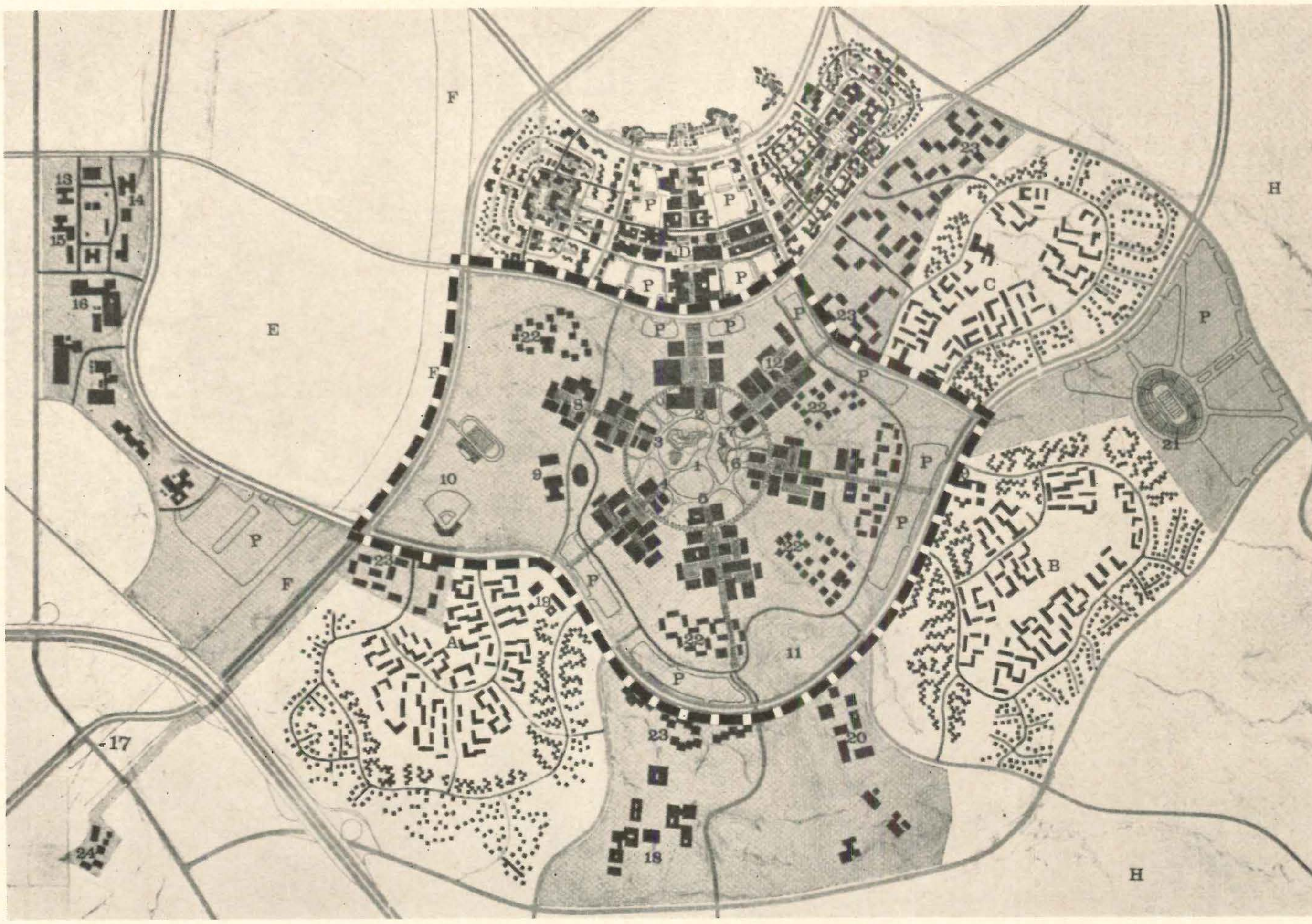
*continued on page 188*



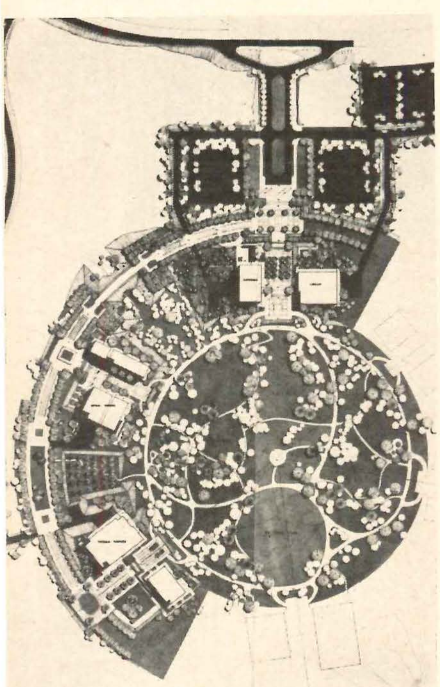

MASTER PLAN. Architects and planners: William L. Pereira & Associates; engineers: Moffat & Nichol (civil), J. S. Hamel, Inc. (mechanical and electrical); landscape architects: C. Jacques Hahn and J. Charles Hoffman with Frederick H. Lang and Robert H. Carter & Associates




Campus organization



Precinct plan shows development of "villages" at right and lower left of campus, with city of Irvine immediately above Gateway



*Studio One*

First phase of landscaping plan shows great central area to be preserved as a permanent park. Buildings shown are under construction

*continued from page 186*

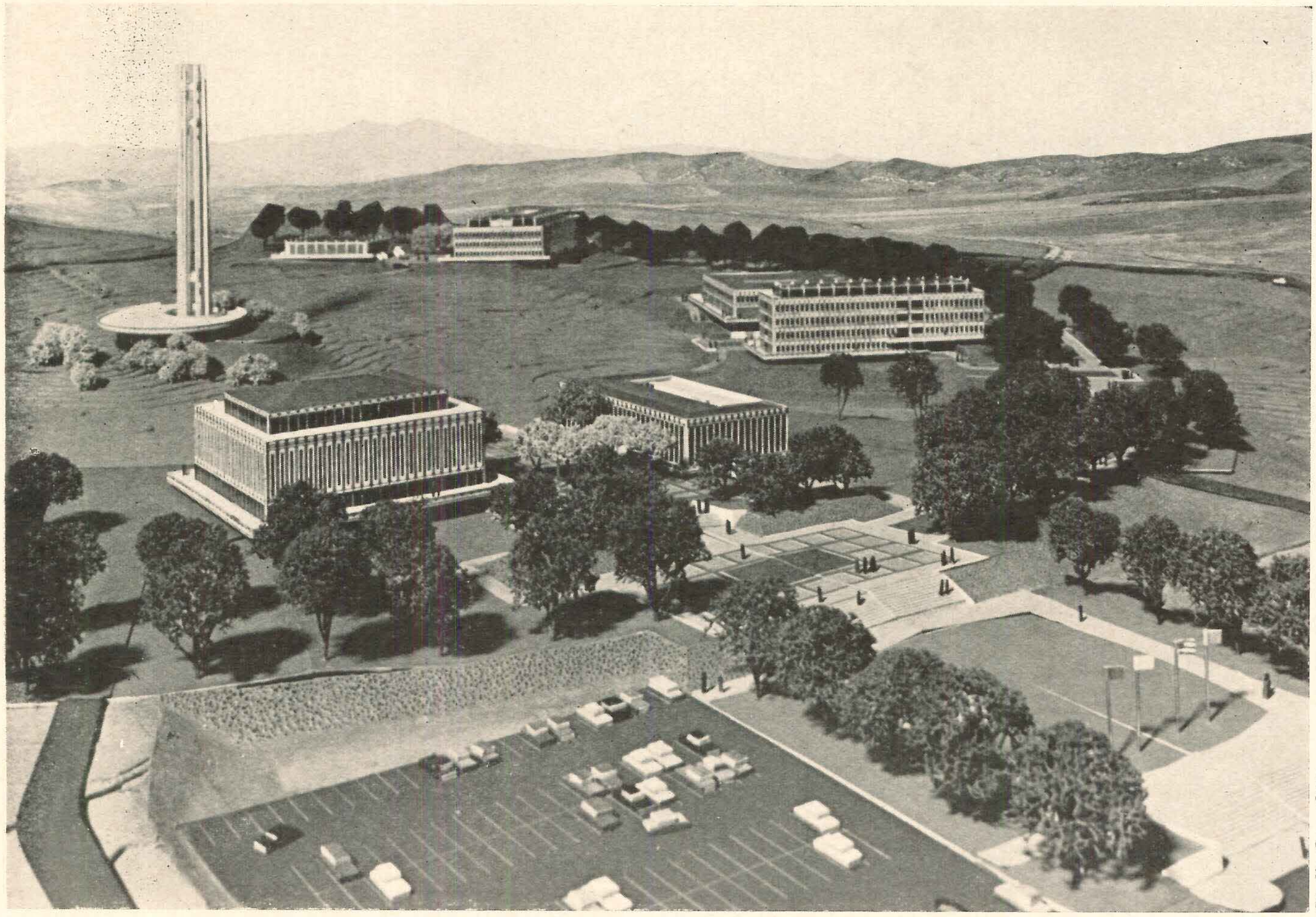
the interrelations between natural resources and open space, and between human resources and urban space, would be examined critically. Our academic plan has simply and clearly evolved from this.

At the core is a College of Arts, Letters and Science, organized to include various divisions such as social sciences, humanities, biological and physical sciences, and fine arts. Initially, it is expected that this college would provide instruction for majors in more than a dozen fields. In addition, as part of the program to further a distinctive character for the campus, especially in resource utilization and development, a School of Engineering and a Graduate School of Administration will be established. In time there will be added various professional schools, institutes and centers, with architecture, medicine and law as possibilities for such additions.

When the Irvine campus opens in the fall of 1965, its first buildings will form an arc of what will eventually be the Ring Mall, in the center of which will be a park, permanently reserved as open space, through which our students will move between classes and activities and where events can be scheduled.

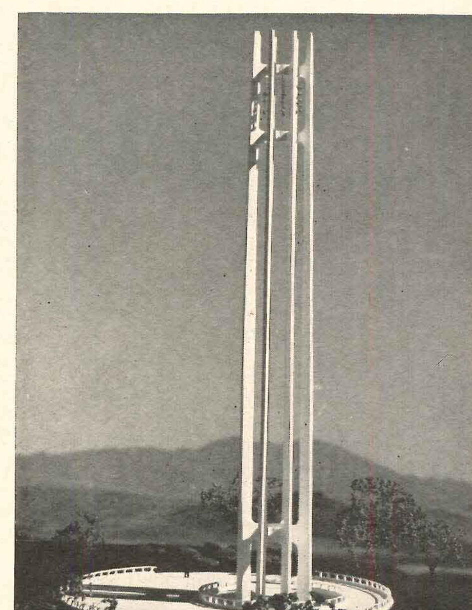
As we grow toward our ultimate enrollment of 27,500 students, the development of our physical plant and the unfolding of our academic program will pace each other to meet the continuing demands of the people of the state.

—DANIEL G. ALDRICH, *Chancellor*
*University of California, Irvine*

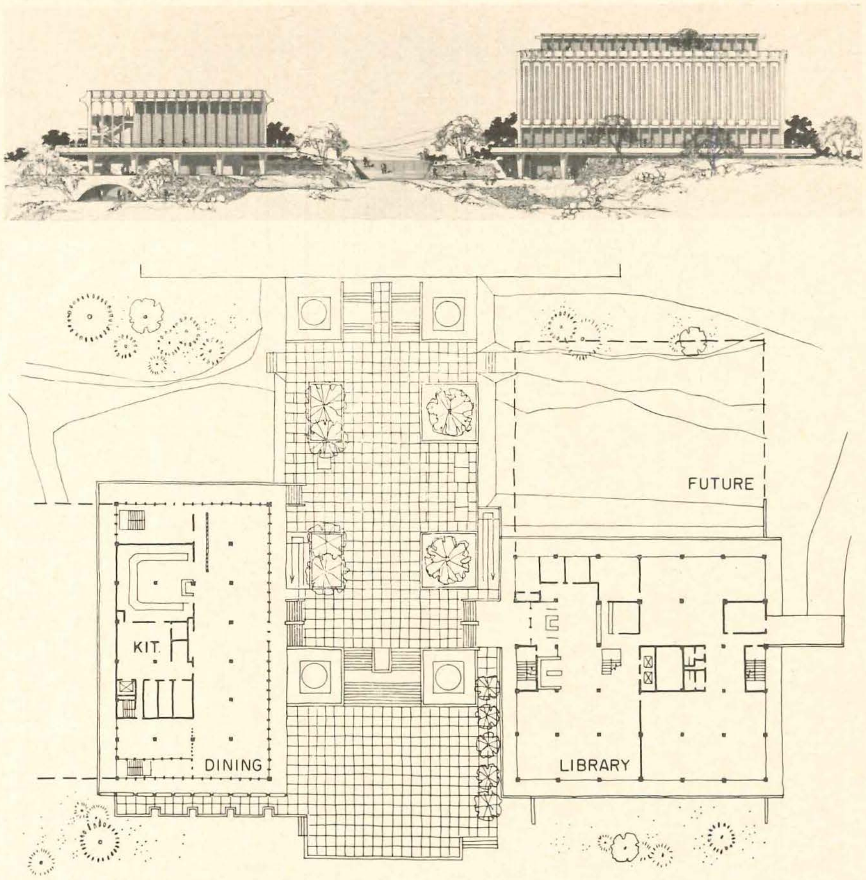



## SITE AND PLAN

The Irvine campus is a 1,510-acre tract of open land within the Irvine Ranch, a 93,000-acre property in Orange County, 30 miles south of Los Angeles, which is still largely undeveloped. The Irvine Company, now in process of planning the development of its vast land holdings, presented the university with 1,000 acres of land for a campus, and the university bought an additional 500 acres to allow for housing and other campus needs. The open, rolling character of the land, as yet treeless and barren, was a strong influence in the development of both the master plan and the design of the first buildings now under construction. The strong geometric pattern of the plan suggests a measure of control within the the openness of the site and a means to a more comprehensible scale. The Ring Mall at the center of campus, and the six quadrangles which radiate from it, provide this containment while retaining ample open space, especially between quads and in the 16-acre Great Park at the heart of the campus. Within the Ring Mall are located all of the initial buildings needed to commence operation of the campus so that from the first the campus will have identity. As it grows, other buildings will be added in the quads. This physical plan directly follows the academic organization of the campus in which the College of Arts, Letters and Sciences is the core undergraduate unit. The divisions within the college provide the major fields of study and these are the basis for five of the quadrangles. The sixth is the Gateway Plaza, the ceremonial entrance to the campus and the link to the Town Center of the community to be developed around the campus. Gateway Plaza contains the principal all-campus facilities: the library, cafeteria, student activities offices, theater, museum and administrative center. This tight organization of academic and administrative elements places all sections of the campus within a 10-minute walking distance of each other, and permits use of the strong unifying device of a platform as the base from which all buildings rise and as the principal level of pedestrian circulation between buildings.



The Centrum, a 300-foot tower to be both symbol and landmark, is to rise from a circular podium set in the Great Park at a point which will make it visible from most parts of the campus. The podium would be used for ceremonies and other all-campus events. *Top*: Ring Mall

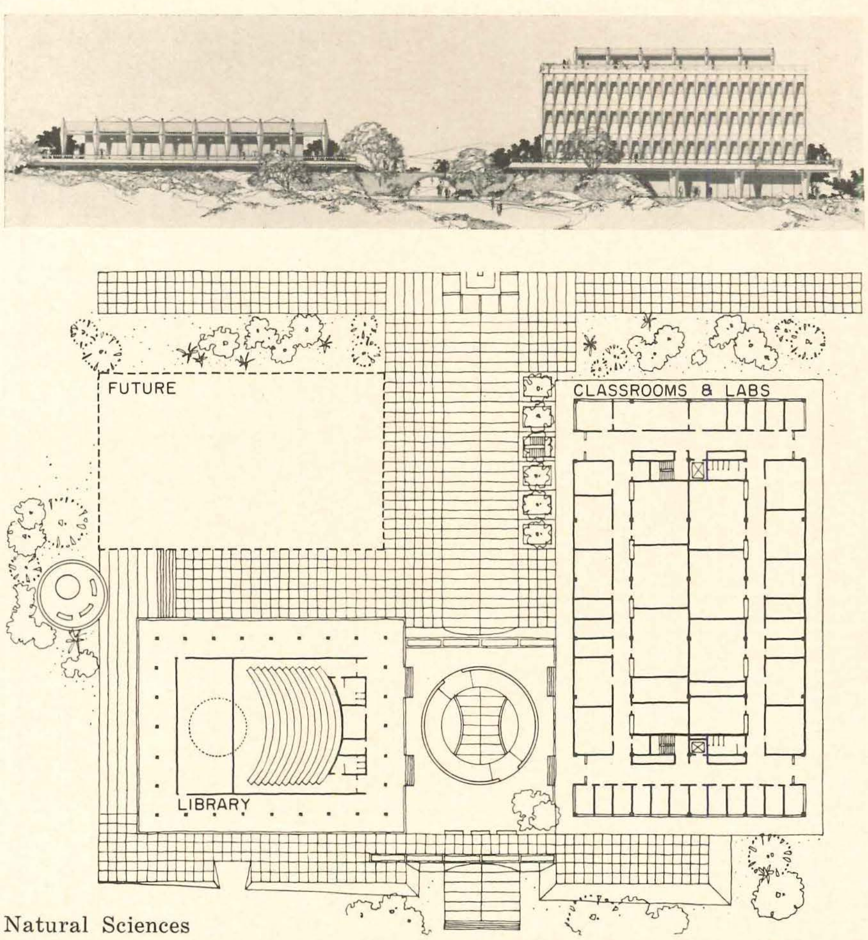



Cafeteria and Library

## LIBRARY AND CAFETERIA

The library and cafeteria are at the entrance to Gateway Plaza, the complex of central campus headquarters and the entrance to the campus from the Town Center of Irvine, a city destined to have 150,000 residents. Both of these buildings will eventually be twice as large as their initial units. The cafeteria which now provides for 600 in commons, faculty and snack bar, will ultimately have tables for 1,200. Offices for campus administration and for student activities will be located on the library roof during the first phase of campus development.

Architects: William L. Pereira & Associates, A. Quincy Jones and Frederick E. Emmons & Associates, and Blurock, Ellerbroek & Associates; contractor: Robert E. McKee, Inc.; landscape architects: Hahn & Hoffman




Natural Sciences

## NATURAL SCIENCES

Unlike Santa Cruz where unity of design is sought in diversity, Irvine seeks diversity within a unified design approach. The first buildings on the campus have been designed by a group of associated architects, and this has provided a "vocabulary" for the present buildings and for those to come in the future. The Natural Sciences unit—a four-story building for laboratories and classrooms and a two-story lecture hall connected by a bridge—shows some of the means to this design diversity. A platform provides a base from which all buildings rise and acts also as a pedestrian circulation at a uniform height above ground; precast concrete panels, on a 5-foot module, incorporate window, spandrel and light control and offer flexibility of design by varying forms within the module.

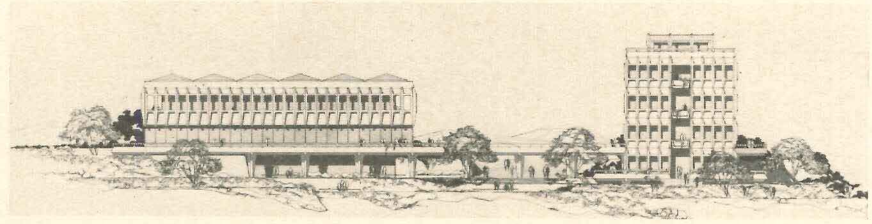
Architects: William L. Pereira & Associates, A. Quincy Jones and Frederick E. Emmons & Associates, and Blurock, Ellerbroek & Associates; contractor: Robert E. McKee, Inc.; landscape architects: Hahn & Hoffman

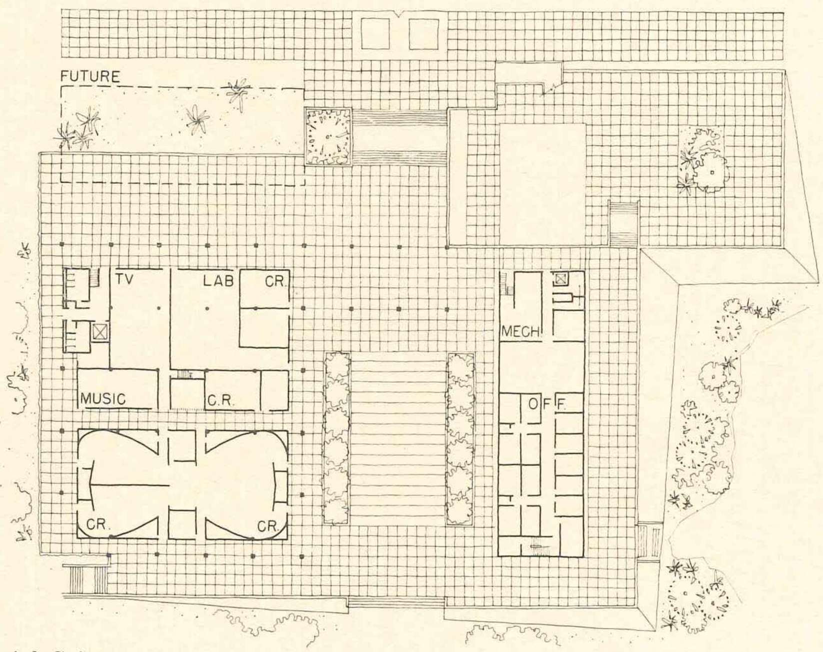
*Studio One photos*

## SOCIAL SCIENCES AND HUMANITIES

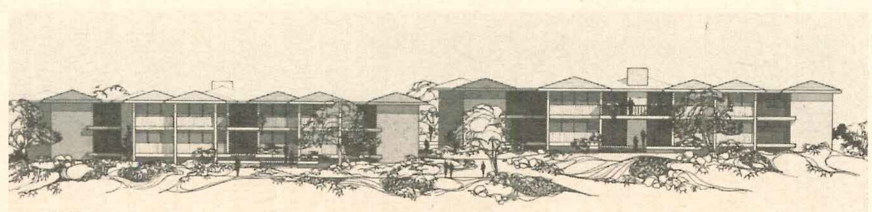
The first buildings at Irvine form an arc of The Ring which will eventually enclose the "vital center" of the campus. Because of their siting, however, the buildings will give the campus a focus from its earliest days. They also form a nucleus for the development of the quadrangles which are a distinctive feature of the master plan. The juxtaposition of buildings is by intention and is based on interrelation of departments and disciplines. Social Sciences, which includes administration, is therefore next to Engineering, which will require courses in administration for certain of its curricula. Social Sciences and Humanities are located in a four-story building connected to a large classroom building by a loggia. Both buildings have access at two levels—the platform level which connects as a bridge, and the ground level which is the loggia. Included are facilities for teaching machines, television and computers.

Architects: William L. Pereira & Associates, A. Quincy Jones and Frederick E. Emmons & Associates, and Blurock, Ellerbroek & Associates; contractor: Robert E. McKee, Inc.; landscape architects: Hahn & Hoffman





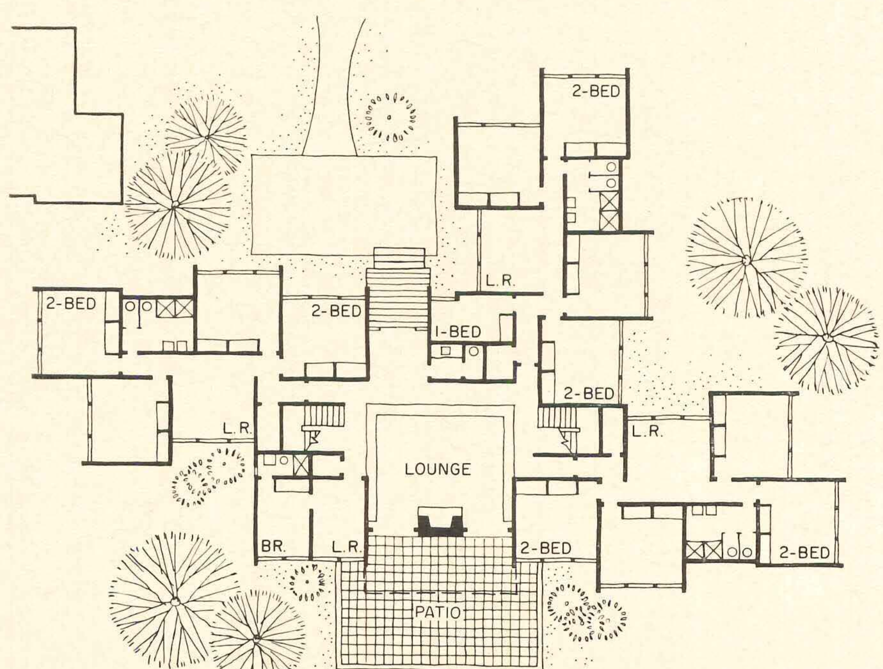

Social Science and Humanities




## RESIDENCE HALLS

The first group of residence halls for 408 single undergraduate students is now under construction and is expected to be completed in time for registration in the fall of 1965. Each will house 50 students and a resident adviser. A head resident and a senior faculty member will also live in each cluster of such halls. Later, apartments for married students and another group of single student resident halls will be added. The residence halls are located near academic quadrangles but are not directly connected with their activities as are the residence halls at Santa Cruz.

Architects: William L. Pereira & Associates, A. Quincy Jones and Frederick E. Emmons & Associates, and Blurock, Ellerbroek & Associates; contractor: Robert E. McKee, Inc.; landscape architects: Hahn & Hoffman




Residence Halls

Palomar Pictures

# SAN DIEGO CAMPUS

*University of California*

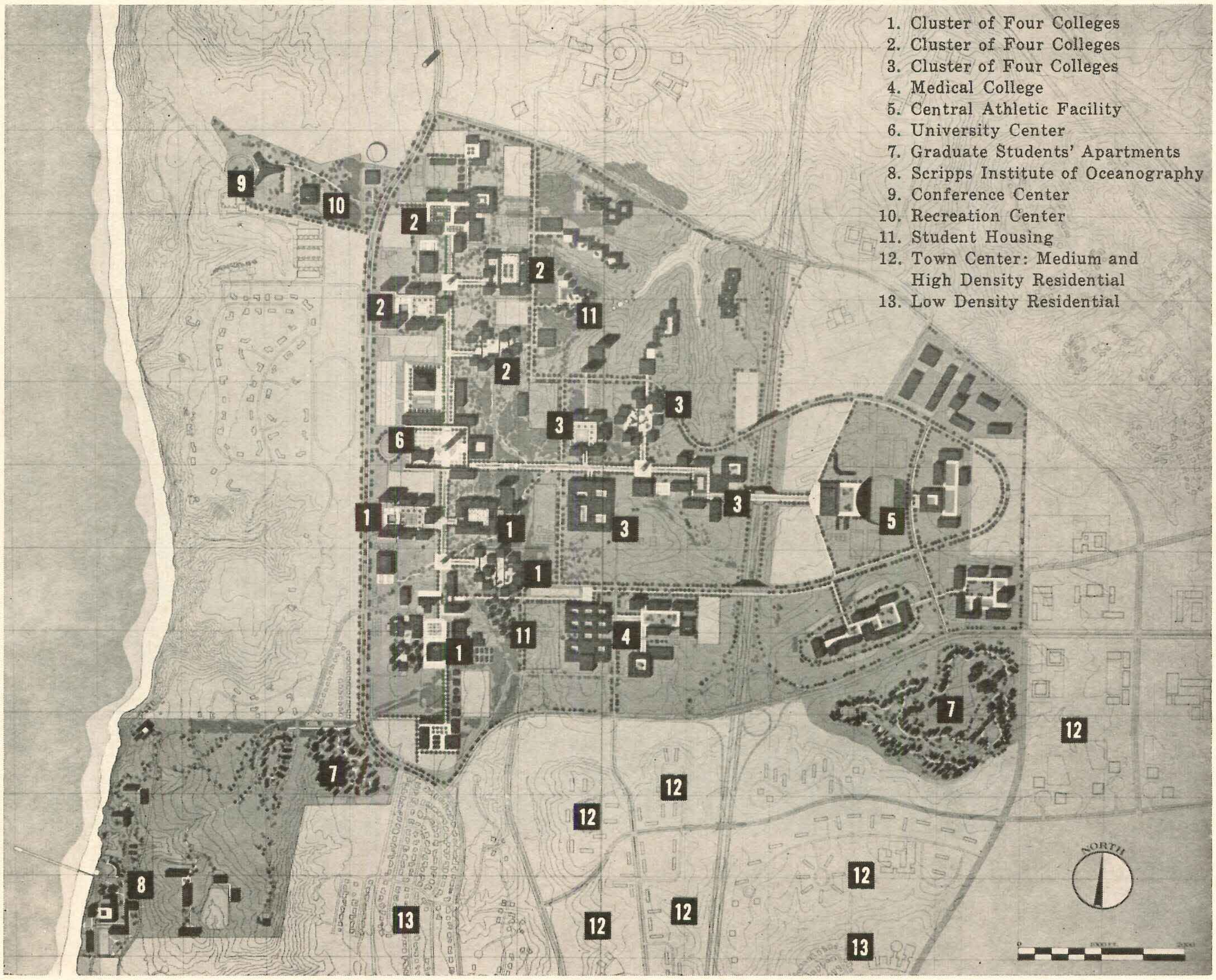
## Site, Place and Time: Academic Program and Architectural Plan

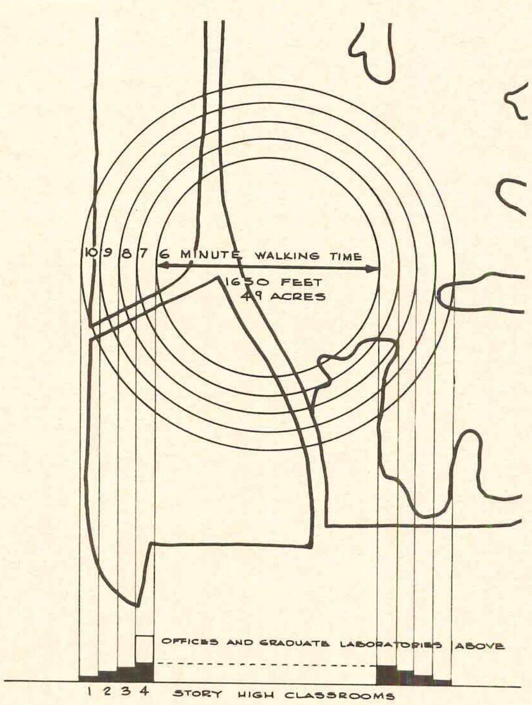
When we started planning the general campus of the university in San Diego, we were sure of one thing: we were going to build on Torrey Pines Mesa a university like none other. This conviction sprang not from a desire for mere novelty, but from a sober recognition of the giddily changing nature of our world. We believed it was our duty to seize the opportunities offered us by the second half of the 20th century and to erect here in San Diego a university campus designed to fit the specific needs of an area, a community and an age.

Our problem was to reconcile the virtues of smallness with those of great size. That the campus was to grow to 27,500 students we knew. Yet we did not wish those students to become anonymous ants in a faceless, "monolithic" university. Nor would we like to see our program splintered, our efforts dissipated, in a nostalgic attempt to emulate the small liberal arts

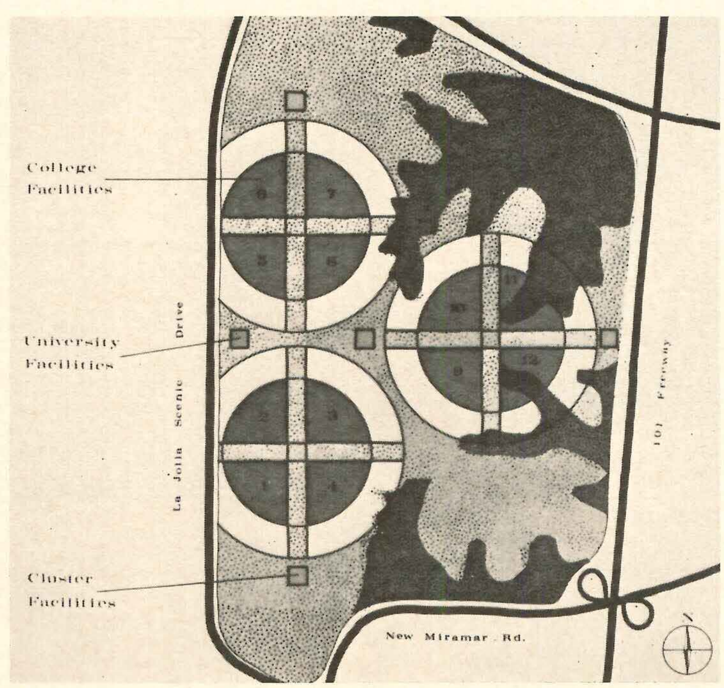
*continued on page 194*

MASTER PLAN. Architects and planners: Robert E. Alexander, F.A.I.A., & Associates; engineers: Boyle Engineering (civil), Parker Zehnder & Associates (structural), Boris Lemos (mechanical), Frumhoff & Cohen (electrical), LeRoy Crandall & Associates (soils mechanics); landscape architects: Wimmer and Yamada



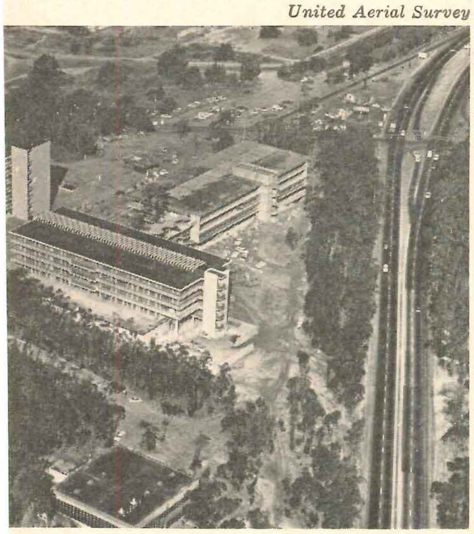
Campus walking time



Cluster plan

Philip W. Faulconer, A.I.A.

United Aerial Survey



The site has great beauty: a plateau overlooking the Pacific Ocean, with views to the Laguna mountains on the east. Tall eucalyptus and some Torrey pines border the open lands. Steep canyons, over 200 feet deep cut the campus in the northern and southern sections. The San Diego freeway bisects the campus, but terrain and organization of activities minimize its disrupting influence

*continued from page 192*

colleges of the past. We therefore decided to found 12 colleges, each large enough (2,300) students to be considered a small university within itself, each offering to its students the opportunity of getting to know intimately their classmates and teachers. Yet these 12 colleges are to be linked in a campus-wide, university organization. The disciplines will draw on faculty from all colleges for their members. Very expensive research facilities, available only to a major university, will be shared.

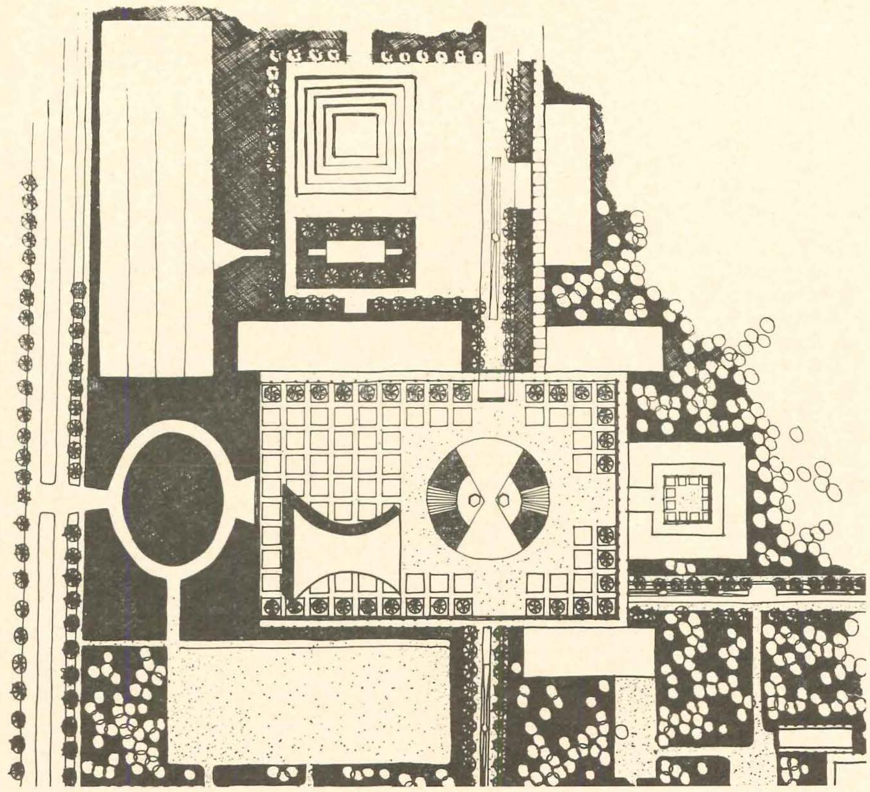
The long-range development plan clearly articulates this concept of diversity within unity. The colleges are entities, yet the over-all plan is as simple as it is noble in scale.

A further thing—one needs to be very familiar with the San Diego area, the climate, the terrain, the culture, to recognize how well the proposed plan suits, how on Torrey Pines Mesa overlooking the sea, there will rise a university that fits exactly there and probably would be at home nowhere else in the world. This, I think, is a most remarkable achievement.

—HERBERT YORK, *Chancellor*
*University of California, San Diego*

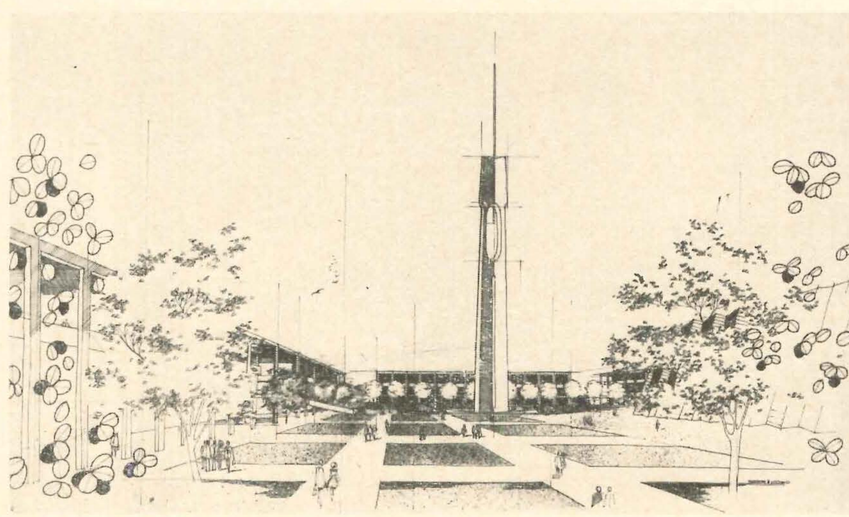
## SITE AND CAMPUS

The San Diego campus on Torrey Pines Mesa is within the limits of the city of San Diego, although 12 miles from its central district. The 1,124-acre site is both beautiful in itself and endowed with fine vistas to the ocean on the west and the mountains on the east. Its terrain varies from gently rolling lands bordered by steep canyons to a ridge which runs north-south at an elevation of 400 feet above sea level and 100 feet above some parts of the campus. The master plan for this campus, eventually to provide for 27,500 students, creates 12 undergraduate colleges of about 2,300 students each, grouped in clusters of four around a campus center with facilities for use by all colleges. As at Santa Cruz, there will be liberal emphasis within this broad academic scope. The distinctive academic character of each college is to be reflected in distinctive physical form (page 197), with unity in such diversity derived from a rectilinear pattern of building arrangement and from landscaping, paving and other elements of campus furniture. A fine north-south pedestrian way, of the scale of the Champs Elysées, and an east-west promenade, will further tie the campus together. Most academic development will be located on the west side of the San Diego Freeway which bisects the campus (fortunately at a lower level), with bridges to connect east and west areas. Parking is of unusual importance for a campus in a location such as this, and five structures will be built ultimately on the campus, most of them in ravines so that they are actually below campus level. Housing for about half the student population will be in residence halls (or apartments for married students) on the perimeter of the campus. Intramural athletic facilities are part of each cluster. The central campus, referred to in the master plan as a "communications center" is intended as a "true center of the communicating arts" to include centers for all means of communication—written, spoken, visual—as well as the campus administrative center. Of major concern is the development around the campus of housing areas of varying densities and types to permit faculty and staff to live near the campus. The city of San Diego has adopted a master plan for developing contiguous lands.



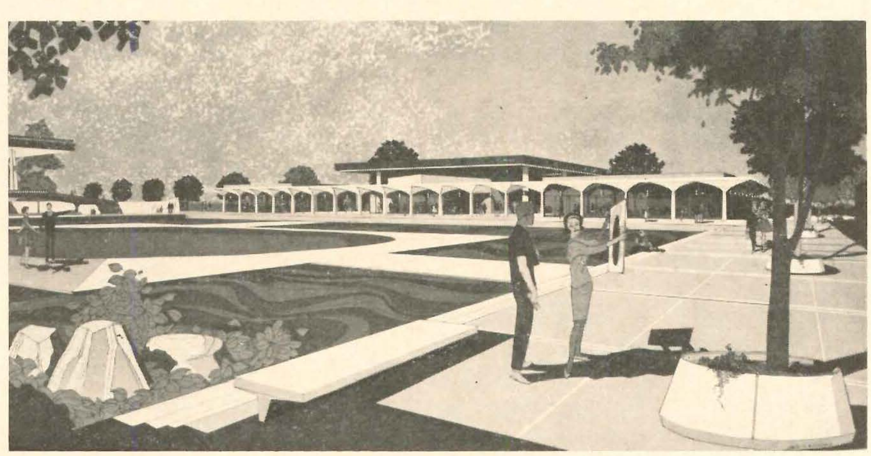
*Claude E. Ellis*

Plan of central campus

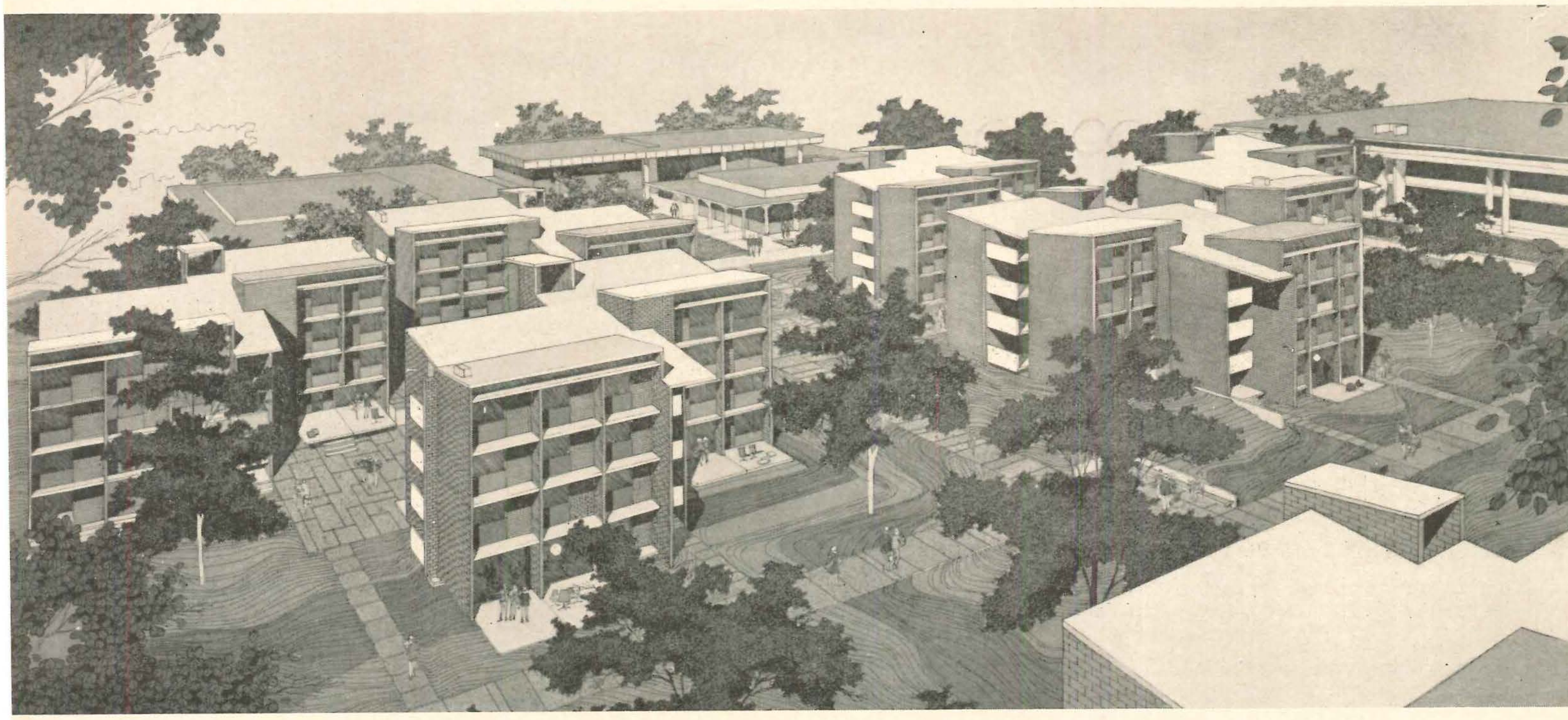


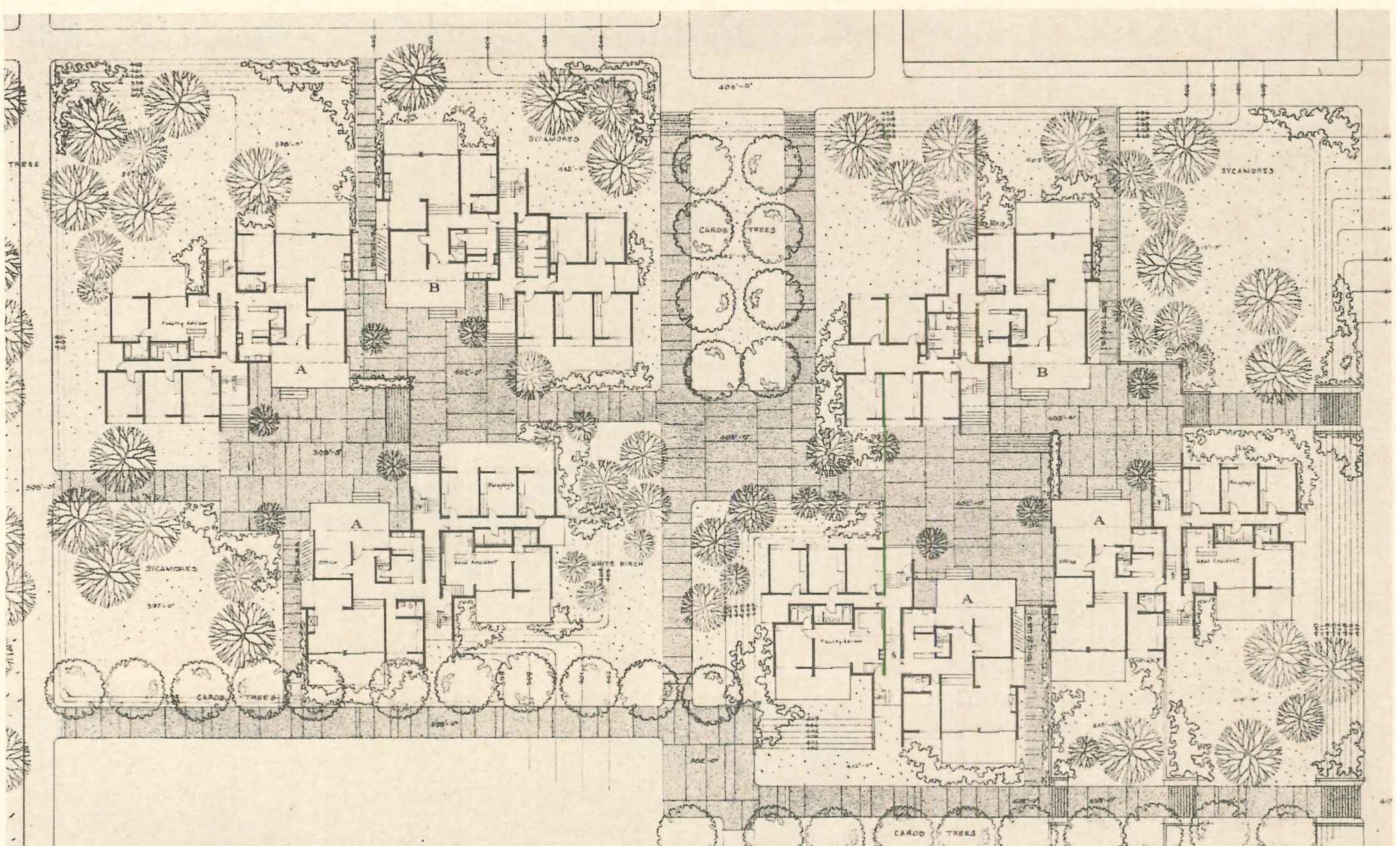
*Claude E. Ellis*

Great Plaza, with 360-feet high Communications Tower



Plaza, surrounded by library, museum, auditorium and theater, television and radio studios. Sunken "forum" will seat up to 6,000 students






MAIN FLOOR

## RESIDENCE HALLS

The architect for these residence halls for First College (*see drawings above*) designed them "to provide a superior social environment by devoting an entire building to the same number of students as are often housed on one floor of a university dormitory." Each hall will house 67 students and a resident assistant assigned to two of the six halls now being built. The split-level plan offers opportunities for further break-down into small groups. The 10 students on each half-floor will share a study-lounge, bathroom and balcony deck. On the ground level, all halls will use half the floor space for a multi-use lounge; the other half will have three student rooms and an apartment for the head resident and for childless faculty members. The Central Facilities building provides for all dining and social activities. The halls, of concrete frame with precast reinforced concrete block walls, are now under construction.

Architects: Robert E. Alexander and Associates, Robert E. Clark, associate in charge; engineers: Parker, Zehnder & Associates (structural), Boris M. Lemos (mechanical), Frumhoff & Cohen (electrical); landscape architects: Wimmer and Yamada

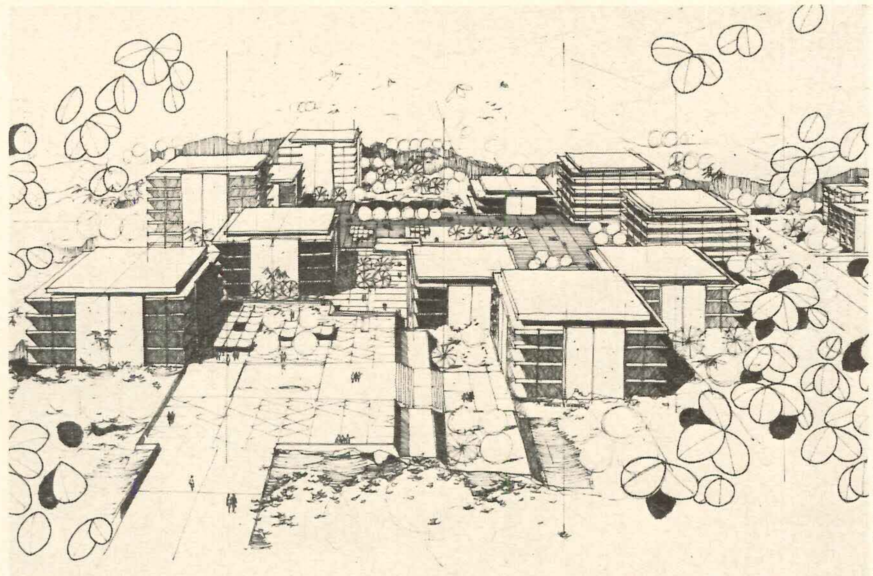
## PROPOSED COLLEGE TYPES

Since the academic plan for this campus, like that of Santa Cruz, suggests that each college have its own distinct character architecturally as well as academically, the master plan architects for the San Diego campus proposed four basic design approaches to give distinction to each college and variety to each cluster. The proposed types—as much illustrations of the academic plan's suggestions as they are proposals—depend on the concept of building form rather than on surface variation. Topography and landscape have their part in adding further variety to the development of each type.

The "cube" type of college plan (*top right*) derives from some of the first laboratory buildings on the campus which use a service core. Building heights vary from two stories to eight. Courts could be terraced to suit the site.

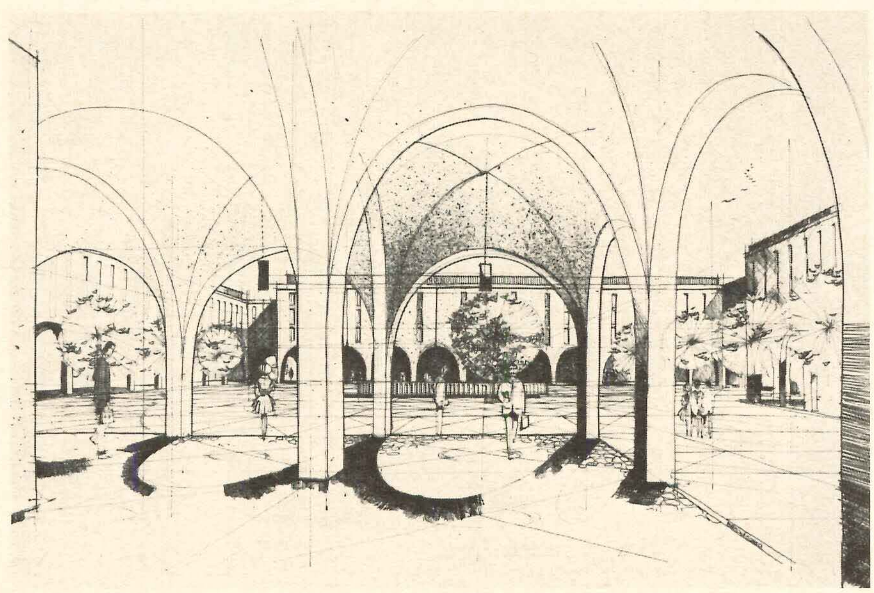
The "cloister" type (*center right*) is suggested by Christchurch, Oxford, but the scale of the laboratory buildings which would surround its court would be much greater than in the English prototype. The cloister type is suggested for other campus areas than the west.

The "tower" type (*bottom right*) is suggested as especially appropriate near the central campus because of its compact land use. The prototype from which this college type derives is San Gimignano, with towers placed along an open landscaped court. The master plan envisions two such colleges as pylons to frame the heart of the campus from the Scenic Drive.

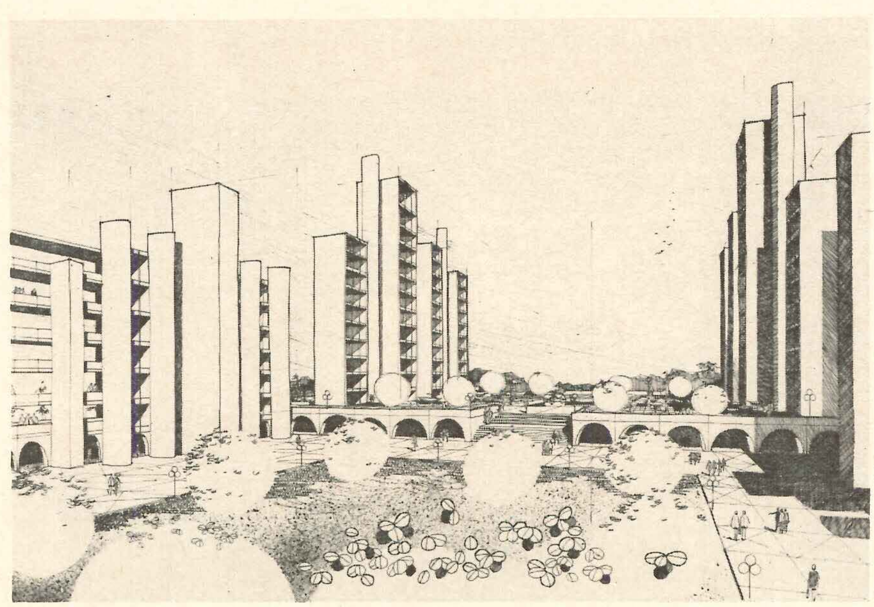


*Claude E. Ellis*

Cube type

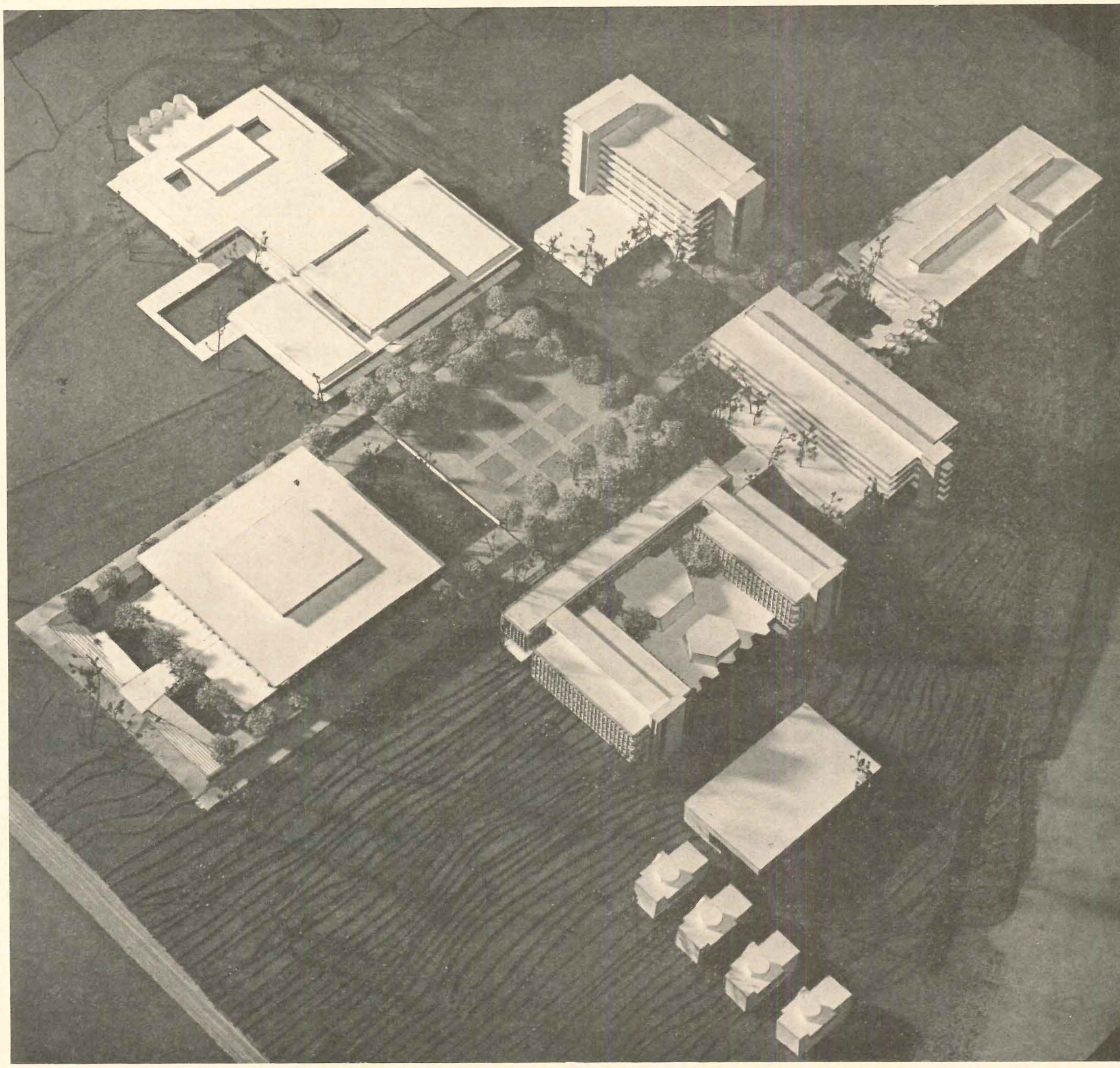


Cloister type



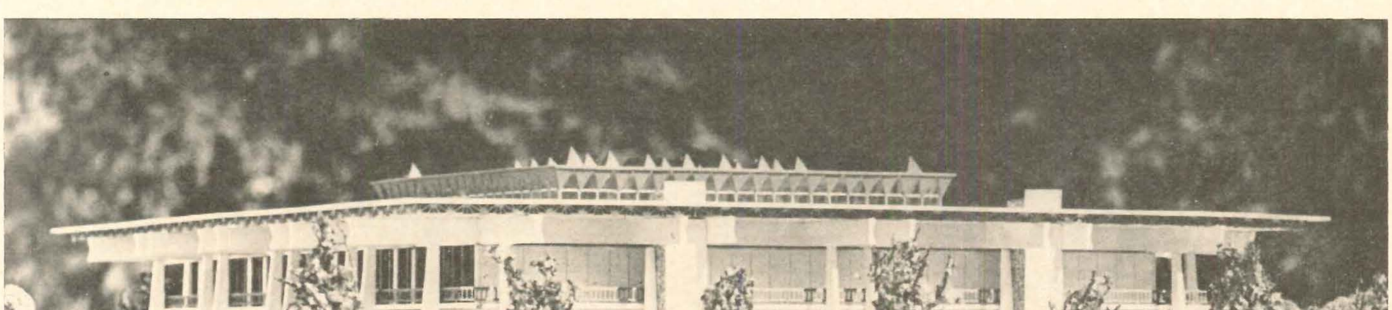
*Glasheen Graphics*

Tower type



Claude E. Ellis

First College campus, library at upper left

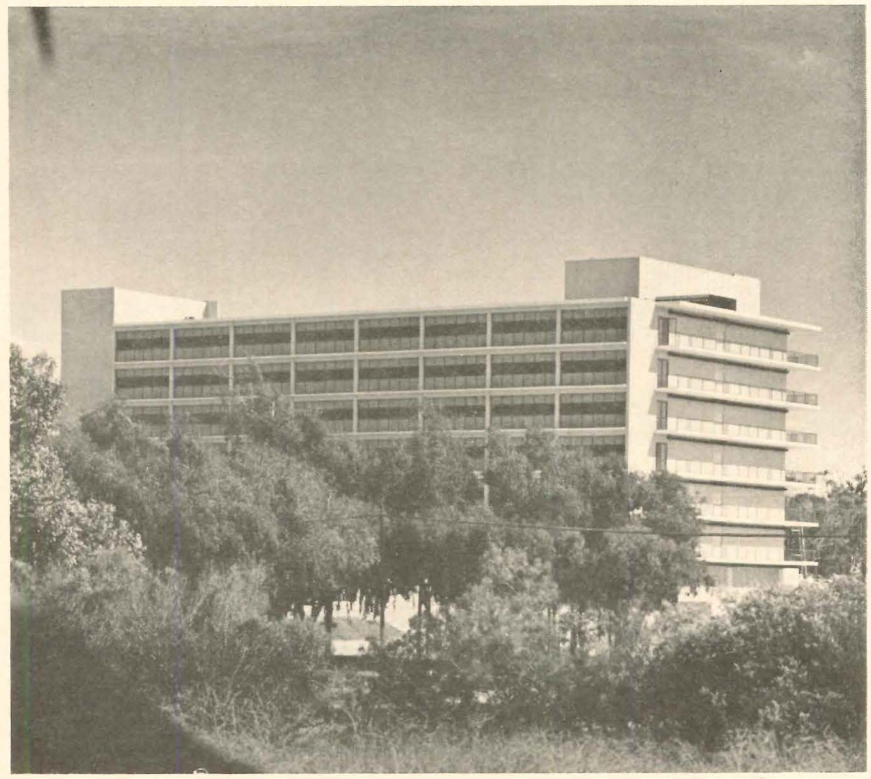


Model of library

## FIRST COLLEGE

The First College is a fourth design proposal (*top left*): an "open" type, with freely related building heights and forms derived from the fact that First College had already been established as a graduate School of Science and Engineering before the decision was made to develop a full scale university campus at San Diego. These first buildings, sited and designed for this earlier function, were completed a year ago and are now in use by San Diego's first freshman class. The buildings are of concrete, and are grouped around a central court which gives an immediate focal point to the college. The tallest is a seven-story classroom, laboratory and office building (*top right*). Two lower buildings, also for instruction and research, are connected by an open multi-level bridge of unexpected exuberance.

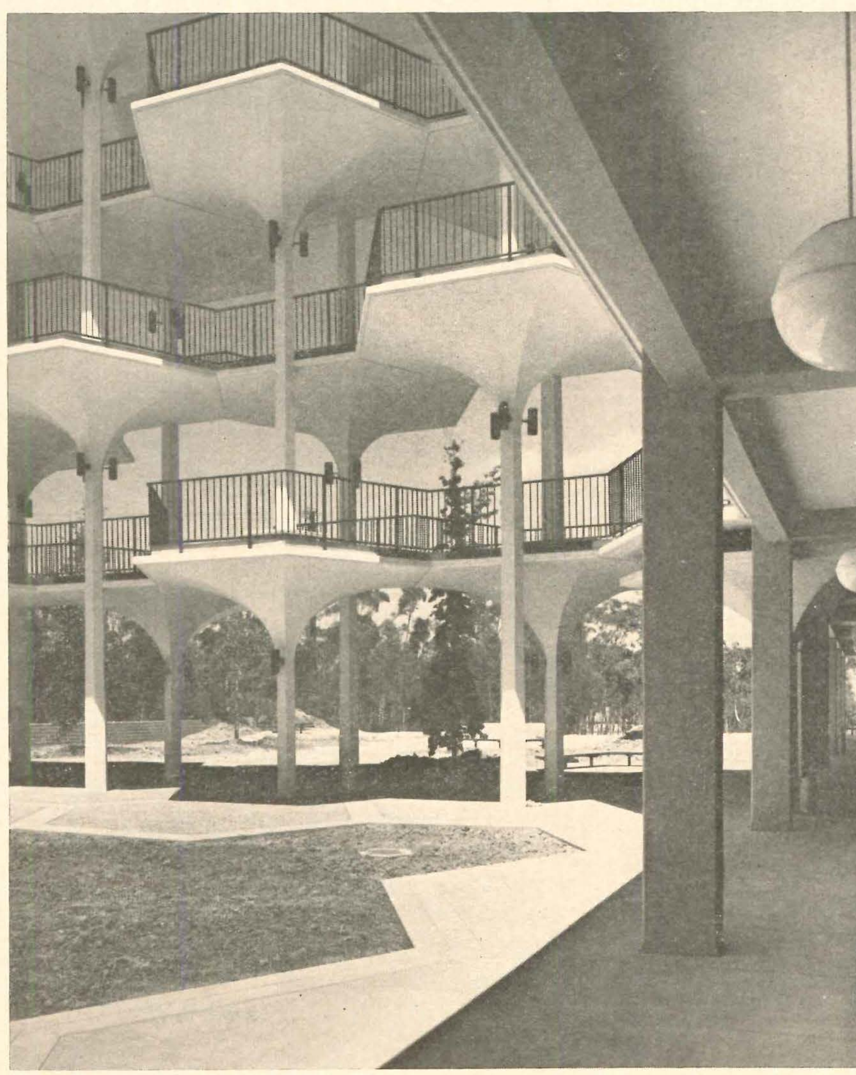
Architects, Laboratory and Classroom buildings: Risley, Gould and Van Heuklyn; consultants: Ayres & Hayakawa (mechanical), Frumhoff & Cohen (electrical), Hillman & Nowell (structural)



## LIBRARY

This library building, nearing completion, also one of the buildings intended for the graduate school of science and engineering, is now the nucleus of First College. Surrounded by its own landscaped terrace, the library intentionally differs in character from the other classroom buildings of the college. Low in height, it relates to the landscaped terrace which surrounds it and to the central court onto which it opens more than it does to the other buildings. On its lower floor is a 500-seat lecture hall. Class and seminar rooms are also included in the building.

Architects: Deems-Martin, Associates; consultants: A. J. Blaylock & Associates (structural), Randolph, Johnson, Miller & Associates (mechanical and electrical), Boyle Engineering (civil), Bolt, Beranek & Newman, Inc. (acoustical); landscape architects: Wimmer & Yamada; graphics design: Russell Forester and Tom Suzuki; interiors consultants: Deems-Martin, Associates



*Glasheen Graphics*

Laboratory buildings and three-story connecting walk were begun before campus was designated for general education

# CALIFORNIA'S NEW STATE COLLEGES

## Architectural Synthesis of Educational, Financial and Physical Requirements — Guiding Consideration, Human Scale and the Human Factor

As part of the master plan for higher education for the State of California, the Governor appointed a board of trustees to guide and coordinate the activities of the state colleges. The 18 colleges under our jurisdiction constitute the largest system of higher education in the United States —and perhaps in the world.

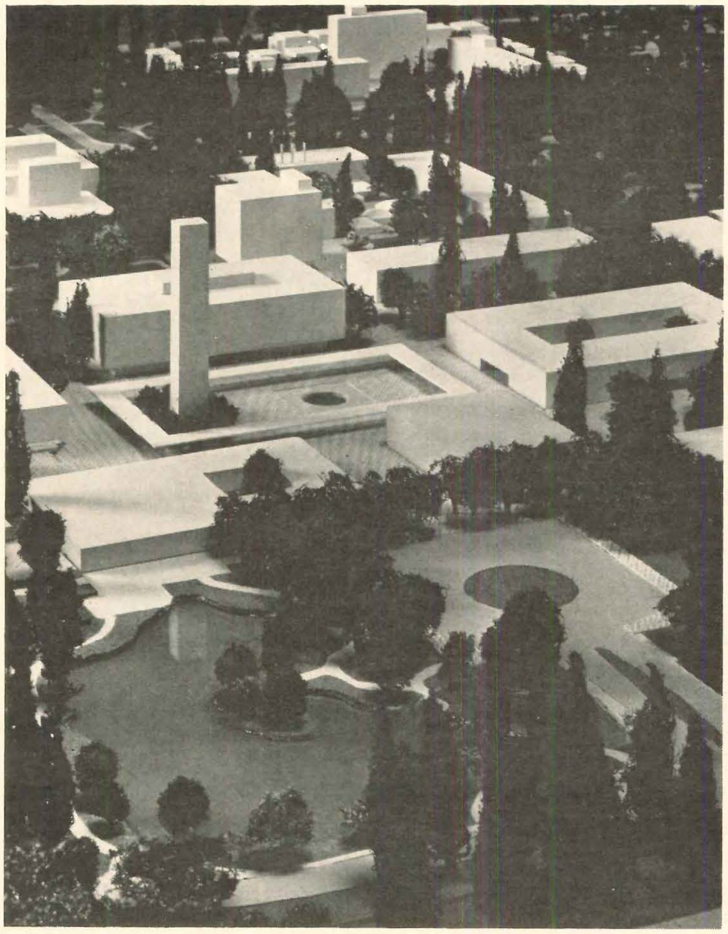
During this brief span of our existence, we have been responsible for the investment of hundreds of millions of dollars in capital outlay programs involving the expansion of existing campuses, and the development of entirely new campuses. Our responsibility has also included the supervision of expenditure of hundreds of millions of dollars for operating budgets.

Since the underlying objective of our Board is the determination to achieve academic excellence of all our colleges, we concluded very early in our operation that we must have the closest kind of coordination between three of our major trustee committees. These are the Committees on Educational Policy, Finance, and Campus Planning. The reason is so simple, it is sometimes overlooked. To achieve academic excellence, we must first have the right educational curricula, we must then be able to finance the cost of these, both in content and in faculty; our campus planning must result in a physical environment that is conducive to the achievement of academic excellence.

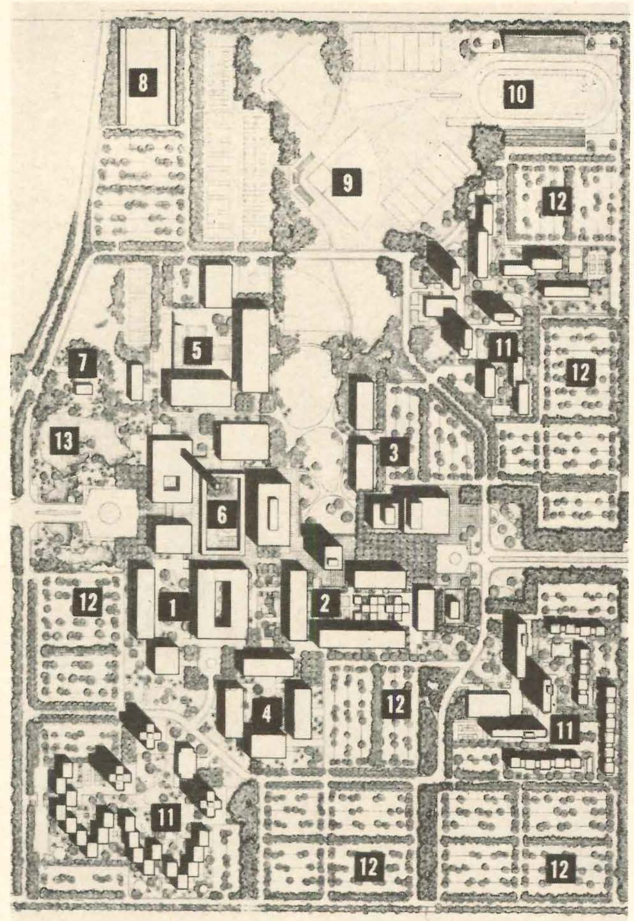
All educators agree that a true education cannot be based on the process of memorizing, but must instead, be based upon the process of learning to think. This places a high priority on the importance of the surroundings for the teachers who teach, and for the students who study.

While still being very prudent and careful with the taxpayer's dollars, our Board of Trustees has been embarked, during the past four years, on a program designed to bring to each campus a proper regard for what I term the "humanation" of architecture—the proper consideration of space, light and air; the development of semi-enclosed patio areas, benches, landscaping; and now and then, even the use of a bit of water. In short, the human scale and the human factor is a guiding consideration.

—CHARLES LUCKMAN, F.A.I.A., *President*
*Board of Trustees, California State Colleges*



Gerald Ratte

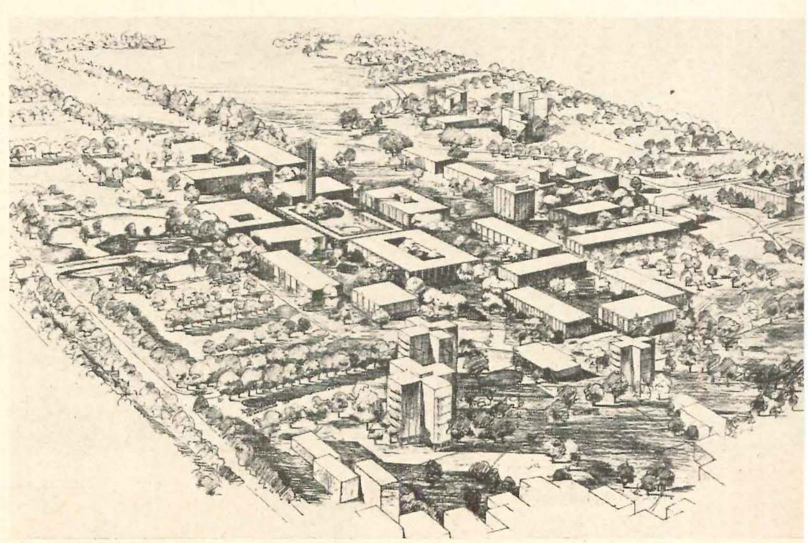


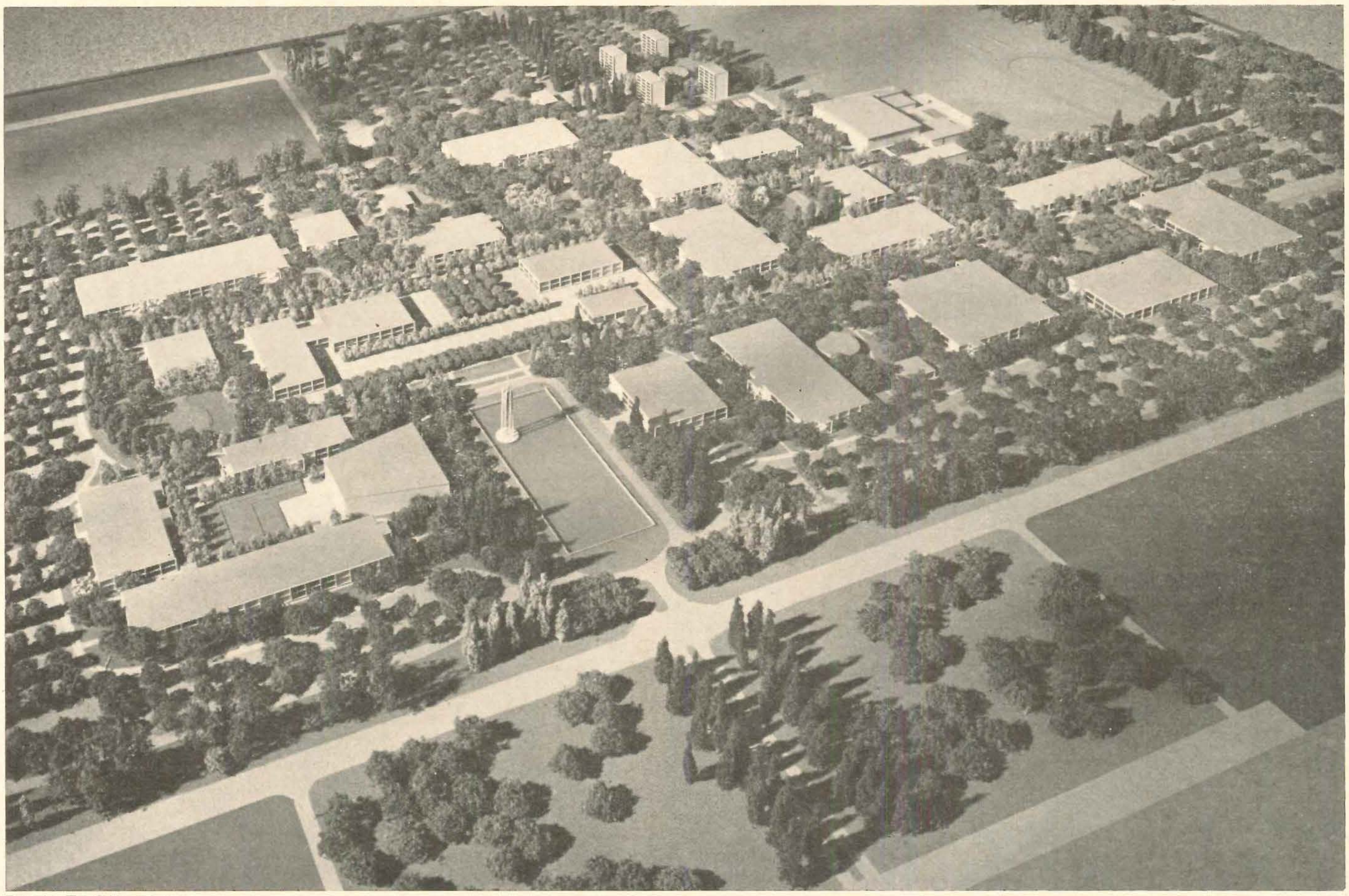
1. Academic Center
2. Science Center
3. Arts Center
4. Unassigned Center
5. Physical Education
6. Campus Center
7. Campus Residence
8. Corporation Yard
9. Athletic Fields
10. Stadium
11. Student Housing
12. Parking
13. Lake

# SONOMA CAMPUS

Sonoma State College at Cotati, some 50 miles north of San Francisco, was the first college to be established after adoption of the master plan for higher education 1960-75, and its master plan was the first to be prepared by a private architectural firm under the policy affirmed in 1961 by the Board of Trustees of the state colleges. The campus is on a 215-acre site in a flat agricultural area whose pastoral character and distant low hills offered no dramatic features. The master plan is based therefore on development of internal interest through building and spatial relationships. Buildings in the five major campus centers—Humanities, Science, Fine Arts, Physical Education and Administration—are grouped around open landscaped courts which give identity to each. Each center is separated from the others by larger open landscaped areas, designed to give over-all unity to the campus. The academic core elements are so located that the first buildings on the campus will provide the sense of a complete environment even while the campus grows, at an expected slow rate, to its ultimate size for a campus of 12,000 students.

Architects: John Carl Warnecke and Associates; engineers: Carl Kirker (civil), Alexander Boome (mechanical); landscape architects: Lawrence Halprin and Associates



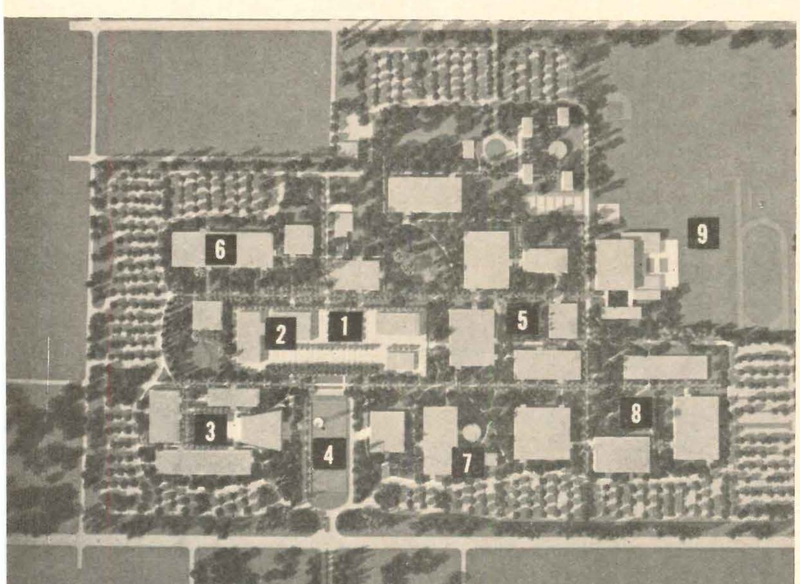


*Dwain Faubion photos*

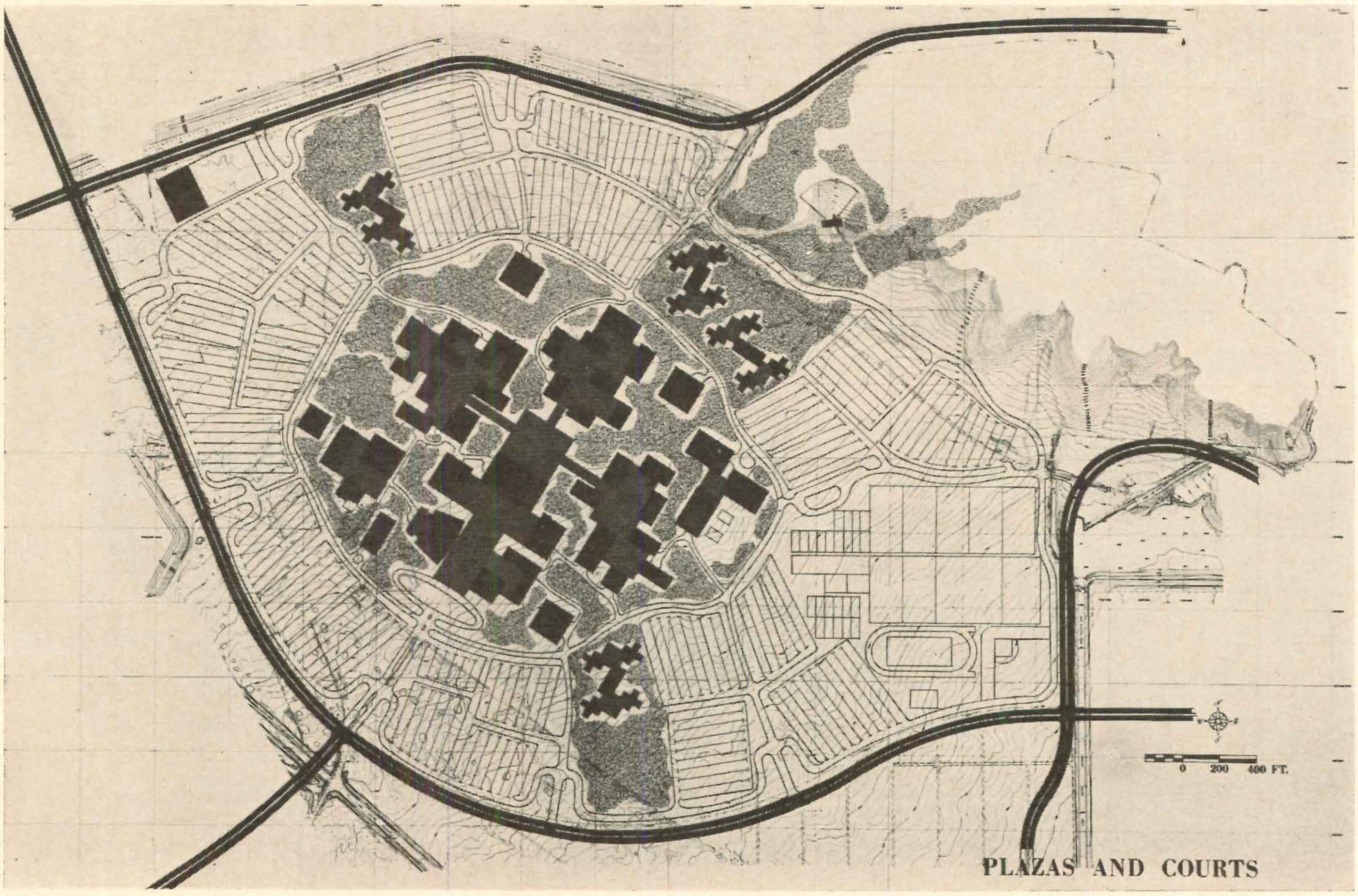
Architects and engineers: Reid and Tarics (master plan), Spencer, Lee and Busse (site development); mechanical engineers: G. M. Simonson (site development); landscape architects: Royston, Hanamoto, Mayes and Beck

# STANISLAUS CAMPUS

Like Sonoma, Stanislaus State College has been operating in temporary buildings on a temporary site, but it will move to its permanent campus when the first buildings, now under construction, are completed in the fall of 1965. The new campus at Turlock in the Central Valley has a flat site of no special interest, and the master plan recognizes the need to create centers of interest within the campus area. In addition to organizing the various academic disciplines so that their buildings form groups around open areas with rather informal landscaping, the plan proposes a formally landscaped mall in the general commons area beside the library and student activities buildings. Since the Central Valley is hot and dry for the major part of the year, the presence of water in visual form is a welcome sight. The large pool is, however, both a handsome visual feature of the campus and a necessary campus storm water holding basin.



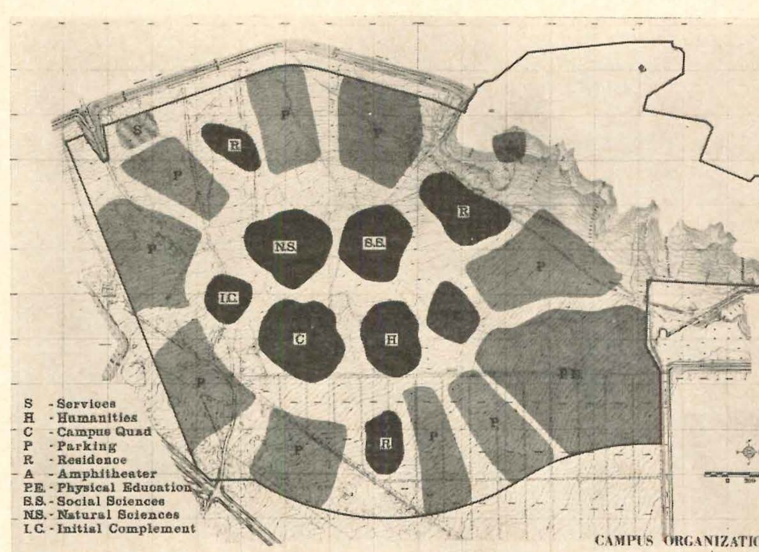

**1.** General Commons Area
**2.** Library
**3.** Performing Arts
4. Storage Pool
5. Education
6. Business
7. Social Sciences
8. Industrial Arts
9. Athletics

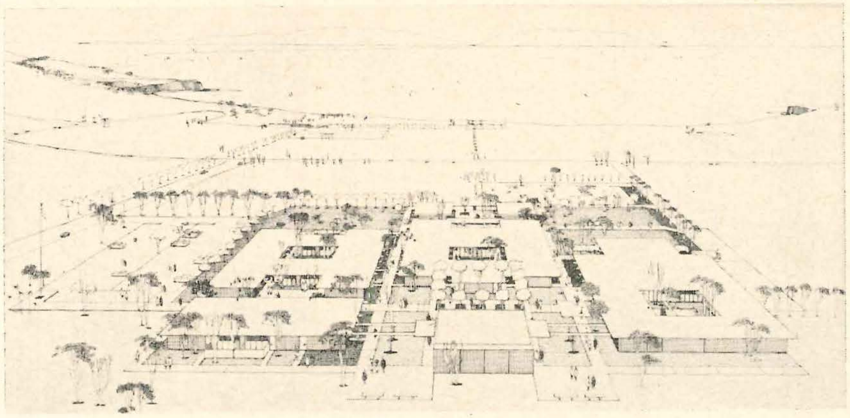


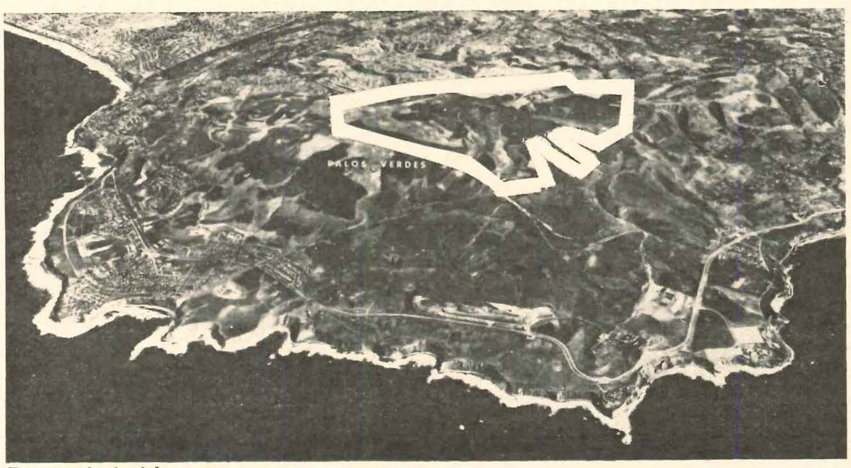

# SAN BERNARDINO CAMPUS

California State College at San Bernardino, the most recently authorized state college campus, is being designed for an ultimate student population of 20,000, which it will draw from the surrounding metropolitan area, destined to have a population of 1,600,000 by 1975. The master plan—tentative so far, since it has not been approved by the State Colleges' Board of Trustees—is based on an academic program which departs from that of the conventional state college. The curriculum emphasizes the liberal arts and sciences with some teacher training courses, and requires a smaller number of courses per term, more independent work assignments and large lecture courses with smaller seminar groups. These educational approaches have repercussions in the design of the physical plant. Fewer classrooms, more facilities in library and science buildings, large lecture halls and 20-seat seminar rooms are proposed to meet these concepts. The architects propose that the buildings be air-conditioned and that they be sited and oriented to provide protection from the intense heat and occasional high winds.

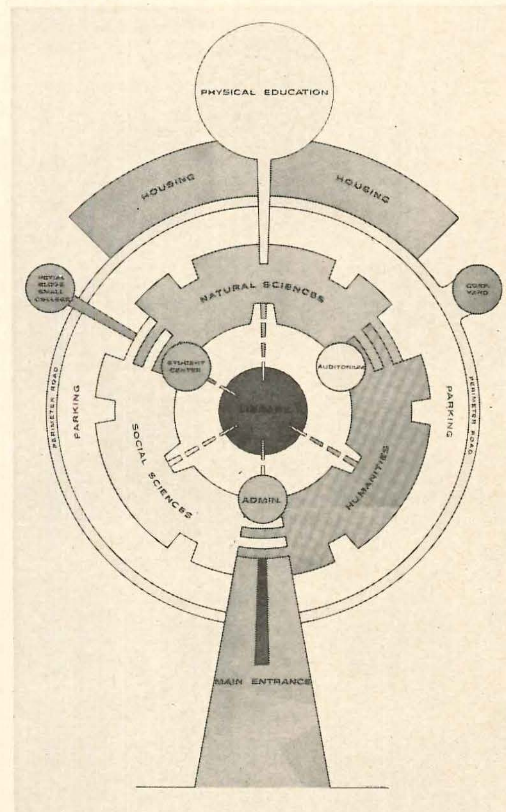
Architects, planners and engineers: Albert C. Martin and Associates (master plan)







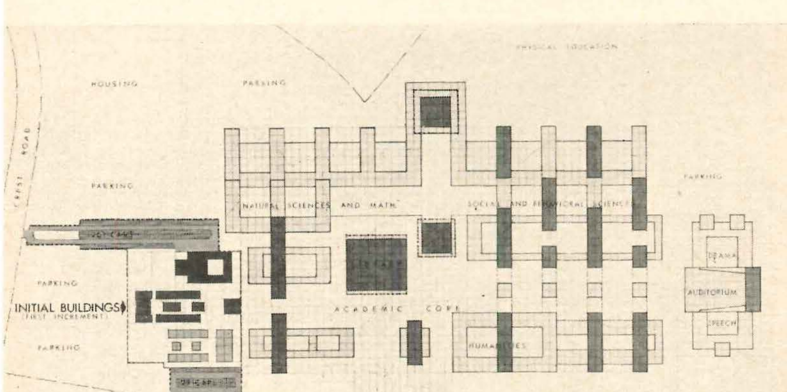
*Panoramic Aerial*




# PALOS VERDES CAMPUS

California State College at Palos Verdes, authorized in 1960, is to open in 1965 and by 1980 will have the full-time equivalent of 16,000 students on its campus. Its location on the Palos Verdes Peninsula gives it superb views of Catalina Island to the south, the Pacific Ocean on the west and the Santa Monica mountains on the northwest. The area it will serve is largely residential, and the scale of the buildings proposed for the campus is compatible with the surrounding development. Since the college will not be activated until its first buildings are completed (this will be the first state college to start operations in its permanent buildings) the design of these buildings has been an integral part of the master planning process. The schematic master plan—tentative, as the State Colleges' Board of Trustees has not as yet approved it—is a direct reflection of the academic plan, and the space relationships derive from a liberal arts curriculum which encourages inter-disciplinary programs of research, teaching and study. The first buildings will become the experimental "small college" in 1969-1970.

Architects and site planners: A. Quincy Jones, F.A.I.A., and Frederick E. Emmons



# *Architectural Engineering*

## Europe Lags U. S. in Architectural Metals

Europe still lags far behind America in the use of architectural metals, according to Dr. Norman Bienenfeld, president of the National Association of Architectural Metal Manufacturers, who recently returned from an extensive inspection trip through England, France and West Germany. Dr. Bienenfeld noted that "the countries are very much custom-minded rather than production-minded. There is a considerable amount of hand labor used where we would use machines, and many of the field procedures, especially in the use of certain walls and store fronts, are similar to the ones we used five and ten years ago. Standardization and mass distribution have yet to come to the architectural industry in Europe."

## Hurricane Cleo Tests Protective Screens

Hurricane Cleo provided the first test of the protective ability of the new hurricane screens used in the three-story window wall of the new Otto Richter Library at the University of Miami, Coral Gables, Florida, designed by Miami architects Watson, Deutschman and Kruse (June 1964, page 186). Maintenance officials reported that with the protective screens and shutters which were designed for rapid closing and maximum protection, not a light of glass was broken.

A special design for rapid closing allows a man armed with a pole to close each nest of screens with maximum ease. The stainless outer screen is pushed upward over the clerestory window, where it snaps into position. As it rises, it uncovers two inner screens of corrugated aluminum which drop down over the lower part of the window.

## Prestressing Laminated Wood Beams

A method of increasing bending strength of glued laminated wood beams made of common-grade lumber by prestressing them is under development at the U.S. Forest Products Laboratory. Prestressing was done by inserting steel wire cables in holes extending through the lower half of the beams. Findings indicate strength gains up to 30 per cent and reductions in strength variability between beams of as much as 50 per cent, based on loadings made immediately after prestressing. Results are being checked with long-term loadings to measure any possible effects of creep that may occur.

Results of the experiments demonstrate that prestressing is effective mainly with the lower common grades of lumber. Prestressing offsets the low tensile stress of low-grade laminations by inducing compressive stress in them. If the strength gains realized by prestressing are maintained under the long-term loading experiments now under way, laboratory officials believe that a major step forward in laminating design with common-grade lumber will have been realized.

## Code to Specify Noise Control Requirements?

Changes in construction practices (lighter materials, more mechanical equipment) are to a large extent responsible for the increased incidence of noise problems in apartment buildings, asserts Harold Birns, Commissioner, Department of Buildings, New York City.

At a recent seminar sponsored by Owens-Corning Fiberglas, Birns stated that because most factors causing noise are symbols of modern day living, solutions to this problem must rest on the judicious use of sound-reducing construction. No one can expect designers to forego advantages resulting from greater sophistication in the manufacture and use of building materials, any more than the general public could be expected to surrender their television sets and other inventions and appurtenances of modern living. But, Birns said, scientific use of sound-reducing construction in proper locations can lower many intolerable, harsh and discordant noises to acceptable levels. In preparing a new building code for New York City, acoustical engineers are studying the subject of noise control. If additional construction costs are indicated to be minimal, Birns remarked, then legislation containing mandatory requirements should unquestionably be adopted.

## This Month's AE Section

# HIGH-RISE APARTMENT STRUCTURES OF STEEL

*By R. M. Gensert, Consulting Engineer*

Steel framing has a number of advantages for high-rise apartment buildings:

1. Column sizes are minimum, especially when the economical high strength steels are used. Thus, more floor area becomes available.
2. Column offsets are freely made without serious shear problems either within the building plan or at its perimeter.
3. All steel beam deflections are instantaneous, and not subject to creep over an extended period of time.
4. Frame action may have complete continuity, no continuity, or any degree between the two limits, at the designers discretion.
5. Openings for mechanical services may be incorporated before or after construction, subject to stress analysis. Furthermore, the light weight of a steel building often effects a marked reduction in foundation costs when poor sub-soil conditions are encountered.

Our purpose here is to alert the designer to the potential available to him with structural steel. Some practical variations of steel skeletons and related architectural and structural details will be presented.

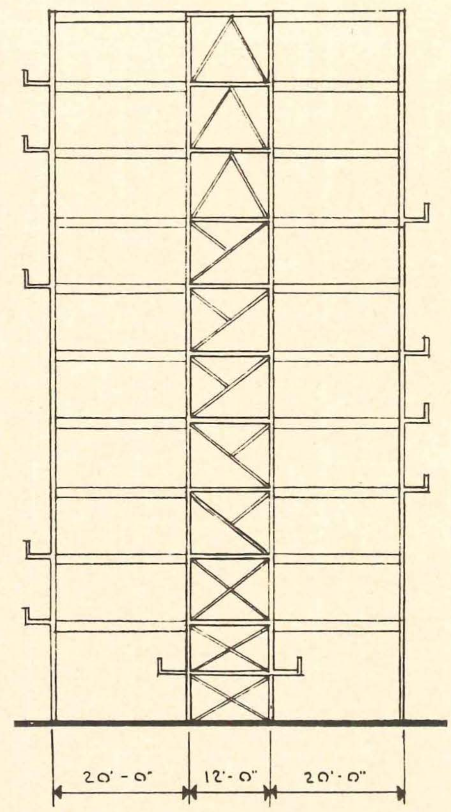



Figure 1: Variations in braced bents to permit corridor and door openings

**LATERAL STABILITY WITH BRACED FRAMES.** Vertical trusses or braced bents are used in multi-story buildings to resist lateral loads from wind or seismic origins. Bending moments from wind loads are converted to axial forces in the trusses, thus eliminating uneconomical flexural stresses. Beams can be joined to supporting columns by simple shear resisting bolted connections.

It is advisable to use high tensile bearing bolts at connections within the braced bent for the prevention of slip due to the repetitive nature of wind gusts or lateral impacts. Connections of other beams to the columns may be either standard bolts or regular high tensile bolts. The columns in a building of this type are not subjected to bending moments of any appreciable magnitude.

Horizontal penetrations through the braced bent are not restricted to ducts or plumbing. It is possible to locate doors or windows within the braced bent through proper arrangement of the web framing (Figure 1). Eccentricities of joint connections are not serious, since beams and columns are heavy enough sections to resist these localized bending moments.

Since the braced bent need not occur at every column line, it is necessary to transfer panel loads from one bent to the other. This transfer may easily be executed by utilizing light horizontal framing in the plane of the floors adjacent to the spandrels. Figure 2 indicates the use of this secondary framing and the accompanying deflection patterns.

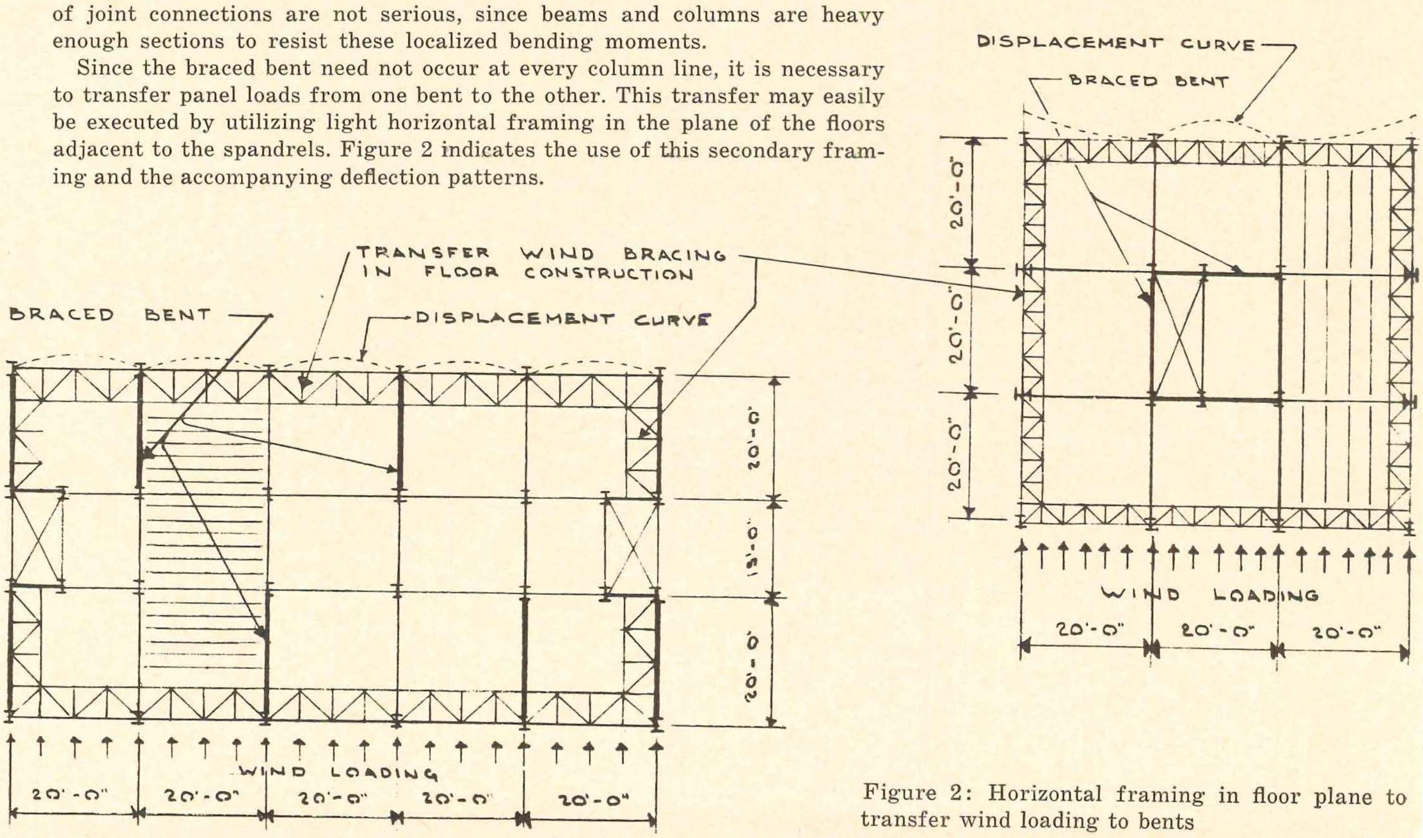



Figure 2: Horizontal framing in floor plane to transfer wind loading to bents

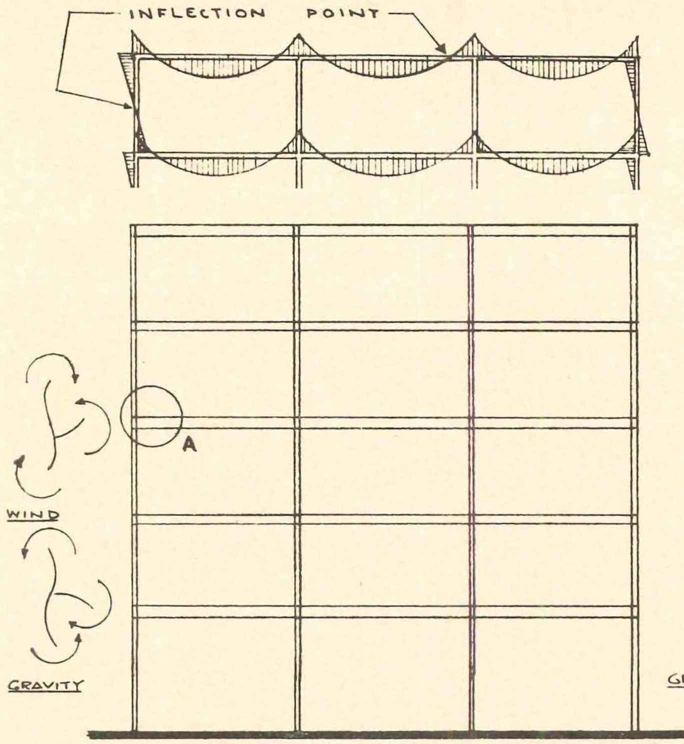



Figure 3: Continuous frame (gravity load moments shown at top)

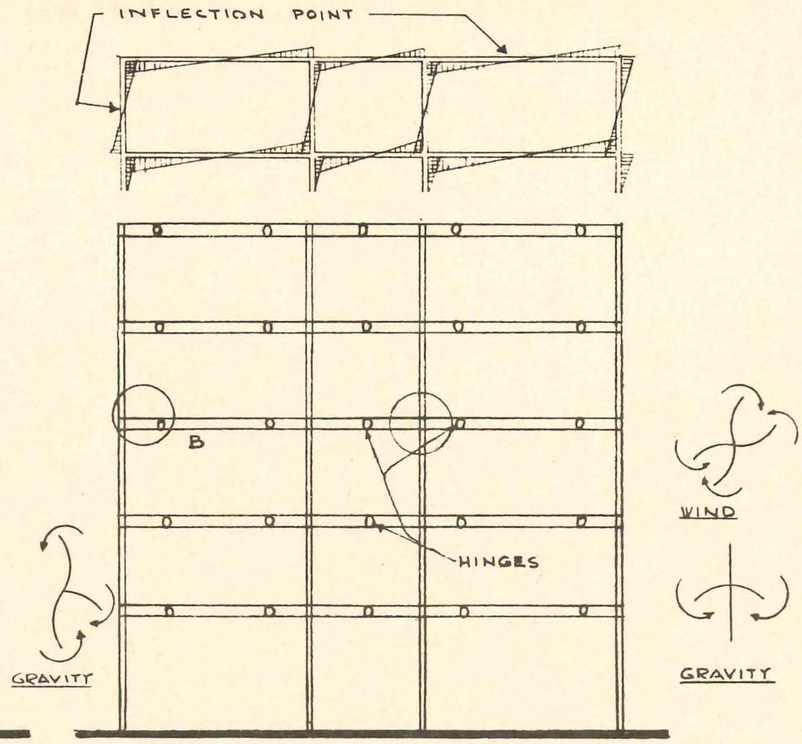



Figure 4: Jointed frame (lateral load moments shown at top)

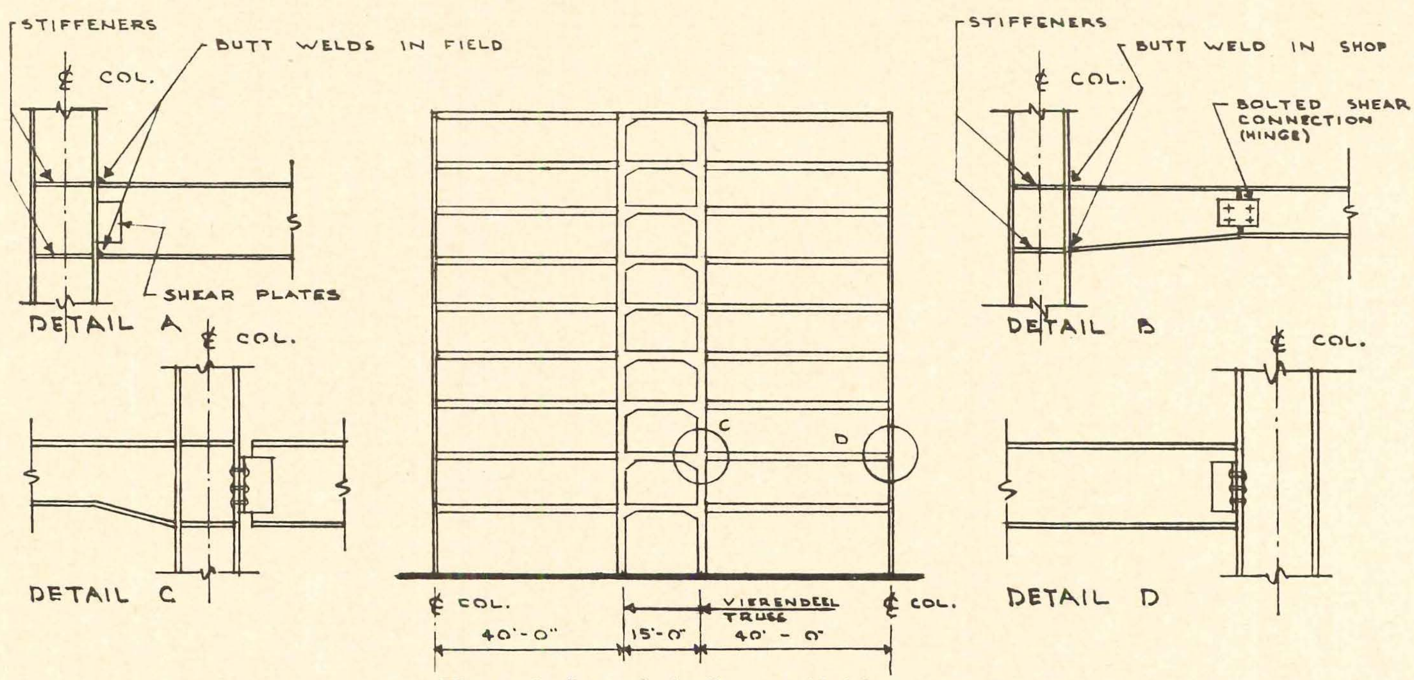



Figure 5: Lateral rigidity provided by vertical Vierendeel frame

**STABILITY BY VARIATIONS IN CONTINUITY.** The use of braced bents, though providing rigidity with economy, may limit the flexibility of the floor plan. Continuous rigid frames (Figure 3) offer nearly the same resistance to lateral loads, with the added advantage of reduced depth of construction. Frame action is obtained by making the connections of all beams to their supporting columns rigid, i.e., non-rotating. These must be made in the field at a higher cost than standard bolted connections.

Points of inflection in the rigid frame (where the elastic line of the frame changes from positive to negative curvature) occur where the combined moments due to gravity and wind loads have a zero value. A point of no moment does not require flexural properties in the beams, but does require shear resistance. Thus hinged or bolted connections can be employed in the beam webs at these locations, allowing fabrication of expensive moment connections in the shop.

Figure 4 illustrates this principle where the center columns and intermediate span stabilize the building. Continuity connections of beams to columns are made in the shop with a simple field connection made at the center of the intermediate span. Side spans are interrupted with hinges or standard field connections at inflection points maintaining total frame action. Lateral stability of this jointed frame is primarily dependent upon the two interior columns and their connected floor beams.

Figure 5 shows another technique of introducing lateral resistance. The two center columns and the intermediate beam are shop fabricated with rigid connections to form a vertical Vierendeel truss; other connections are field bolted. Although continuity in regard to vertical loads is not available, longer side spans are feasible by providing composite action between concrete floor slab and beam. This composite action would not be restricted by negative moments from wind resistance as is the case with continuous beams.

**MINIMUM COLUMNS AT GROUND LEVEL.** Lobbies and extended plazas often control the plan of the ground floor. Sometimes it is necessary to eliminate some of the building columns in the lower story. To accomplish this, one could resort to cantilevered floors, or floors hung from girders at the roof level. Figure 6 illustrates one of these structures.

The vertical Vierendeel trusses used in Figure 6 are the sole means of resisting lateral forces. The designer must consider this factor along with that of torsion of the columns in the lower stories due to unsymmetrical wind loads.

Transition frames similar to the one in Figure 7 allow the designer to create a column spacing at the ground level that is different from the typical spacing in the upper stories. This particular frame is proportioned to be a rigid structure with negligible deflections.

When the spacing of columns in the lower story is some multiple of the spacing above, a transfer girder may be used as shown in Figure 8. The transfer girder is subjected to high shear stresses that will require a reasonably heavy web with stiffeners.

This article is based on a study sponsored by United States Steel

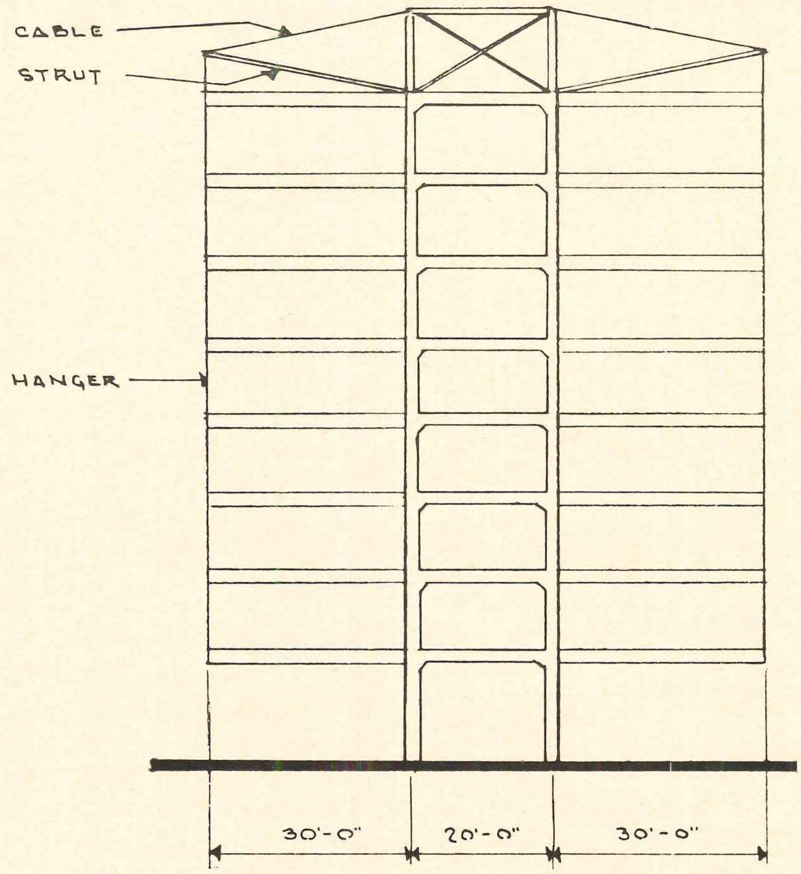



Figure 6: Hung floors permit minimum columns at ground level

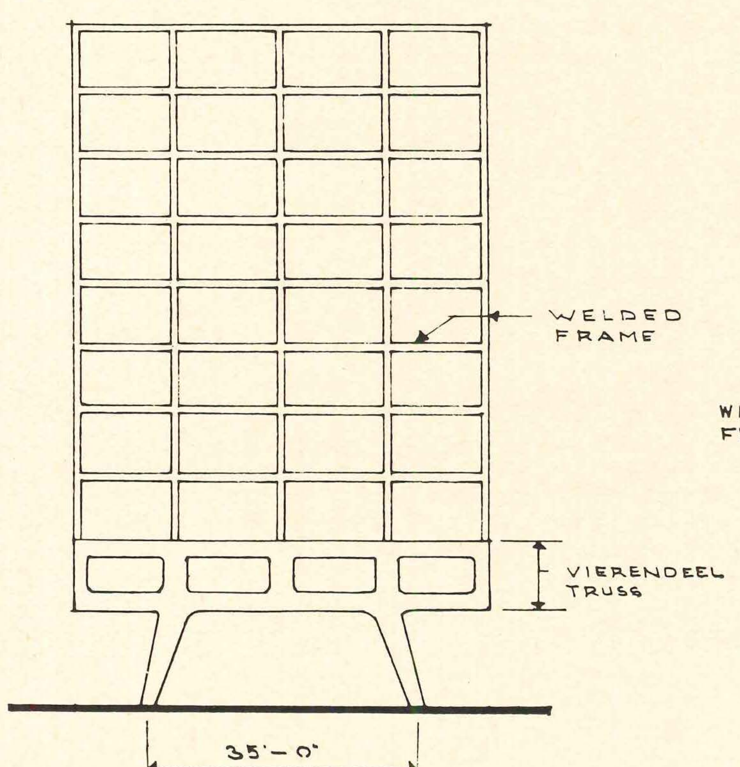



Figure 7: Vierendeel truss forms transition frame at first floor

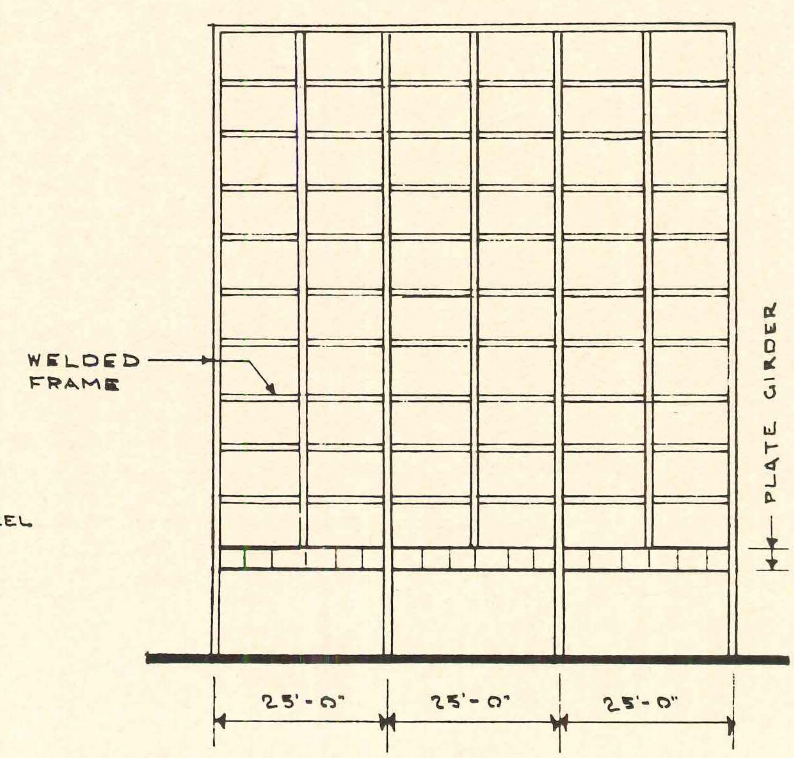



Figure 8: Transfer girder cuts down on columns at ground

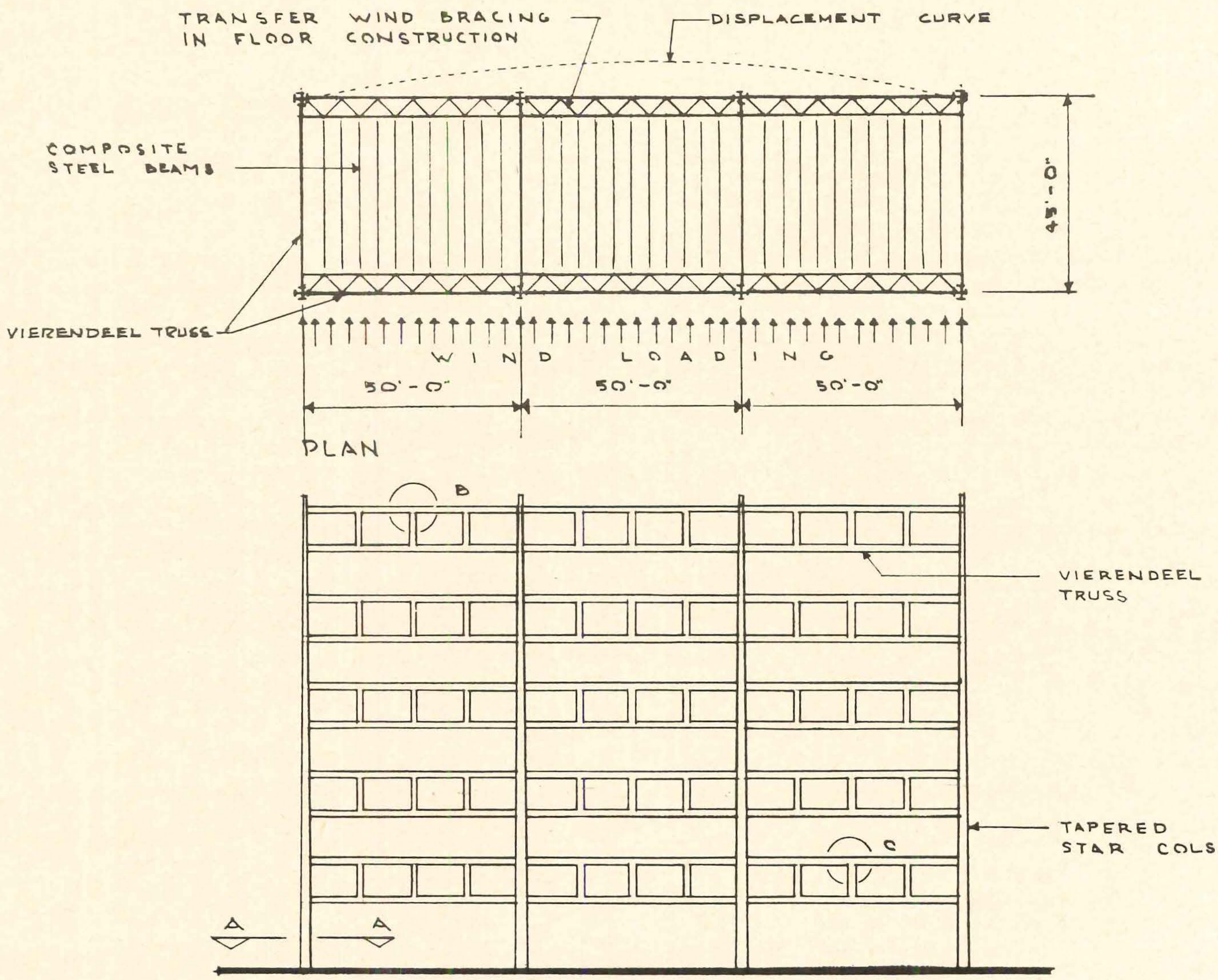
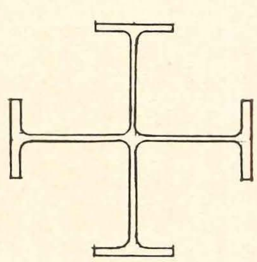
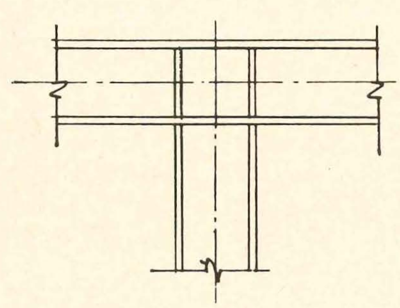


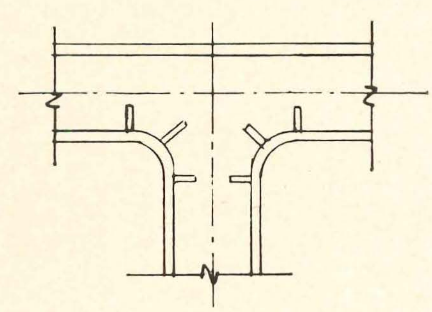

Figure 9: Vierendeel trusses and horizontal bracing provide column-free areas in this high-rise structure



Star column, section A-A



Medium moment connection 'B'



High moment connection 'C'

**MINIMUM COLUMNS AT TYPICAL FLOORS.** Special conditions of design may demand column free areas on all floors of a tall building. Floor beams may span the width of the structure if composite action is established between the beams and concrete slab. Carrying girders may be Vierendeel trusses as shown in Figure 9. Triangulated trusses or plate girders with the accompanying disadvantage of window restrictions may also be utilized. Regardless of the type of truss used at exterior wall lines, the possible variation in fenestration between adjacent floors is architecturally significant.

Vierendeel trusses of moderate spans as those in Figure 9 are not critical in deflection. Trusses could be shop fabricated and shipped without difficulty. Their erection would be straight-forward, particularly when high-tensile bolts are used.

# PREVENTING CRACKS IN MASONRY WALLS

*By Dov Kaminetzky, Chief Engineer, Office of Dr. Jacob Feld, Consulting Engineer, New York City*

Despite the fact that they have a very long history in use, masonry walls continue to give trouble due to cracking. Some of the causes of cracking are obvious and well known, but for various reasons, those concerned with the design and construction of buildings often fail to take appropriate preventive measures. Other causes are more subtle and more difficult to pin down, and sometimes a number of contributory factors combine to cause cracking. In many cases, there are differences of opinion as to the real reason for cracking and the most appropriate action to be taken. Indeed, many people now accept masonry cracking as an inevitable evil, about which little or nothing can be done. The advent of new building methods and materials seem to have complicated rather than alleviated the problem.

The purpose of this article is to examine in detail some of the principal causes of cracked masonry walls, to advocate preventive rather than corrective action, and wherever possible to suggest as to what preventive measures.

In general one might say that proper detailing of masonry and its supports, the introduction of expansion or contraction joints as necessary, and the elimination of construction errors will control and minimize the possibility of cracking. However, these general principles should certainly not be interpreted as a relaxation of the basic requirement that the contractor abide by the specification calling for high quality materials and workmanship.

### Causes of Masonry Cracking

Some of the major factors of masonry cracking are:

1. Inadequate construction procedures or methods, and imperfect design details.
2. Excessive deformations of the structural frame due to vertical loads (dead and live loads), and lateral loads (mainly wind and seismic loads).
3. Differential foundation settlements.
4. Longitudinal changes in length involving the following:

a. Expansion and contraction due to thermal changes;
b. Temperature differential between various building materials;
c. Drying shrinkage and creep of concrete structures;
d. Expansion of masonry due to absorption of water;
e. Elongation and contraction of the mortar.

In items one through three, the cracking pattern is connected directly with the pattern of the forces, their direction and line of action. Thus it is possible to determine the cause of distress with a considerable amount of confidence. Contradictory theories, opinions and diagnoses as to the contributing causes of cracking most frequently arise in connection with the factors listed under item four.

### Inadequate Construction and Imperfect Details

One common error in construction is too long a delay before the removal of shores or reshores from concrete structures. Overcautious building superintendants may leave the shores in place for an extended period and fail to remove them until after some of the masonry is in place. Since brick or block masonry is a structural element which is weak in tension, and so is masonry mortar before it sets, the downward bending movement following the removal of the shores is liable to cause considerable masonry cracking (Figure 1). The danger is worse in the case of cantilevers where deflections are usually large. It is therefore essential to remove shores before any of the masonry is in place.

### Cavity Walls

One of the major purposes of providing a continuous hollow space in the external walls is to prevent rain from penetrating the interior face of the wall. Any bridging of the cavity by mortar droppings or other materials enables water to travel inward and leak into the interior. If

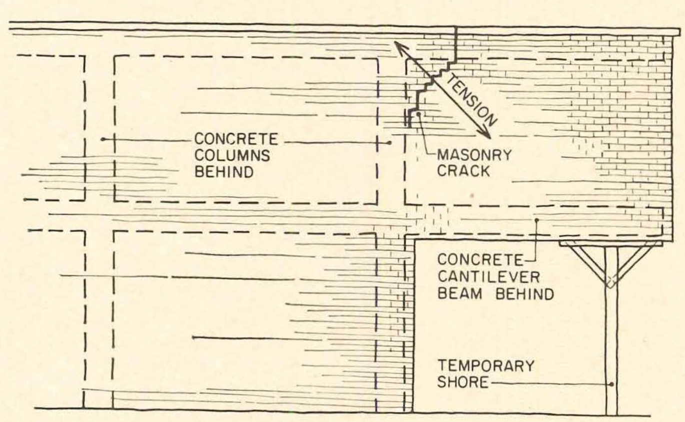


Figure 1. Shores left in too long

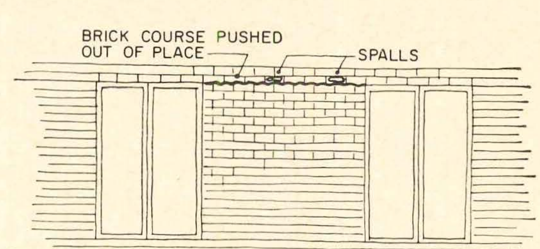


Figure 2. Ice forms at spandrel beam; cracks wall

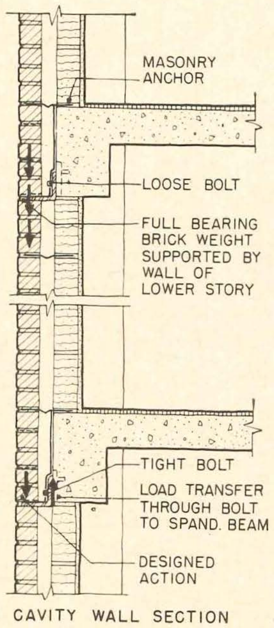



Figure 3. Shelf angle not firmly attached

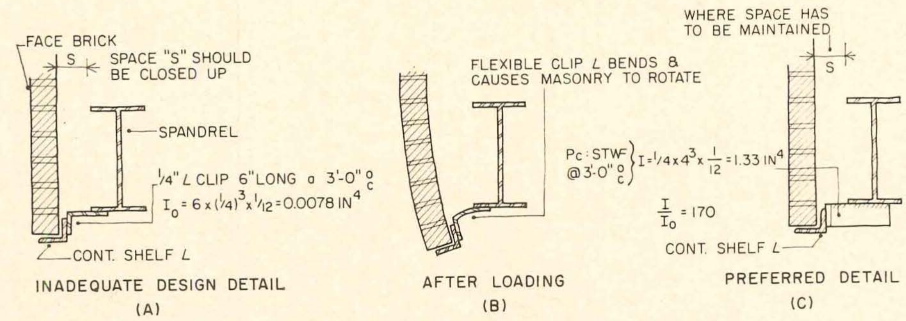



Figure 4. Masonry bends due to flexible clip. Stiff connector precludes this

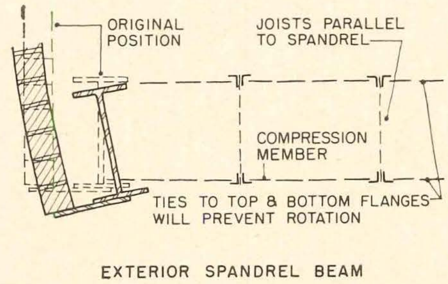



Figure 5. Ties needed between joists

reduce the possibility and extent of cracking. In Figure 4, the use of a flexible clip to attach the masonry to the spandrel beam, allows rotation of the masonry after loading. If, however, a rigid connector is used instead of the clip, chance of movement is minimized, reducing the risk of cracking. In Figure 5, one can see that if ties are fixed to both the top and bottom flanges, this will prevent rotation of the beam and the resultant movement of the masonry.

*Table 1: Comparative Rigidity of Slabs and Walls*

| *L/t* | *(L/t)²* | *R* |
|---|---|---|
| 10 | 100 | 16 |
| 15 | 225 | 35 |
| 20 | 400 | 63 |
| 25 | 625 | 98 |
| 30 | 900 | 141 |
| 35 | 1225 | 192 |

*Note:* For L/t greater than 20, allowance for buckling will reduce the value of R. (See Figure 6, for nomenclature)

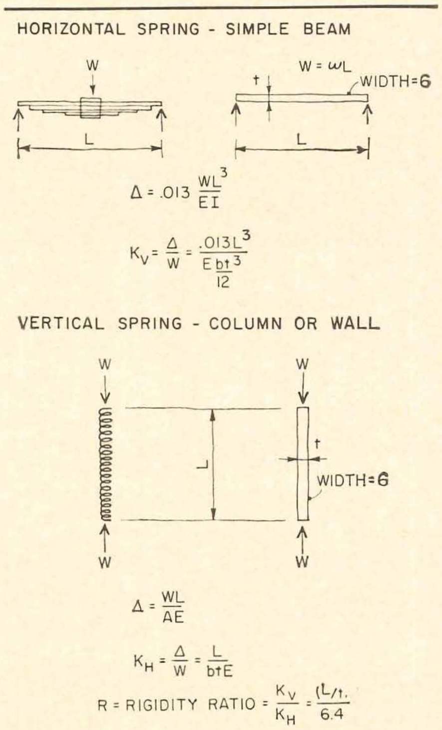



Figure 6. Derivation of rigidity ratio

weep holes become plugged by mortar droppings, there is a danger that in low temperatures, water accumulated in the lower part of the cavity will freeze and push the exterior brick outward. This action can result in cracking at spandrel beam level (Figure 2).

Another condition which contributes to cracking is loose shelf angles in cavity walls. The reference here is not to what is commonly known as a "loose lintel," but to the attached shelf angle. If, through negligence, these angles are not made secure to the supporting structural member by tightening of the bolts at the proper level, the load is thrown outwards to the exterior wall, with the lower masonry carrying the upper stories of brick (Figure 3). The excessive strain involved produces cracking in the masonry. Thus it can be seen that care in securing bolts can save a great deal of trouble at later stages.

Figures 4 and 5 demonstrate how care in detailing can considerably

### Vertical loads

Several problems can arise when the masonry walls are built too tightly against the structural frame. The deformation of vertical compression members is predominantly smaller than horizontal members serving as bending elements. The comparative rigidity (resistance to deflection) of slabs and walls of the same length and cross section is given in Table 1. A concrete slab, which is designed for simple bending, may not be able to perform as designed, if the masonry wall is built right up to the underside. Since the wall is many times as stiff as the slab, this may cause overstressing of the slab at the point of support. Cracking of the slab and masonry can be avoided if a compressible joint is introduced at the top of the wall, to permit the slab to deflect as designed (Figure 7).

Grade beams supporting masonry are always thought of as rigid structural members carrying the masonry, which in turn is considered

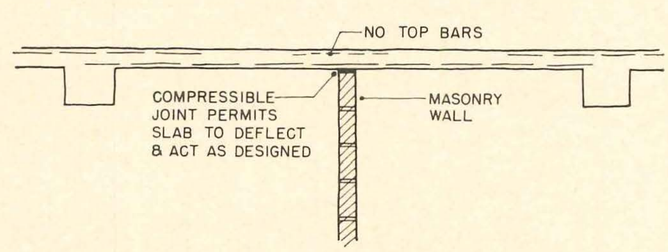



Figure 7. Compressible joint between masonry wall and slab

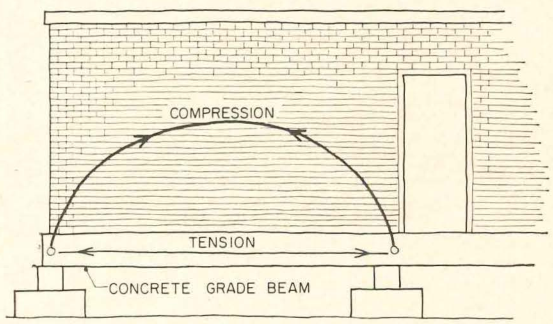



Figure 8. Rigid masonry acting as a compression arch

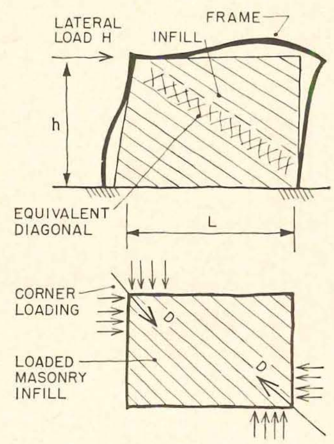



Figure 9. Masonry partition too close to structural frame

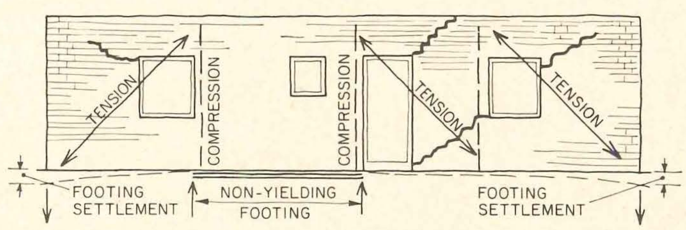



Figure 10. Diagonal tension crack due to differential settlements

yielding material of a rubber element type. In fact a masonry wall without openings is much more rigid than the beam and acts as a compression arch for the grade beam, which serves as a tension rod. At interior bays, compression will be balanced at adjacent bays, but the tension tie will be active at end bays or at masonry openings (Figure 8). Exceedingly shallow and flexible grade beams should be avoided in walls with a large number of openings. Because arching action will not be present, the beam will bend and the walls may crack.

### Lateral loads

A structural engineer may frequently spend considerable time in analysis and design of shear walls for resistance to lateral (wind and seismic) loads, only to find later evidence that some masonry partitions have, in effect, become "active sheer walls," and have cracked. These are walls which are sufficiently rigid to attract loads, but are not structurally strong enough to resist and transmit them to the foundations.

If an interior partition is built tightly along the periphery of the structural frame, it will act as an equivalent strut (Diagonal D in Figure 9) and will try to prevent the frame from deforming elastically and freely into its natural deflected shape. A shear deformation of the frame is therefore impeded by the presence of the rigid masonry, but this restraining role places too great a load on the masonry. The extent to which cracking of the masonry eventually occurs is dependent on various factors: the shape of the panel (ratio L/h), the elastic moduli of the masonry and the frame, the extent of tightness of the masonry to the frame (possibility of "give"), and to a lesser degree, the rigidity of the joints of the frame. The relative location of the partition in the building (lower or upper floor, center or exterior and relation to columns) will also influence the behavior of the structure. The effect of a small lateral load is usually to close up any existing slack. Only after this can loads be transferred to the masonry infill.

### Foundation Settlements

Excessive differential in settlements of various parts of the structure must be regarded as definite structural failure. This type of structural failure is usually associated with diagonal masonry cracking extending towards the window and door openings (Figure 10). If crack widths continue to increase, a consulting engineer should be engaged to determine a method of underpinning the foundation or to devise some other corrective measures.

When soil conditions vary considerably along the building site, lowering of the water table by pumping, or blasting in the vicinity can initiate masonry cracking.

### Changes in Wall Length—Effect of Temperature

The generally accepted theory is that a brick masonry unit expands and contracts as an elastic body, and that this longitudinal change is proportional to the length and to the thermal differential. This is a correct basic statement of physics. Another theory is the assumption that this motion is identically reversible. But in fact this motion will be completely reversible only if the wall is free to move in the direction of the change without any restraint in the form of friction, bond or mechanical ties.

Masonry expanding with a rise in temperature will elongate, while the friction provided by the frame, (whether a foundation grade beam or a spandrel beam) exerts additional compression in the masonry. During a temperature drop, the shrinkage of the masonry against resistance will introduce tension stresses which, if sufficiently severe, will cause cracking. Cracks will generally appear if the temperature changes are extreme, particularly in long stretches of wall where resistance to shrinkage is greater. Restraint to shrinkage is also marked at corners of masonry walls and where a lower wing of a building adjoins the main tower; thus cracking is liable to occur in these places (Figure 11).

Solid masonry walls of brick or block have a tendency to buckle outwards when the air temperature is higher outside than inside. The two different materials have different coefficients of thermal expansion, and when bonded into one unit will bend in both horizontal and vertical planes. This action is magnified when the interior of the building is overcooled, causing the block on the inside to contract while the brick on the outside expands. This causes lateral movement which may give rise to cracking (Figure 12).

Thermal movement of the roof deck will often induce stresses in the upper stories and at the parapets. This condition could be minimized by the introduction of expansion joints in the roof slab, and expansion joints in the parapets at close intervals of 20 or 30 ft (Figure 13). The provision of a horizontal joint separating the spandrel beams from the roof slab would reduce cracking in the masonry by allowing the roof slab to move freely at its ends.

Metal railings (especially aluminum rails and posts) embedded in brick parapets, require loose slip joints in the railings or even the preferred detail of rail joint with double posts to permit lateral expansion or contraction. Omission of these joints will quite often cause masonry cracks similar to that shown in Figure 14.

**Effect of Shrinkage and Creep of Concrete**

As concrete sets and dries, particularly during the weeks immediately after it is placed, the loss of moisture will cause shrinkage of the concrete. Drying shrinkage is a function of many variables. Proper mix, curing, and controlled construction joints will tend to reduce its effects. It is normal to assume the shrinkage strain in the range of 0.0002 to 0.0006. Some aggregates (in particular some of the lightweights) will exhibit high shrinkage factors. Generally, shrinkage tends to increase with the richer and wetter mixes and with low humidities.

Shrinkage of concrete columns is unfortunately compounded with creep and elastic shortening. As shrinkage and creep are unreversible linear contractions, the masonry is compressed by part of the structural weight imposed on it, resulting in overstress. In cases of thin masonry walls or cavity walls, this last effect will result in visible buckling and bulging. As indicated in Figure 15 shrinkage of 1/8 in. in the columns will force a lateral movement or push of the masonry of about 1/2 in. Excessive shrinkage is known to have caused outward masonry movements in the magnitude of about 3 in. In these cases the brick wall was practically off the shelf angle.

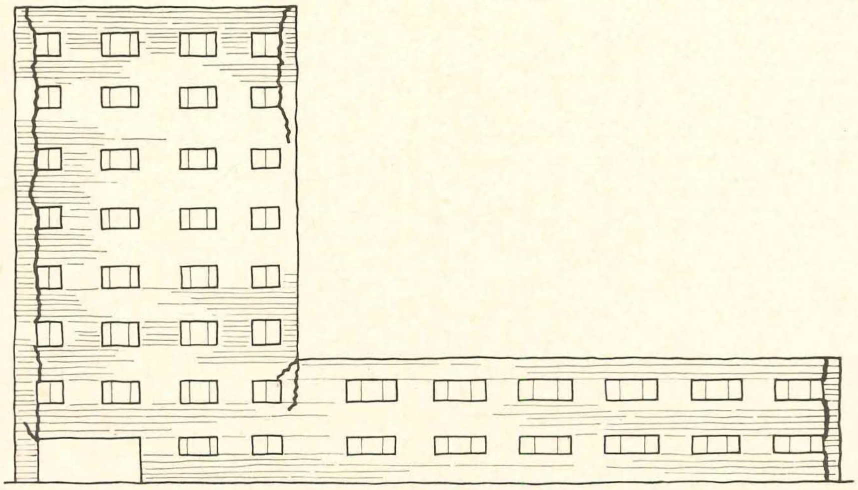


Figure 11. Cracks resulting from contraction of masonry in cold weather

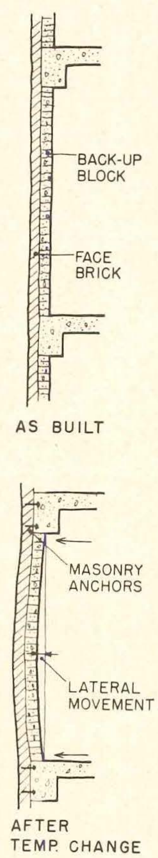



Figure 12. Bulging of wall due to difference in inside, outside temperature

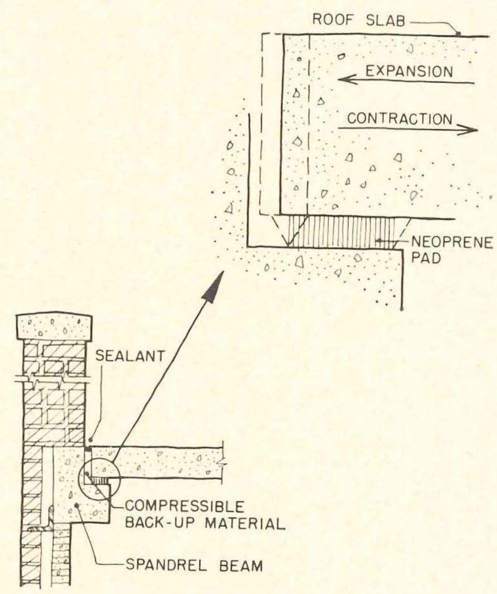



Figure 13. Compressible joint prevents parapet cracking

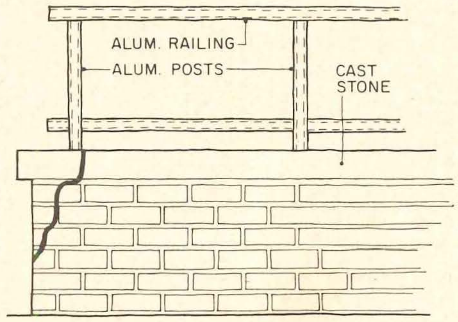



Figure 14. Cracking due to railing expansion

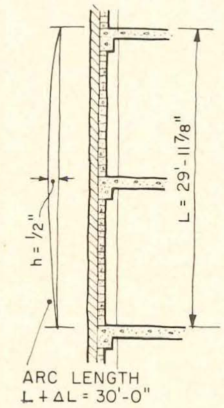



Figure 15. Effect of column shrinkage on masonry wall

**Moisture Problems**

Brick has the capacity to absorb relatively great quantities of water. Expansion of masonry due to absorption of water and longitudinal changes in the mortar will have similar effects to the previously mentioned linear changes. Shrinkage of the mortar will generally cause hairline cracks which are confined to the mortar joints and are relatively non-significant. The presence of free lime particles in the mortar will cause damage by hydration, while the presence of clay in the mortar will also cause injurious results.

**Characteristics of Brick**

The latest developments in the manufacture of brick have produced harder brick units; at the same time cement mortar joints are also being made harder.

While soft brick has a modulus of elasticity of 1 x $10^6$ psi, the harder brick will reach values of 4 to 5 x $10^6$ psi, which is in the same range as that of concretes. If the harder brick is combined with non-yielding joints, stiff fragile enclosures will be formed which do not possess any flexibility and will crack when overstressed.

**Conclusion**

It is essential that the movements of the masonry be separated from the movement of the structural frame particularly in structures of great length or height. While this separation is costly and would not result in an absolute "no-crack" masonry, it will definitely minimize crack possibilities.

Since certain facts are not completely known, and the behavior of brickwork under certain conditions has yet to be understood, further experimentation and research are needed in the following areas:

1. Expansion and contraction of masonry restrained within a structural frame.
2. Action of glazed face brick as a vapor barrier to contain water, and the extent to which it contributes to the destruction of brickwork.
3. Experimentation with new types of mortars capable of transferring tension without cracking and "soft" enough to permit slight adjustments in the masonry.

The linear changes in a building, whether caused by deformations in the brick, block or the structural frame are practically impossible to anticipate. Any one of these factors alone may be insufficient to cause harm to the masonry. However, the various forces arising out of these changes, especially when they are all exerted in the same direction, will cause distress signals in the masonry, especially in location of openings or local weaknesses of materials.

This situation can be improved by the following:

1. Tighter control on materials and workmanship.
2. Provision of masonry joints (control joints), both horizontal as in Figure 16, and vertical as in Figure 17, for tall and long buildings respectively. Figure 18 shows the proposed location of vertical joints. These joints should be detailed and executed so as not to permit "locked" or "frozen" joints.
3. Use of softer bricks and mortars having smaller values of "E" (modulus of elasticity), where high compressive strength is not required and when the brick is used as an enclosure material rather than as a bearing medium.
4. Avoidance of masonry parapets (where building codes will permit this omission) when such parapets will be exposed to extreme weather conditions, such as high precipitation and intensive wind pressures.
5. Avoidance of "fresh" brick and concrete block units which have not been properly cured.

Table 2: Properties of Building Materials

| Material | Elastic Modulus (E, psi) | Shear Modulus (G, psi) | Thermal Expansion Coeff. | Thermal Expansion: Expansion in per 100F per 100 ft | Weight lb/cu ft |
|---|---|---|---|---|---|
| *Concrete | 3x-$10^6$ | | 0.0000060 | 0.72 | 150 |
| **Brick | 1x$10^6$ | 0.5x$10^6$ | 0.0000030 | 0.36 | 120 |
| Steel | 30x$10^6$ | 12x$10^6$ | 0.0000065 | 0.78 | 490 |
| Aluminum Alloys | 10x$10^6$ | 4x$10^6$ | 0.0000130 | 1.56 | 175 |

*Average values for 3,000 psi concrete
**Average values for soft brick

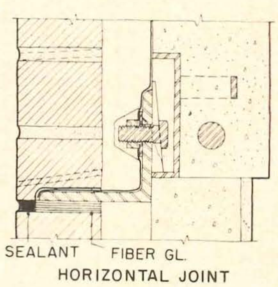



Figure 16. Horizontal joint

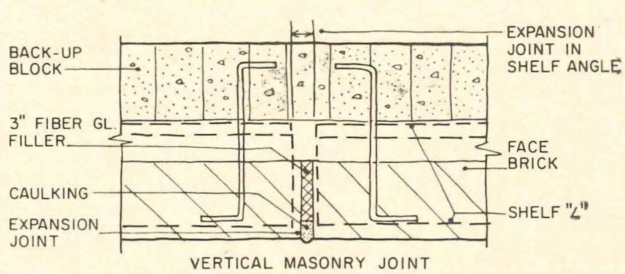



Figure 17. Vertical masonry joint

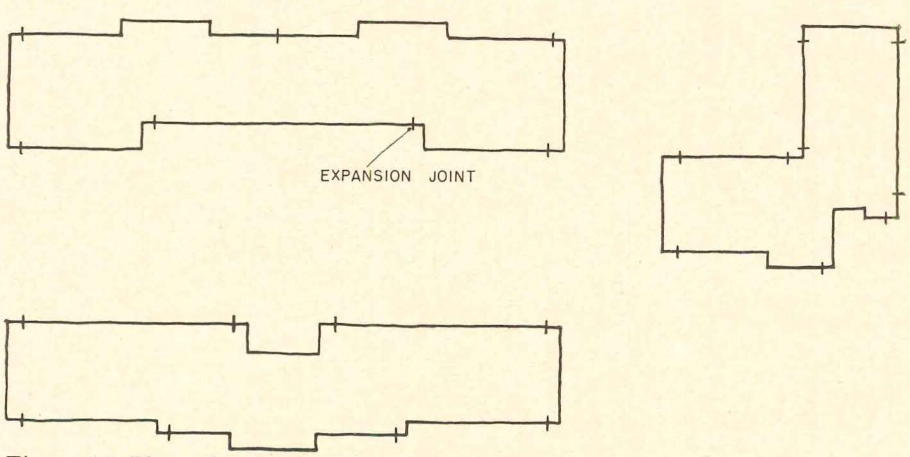



Figure 18. Plans showing location of vertical loads

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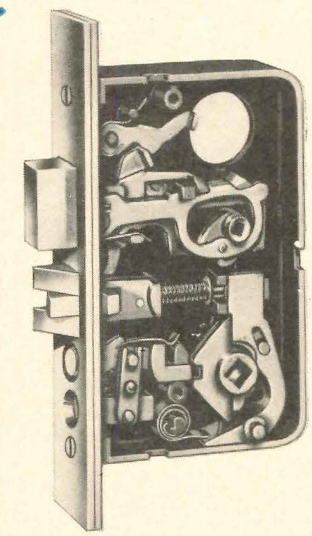
*Not one service call on locks in four years.*

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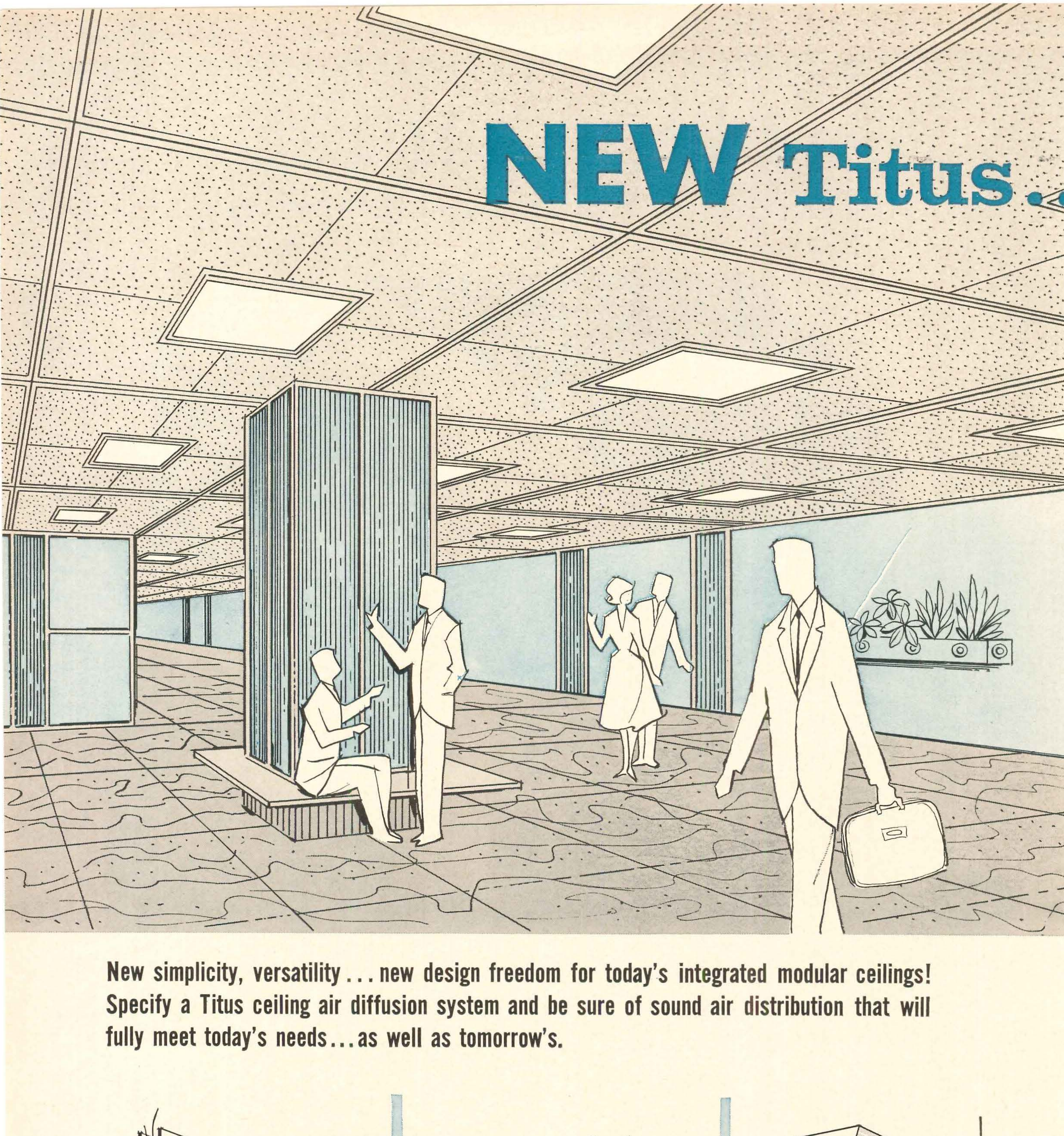


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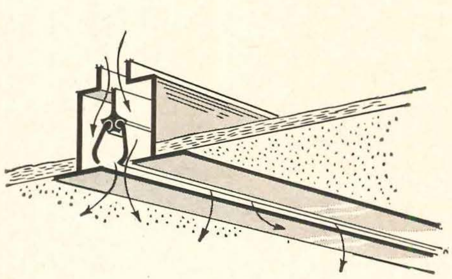

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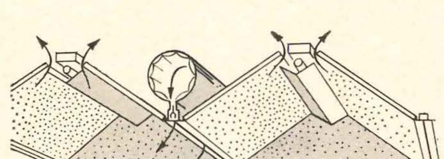

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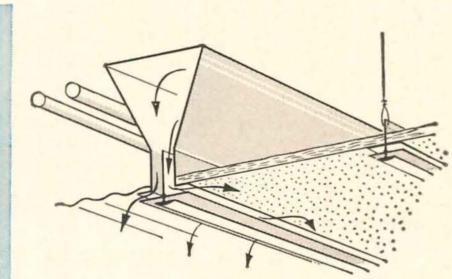

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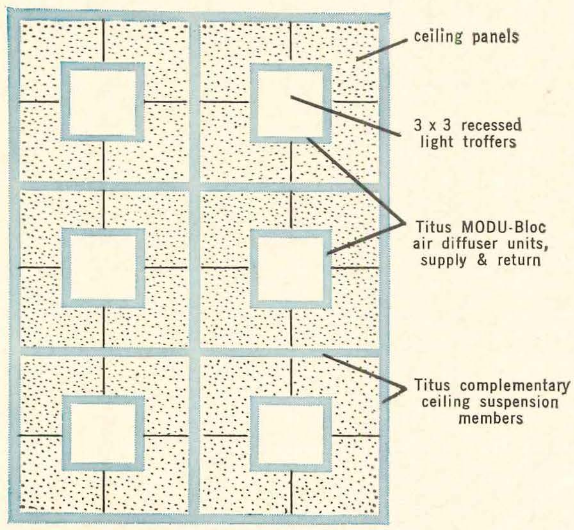


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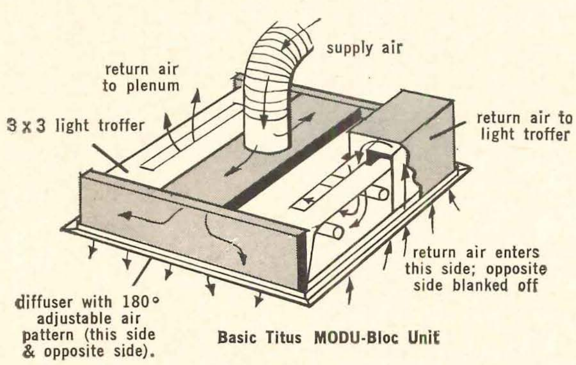


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# FIBER GLASS FABRICS MODIFY ENVIRONMENT

*By A. W. Metzger, Merchandising Manager, Fiber Glass Division, Pittsburgh Plate Glass Company*

A system for the selection and specification of fiber glass draperies for the control and modification of such interior environmental parameters as solar heat, view, glare and sound has recently been developed, based largely on tests at The Pennsylvania State University.

The system is based on two fabric factors—color tone and weave construction. Radiant energy is reflected, absorbed, or diffused by the yarns or is transmitted through the openings between the yarns. The wider the space between yarns, the more energy transmitted. Transmittance also varies, however, according to yarn color. The degree of openness of the weave also affects sound transmission. The closer the space between yarns, the greater the amount of sound absorbed. Colors in the system range from white to deep tones of blue, green, brown, etc. Weave constructions are open, semi-open and closed. An "open" weave fabric has the most air space between individual yarns. A "closed" weave has little or no space between the yarns.

*Trademark for Pittsburgh Plate Glass fiber glass yarns

### Type Classification

Research conducted by The Pennsylvania State University included study of the performance of Feneshield* weaves and colors in various combinations under actual fabric and glass conditions.

These fabrics were then classified according to their performance into one of nine groups as shown in Table 1. Each classification was given a "designator" which indicates the weave construction and color tone (i.e. $I_D$—(I) open weave fabric; (D) dark colored yarn) which permits identification of fabric performance characteristics.

A new device, developed by PPG to measure the amount of space between individual yarns (or the amount of "openness"), is used in the classification of various fabrics.

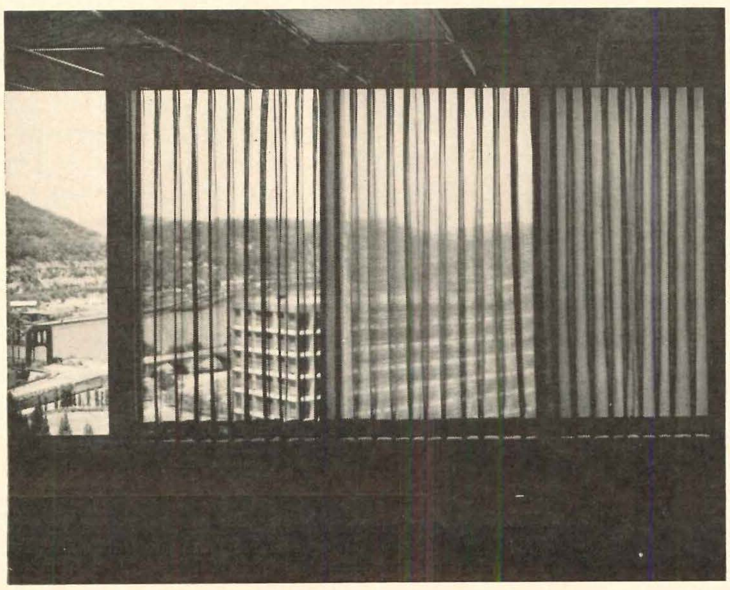
The fabrics also were classified broadly into Type A, Type B and Type C to aid in quick selection of a suitable fabric when technical calculations are not required. Each fabric type has its own special characteristics. Several weave-color combinations "designators" may fall within each fabric "type" classification.

*Type A* fabrics permit outward vision through the total window area. They retain the natural view, including sky and clouds, and enhance this view by reducing sky glare. In gen-

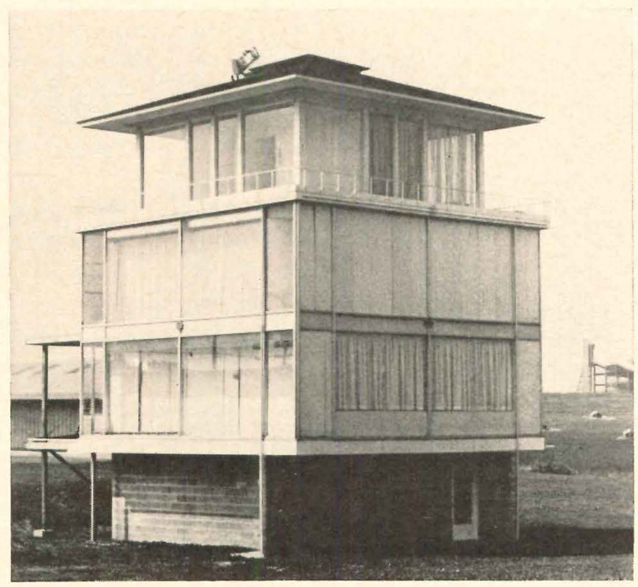
Table 1: Designator Classification

| | Dark Colored Yarn "D" | Medium Colored Yarn "M" | Light Colored Yarn "L" |
|---|---|---|---|
| Open Weave Fabric "I" | $I_D$ | $I_M$ | $I_L$ |
| Semi-Open Weave Fabric "II" | $II_D$ | $II_M$ | $II_L$ |
| Closed Weave Fabric "III" | $III_D$ | $III_M$ | $III_L$ |

Examples of the three different weaves of the fabric



The fabric is tested for reduction in solar heat gain



eral, medium-color or dark-color fabrics of open weave and possibly semi-open weave will fall into this classification. (Designators included in Type A fabrics are $I_D$, $I_M$, and possibly $II_D$ and $II_M$.)

*Type B* fabrics provide some protection against solar radiant heat and exclude heat and exclude glare. They soften areas of bright light and still permit a modified outward view. Outside objects are seen in general outline, usually as light and dark areas or in silhouette. These fabrics include light-colored open-weave, medium- and dark-colored semi-open weave, and a dark-colored closed-weave (opaque) fabric, used when control of heat and glare are the prime requirements. ("Designators are $I_L$, $II_D$, $II_M$, and $III_D$.)

Fabrics in the *Type C* classification provide maximum protection from solar radiant heat. Because the combination of a light color and a relatively closed weave is remarkably effective in reducing radiant heat loads, Type C fabrics include a closed-weave in light- or medium-colored materials and a semi-open weave in light-colored materials. ("Designators" are $II_L$ $III_M$, and $III_L$.)

Among fabrics of the same weave, darker colors provide a better outward view, while light colors admit more natural, diffused light to a room. For this reason, pure white fabrics usually are too bright for use in direct sunlight and are not recommended unless over-draperies will be used. Off-white colors are more satisfactory for general use. Dark-colored fabrics, which tend to absorb and re-radiate solar energy, normally are recommended for use where maximum rejection of solar heat is not essential for interior comfort.

**Radiant Heat Control**

The amount of radiant heat admitted through vision areas must be controlled to provide comfort for building occupants and to avoid excessive air-conditioning loads. Both the vision glass itself and the window treatment should control the heat at the window area before it has a chance to effect the interior climate measurably.

The tests conducted at The Pennsylvania State University and other research locations have shown that fabrics made from glass fibers will reduce solar heat transfer as well as, or better than, other shading devices.

Type C fabrics are the most effective for control of heat and radiation. An important factor in the control of radiant heat is the "shading coefficient" of the window assembly. The lower the shading factor, the less heat that is allowed to pass through the window assembly.

In table 2 the factors to the left of the diagonal line are based on a combination of ¼-in. clear plate glass and 100 per cent fullness fabric with the window in sunlight. The figures to the right of the diagonal provide the same type of measurement based on the use of thick heat-absorbing glass instead of ¼-in. clear plate. Solar gain through glass and draperies is calculated by multiplying the shading coefficients by the solar heat gain factors, as published in the ASHRAE Guide, 1963.

**Sound Control**

When draped in soft folds at windows and room dividers, or even at partitions, the fabrics provide improved room sound absorption.

Tests conducted within the normal frequency range of 125 to 4,000 cycles per second show that Feneshield fabrics absorb sound throughout this range. Even more significant, their greatest acoustical efficiency occurs in the frequency range which is associated with sources of the most irritating office sounds.

**Fabric Specification**

In specifying the proper fabric, the architect first ranks the following environmental factors in order of their importance to his application: (1) heat rejection; (2) outward vision; (3) privacy; (4) bodily comfort; (5) eye comfort; (6) ear comfort.

By referring to the various charts and tables* and selecting those designators which provide the best ratings for specific environmental needs, the architect can then pinpoint the exact designators which have the best combined ratings.

**Heat Factors Affecting a Building**

In selecting the proper fabric for a particular fenestration area, the most important factors to be controlled, for the specific exposure, must be determined first. It is possible to make a qualitative analysis of each exposure and a number of generalized conclusions can be reached. For example:

*North Exposure*

There is no direct sunlight, except for short periods in the summer (early morning and late afternoon). The full expanse of windows can be used for maximum outward vision, with minimum protection from radiant heat and glare required. A Type A fabric should be considered.

*East Exposure*

This exposure receives direct sun rays in the morning throughout the year. Therefore, protection from radiant heat is of primary importance during the hours before noon. Type C or B fabrics should be considered.

*South Exposure*

In the fall and winter, this exposure is subjected to sunlight all day. During the spring and summer, however, direct sun rays are a factor only for short periods, depending on geographic latitude. A compromise may be possible in selecting a fabric which will allow some outward vision and, at the same time, give protection from radiant heat and glare. A Type B fabric would be appropriate.

*West Exposure*

This exposure receives the most intense sunlight during the hottest part of the day and for the longest period of time. Consequently, maximum protection from radiant heat as well as glare is necessary. A Type C fabric could be considered.

Table 2: Shading Coefficients

| | Dark Colored Fabric "D" | Medium Colored Fabric "M" | Light Colored Fabric "L" |
|---|---|---|---|
| Open Weave Fabrics "I" | $I_D$ .76/.37 | $I_M$ .69/.35 | $I_L$ .67/.35 |
| Semi-Open Fabrics "II" | $II_D$ .69/.36 | $II_M$ .63/.34 | $II_L$ .55/.33 |
| Closed Weave Fabrics "III" | $III_D$ .67/.35 | $III_M$ .57/.33 | $III_L$ .47/.31 |

* This data is included in a technical information bulletin available from the Public Relations Department, Pittsburgh Plate Glass Company, 632 Fort Duquesne Blvd., Pittsburgh, Pa., 15222

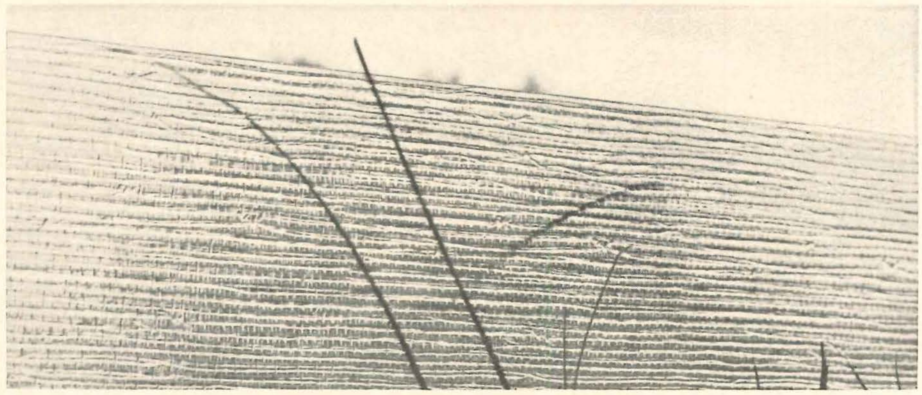
For more information circle selected item numbers on Reader Service Inquiry Card, pages 283-284

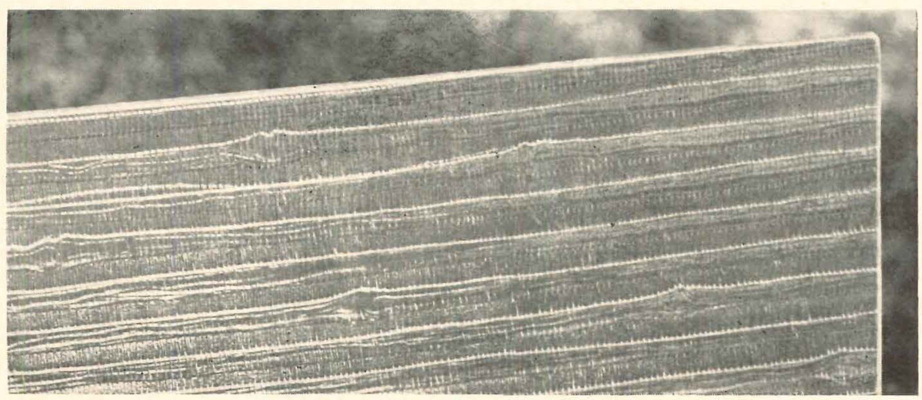
## PATTERNED GLASS HAS MANY APPLICATIONS

The Libbey-Owens-Ford Glass Company has announced plans for the manufacture of its own line of patterned glass for use in office partitions, room dividers, shower doors and a variety of industrial applications. Ten basic patterns will make up the line, which will also include the first gray patterned glass with heat absorbing and glare reducing characteristics to be manufactured in this country.

All patterns will be available in widths of from 90 to 96 in. Eight patterns, including Grassweave *(top right)* will be produced in 1/8- and 7/32-in. thicknesses; the rest will be available only in the 7/32-in. thickness. All the regular patterns have a daylight transmission of 90 per cent. The gray stippled glass has a daylight transmission of about 50 per cent, and an approximate direct solar heat transmission of 53 per cent. *Libbey-Owens-Ford Glass Company, 811 Madison Ave., Toledo, Ohio*

CIRCLE 300 ON INQUIRY CARD



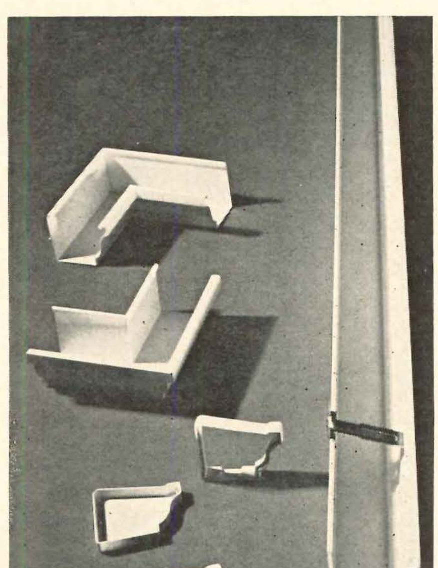


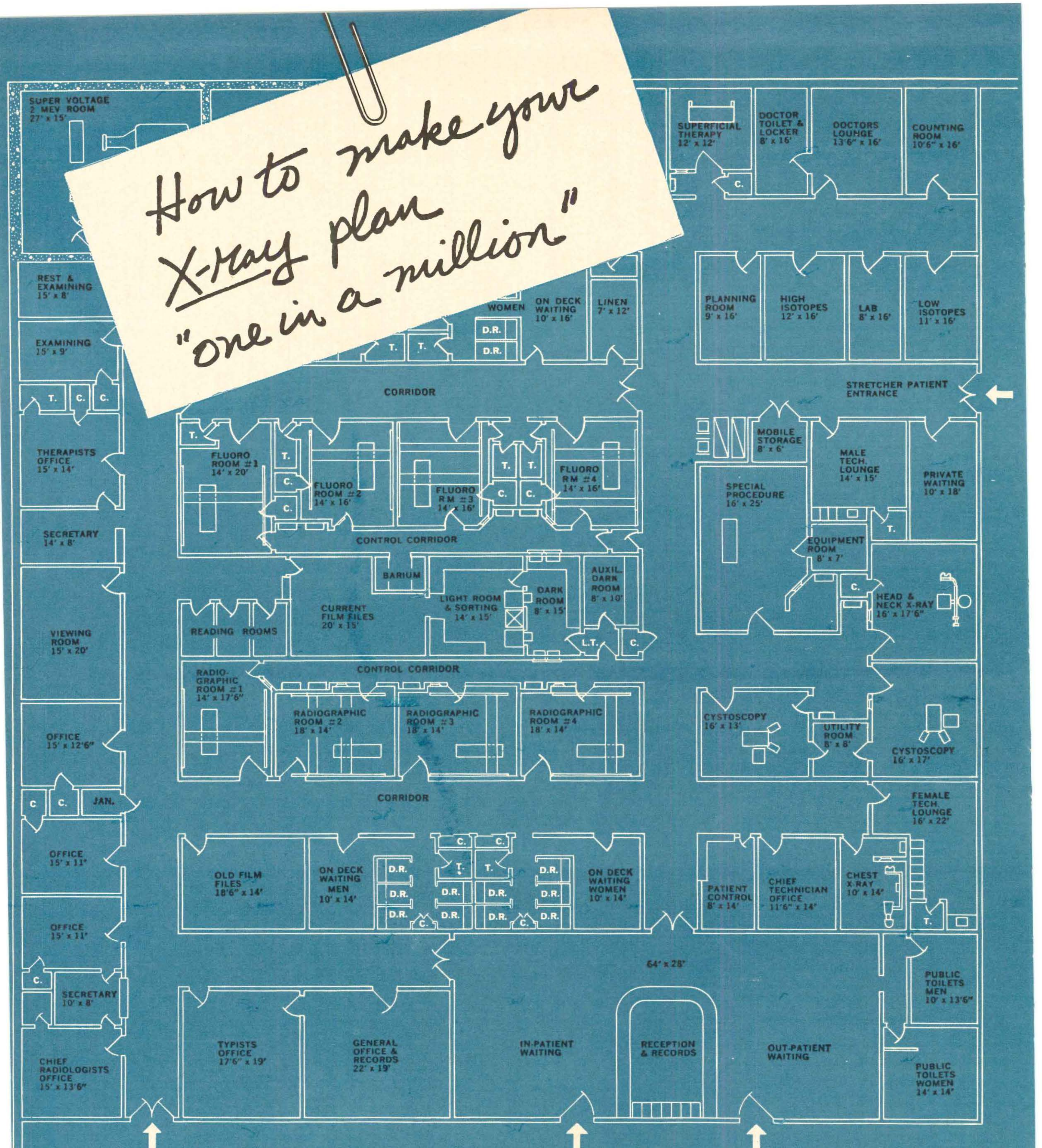
## NEW VINYL RAIN-CARRYING SYSTEM

A completely integrated domestic rain-carrying system consisting of all-white vinyl components, including gutters, downspouts, connectors, inside and outside corners, elbows, end caps and collectors has been introduced commercially. The only nonplastic parts of the system are metal gutter hangers and downspout brackets. Competing favorably in price with metal rain-carrying equipment, the vinyl system is tough, does not require painting and has high sound insulation value. The company claims that the components will not chip, dent, blister, support fire or conduct electricity. Assembly and installation is said to be quick and easy. The connectors also serve as weatherproof seals. *Monsanto Company, 800 N. Lindbergh Blvd., St. Louis, Mo.*

CIRCLE 301 ON INQUIRY CARD

*more products on page 226*






The touch that makes x-ray floor plans *exceptional* can be yours for just a phone call or letter to your local G-E x-ray representative! Drawing from the wealth of resources and experience at his command, he will collect and evaluate background on patient flow, traffic patterns, radiological trends, space demands, and required radiation protection. If you request, he also will make or supervise preparation of detailed recommendations on x-ray department layout, wiring, power, plumbing, and related problems . . . drawing, when needed, on G-E X-Ray Installation Planning Service at Milwaukee. His unique knowledge and personal assistance can help you make every x-ray layout literally one in a million . . . individual, accurate, complete. To contact him, look for the G-E office nearest you under "X-Ray" in the Yellow Pages of your phone directory. Or write X-Ray Department, General Electric Company, Milwaukee, Wisconsin 53201.

*Progress Is Our Most Important Product*

**GENERAL ELECTRIC**

For more data, circle 100 on Inquiry Card

For more information circle selected item numbers on Reader Service Inquiry Card, pages 283–284

### PACKAGED AIR CONDITIONERS

Self-contained, packaged roof-top air conditioners designed for offices, industrial plants, auditoriums, sales rooms, shopping centers and other single-story buildings are described and illustrated in a new 32-page publication. The manual, No. 96-572-B, covers three models: the *RAC-G*, for heating, cooling and ventilating available in eight sizes for cooling from three to 20 tons and for heating from 50 to 480 mbh, handling air from 900 to 9,000 cfm; *RAC* for cooling only; and *RXE* which is only for heating. The booklet presents mechanical and engineering specifications, equipment dimensions and physical data, and a typical selection procedure. Related subjects such as performance and capacity data, air friction, fan performance, total heat, controls and electrical data are covered by means of graphs and tables. *Acme Industries Inc., 600 North Mechanic St., Jackson, Mich., 49202*

CIRCLE 400 ON INQUIRY CARD

### SOUND RATING OF AIR MOVING DEVICES

A new 24-page bulletin, No. 300, contains the test code for sound rating of air moving devices. The Standard Test Code, which was developed to meet the needs of consulting engineers, architects and equipment manufacturers for reliable and accurate sound ratings, establishes practical methods for determining the sound power level of air moving devices, AMD. This is done by comparing the sound pressure levels produced by the test AMD and a pre-calibrated reference sound source, when operated under the same conditions. Results obtained are sound power levels expressed in decibels in eight octave bands.

In addition to a description of instruments and equipment, test setups and room qualification procedures, the bulletin also contains four diagramed sample setups for testing different types of AMD. *Air Moving and Conditioning Association, Inc., Dept. PR., 205 West Touhy Ave., Park Ridge, Ill., 60068*

CIRCLE 401 ON INQUIRY CARD

### LAMINATED WOOD

An illustrated catalog describes how vertical lamination of wood beams introduces a significant product for light construction. The new beams, which have a vertical rather than horizontal glueline when in use, are kiln dried and are said to be stronger than solid wood beams, and to cost less than horizontally laminated members. The catalog includes sizes, span tables, weights, connecting details and suggestions for use as floor beams, roof beams and posts. A second brochure gives details of a new machine sanded wood decking. *Weyerhaeuser Company, Wood Products Division, Tacoma, Wash., 98401*

CIRCLE 402 ON INQUIRY CARD

### CONTROLS CATALOG

A new catalog shows the company's complete line of automatic controls for heating, refrigeration and air conditioning. Among the new products featured are zoning controls for both warm air and hydronics, controls for gas, oil and electric heat. Also included are diagrams showing internal control contact structures and control circuit wiring. *White-Rodgers Company, 9797 Reavis Rd., St. Louis 23, Mo.*

CIRCLE 403 ON INQUIRY CARD

### PLASTIC COATED PIPING

An eight-page brochure outlines the advantages of Republic *X-Tru-Coat* polyethylene coated steel pipe, and gives suggested applications. Physical and electrical properties of the mill-applied plastic are detailed, and degrees of resistance to weather, water, acids and alkalis are given. *Republic Steel, Advertising Division, 1441 Republic Building, Cleveland, Ohio, 44101**

CIRCLE 404 ON INQUIRY CARD

### FLEXIBLE AIR DUCTS

Four types of flexible air duct for air-conditioning systems are described in a new, eight-page two-color folder. The folder incorporates data on the construction and installation features of the air duct. *The Wiremold Co., Hartford, Conn.**

CIRCLE 405 ON INQUIRY CARD

### WIRE REINFORCEMENT MANUAL

The Wire Reinforcement Institute has published a 40-page, illustrated general information manual, which discusses the advantages of steel fabric-reinforced concrete construction in a wide range of applications from high-rise apartment construction to concrete and asphalt pavement and reinforced concrete pipe manufacture. Complete tables are given covering styles of welded wire fabric generally available, sectional areas of steel furnished by various styles, and gauge and sizes of wire used to manufacture fabric. *Wire Reinforcement Institute, 5034 Wisconsin Ave., N.W., Suite 202, Washington, D.C., 20016*

CIRCLE 406 ON INQUIRY CARD

### REINFORCING MASONRY WALLS

A new fully illustrated 18-page brochure on installation details for reinforcing masonry walls has just been issued. Designed to assist all members of the building team, Dur-O-waL's booklet illustrates a number of different finishes and sizes of reinforcement. Wall placement, splices, spacing in the wall, uses at corners, in cavity and composite walls, returns and offsets, application at wall intersections, with control joints, at chases, jambs, piping, enclosures, buttresses, counterforts and parapets are all covered in the brochure, which is fully illustrated with detailed installation drawings. *Dur-O-waL National, P.O. Box 150, Cedar Rapids, Iowa.**

CIRCLE 407 ON INQUIRY CARD

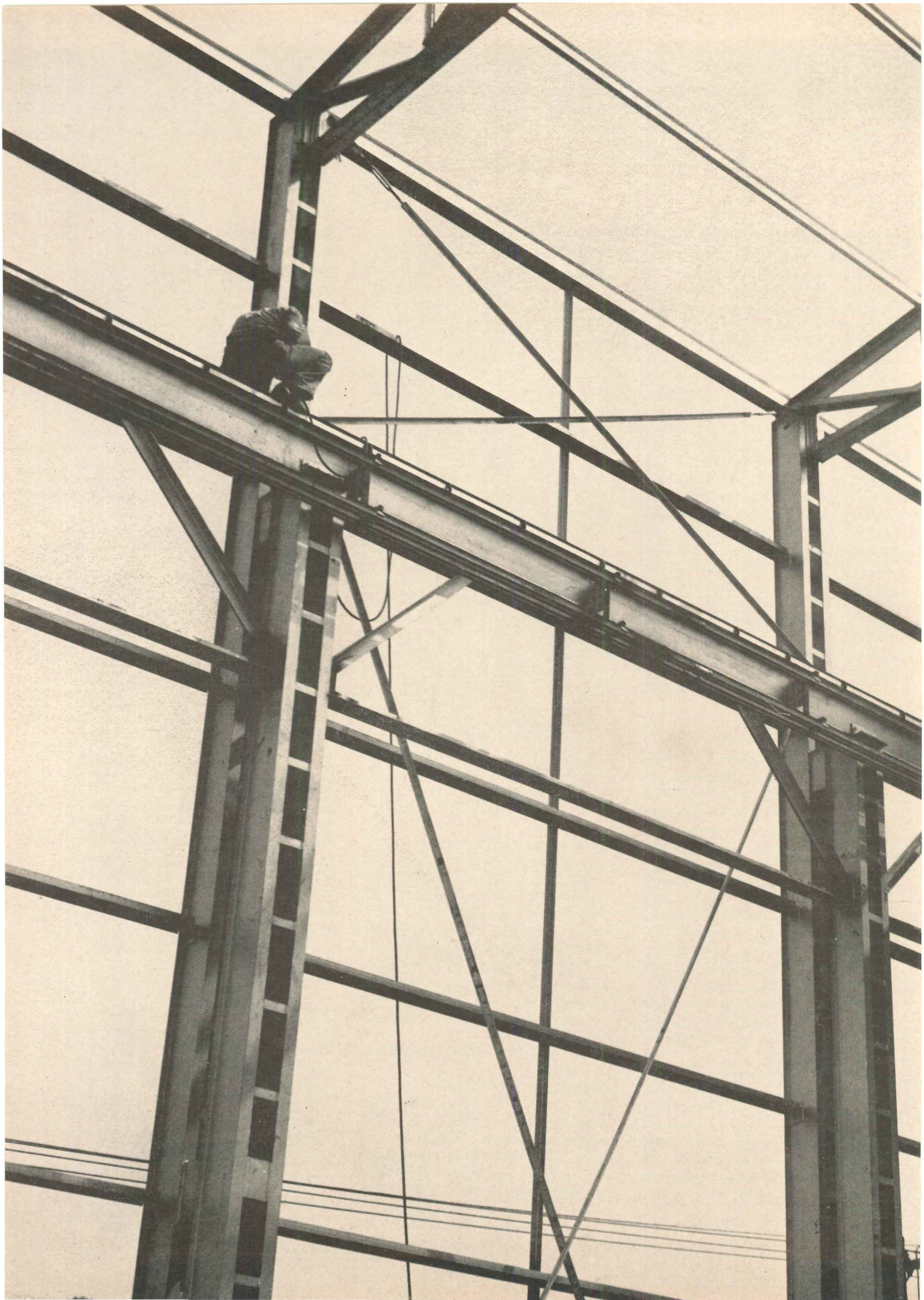
### STEEL FOUNDATION PILES

Catalog 92 is a 24-page study of *Monotube* fluted steel foundation piles. Information is given on physical properties, test loading, concrete volumes and weights. Suggested specifications are also included. *The Union Metal Mfg. Co., Canton, Ohio, 44705**

CIRCLE 408 ON INQUIRY CARD

**Additional product information in Sweet's Architectural File*

*more literature on page 274*



Steel

STEEL'S SYMBOL
OF STRENGTH, LONG
LIFE AND ECONOMY

# Builder saves 26 tons—$8,000 using J&L lightweight structurals

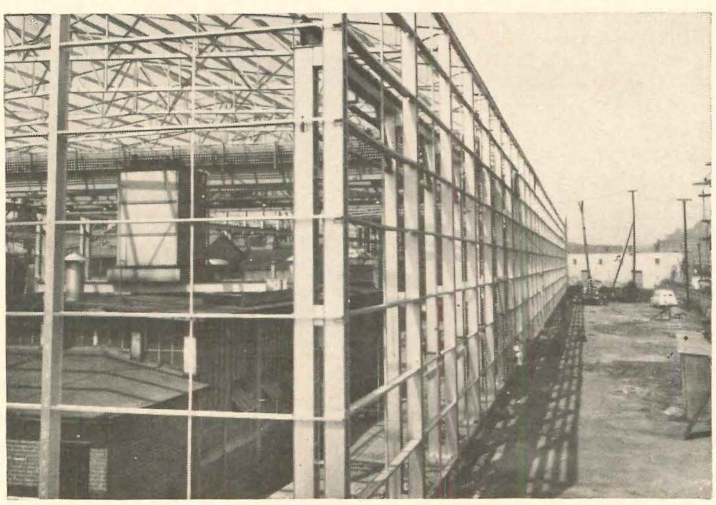
Extensive use of J&L Junior Beams cut costs substantially in a building constructed for Kanawha Manufacturing Company, according to J. C. Morton, Assistant Chief Engineer for Holston Steel Structures, Inc.

He said: "Each of the composite crane and building columns were fabricated from four 12" Jr. Beams weighing 11.8# per foot. Completed, the composite column weighs 2,100 lbs. compared to the formerly required standard steel column weighing over 3,000 lbs. For purlins and girts we used Junior Beams."

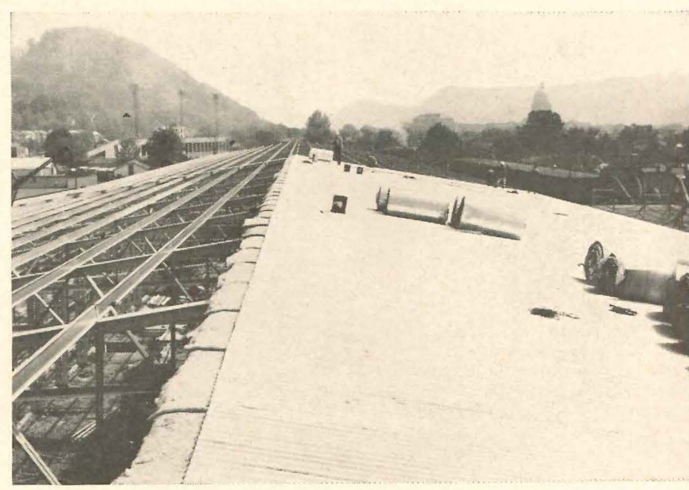
Bill Setzer, Holston Executive Vice President, added, "We specialize in custom-made structural steel buildings. This is a highly competitive field. Therefore, we constantly look for new and more economical design, fabrication and erection methods. J&L lightweight structurals give us a wide building scope—that's why we use them whenever possible."

You, too, can enjoy similar savings with J&L lightweight structurals. They are easy to adapt to a wide range of architecture.

For information on J&L lightweight sections, call your nearby J&L sales office, or write: Jones & Laughlin Steel Corporation, 3 Gateway Center, Pittsburgh, Pennsylvania 15230.



J&L lightweight structural steel used in the composite crane and building columns reduced the steel weight by 26 tons.



Junior Beam roof purlins were covered with aluminized steel sheets.

**Jones & Laughlin Steel Corporation**

STEEL

Two 12" Junior Beams extend 38' high to support the roof of the Kanawha Mfg. Co. industrial building, Charleston, W. Va. The inside two 12" Junior Beams extend 28' high to support the crane runway. Both J&L sections are joined together forming a composite column weighing 2,100 lbs. A single standard steel column would have weighed over 3,000 lbs.

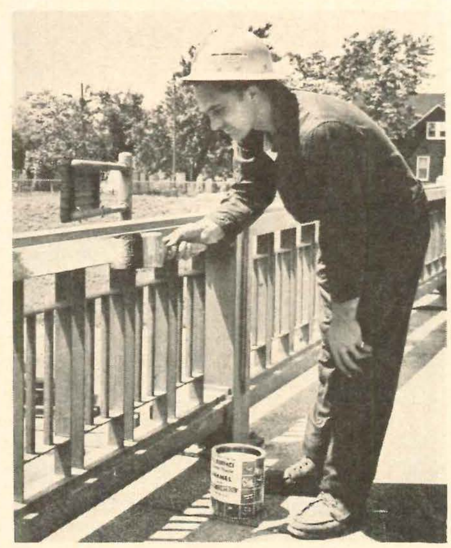
For more data, circle 101 on Inquiry Card

## *Product Reports*

*continued from page 221*

### NON-TOXIC PAINT HAS RUST PROOF QUALITIES

A non-toxic paint which claims to have strong rust resistant qualities has just been introduced by Acme Quality Paints, Inc. The company states that extensive laboratory tests have been conducted which show that the new *All Surface Enamel* combats corrosion as effectively as paints containing poisonous lead or chromate pigments. Biological tests have established the non-toxicity of its pigment ingredients and its innocuousness as a dry film. This means that *All Surface Enamel* can be used safely where



lead of chromate paints might prove dangerous; for example, to protect food-processing plant interiors against corrosion and for painting children's toys or furniture. *All Surface Enamel* is available in many clear colors including white. *Industrial Finishes Division, Acme Quality Paints, Inc., 8250 St. Aubin Ave., Detroit, Mich.*

CIRCLE 302 ON INQUIRY CARD

### STAIRS IN MULTI-STORY UNITS

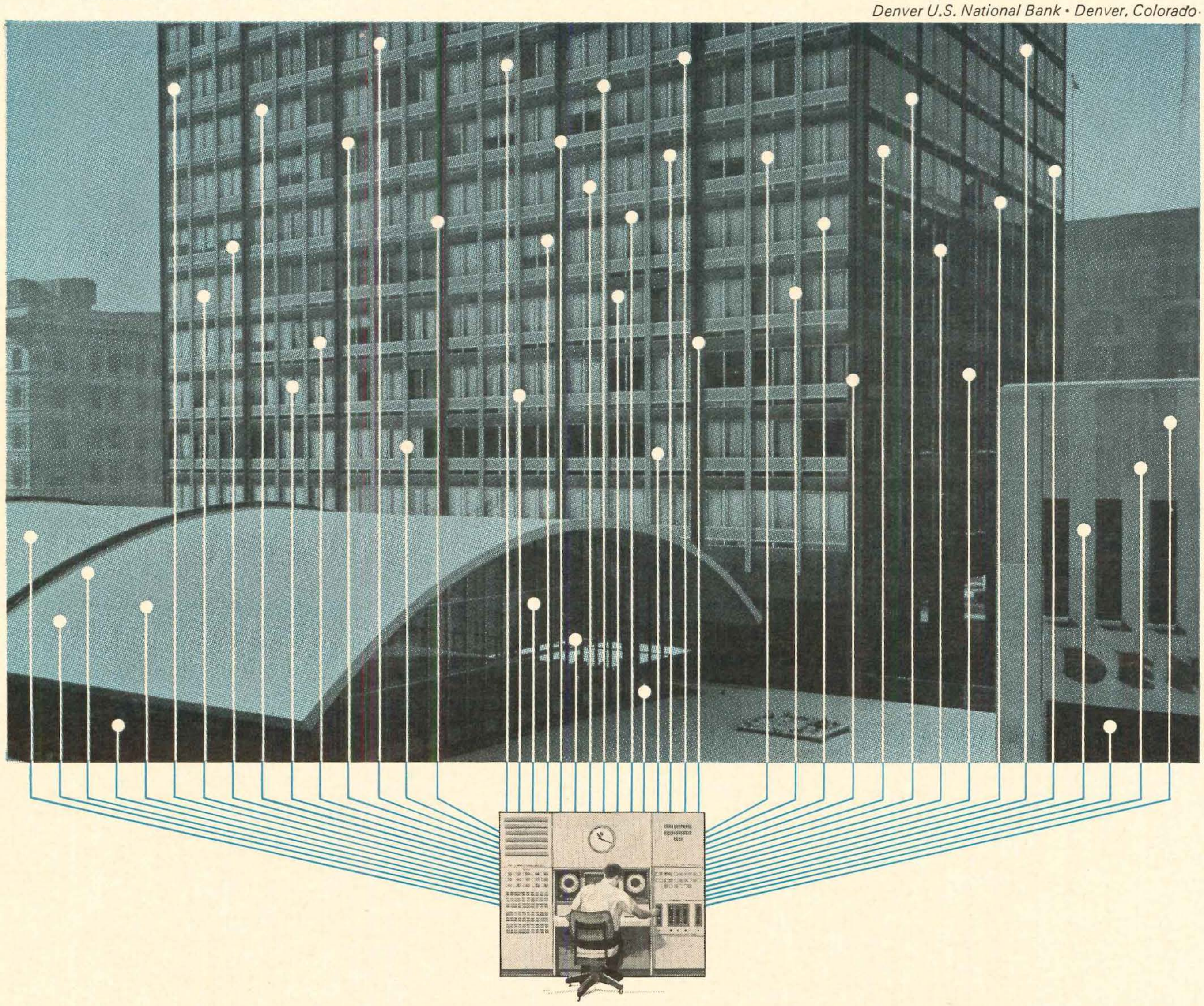
Pre-erected steel stairs may now be ordered in two-, three- or four-story units, and are delivered ready to be set in place by crane and used at once. The company claims that the new *Pico II* multiple story units can be erected about twice as fast as equivalent stories of single-floor units. *Pico Safe Stairs Company, 4628 42nd Place, Hyattsville, Md.*

CIRCLE 303 ON INQUIRY CARD

*more products on page 230*

# HONEYWELL ANNOUNCES 1-MAN BUILDING CONTROL

*Denver U.S. National Bank • Denver, Colorado*



**Sees, hears, records, reveals, checks, adjusts, alarms, remembers, analyzes, monitors, starts and stops,**

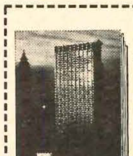
*And*

**pays for itself in 3 to 5 years**

One man can control *any* building with a Honeywell Automated Control Center.

He sits at a compact control panel. From it he can control fire protection, clocks, security, temperatures, humidity and equipment. In fact, he can handle practically everything but maintenance from his chair. Constant supervision replaces periodic inspections.

**Only Honeywell** can design, manufacture, install, guarantee and service *all* the equipment you need to control your building like this. Only Honeywell can eliminate the problems of purchasing this equipment piecemeal. One source. One responsibility. Honeywell simplifies building control. We supply everything but the man.



Send coupon for free booklet:
ONE MAN BUILDING CONTROL BY HONEYWELL

Contains information on the operating economies and applications of automation in controlling all kinds of buildings. Send to Mr. W. N. Wray, Honeywell, Dept. AR11-47, Minneapolis, Minnesota 55408.

NAME ____________

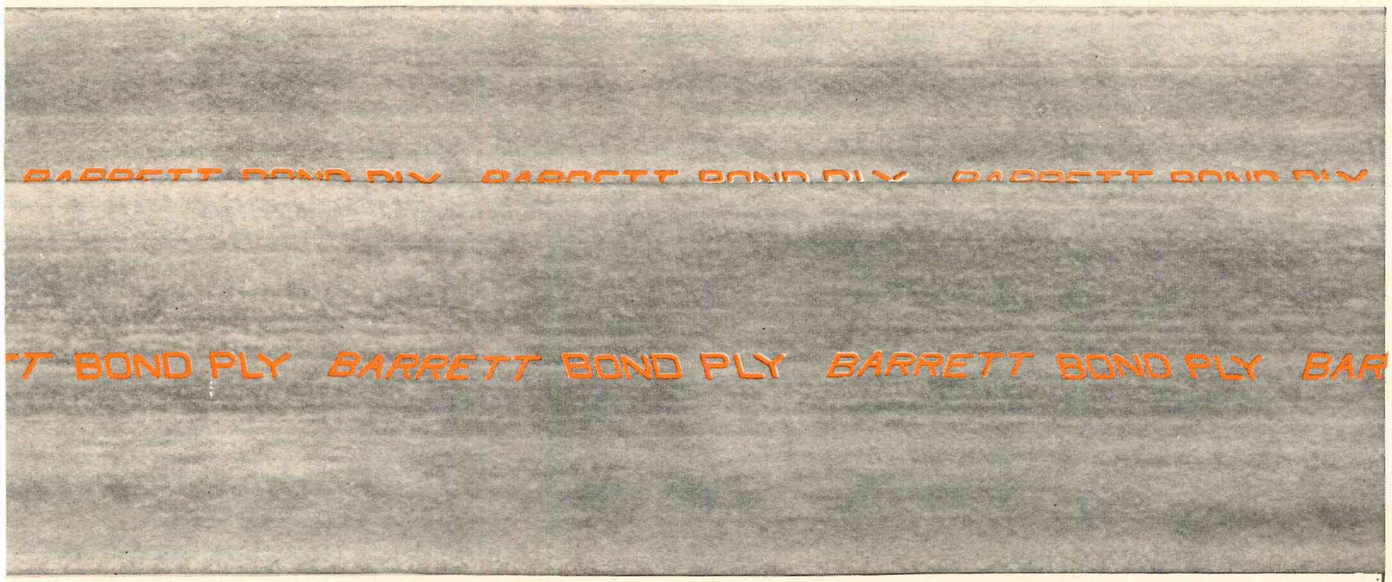
TITLE ____________

FIRM ____________

ADDRESS ____________

CITY ____________ STATE ____________

**Honeywell**




**WHAT IT IS**—Shown above is a NEW type of roofing sheet that's coated on both sides with a smooth, even layer of bitumen AT THE FACTORY. **WHAT IT DOES**—Provides a new SYSTEM for installing Built-Up Roofing—a 2-PLY SYSTEM which requires only 2 layers of roofing instead of the usual 4. **DOES IT MEET SPECIFICATIONS FOR A 20-YEAR BOND BUILT-UP ROOF?** Absolutely—two layers of Barrett's new Bond Ply Coated Roofing Sheet, adhered with new Barrett Bond Ply Cement, provide greater protection than four layers of conventional felt . . . with only two on-the-job moppings instead of the former four. **WHAT CAN BARRETT BOND PLY DO FOR YOU?** Plenty! Faster, simpler application using established techniques reduces "on-the-job" handling . . . about 60% of every dollar spent on a Bond Ply roof stays on the roof. Factory-applied weatherproof asphalt coating on both sides provides dependable weather protection. Because each roll is printed along its entire length with the Barrett Bond Ply name . . . **YOU GET WHAT YOU SPECIFY!** Why not specify Barrett Bond Ply for your next built-up roofing job? Write to us for the fact-file "1+1=4" on new Barrett Bond Ply—the newest and most efficient system in built-up roofing. Address: Barrett Division, Allied Chemical Corporation, Dept. ARC11, 40 Rector Street, New York, N.Y. 10006.

**BARRETT BUILDING MATERIALS**

Allied Chemical

For more data, circle 103 on Inquiry Card

## *Product Reports*

*continued from page 226*

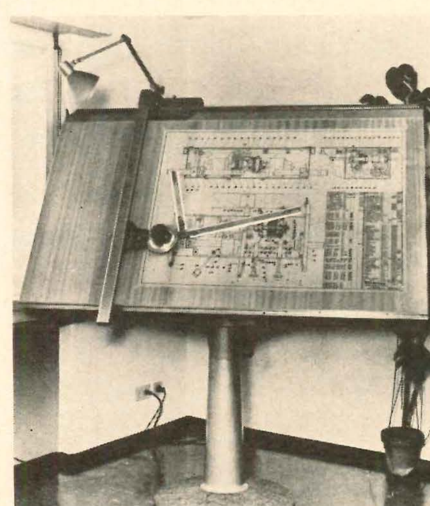
### FOLDING CONFERENCE TABLE

Hugh Acton's new series of folding conference tables from 4 to 10 ft. in length, includes this 8-ft. oiled walnut boat-shaped table with a vinyl edge. The base is of polished mirror chrome steel. *Hugh Acton, 588 Brookside, Birmingham, Mich.*

CIRCLE 304 ON INQUIRY CARD

### ADJUSTABLE ELECTRIC DRAWING TABLE

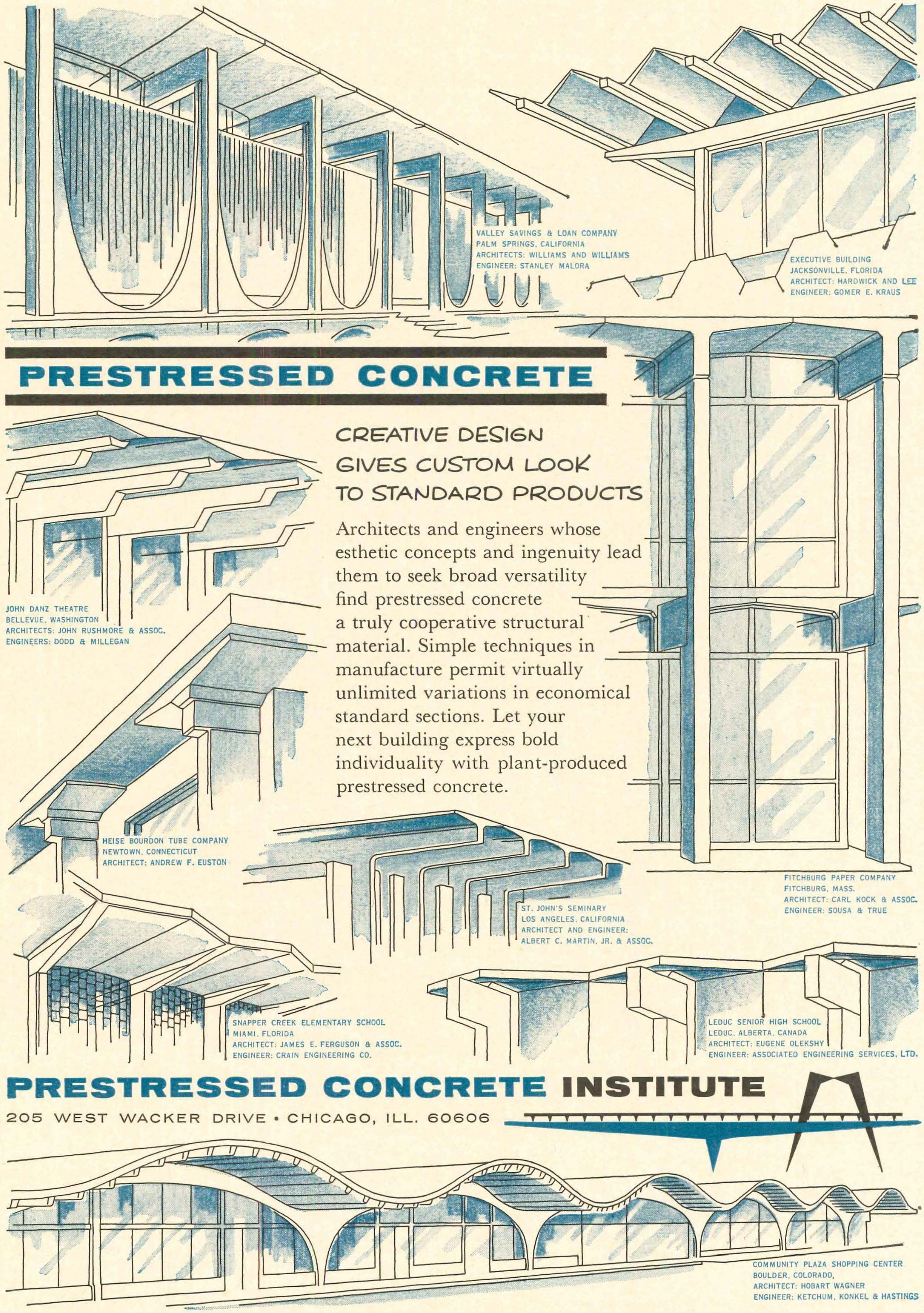
Developed in Switzerland, this new drawing board can be moved to any desired height or angle at the touch of a knob. Designed to prevent the occupational discomforts of drafting, the new *Sinamat* table is said to improve accuracy and efficiency. The



vertical shaft moves freely on ball bearings through 360 deg and may be locked in any position. Two 115 volt 400 watt motors supply the power. The board is adjustable from 16 to $31\frac{1}{2}$ in. in height. The slope adjustment is 90 deg from horizontal to vertical. *Reed Products Co., Dept. 33, 4438 North 20th St., St. Louis, Mo.*

CIRCLE 305 ON INQUIRY CARD

*more products on page 234*

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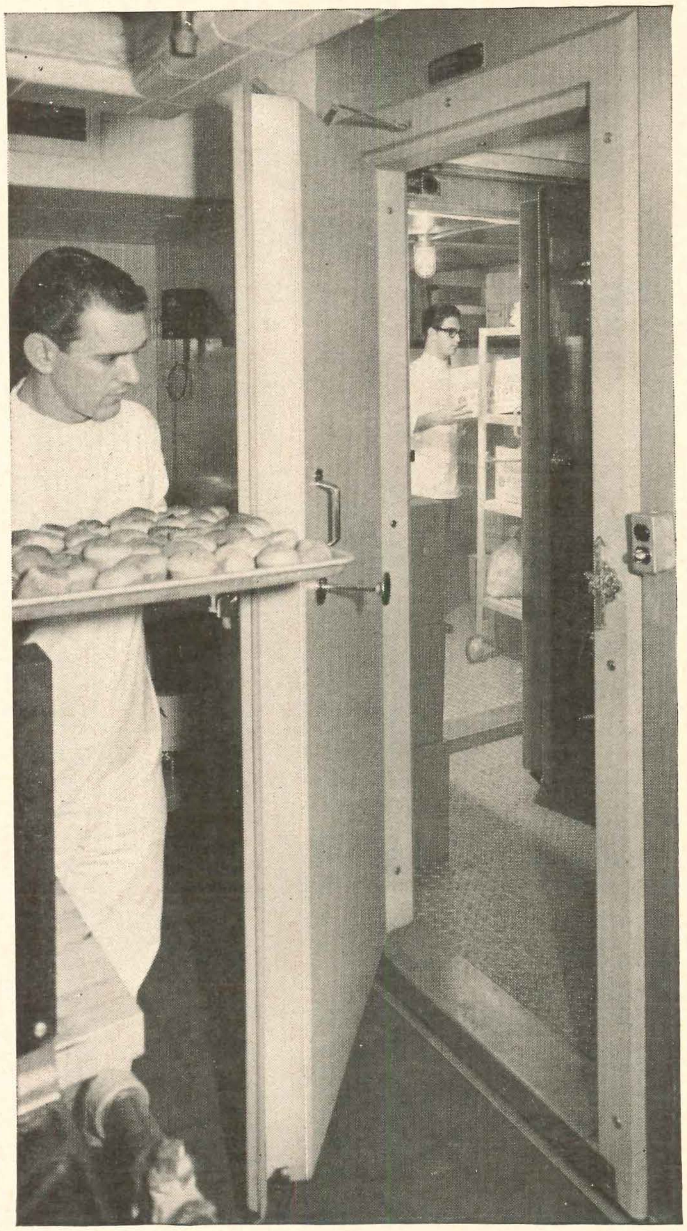
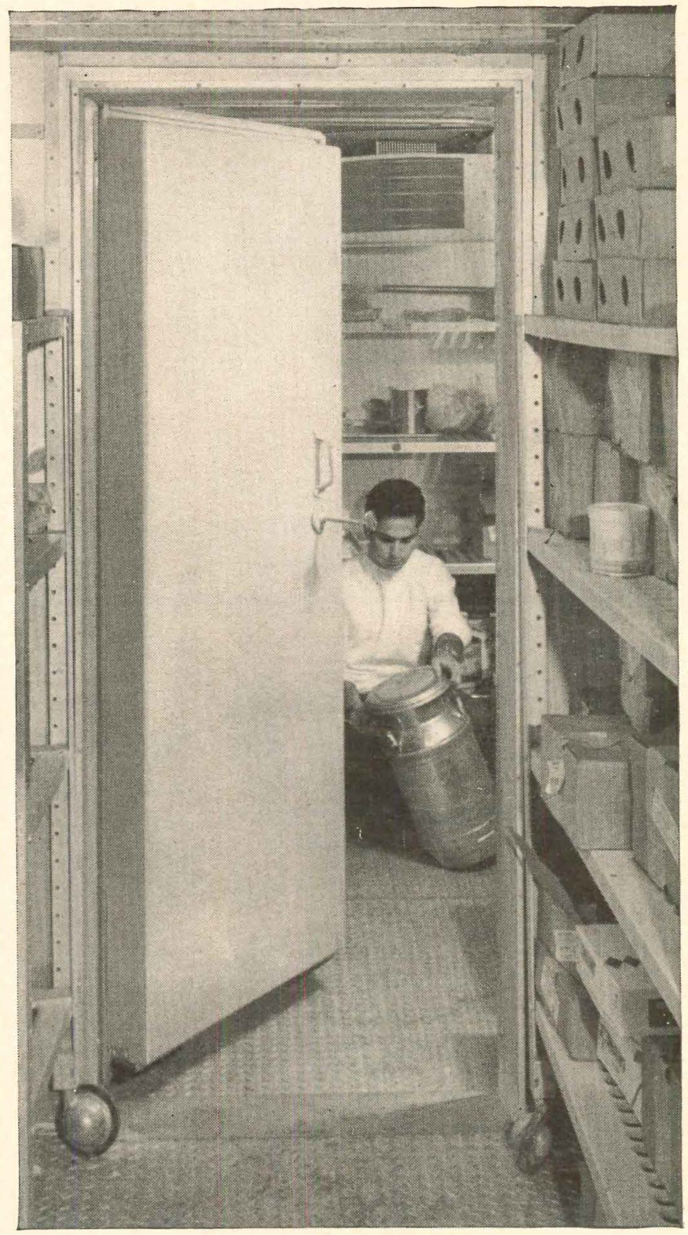


EASY OPENING Jamolite plastic doors facilitate rapid movement between kitchen area and cold room.



JAMOLITE FREEZER DOOR is equipped with Jamison Frostop® to prevent ice formation.

# ***Jamolite***® *Food Service Doors adopted by famous restaurant chain for top performance—smart appearance*

At the Howard Johnson Restaurant, College Park, Md., Jamison Jamolite Food Service Doors are making an important contribution to the efficient operation of this famous restaurant.

These flush-fitting doors cannot warp. Installation is fast and easy. Foamed-in-place polyurethane insulation forms a permanent, rigid bond with the outer door shell. For complete details write for latest bulletin to Jamison Cold Storage Door Company, Hagerstown, Maryland.

NATIONAL SANITATION FOUNDATION nSf TESTING LABORATORY

## NSF Approval

JAMOLITE Food Service Doors meet high public health standards, conforming to all applicable standards and criteria of the National Sanitation Foundation Testing Laboratory, Inc.

**JAMISON**

COLD STORAGE DOORS

For more data, circle 57 on Inquiry Card

## *Product Reports*

*continued from page 230*

### DOUBLE DUTY SHOWER UNIT

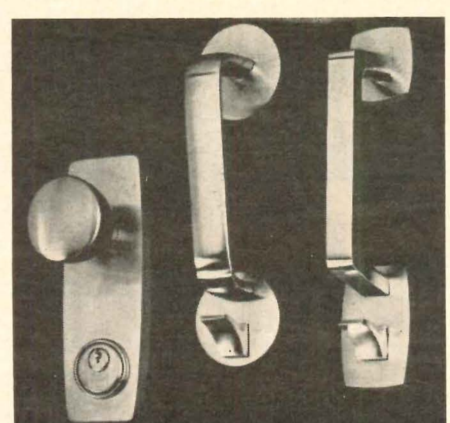
A new combination shower unit called *Showerall* is both a wall shower and a hand shower, which can be moved all around the tub, or over to the wash-basin as required. Designed particularly for hospitals and nursing homes, the unit is said to enable nurses to wash patients in about one-third of the time required for normal tub baths. The spout is chrome-plated heavy brass, and the chrome-plated corrugated hose is 59½ in., long and very flexible. Installation is quick, and costs are said to compare favorably with those of regular shower units. *Jaclo Inc., Box 112 Bratt Station, Brookly, N.Y.*

CIRCLE 306 ON INQUIRY CARD

### TRIM FOR FIRE BOLTS

Five sets of outside trim to match the company's new "*Exiter* fire exit bolts have recently been developed. Each trim is designed for use with rim, vertical and mortise *Exiter* bolts, and is available in brass, bronze aluminum or stainless steel. *Russell & Erwin Division, The American Hardware Corp., New Britain, Conn.*

CIRCLE 307 ON INQUIRY CARD



*more products on page 239*

For more data, circle 108 on Inquiry Card

## *Product Reports*

*continued from page 234*

### DOUBLE DECKER GAS RANGE

A large *Ultra-Ray* broiler which focuses intense rays over a large area, reaches boiling point in seconds, and saves up to 30 per cent in broiling time, is an important feature of the new *Caloric 75* gas range. This new range is 29⅞ in. in width and 63¾ in. high without hood and exhaust system. It is equipped with oven lights for both top and bottom ranges

and a switch controls the "Cook and Keep Warm" oven system. The four high speed burners can be easily removed for cleaning, and are guaranteed for life. *Caloric Corp., Topton, Pa.*

CIRCLE 308 ON INQUIRY CARD

### HEAVY-DUTY GAS BOILER

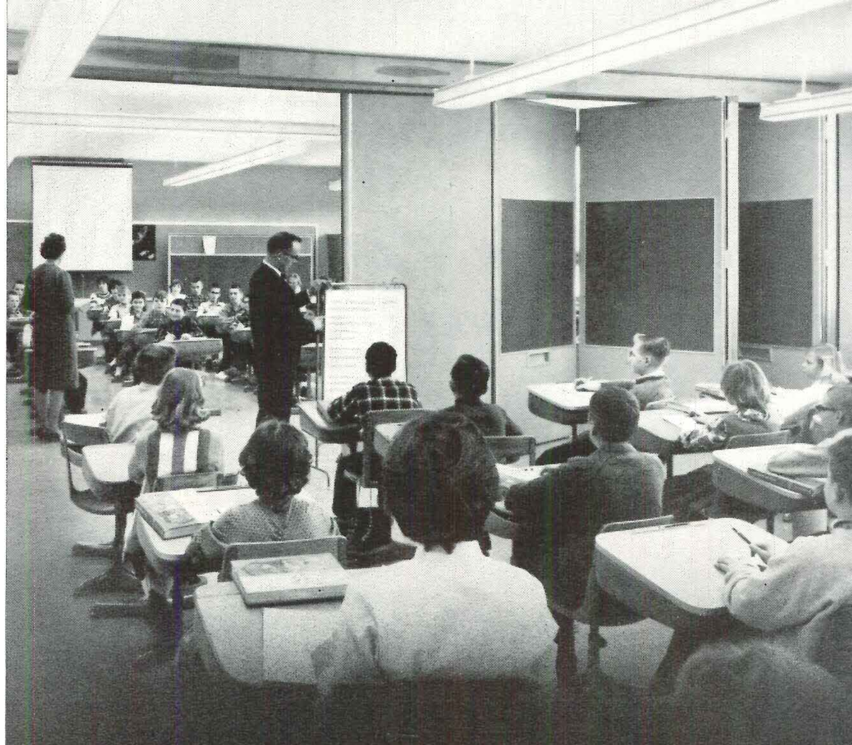
The *Type K* gas-fired boiler, with cast iron sectional construction is designed for use in apartments, schools, commercial, industrial and institutional buildings. It has net I-B-R ratings, for hot water of from 1,432,600 to 3,913,000 Btu/hr. The steam ratings are from 5,970 to 16,305 sq ft. The boiler provides for up to five tankless water heaters, has asbestos rope seal between sections permitting faster assembly and a gas-tight seal, and an air elimination fitting, as optional equipment.

The *K* boiler meets AGA efficiency standards for natural, manufactured, mixed, LP air mixture and propane gases. Other features include stainless steel ribbon burners, and electronic controls. *Weil-mcLain Company, Inc., Michigan City, Ind.*

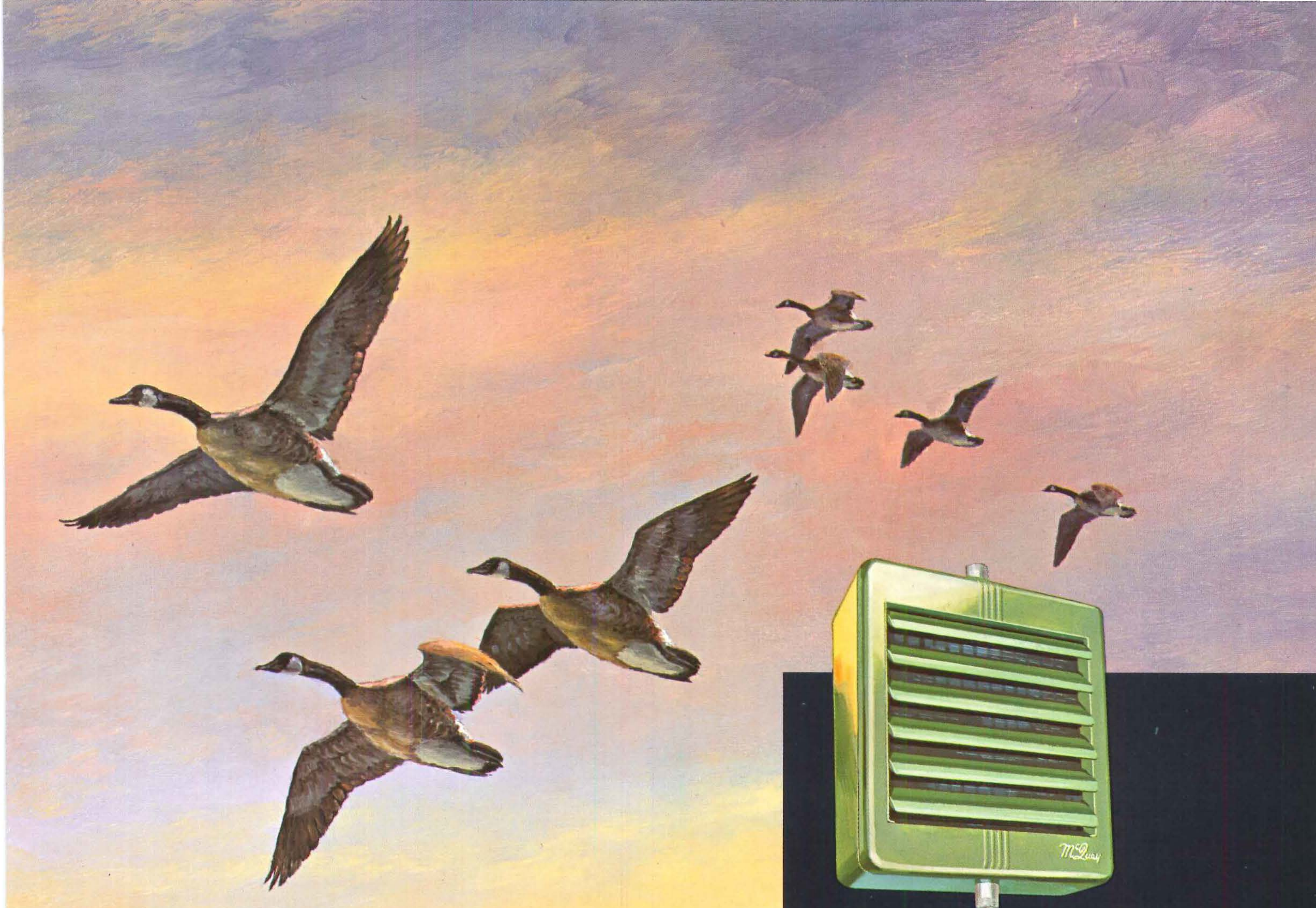
CIRCLE 309 ON INQUIRY CARD

*more products on page 246*





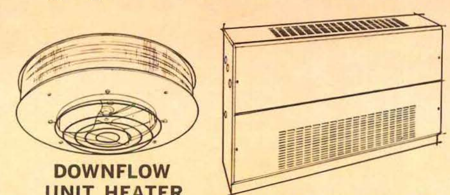

LOOK TO
THE LEADER
for equipment that
masters the seasons . . .
McQuay®
THIN-LINE
SEASONMAKER
Seasonmakers®
Industry's widest range of remote type individual room air conditioners. Five lines, 15 models, 78 sizes. Thin-line Seasonmaker is just 8½" thin. Lo-Line is 14½" high—ideal for modern, floor-to-ceiling glass walls. Seasonmaker Jr. can be recessed between studs. Apt. Seasonmaker conditions several rooms. Large capacity model delivers up to 3200 cfm.
LO-LINE
SEASONMAKER
SEASONMAKER JR.
APARTMENT
SEASONMAKER
LARGE CAPACITY
SEASONMAKER
MULTI-ZONE SEASONMASTER
Seasonmaster®
It's easy to select the McQuay Seasonmaster central station air conditioner that meets your exact need. Multi-zone, horizontal and vertical models in 44 low and medium pressure sizes from 700 to 38,100 cfm. Compact, dependable, easy to maintain. Full line of "Ripple-Fin" coils and accessories.
VERTICAL
SEASONMASTER
HORIZONTAL
SEASONMASTER
Seasonvent®
Single and multi-zone central station heating and ventilating units —5 models, 65 sizes from 720 to 57,150 cfm. Floor, ceiling or wall-mounted. Full line of coils, accessories. Quiet, efficient McQuay Utility Fan Sets available from 700 to 23,000 cfm. AMCA certified ratings.
UTILITY FAN SET
HA
AUDITORIUM SEASONVENT
HD SEASONVENT



HORIZONTAL UNIT HEATER

## *Unit Heaters*

Solve all your space heating problems! Three models, 61 sizes—all with McQuay's famous "Ripple Fin" coils for efficiency. Steam or hot water. From 20,300 to 610,000 btuh. Heavy gauge bonderized steel construction.



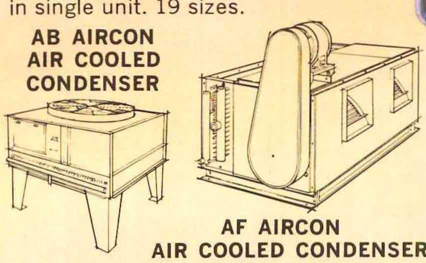
DOWNFLOW UNIT HEATER

CABINET UNIT HEATER

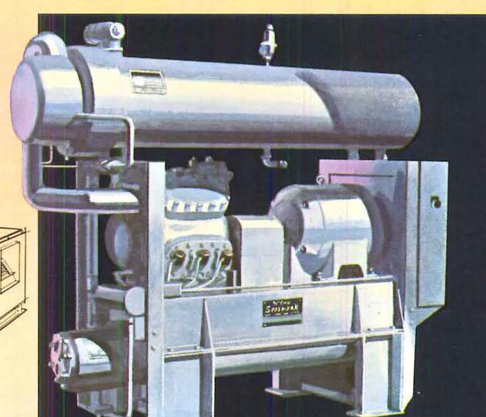
## *Seasoncon®/Aircon®*

Seasoncon Air-Cooled Condensing Units from 20 to 50 nominal hp. Rugged, weatherproof aluminum housing has low silhouette. All internal wiring and piping is completely assembled. AIRCON air cooled condensers—7½ to 95 tons in single unit. 19 sizes.

AB AIRCON AIR COOLED CONDENSER



AF AIRCON AIR COOLED CONDENSER

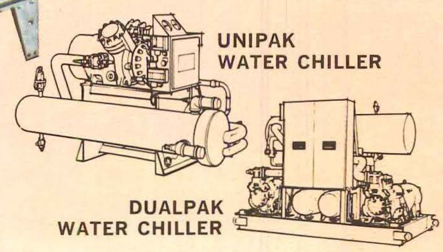


MONOPAK WATER CHILLER

SEASONCON AIR COOLED CONDENSING UNIT

## *Seasonpak®*

Full line of water chillers lets you install a completely integrated McQuay air conditioning system. Unipak from 7½ to 15 nominal tons; Monopak, 25 to 75 nominal tons; Dualpak, 60 to 150 nominal tons.



UNIPAK WATER CHILLER

DUALPAK WATER CHILLER

## FREE!

Beautiful full-color print of Canada Honkers by Richard Bishop, one of the nation's foremost wildfowl artists. Mounted print measures 18"x16" and is ready for framing. Clip coupon and mail today.

McQuay INC.
MEANS QUALITY

MAKE THE SEASONS COME TO YOU ®

1600 Broadway N. E.
Minneapolis, Minnesota 55413

Please mail prepaid a colorful Canada Honker print. While you're at it, send along some information on the following McQuay products: __________

NAME __________

COMPANY __________

ADDRESS __________

CITY ______ ZONE ___ STATE ______


# Now's the time to call the man from BARCOL

When it comes to determining the right overhead-type door for the right project, call the man from Barcol . . . he's best qualified to work with you at the preliminary planning stage.

He'll help you anticipate and prevent common door problems . . . identify penalty your client would pay with inadequate, inferior-quality doors . . . justify initial cost of door equipment . . . determine a firm, accurate budget figure . . . AND provide the proof that Barcol saves money for your client.

Barcol Overdoors with exclusive "Cam-Action" and perimeter gasketing are the tightest sealing doors on the market. For added dependability, specify Barcol's springs that are guaranteed for 100,000 cycles or 10 years.

If the buildings you're planning now require efficient materials handling, more accurate temperature control, more convenient door operation, Barcol Overdoors, electric operators and automatic controls assure more efficient performance. Barcol's superiority is fully documented . . . providing you proof of performance that justifies initial cost to clients. We're as near as your phone!

BARBER COLMAN

BARCOL

*See Barcol insert, Sweet's Architectural File*

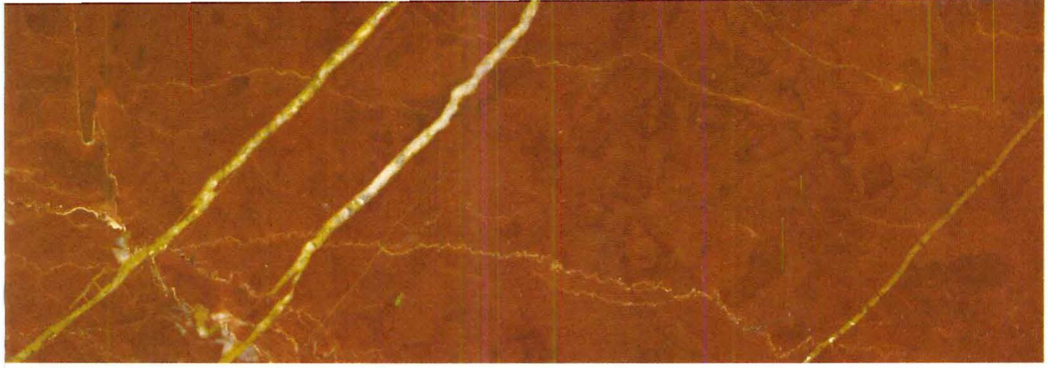
**BARCOL OVERDOOR COMPANY**

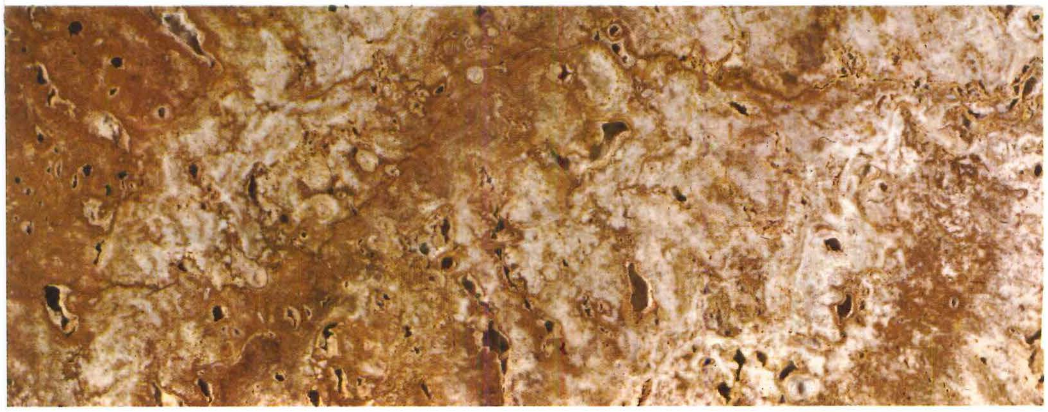
SHEFFIELD, ILLINOIS

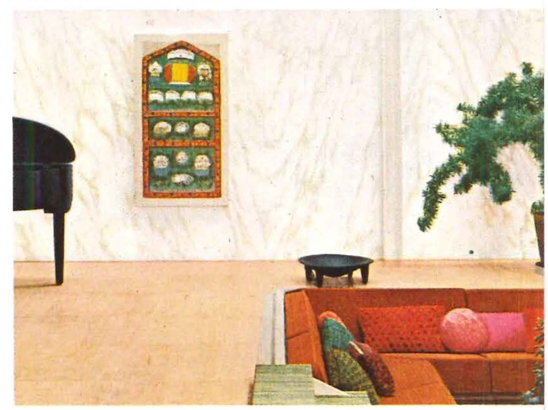
Subsidiary Barber-Colman Company, Rockford, Illinois

For more data, circle 111 on Inquiry Card

For more data, circle 112 on Inquiry Card →







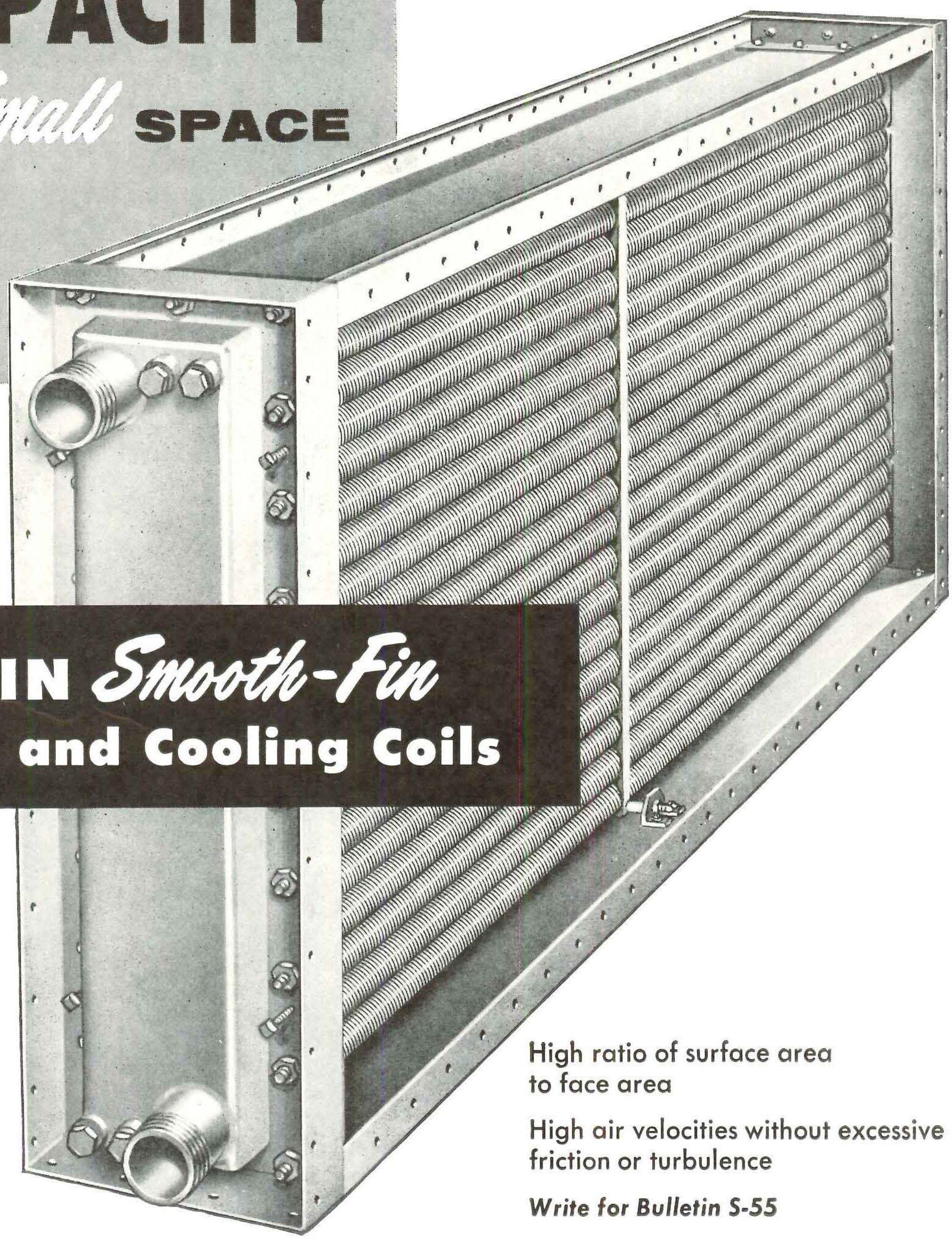

Kodak Administrative Headquarters
Architects: Eastman Kodak Company

Oklahoma Bar Center.
Architects: Parr and Watkins

Residence by Architects: Eero Saarinen and Associates and Alexander Girard—Kevin Roche, Associate

Ft. Lauderdale Bank of Commerce
Architect: Charles F. McKirahan

# BIG CAPACITY IN *Small* SPACE



## AEROFIN *Smooth-Fin* Heating and Cooling Coils

High ratio of surface area to face area

High air velocities without excessive friction or turbulence

***Write for Bulletin S-55***

## AEROFIN CORPORATION

*101 Greenway Ave., Syracuse 3, N.Y.*

*Aerofin is sold only by manufacturers of fan system apparatus. List on request.*

ENGINEERING OFFICES IN PRINCIPAL CITIES

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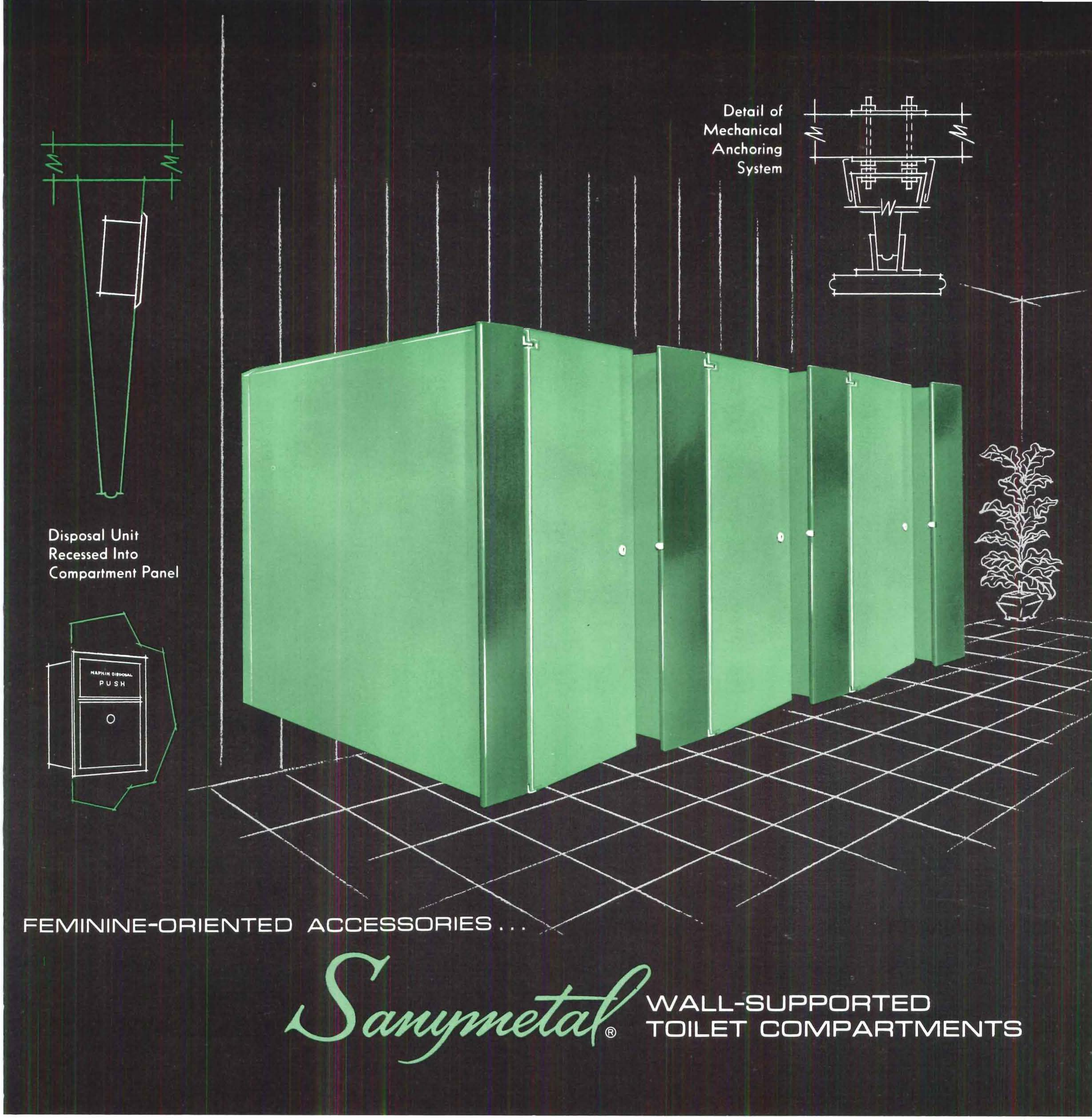



***Everyone Benefits.*** Add to the advantages of Sanymetal wall-supported toilet compartments another unique design feature—recessed accessories! Space-saving sanitary napkin receptacles can be set into a panel of each enclosure . . . fully flush for up-to-the-minute decor . . . simple maintenance . . . and convenient use.

***Architect*** . . . achieves occupant appreciation, as well as clean-line styling with wall-supported compartments—and their accessories. Floor and ceiling supports are eliminated, permitting the widest possible latitude in rest room design. Mechanical anchoring to masonry walls assures the added strength needed for all possible stresses.

***Owner*** . . . finds his consideration in providing disposal units rewarded with considerate usage . . . lessening the possibility of costly waste pipe clogging and periodic need for napkin retrieval. Porcelain or acrylic enamel finish of compartments cleans with soap and water washing . . . lasts a lifetime.

***Tenant/Occupant*** . . . enjoys hygienic compartment with unobstructed space . . . appreciates complete privacy and thoughtful provision for personal needs.

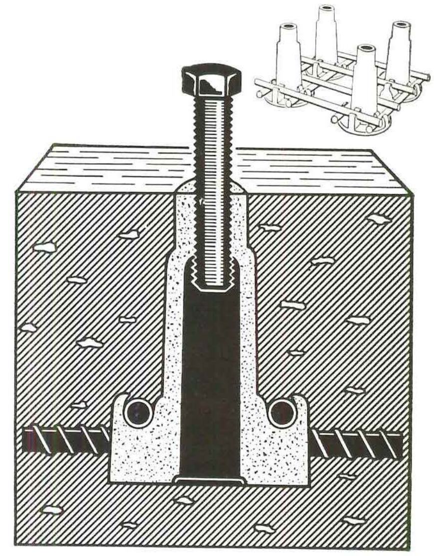
THE Sanymetal® PRODUCTS COMPANY, INC.
1701 Urbana Road, Cleveland, Ohio 44112

## *Product Reports*

*continued from page 239*

### ANCHORING SYSTEM FOR CONCRETE

*Redi-Anchor* is a new system for anchoring a wide range of items to concrete. Cast in high strength malleable iron, the product is available in assemblies or individual units as required. A plastic closing plug is provided to prevent entry of foreign matter prior to use. The system is said to provide anchorage to any required depth or spread, and to remain flush with the top of the foundation



without any awkward projection of bolts. Typical applications include bridge railings, building columns, signs and light posts. The system is available in ½, ⅝, ¾, ⅞, and 1 in. bolt sizes. *Decatur Engineering Company, 519 East William St., Decatur, Ill.*

CIRCLE 310 ON INQUIRY CARD

### NEW SHEET COPPER WALLPAPER

*Chemetal* decorative copper wall covering is made from laminated sheet copper with a sturdy kraft paper backing. Treatment with chemical reagents produces flow patterns, and the four different color finishes are designed to reproduce the natural tones of oxidized copper. *Chemetal* can be applied with the use of heavier viscous adhesives to cover almost any interior surface. Thirty-in.-wide-rolls are available in lengths of up to 30 ft. *Advanced Resin Products, Inc., South Norwalk, Conn.*

CIRCLE 311 ON INQUIRY CARD

*more products on page 252*

For more data, circle 116 on Inquiry Card →

Weldwood #58/AM umber Glasweld sandwich panels on the Demmon-Hunter Building, Palo Alto, California. Architect: Paul James Huston, Palo Alto, Calif. Installer: Fentron Industries, San Francisco.

# This building's insert panels will never lose their rich, earth-toned beauty.

## They're permanently colored Weldwood® Glasweld®

Specify umber — or blue, beige, gold, green or any of 28 other Glasweld colors — and that's the color that will remain. Glasweld won't fade, won't stain, won't craze, crack, or warp. Won't burn, either; it's 100% incombustible.

Glasweld is an autoclaved asbestos-reinforced panel with a permanently colored mineral coating. It can be used in any curtain wall system, and is available as a facing for insulated sandwich panels (as above) or single thickness window inserts. Wherever you use it, Glasweld is a practical and economical material for exteriors that combine color with low maintenance. Through salt air, sunlight, rain, and smoke, Glasweld requires only occasional washing to keep its fresh new look.

For more information, mail the coupon.

Weldwood®
GLASWELD
A Product of United States Plywood

United States Plywood Dept. AR 11-64
777 Third Avenue, New York, N. Y. 10017

☐ Please send me the Weldwood Glasweld brochure.

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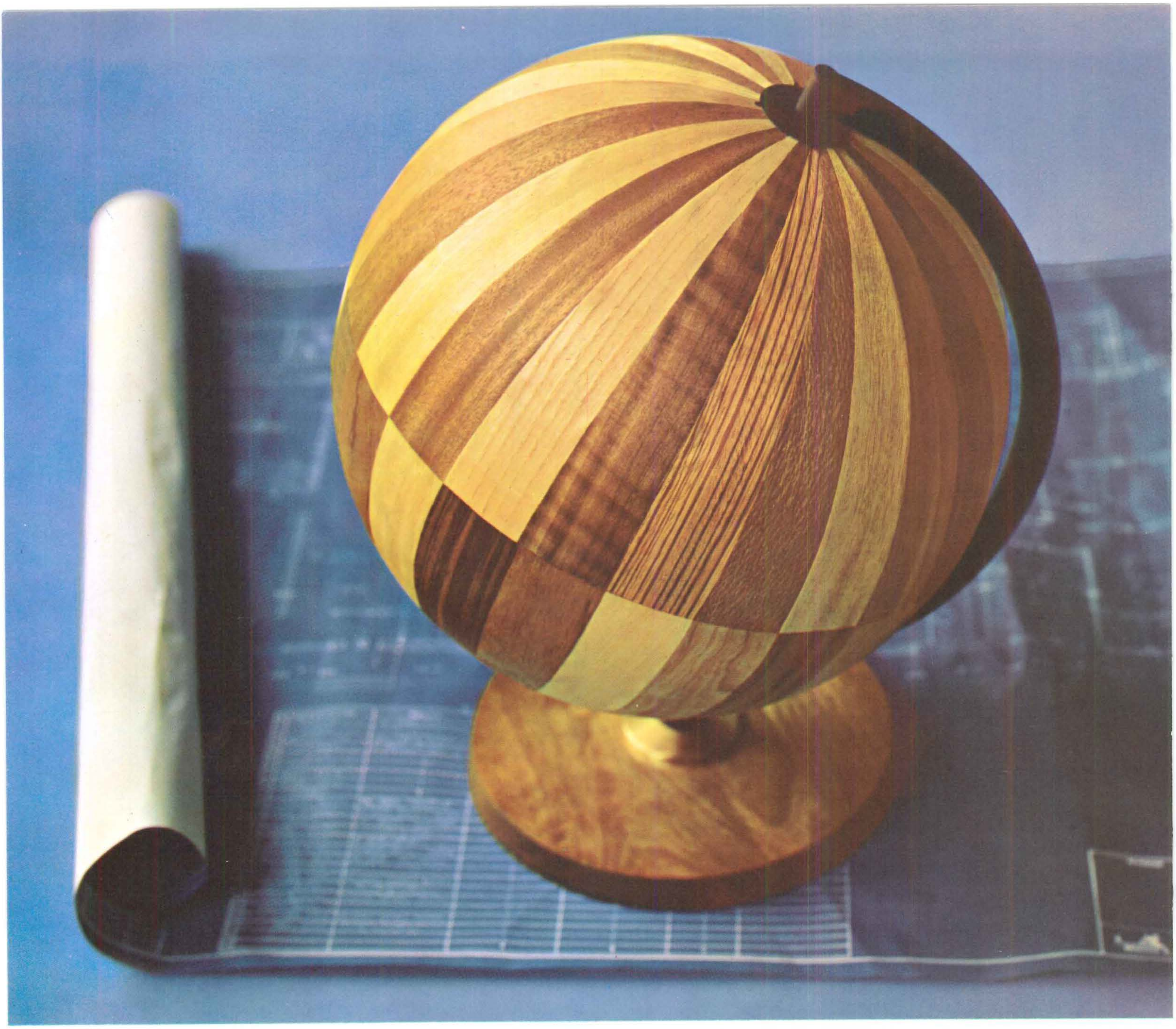


# Flexwood bends to your design... opens the world's forests to you.

With Flexwood®, you can do a lot of things you might now think impossible. Such as panel an office in figured African rosewood. Or wrap a column in teak. Sit at your desk and make your choice among the world's most beautiful woods—African tigerwood, Australian orientalwood, English brown oak, Honduras mahogany. More than 40 species to tantalize your imagination in design.

Weldwood® Flexwood is real wood veneer, 1/85″ in thickness. Because of this thickness, a single flitch of rare wood goes farther—allows you to use sequence-matched wood for larger wall areas than with standard paneling. No joints show, no furring needed. And no need to remove existing trim. Flexwood is so flexible you can give any problem wall—curved or straight, even extra high—the incomparable warmth of fine wood paneling.

Fire Safety.

Where fire and building codes limit the use of wood, Flexwood can be specified and used with complete freedom and confidence. Meets all requirements of Federal Specification SS-A-118b for an incombustible wall covering when applied to an incombustible surface, such as plaster. The New York City Board of Standards and Appeals also permits unrestricted use of Flexwood when bonded to plaster or metal surfaces. Flexwood bears the Underwriters' Label with a flame spread rating of 15.

UNITED STATES PLYWOOD CORPORATION
WELDWOOD
FLEXWOOD®
Underwriters' Laboratories, Inc.
®
INSPECTED
WALL COVERINGS
NOT OVER SQ. FT. ISSUE NO.
FIRE HAZARD CLASSIFICATION
(BASED ON 100 FOR UNTREATED RED OAK)

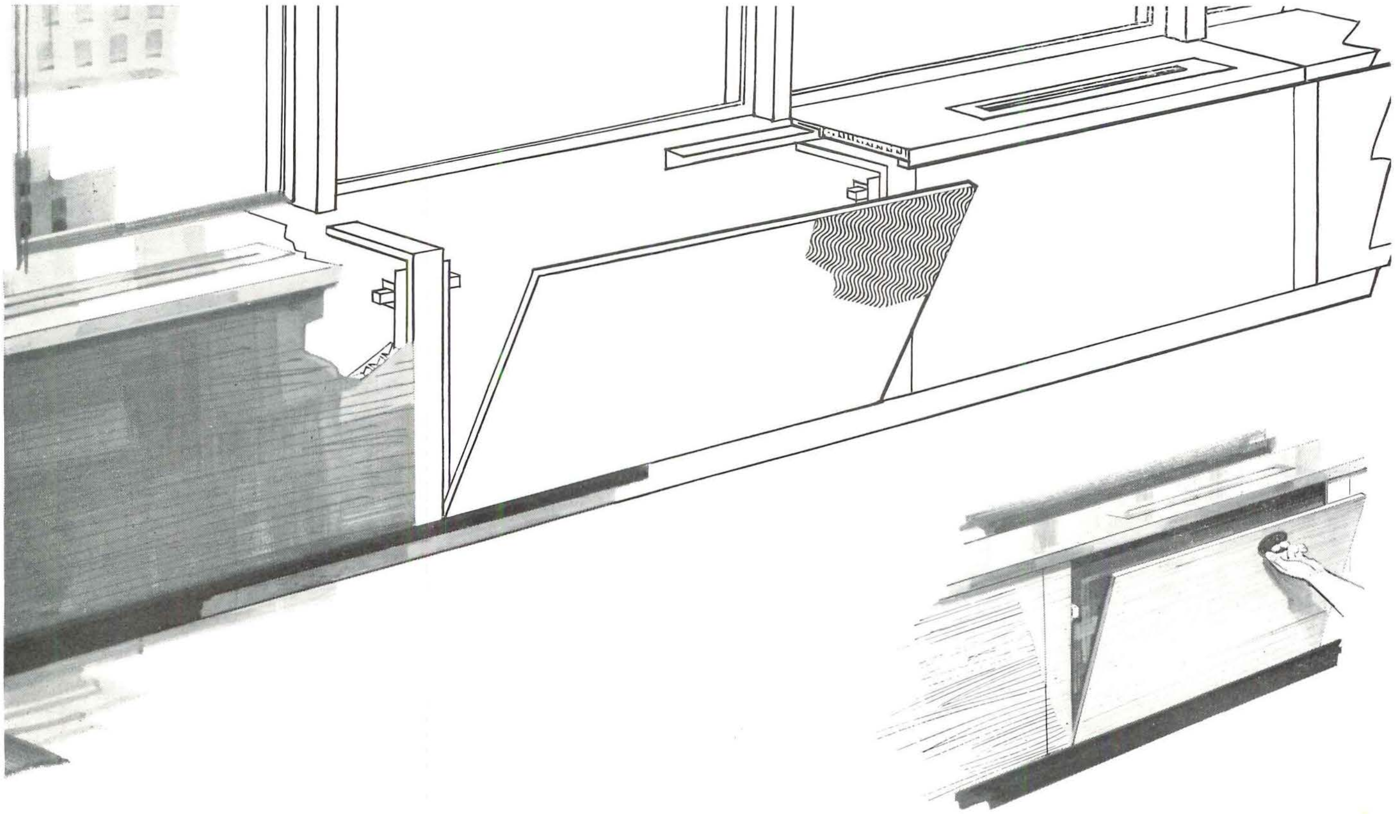
| | |
|---|---|
| FLAME SPREAD | 15 |
| FUEL CONTRIBUTED | 5 |
| SMOKE DEVELOPED | 0 |

Write for data and free sample.

WELDWOOD® FLEXWOOD®

United States Plywood,
Flexible Materials Division, Dept. AR 11-64
P.O. Box 17085, Louisville 17, Kentucky

Come see us at the New York World's Fair—Better Living Building



What do you call a foam-filled under-window enclosure that snaps into place with magnetic locks that eliminate knobs, keys, bolts, screws or slots...comes in a wide range of finishes including aluminum, plastic and steel... will not warp, buckle, bend or vibrate...and weighs only 2 lbs. per square foot?

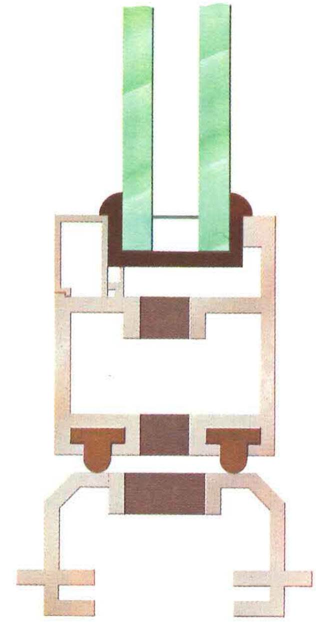
BUENSOD dual panels. The right answer for every installation.

BUENSOD-STACEY

Write for free, illustrated full-color brochure #MP-121.
**BUENSOD-STACEY CORP.** Manufactured Products Division
Subsidiary of Aeronca Manufacturing Corporation, 45 W. 18th St., New York 11, N.Y.

For more data, circle 117 on Inquiry Card

For more data, circle 118 on Inquiry Card →

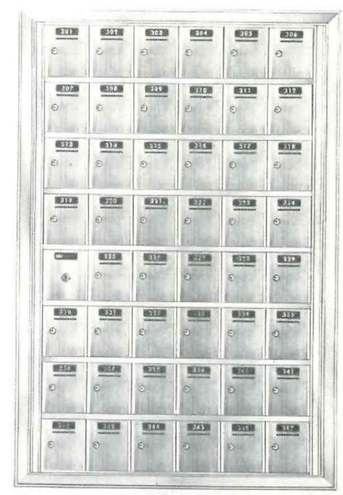


## *Product Reports*

*continued from page 246*

### HORIZONTAL STYLE MAIL BOXES

The new Auth *Series 50* horizontal style mail boxes are designed to be installed 15 in. deep in the wall and to hold mail in a horizontal position. The principal advantage of the new system is conservation of wall space. Although they conform strictly to the U.S. Post Office regulations governing mail compartment size, many more of these horizontal boxes can be installed in a given wall area than can vertical ones. The system is of particular value to architects concerned with high rise apartments, where lobby wall space is extremely limited.



The mail boxes are of aluminum construction and are extremely light in weight. The use of rigidized extrusions provides maximum structural strength and resistance to vandalism. *Auth Electric Company, Inc., Dept. HMB, 34-20 45th St., Long Island City, N.Y., 11101*

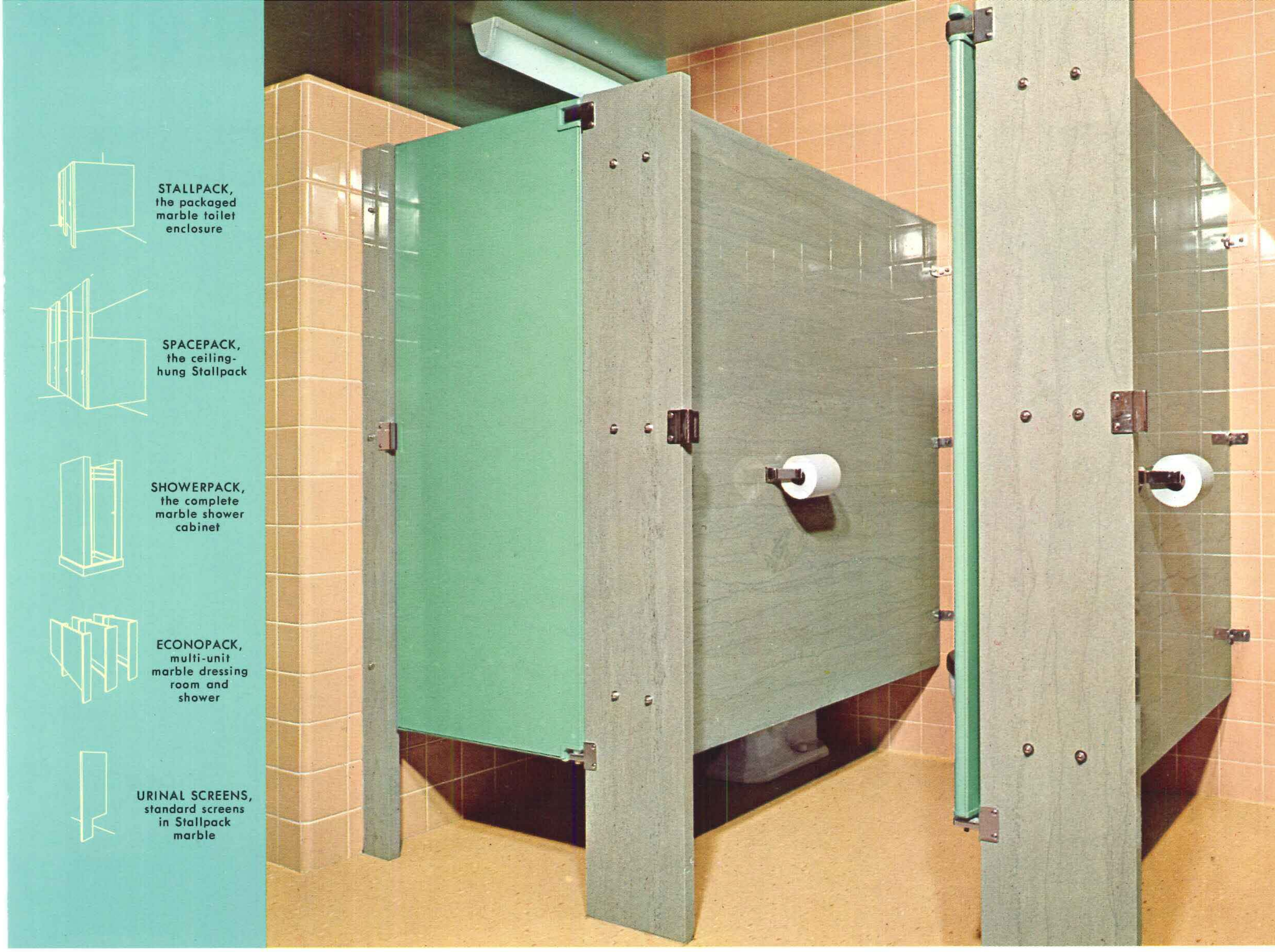
CIRCLE 312 ON INQUIRY CARD

### TEXTURED ALUMINUM SIDING

Eight-in.-wide textured aluminum clapboard siding with an embossed stucco-type surface is available in a wide range of colors including white, green, beige, gray coral and ivory. Formed from heavy gauge *Alclad* aluminum sheet, the board features a special drip-bead lower edging to prevent rainstreaking of the siding. *Aluminum Company of America, 788 Alcoa Building, Pittsburgh, Pa.*

CIRCLE 313 ON INQUIRY CARD

*more products on page 262*




3 Stallpack units, Metzler Hall, McPherson College, McPherson, Kans. Arch: Mann & Co., Hutchinson.

# Stallpack® keeps solving partition problems with durable marble and rustproof hardware

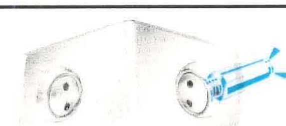
**A COMPLETE PACKAGE.** Stallpack gives you the unique durability of solid marble partitions precut to standard size, pre-drilled ready to assemble, and offered in a package unit complete with door and chrome-plated non-ferrous hardware. These package units are ready to be shipped immediately.

**EASY TO SPECIFY.** Just indicate water closets 2′ 10″ on centers on your drawings, then specify Stallpack. With that one easy specification you give the toilet rooms of your building the lasting beauty and trouble-free durability that cannot be had with any material but marble.

**PERMANENT.** Stallpack marble partitions will not rust or deteriorate. They will never need refurbishing. Washing with mild soap and water is all it takes to keep Stallpack marble partitions in perfect, shining condition. Imagine the total savings in upkeep expense!

**EASY TO CLEAN.** These partitions are easy to keep clean because they are solid marble. Flush construction with solid marble leaves no inaccessible hollow places around the base of the stiles to breed germs and retain odors.

New!



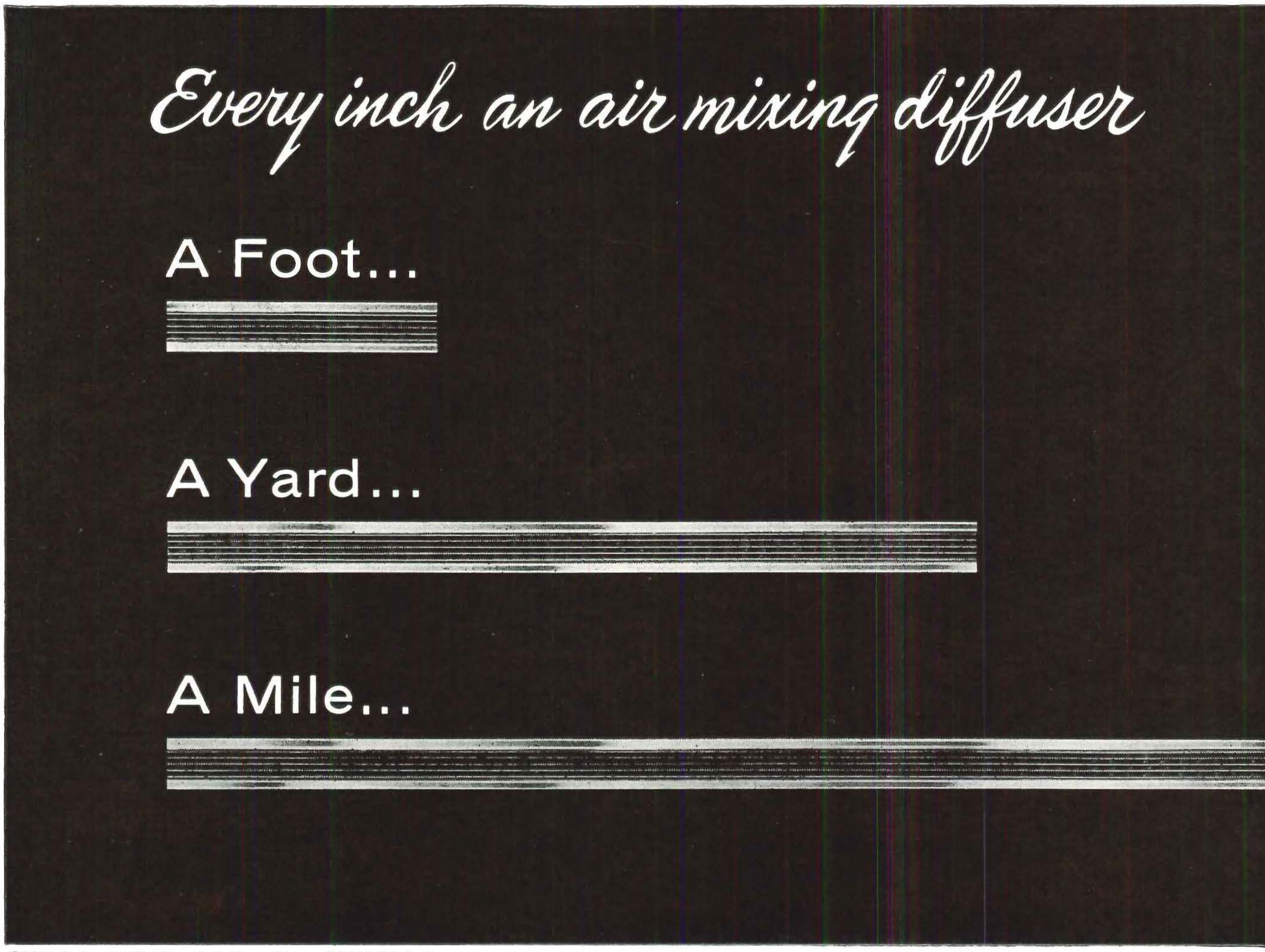
**THEFT-RESISTANT** spanner head machine screws now fasten the exclusive Carthage Marble clip-angle. It takes a special two-pronged screwdriver to remove the screws. This slotted clip-angle saves hours of setting time because it adjusts to out-of-line floors and walls.

**UNIVERSAL COLOR.** Stallpack partitions are made of fine Ozark Grey Veined marble. This lustrous light grey marble blends beautifully with any color scheme, stays beautiful as long as your building stands!

**ECONOMICAL.** High sales volume enables us to polish Stallpack marble partitions on an automated production line and to purchase top quality doors and hardware in carload lots. Stallpack is priced to compete with other types of partitions, yet it offers the durability that marble alone can give. Over the years that durability will mean true economy for the building owner.

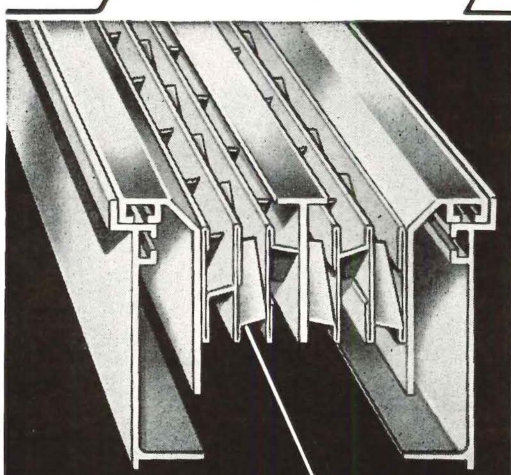
*Specify Stallpack from Sweet's Architectural File, Section 22b/Ca, or write Carthage Marble Corp., P. O. Box 718, Carthage, Missouri 64836.*

CARTHAGE MARBLE CORPORATION




*2⅜" Actual Width of 4 Row Type "EF" Stripline*

## STRIPLINE...*has no equal*



If it does not have these built-in air mixing elements it is not a STRIPLINE diffuser.

When STRIPLINE is installed you can be sure that every inch, foot or mile of these air mixing diffusers, will deliver uniform, homogenized air with control movement in every cubic foot of space served.

Unlike slot type grilles, STRIPLINE has built-in air mixing elements incorporated for functional perfection . . . induce greater quantity of room air toward the diffuser . . . rapidly mix primary and room air . . . providing equalized velocities and temperatures in the zone of occupancy.

More than 250,000 feet of STRIPLINE is now in use. Not one foot has ever malfunctioned, your guarantee that the design of STRIPLINE and the authentic performance data available for the application of these air mixing diffusers, will assure noiseless, draftless air distribution.

Slot type grilles without air mixing elements are not diffusers and are incapable of performing these functions.

For complete performance data, types and sizing ask for catalog ES-105.

### FEATURES . . .

- No visible attaching screws.
- Removable core simplifies installation.
- Design eliminates complicated and expensive duct connections while assuring equalized discharge.

AIR DEVICES INC.
185 MADISON AVENUE, NEW YORK 16, N. Y.
BETTER PRODUCTS FOR
AIR DISTRIBUTION • AIR CLEANING • AIR EXHAUST

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# NOW

# MODERN MASONRY CEMENT MILL-MIXED TO ANY COLOR YOU SPECIFY


With new Medusa *Custom Color* Masonry Cement, architects now have broader freedom in the design of eye-appealing modern masonry walls. The forty custom colors shown are merely representative of the infinite color spectrum now available to the architect's specifications. Medusa Custom Color Masonry Cement is pre-mixed at the plant, comes to the job ready for sand and water. ■ No job-mixing errors. No repeated trips to the job site for color supervision. And each bag is color-coded for precise uniformity of color bag after bag. ■ So whatever the masonry unit—whatever the color theme—Medusa Custom Color Masonry Cement will match it, complement it, or provide a dramatic contrast. In short, the design decision of color in mortar is now limited only by the architect's most creative imagination. ■ For further data, write us direct.

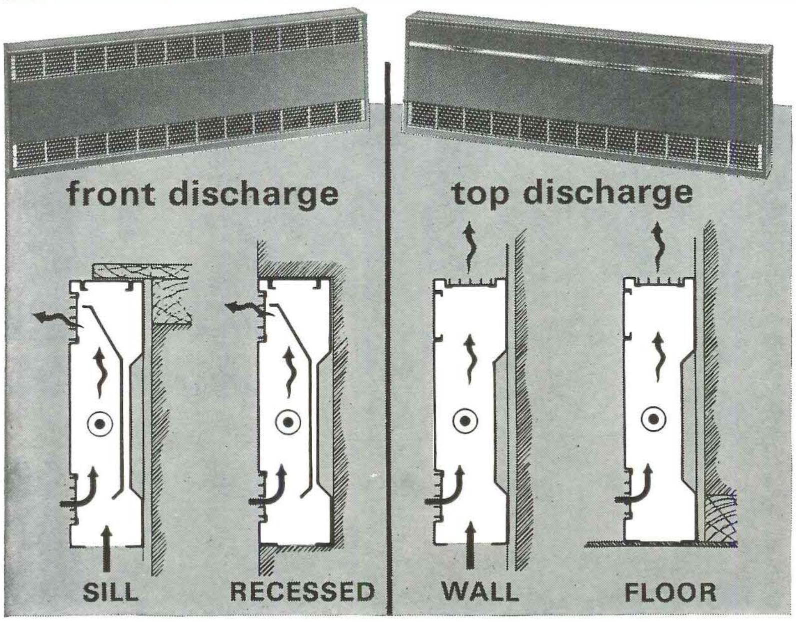
**MEDUSA PORTLAND CEMENT COMPANY**

P. O. BOX 5668 CLEVELAND 1, OHIO

No other convection heater offers so few restrictions to creative architectural design

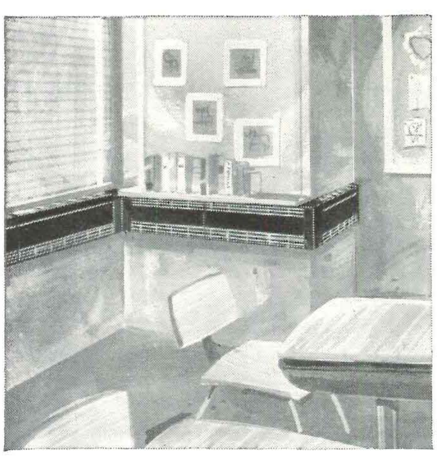
# Electromode

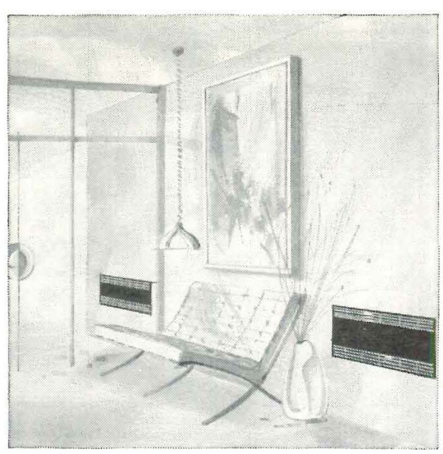
# versatile electric convection heater

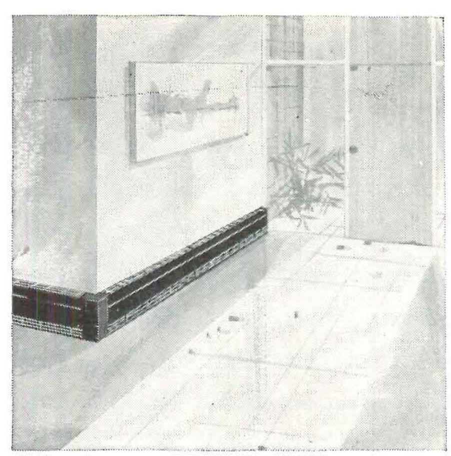



The only electric convection heater that gives you a choice of *air intake* — front, bottom or both—and heated air *discharge* —through the front or top. It is available in lengths of three and four feet, heights of 11, 15 and 20 inches, and depths of 3, 4, and 5 inches.

It is readily adaptable to installation at baseboard level, on the wall at any distance from the floor, or recessed anywhere in the wall . . . in new or existing schools, offices, air terminals, auditoriums, bus terminals, restaurants, churches, factories and theatres.







Offering the utmost versatility in application and installation these Electromode convection heaters will solve many of the design and installation problems you encounter in planning new buildings and in providing flameless electric heat for remodeling and modernization projects. They make it easy to provide commercial, industrial and institutional buildings with all the advantages of flameless electric heat without sacrificing freedom of expression in architectural design. They are quality built by Electromode to assure dependable, carefree performance plus safety and durability.

For complete information and specifications on the convection heaters or any of the 400 types, models and capacities of Electromode electric heaters see your Electromode representative or write

**Electromode** *division* Friden, *Inc.* Dept. AR-114 Rochester, N.Y. 14603

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# BIG CHOICE
## is one of the big reasons to lease your personal car through FALS

Clockwise from top: Thunderbird Landau, Fairlane 500 Sports Coupe, Mustang Fastback 2+2, Falcon Futura Convertible, Ford Country Squire.

With so many models and options to choose from, you'll find that to get exactly what you want is easy when you lease your personal car through FALS. Your local FALS Dealer can provide the Ford of your choice, equipped the way you want it.

When you lease, instead of buy, you have no down payment . . . no trade-in problems. Your FALS Dealer will help you dispose of your present car . . . take back your leased car at the end of the lease.

Just pick the car and equipment you want; decide how long the lease is to run. Your FALS Dealer will then provide the car at a low monthly rate. Insurance and various maintenance plans can be included in the lease at a small additional charge.

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*America's largest leasing system*

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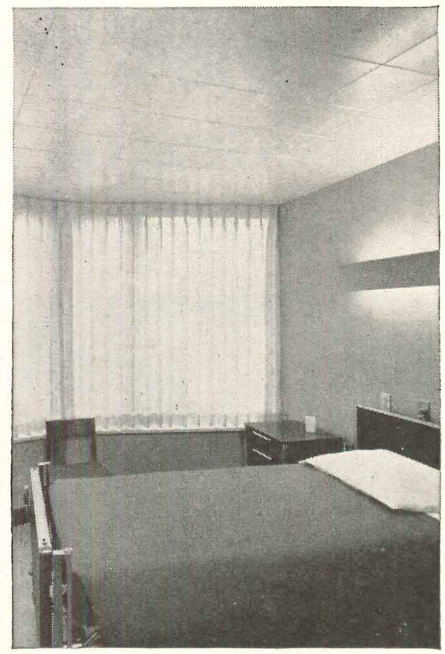
*The radiant ceiling panels of the IRC System are finished in baked enamel for easy cleaning. There are no floor-mounted, wall-hung, or window-sill units to clean or to get in the way.*



# ENVIRONMENTAL CONTROL IN HOSPITALS

## *Designing to meet a medical facility's special conditions of temperature, humidity, air cleanliness and circulation*

The environmental requirements of today's hospital increase the demand for total air conditioning. Thirty years ago, air conditioning a hospital was big news. In fact, air conditioning *anything* was new and exciting; the concept of a controlled indoor environment had just dawned.

Many basic ideas now common in air conditioning practice were born in that period. Force-fed by the pressure of great building programs, they matured and were refined into highly efficient systems. But they had their limitations.

The vast volume of air used to heat and cool a large building required extensive mechanical equipment and ductwork. Wet refrigerating coils had a bad habit of accumulating and propagating airborne contaminants. These deposits tended to develop into colonies of bacteria and other micro-organisms which passed into the air stream during the system's operation.

Great strides were made by filter designers to reduce this hazard. But one weakness of the filter remains: it has to be serviced regularly and faithfully by human beings — and is subject to consequences of their vagaries.

### *Need for a New Approach*

The basic ideas of the 1930's were great in their day, but we are now in the mid-1960's. The need now is for an up-dated approach to hospital comfort control — one that takes into account the special conditions of the hospital.

Designing an air-conditioning system to satisfy these particular requirements differs from designing for other building types. Problems indigenous to hospitals are:

(1) The need for 100% exchange of air.

(2) Complete control of airborne contamination.

(3) Temperature, humidity, and air movement favorable to a patient's health and comfort.

(4) Cleanliness and ease of maintenance.

(5) Economy—both in first cost and in operation.

There is a new awareness of air conditioning as a contributing factor in sanitation, as well as comfort. Obviously, it is inconsistent to spend time and money to create aseptic conditions in surgery and other critical departments by sterilization methods and then permit contaminating influences to exist in the air conditioning system.

### *Growth of New Technics*

Technological advances over the past decade have placed at the disposal of the hospital architect new equipment, methods and procedures that are capable of improving environmental conditions in medical facilities — at the same time, contributing to economy of installation and operation.

One of the newest developments is the Inland Radiant Comfort System. Here is a completely new concept in total air conditioning specifically designed for the needs of the hospital.

This system combines three widely accepted, proven components into one engineered design: (1) a radiant-acoustic ceiling, (2) a chemical air conditioner, and (3) a cellular steel floor. Because of the integrated design, each component assists in the functioning of the others.

### *100% Exchange of Air*

The arguments for and against using only *outside* air as an air-conditioning source, instead of recirculating *inside* air, are academic. If it weren't for its record of excessive costs (*until now*), everyone would prefer to start with outside air, condition it, feed it into the patient's room, then exhaust it. Outdoor air, by action of the sun and massive dilution, usually is less contaminated than recirculated air, both given the same degree of filtration.

Recirculating inside hospital air is a touchy procedure completely dependent upon filter efficiencies which can be variable, due to maintenance problems. Equally or more hazardous is to attempt flushing air completely in some parts of the hospital and not in others, depending upon balanced pressures to prevent cross-contamination.

No one prefers these compromise measures. They were forced upon hospital designers by the high cost of conditioning the large volumes of air required by conventional, all-air systems. To add the cost of conditioning outside air was to prohibit it.

This is no longer so, with the Inland Radiant Comfort System for hospitals. By efficiently handling only a small amount of air, the IRC System introduces 100 per cent outside air throughout the hospital and does it at no extra cost.

This contrasts with conventional air conditioning systems which generally are based on the principle of using large quantities of air, most of it recirculated. Decontaminating air in large quantities not only is impractical, but the fan horsepower to move such air adds to the expense of operation.

With Inland's modern system, it is practical to exhaust all air without recirculation. The air can be decontaminated very effectively, because of the small amount used.

## Radiant Panel Ceiling System

The inherent advantages of radiant-acoustic ceiling panels help to make this new Inland technology a sound approach to hospital air conditioning.

As its name implies, the radiant-acoustic ceiling heats and cools by the principle of radiant heat transfer and, at the same time, provides acoustical control to the room space.

Acoustical treatment is simple. Perforations in the aluminum panels, with glass-fiber insulation above, give this ceiling system an excellent acoustical rating — noise reduction coefficients as high as .90. Sounds disturbing to a restful atmosphere, e.g., the extra noise level during visiting hours, are dampened.

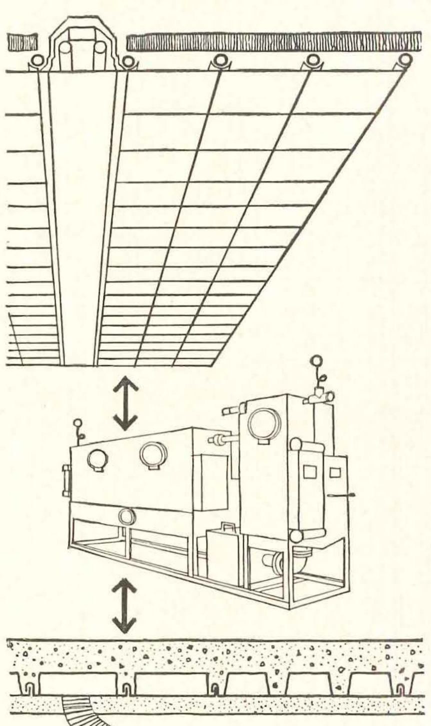
The radiant-acoustic ceiling acts as a single, wall-to-wall heat exchanger — heating when the thermostat calls for heat, and cooling when circumstances require. The ceiling heats in the same manner as the sun. Low-frequency waves of heat energy travel in straight lines from the ceiling to every part of the room, bathing all surfaces in warmth.

This steady, gentle comfort is patient-oriented. Physiologists have determined that more than one-half of our body heat is lost by radiation. Therefore, the most practical method of maintaining comfort is to control the rate of heat gain or loss by radiant means.

Here's where radiant heating is ideally suited to the needs of a hospital patient. It bathes his body in continual warmth, free of drafts. Even without a blanket, the rate of his body heat loss is kept at a uniform rate throughout the day and night. Because radiant heating is not dependent upon moving air to raise room temperature, there are no hot blasts from registers, no strong convection currents.

Radiant cooling obeys the same physical law of radiant energy transfer as radiant heating, but in reverse. Now, the ceiling is made cool and it absorbs heat from all surfaces in a room, including a patient's body. The human body loses heat most comfortably through radiation, without chilling drafts.

Only ventilation is required of the air system. Ventilating air is supplied at low velocity and held to desirable humidity levels.



*The Inland Radiant Comfort System is made up of three basic components, carefully engineered to work together more efficiently than any one of them could work alone. The components are not new to architects and mechanical engineers. They are: (1) a radiant-acoustic ceiling, (2) a chemical air conditioner, (3) a cellular steel floor (optional in hospital construction).*

*All three of these components have long records of successful performance as individual products. It is the way in which they are used together — in integrated design — that accounts for the efficiency of the IRC System: The radiant ceiling handles virtually the entire heating and cooling loads in the hospital. The chemical air conditioner controls humidity and purifies the air. Reduced air volume makes it possible to use the cellular steel flooring for air distribution, eliminating tons of ductwork.*

## Chemical Air Conditioning

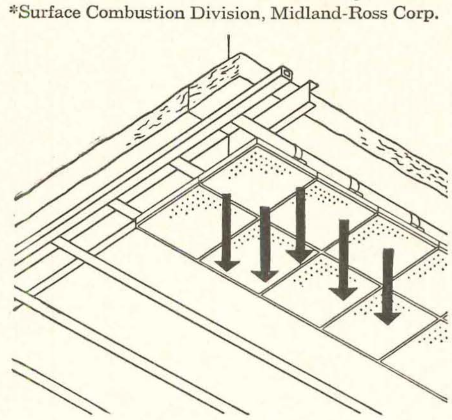
Chemical air conditioners have long been recognized as superior devices for controlling humidity and air purity in operating rooms, recovery rooms, and other critical hospital areas. In the integrated design of the Inland Radiant Comfort System, a Kathabar® Chemical Air Conditioner* treats the hospital's entire ventilation-air system.

Air is conditioned by a spray of lithium chloride. This traps up to 97 per cent of all airborne impurities.

Conventional air conditioners use refrigeration coils to cool and dehumidify the air. For many years, these wet coils have been recognized as breeding places for colonies of bacteria and micro-organisms.

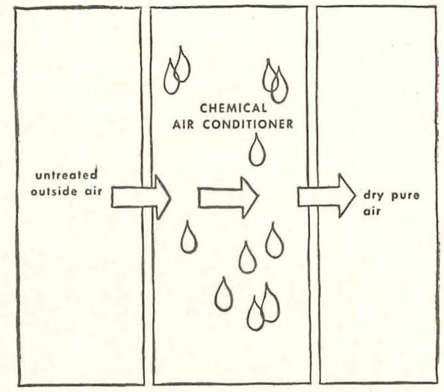
Trouble arises when matter from these colonies blows off into the hospital's air stream. Elaborate filter systems have been designed to remove this contamination from the air, but their complete effectiveness frequently has been questioned. Hospital administrators, bacteriologists, and others have been shocked at the contaminating effect of conventional air conditioning systems.

*Surface Combustion Division, Midland-Ross Corp.



*The radiant-acoustic ceiling acts as a single, wall-to-wall heat exchanger. Heating and cooling are accomplished by means of aluminum panels attached to grids of water pipes hung in the manner of a conventional suspended ceiling. Hot or cold water is circulated through these pipes to heat or cool the panels. Heat loss and noise are reduced by an acousti-thermal blanket.*

*Advertisement*




*Chemical air conditioning removes the latent (humidity) load from incoming outside air. A non-vaporizing solution of lithium chloride with a great affinity for moisture is sprayed into the air stream. Condition of the air as it leaves the dehumidifier at a specified humidity level depends upon (1) solution concentration and temperature, and (2) temperature of cooling tower water.*

## Substantial Construction Savings Possible

Where hospital plans include a steel frame, significant savings in construction costs accrue from the IRC System's third basic component, a cellular steel floor.

Ventilating air is carried through cells in Inland Celluflor, eliminating tons of expensive ductwork. This not only saves money on materials and labor, it reduces the space required between floors. This can drop the total height of a multi-story building by as much as 5 per cent, without sacrificing a cubic inch of interior space. Obviously, there are consequent cost savings all down the line — including savings on the foundation, since building weight shrinks with the height.

There are other advantages to consider here, during the planning stage of a new hospital: The greater erection speed of steel-frame construction. The flexibility of electrification made possible only by a Celluflor steel floor.

## Breakthrough in Hospital Comfort Control

Of great importance to the hospital architect, the Inland Radiant Comfort System delivers all of its advantages well within the budget for an ordinary hospital air conditioning system. Key to its economy is its concept of three basic components working together. By balancing the high performance of these components through careful engineering, the IRC System saves on both first cost and operating costs.

Further information is available in a new brochure, "Breakthrough in Hospital Comfort Control." Write for your copy today. Address Inland Steel Products Company, Engineered Products Division, 4033 West Burnham Street, Milwaukee, Wisconsin 53201.

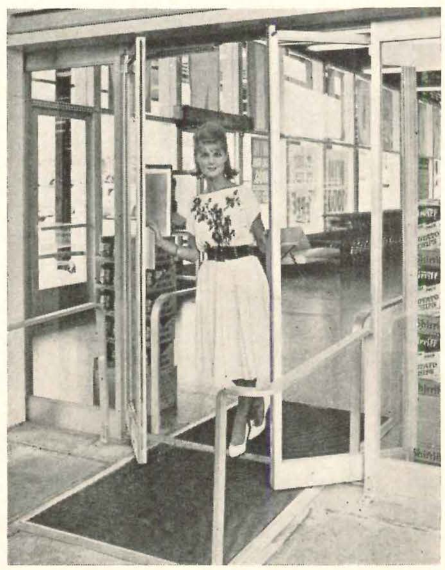
For more data, circle 125 on Inquiry Card

## *Product Reports*

*continued from page 252*

### PANIC ACTION DOOR

A new "break-away" door for use with the company's *Hydra-Slide* automatic sliding door control has been announced. The break away application now permits the *Hydra-Slide* to be installed in exterior entrances of buildings to conform to codes requiring a swinging door for emergency exit. In event of fire or power failure,



merely pressing against the door will cause it to open like a swinging door. A special safety design feature permits the door to break-away at any point of the opening or closing cycle, allowing full width opening of the doorway during an emergency. *Ronan & Kunzl Inc., Marshall, Mich.*

CIRCLE 314 ON INQUIRY CARD

### WHITEPRINT MACHINE

The use of anhydrous ammonia in the developing system of this white-print machine, permits installation of the unit without venting, and eliminates liquids of any kind. The *Welco 600* is planned for use in small engineering offices, where a relatively cheap and compact machine is required which can stand up to heavy use. Features of the new unit are: no warm up requirement; variable two-speed control; reverse switch to protect tracings; low-cost fluorescent tubes; independently operated heat control and completely dry operation. *Warren Electr-O-Line Corp., 7419 Grand River, Detroit, Mich.*

CIRCLE 315 ON INQUIRY CARD

*more products on page 266*


From
a volcano
comes
Celo-therm
TRADE-MARK
incombustible ROOF INSULATION
UL TESTED AND APPROVED

**Celo-Therm** Roof Insulation's remarkable properties result from what it is and where it comes from. It's incombustible* because its basic ingredient, Perlite, is processed from volcanic ore.

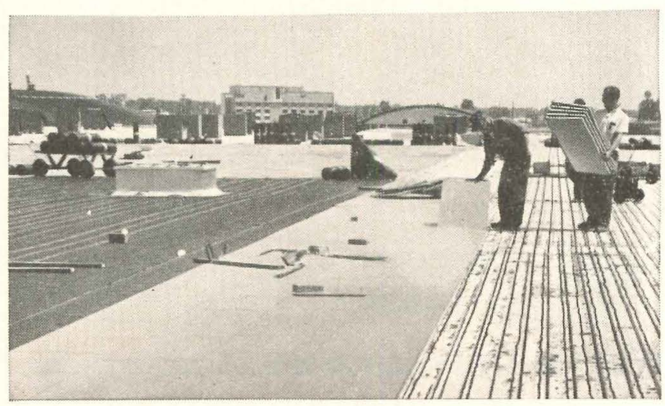
Roofing crews like to handle Celo-Therm panels. They're lightweight, rugged, easily cut with a knife—can be applied on any type deck. Panels are 2′ x 4′.

Celo-Therm Roof Insulation is highly moisture-resistant. It won't decay or deteriorate. It has excellent thermal insulating value and is dimensionally stable.

Celo-Therm Roof Insulation has a UL flame spread classification of 25, and is listed and labeled by Underwriters' Laboratories. Qualifies for metal deck assemblies UL Constructions No. 1 and No. 2. Acceptable for Factory Mutual Class I metal deck construction with approved adhesive. Permits reduction generally equivalent to 40% of the basis insurance rate.

*In accordance with the definition of noncombustibility in NFPA No. 220.

**Distributed East of Rocky Mountains**



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REG. U.S. PAT. OFF
BUILDING PRODUCTS

THE CELOTEX CORPORATION
120 S. La Salle St., Chicago 3, Illinois

**SEND COUPON TODAY for samples and application instructions**

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**THE CELOTEX CORPORATION, Dept.** AR-114
**120 S. La Salle Street, Chicago 3, Illinois**

☐ Please send me application instructions for Celo-Therm Incombustible Roof Insulation.
☐ Show me samples.

My Name ____________________

Firm Name ____________________

Address ____________________

City ____________ Zone ______ State ____________

For more data, circle 128 on Inquiry Card

## *Product Reports*

*continued from page 262*

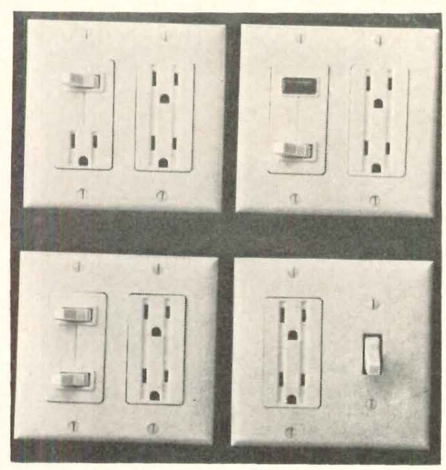
### MOVABLE WALL HAS ACOUSTICAL PROPERTIES

A new movable divider wall has been introduced by Industrial Acoustics Company which is composed of panels with high acoustical properties supported by ball bearings in a simple box track. The bearings arrangement eliminates the need for complicated electrical, hydraulic or pneumatic equipment. The acoustical qualities of the wall are achieved by means of 4 in. thick acoustical panels which provide a mass of 12 lbs per sq ft, and float in compressed perimeter seals, giving a high sound transmission loss. *Industrial Acoustics Company, Inc., New York, N.Y.*

CIRCLE 316 ON INQUIRY CARD

### NEW ELECTRIC DEVICES

A completely new line of *Medalist* combination devices featuring AC quiet switches and split circuit wiring has recently been introduced. All items in the series are designed with the rectangular *Decorator Group* face



which has been developed to harmonize quietly with different types of interior decoration. The addition of a break-off feature in these items permits 16 different wiring combinations with only seven catalog numbers. Separate or common feed is always available in one device. Other features include 20 carat gold plated switch contacts, a compact body, and staked and backed out screws. Heavy duty duplex grounding receptacles are also available. *Slater Electric Inc., 45 Sea Cliff Ave., Glen Cove, N.Y.*

CIRCLE 317 ON INQUIRY CARD

*more products on page 270*

WHITE MEDICAL BUILDING IN AURORA, ILLINOIS/ARCHITECT: ROBERT F. MALL, A.I.A., AURORA, ILL.

# Just what the doctor ordered

*(thanks to J-M Last-O-Roof)*

Roofs that look as good installed as they do on paper is what J-M Last-O-Roof* is all about. Like the one on the medical building pictured above. Those changes in slope and shape would be impossible for most roofing materials. But not Last-O-Roof! Light, reflective green in color, it hugs the widely spaced serrations of the main roof and then climbs the steep slope of the finial at the center of the building. In addition, it's used on the flat canopy at the entrance.

Last-O-Roof is a single-membrane, plastic elastomer product that can be installed in one step. It's a complete roofing system of totally compatible components . . . roofing membranes, cements, flashings and finishes. Applied cold, it can be used on low or steep slopes as well as involved configurations.

Last-O-Roof is durable, too. Even in the harshest climates. And, here's a roof that's three times lighter than the usual smooth-surfaced roof and ten times lighter than gravel.

Last-O-Roof is available in white, aluminum, green, blue and rose and other colors on special order. For full details, write to Johns-Manville, Box 111, New York, N. Y. 10016. Cable: Johnmanvil..

*TRADEMARK

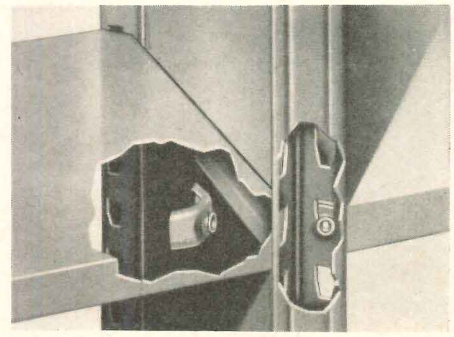
Johns-Manville JOHNS-MANVILLE JM PRODUCTS

For more data, circle 130 on Inquiry Card


FIRE

## *Product Reports*

*continued from page 266*



### STEEL SHELVING

A completely new line of steel shelving has been added to the company's range of storage equipment. An unusual feature of the *Equipto V-Grip* line is the upright, which is triangular in shape and provides a common support for two adjoining shelving units. The company claims that this formation has great structural advantages in that it combines the strength of angular steel with factors of economy, convenience and ease of assembly. The shelves have corners which are formed at angles of 45 deg. This angle, which corresponds to that of the upright, prevents storage items from catching as they often do in the 90 deg. angle of ordinary uprights. All shelves are double flanged on all four sides for strength and rigidity. They will carry up to 2000 pounds with an ample safety margin. *Equipto, Aurora, Ill.*

CIRCLE 318 ON INQUIRY CARD

### AUTOMATIC LIGHTING CONTROL

A series of on-off controls for lighting, combining photoelectric and time control has recently been announced under the name of the *Lighting Control Center (LCC)*. The units, which are designed for use in shopping centers, factories, parking lot and outdoor lighting systems, provide fully automatic control for one or a number of lighting circuits. When several circuits are controlled, varied lighting programs can be set for each circuit. The circuits may be controlled by photoelectric cell alone, by time switch alone, or by a combination of them both. *Lighting Control Division, Tork Time Controls, Inc., Mount Vernon, N.Y.*

CIRCLE 319 ON INQUIRY CARD

## *Office Literature*

*continued from page 223*

### LIGHT MEASUREMENT AND CONTROL

The nature of light and how it is measured and controlled are discussed in a new technical publication issued by General Electric's Large Lamp Department. "Light Measurement and Control," is an illustrated publication intended for all concerned professionally with the successful application of lamps and lighting equipment. The booklet contains text, photographs, drawings and tables which cover the nature of light and how we see, the terminology of lighting, the physics and measurement of light, optical methods of light control and the characteristics of materials, finishes and coatings used in lamps and lighting equipment. *General Electric Company, Nela Park, Cleveland, Ohio, 44112**

CIRCLE 409 ON INQUIRY CARD

### WINDOW SHADES FOR SCHOOLS

A four-page folder illustrates a number of unusual ways in which window shades can be used to improve the appearance of school classrooms, and at the same time provide the exact amount of light control required for each particular activity. *Joanna Western Mills Company, 22nd and Jefferson Streets, Chicago, Ill., 60616*

CIRCLE 410 ON INQUIRY CARD

### CATALOG OF FOLDING FURNITURE

A range of folding tables, chairs, mobile storage racks and trucks for offices, restaurants and institutional use is described in a 28-page illustrated catalog. The catalog provides a full description of each product's physical advantages, dimensions, and shipping and handling weights. Architects' specifications are included where required. The catalog also contains a complete technical description of each product's construction features and the materials used. *Howe Folding Furniture, Inc., 360 Lexington Ave., New York 17, N.Y.*

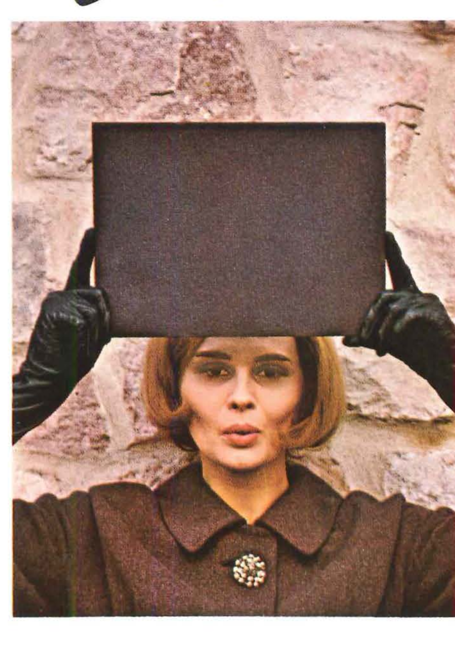
CIRCLE 411 ON INQUIRY CARD

**Additional product information in Sweet's Architectural File*

*more literature on page 290*

*The weathered color of the exposed steel beams and columns blends harmoniously with the native stone and the surroundings of this Maryland residence.*

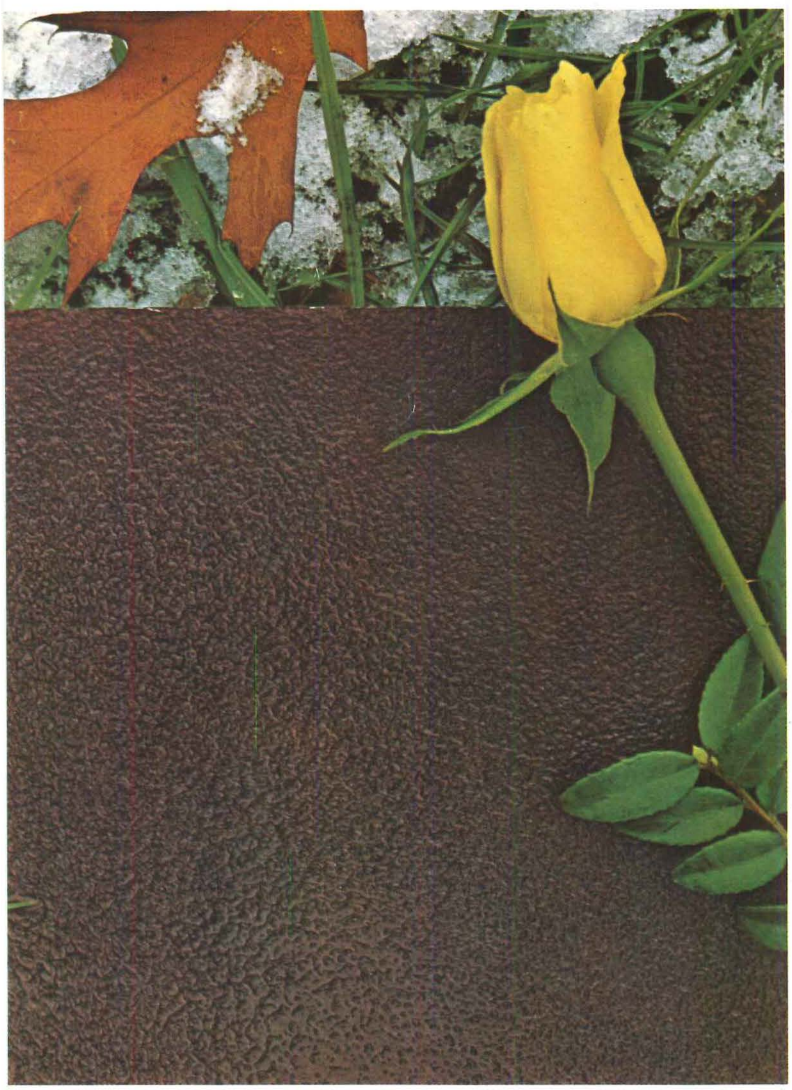
*Rust can be beautiful...*



# weathering Steel

BETHLEHEM STEEL

# ...a new concept for architects



There is rich, earthy beauty in the color of this unpainted Weathering Steel test panel. Eye-appealing, too, is its fine, pebbly texture.

Over the years, Weathering Steel displays a unique ability to resist corrosion; to heal its own wounds; and to preserve its integrity without maintenance problems or expense.

Architects are finding Weathering Steel aesthetic as well as practical for exposed, unpainted steel members.

### *What Is Weathering Steel?*

Weathering Steel is Bethlehem's Mayari R grade used for exposed, unpainted applications. Mayari R is a high-strength low-alloy steel. It has been widely used in structural, automotive, railroad, marine, and general manufacturing applications where superior corrosion-resistance, lighter weight, or greater strength are primary considerations.

### *Why Mayari R "Weathers" Well*

Over the past 25 years, many thousands of Mayari R specimens have been subjected to atmospheric exposure in widely different localities and environments, including seacoast, industrial, and rural atmospheres. Naturally there were variations in the results of these tests, but all the tests confirmed the superiority of Mayari R Weathering Steel over plain carbon steel and certain other materials. However, exposed Weathering Steel applications are not recommended in severe industrial or severe marine conditions, nor in buried or submerged situations.

### *Its tightly adherent oxide coating arrests further corrosion*

Exposure tests have also brought out the unusual manner in which Weathering Steel oxidizes. While the rust that forms on plain carbon steel is coarse and free-scaling, Weathering Steel develops a closely grained and tightly adherent oxide coating which locks out moisture and oxygen and effectively prevents further corrosion of the steel.

This oxide ripens into an attractive finish, with its fine, even texture, and its deep brown color blended from grays, purples, and reds. Age further enriches the hue.

*0 days* *4 days* *4 months* *10 months* *18 months*

### *Another Advantage—Strength*

Because of special alloying elements in Mayari R Weathering Steel, the yield point is 40 to 50 per cent higher than that of ordinary carbon steels, and the tensile strength likewise is higher.

Thus a Weathering Steel structure can often be designed with lighter sections to maintain the desired strength; similarly, sections equal to those of carbon steel can often be utilized for substantially increased loads.

*Window framing members for the 650-ft 31-story Chicago Civic Center building were designed in Weathering Steel to be consistent with the skin material. Bethlehem roll designers worked to the architects' specifications in designing the cruciform bar section for this application. The section weighs 20 pounds per foot.*

*Owner: Public Building Commission of Chicago*
*Architects: C. F. Murphy Associates; Skidmore, Owings & Merrill; Loebl, Schlossman & Bennett*

### *Readily Welded and Fabricated*

Mayari R Weathering Steel can be welded by all the usual methods, including electric-resistance, manual-arc, automatic-submerged arc, and gas-welding processes. It is classed as a non-air-hardening steel, and exhibits no appreciable hardening from temperatures normally encountered in welding or fabricating processes. Welding procedures are generally similar to those used with plain carbon structural steels.

For architectural applications, where appearance is a major factor, we recommend the use of a special Mayari electrode. This electrode duplicates the chemistry of Mayari R Weathering Steel and results in a uniform appearance of weld and base metal, even during the early periods of exposure. Mayari R Weathering Steel can also be fabricated by the usual methods used with carbon steels, with only minor variations to allow for its higher strength. It can be readily flame-cut and hot-flanged, and has good machinability. Mayari R bolts and rivets are available.

### *Special Factors to Consider for Successful Installation*

1. *Appearance* of Weathering Steel will vary with duration and type of exposure.
2. *"Rusty Look"* of the steel will prevail for several months, depending on cleanliness of steel and type of exposure.
3. *Staining* of adjacent material must be avoided by proper design and detailing.
4. *Mill scale* must be removed either by pickling or blast-cleaning for uniform appearance.

Steel

*Steel for Strength*

*Exposed Weathering Steel accents this new Raw Materials and Chemical Engineering Building at Bethlehem's Homer Research Laboratories, Bethlehem, Pa.*
*Architect: Smith Smith Haines Lundberg and Waehler.*

### *Send for Specification Sheet*

Our new Descriptive Sheet 2072, "Specifications for exposed unpainted Mayari R Weathering Steel" contains much information which will be helpful to you in the writing of material specifications. We will be glad to send you a copy; the coupon is for your convenience.

BETHLEHEM STEEL

**BETHLEHEM STEEL**

*Advertising Department, Room 1047*
*Bethlehem Steel Co.*
*Bethlehem, Pa.*

*Please send me your Specification Sheet on Weathering Steel (Descriptive Sheet 2072).*

*Name*____________________

*Firm*____________________

*Address*____________________

*City*__________ *State*__________

# A RōWAY door belongs in any plan you create

RōWAY Overhead Doors belong to any plan you may have in mind . . . and for several reasons. Obviously, strength, ease of operation and economy are important RōWAY features.

What about the **appearance** of an overhead door when considering the plan you have created?

Does it enhance the style of architecture being used? RōWAY will.

Does it fit in with your design? RōWAY will. There are no restrictions, no contrasts, no eyesores when you specify RōWAY Overhead Doors.

*there's a RōWay for every Doorway!*

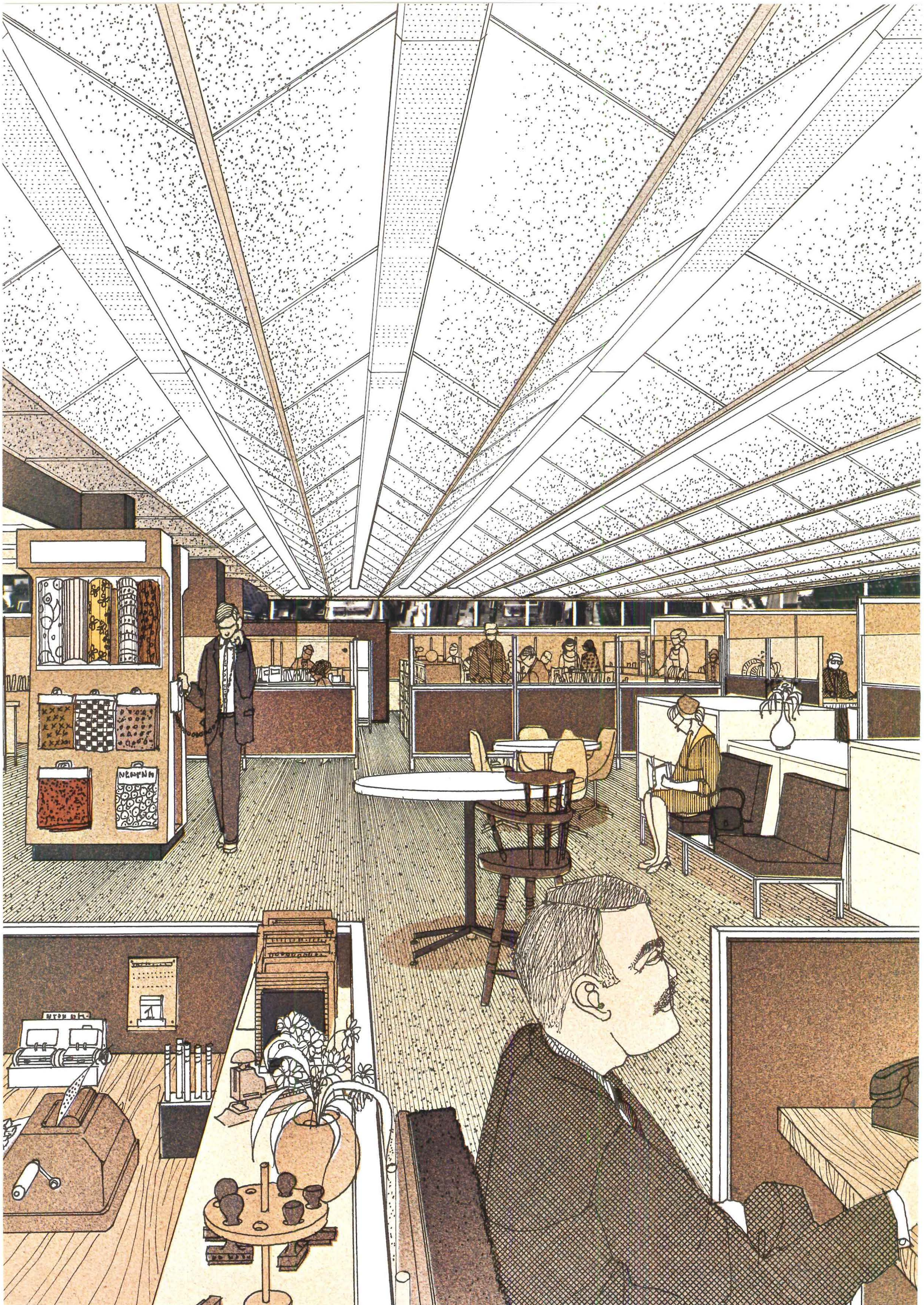
**COMMERCIAL • INDUSTRIAL • RESIDENTIAL**

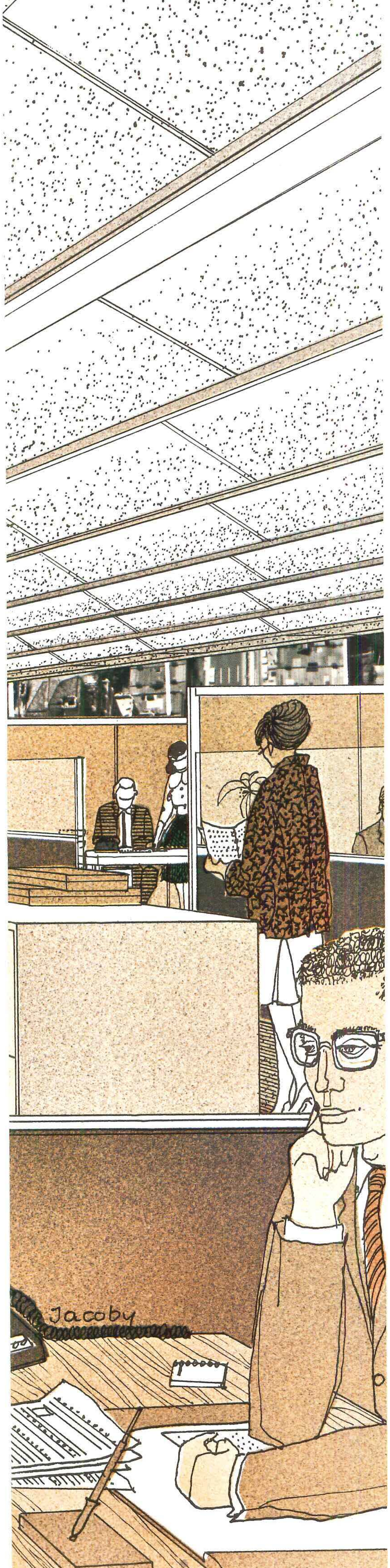
RōWAY OVERHEAD DOORS

**ROWE MANUFACTURING COMPANY**
**Department AR1164, Galesburg, Illinois**

SEE OUR CATALOG IN SWEET'S

For more data, circle 135 on Inquiry Card






# At work in Los Angeles: THE ARMSTRONG LUMINAIRE CEILING SYSTEM

**The industry's first totally integrated ceiling system lights, cools, heats and quiets this large sales and display office building.**

Architects and owners are fast discovering how Luminaire fits readily into almost any design situation.

This recently remodeled office building is a good example. In sales areas, the Armstrong Luminaire Ceiling System lights product displays to maximum advantage. Over the drafting areas, it illuminates so well no additional desk lamps are needed. In public areas, the system creates a dynamically beautiful atmosphere for entertaining and client consultation. And while providing more efficient light, the system delivers uniform, draft-free conditioned air to each area, quiets better than conventional flat acoustical ceilings.

The Luminaire System encourages individual ceiling designs. Flat ceiling panels can be placed between rows of lights or perpendicular to them. Specially adapted for ceiling-high partitions, the system allows almost limitless layout flexibility.

Luminaire is a simple system. Each module is its own light- and air-distribution source. You order from one supplier. All components are supported from one grid. Maintenance is virtually nil. Even when shielded, as here, lamps are easily accessible for cleaning and replacement.

These offices use 384 Luminaire 48″ modules and 44 Luminaire 50″ modules; all have two-lamp fixtures. The area shown at left is lighted to 175 footcandles. (With the Luminaire System, lighting levels can range from below 50 footcandles to well over 200.) For complete information on both the A-50 and B-48 Systems, write to Armstrong, 4211 Rock Street, Lancaster, Pa.

Elster's Office Building, Hollywood, California
*Engineers & Architects:* George J. Fosdyke & Assoc., Los Angeles, Cal.
*Consulting Engineer:* Elster's Air Conditioning, Hollywood, Cal.
*Comfort Conditioning Specialist:* V. A. Bradshaw, Dept. of Water & Power, City of Los Angeles
*Interior Designer:* Elster's (Contract Furnishings Dept.), Hollywood, Cal.
*Ceiling Systems Contractor:* Mastate Acoustics, Inc., N. Hollywood, Cal.

**Ceiling Systems by Armstrong**

For more data, circle #1 on Inquiry Card.

← For more data, circle 137 on Inquiry Card

For more data, circle 138 on Inquiry Card


DAVE BRUBECK
&
CONTEMPORARY
POST AND BEAM

ARCHITECTS: Lawrence Michaels and David Thorne. GENERAL CONTRACTOR: Joseph A. Marino. STEEL FABRICATOR: Westchester Steel Products Co.

Pianist Dave Brubeck wanted his new Connecticut home to be as avant-garde as the cool chords of his famed jazz quartet. Architects Lawrence Michaels and David Thorne translated the theme into this contemporary post-and-beam combination of wood, stone, glass, and steel. Secret of the airy, open appearance: USS NATIONAL Hollow Structural Tubing exposed and painted, that supports roofing, flooring, canopy, and even windows.

Wooden structural members for the long open spans would have been too massive for the desired effect. By using square and rectangular steel tubing, the architects retained traditional—but slimmer—post-and-beam appearances. Perhaps the best description of the over-all impression came from one of Brubeck's sons in a school essay about "The Home I Live In." Young Brubeck called it a "castle with the gloom taken out."

The Brubeck house—with about 10 tons of USS NATIONAL Hollow Structurals—is one of the first major residential uses of this versatile new member, but architects have used exposed structural tubing for everything from branch banks to neo-Gothic churches to World's Fair pavilions. With efficient design, structural tubing can often reduce steel requirements by more than 30%.

Structural tubing accepts bending stresses in several directions and is used as posts, beams, columns, rafters and mullions. The flat surface simplifies beam and angle connections, eliminates the need to "box in." Hollow structurals often double as conduit and drain housing, too.

USS NATIONAL Hollow Structural Tubing offers advantages not found in any other structural tubing. Corners are sharper. It is manufactured to the closest underweight tolerance in the industry, minus 3½%. Its size range is the widest available, going up to 10" x 10" squares and now to 12" x 6" rectangles. Wall thicknesses range up to ⅝" in some sizes.

For more information on USS NATIONAL Hollow Structural Tubing see our catalog in Sweet's Architectural File, or contact our construction marketing representatives through the United States Steel Sales Office nearest you. (Just for the record, we have a new 22-minute, color-sound movie, "The Shape of Things to Come," available upon request.) Write United States Steel, 525 William Penn Place, Pittsburgh, Pennsylvania 15230. *USS and NATIONAL are registered trademarks.*

United States Steel USS

## *Office Literature*

*continued from page 274*

### WELDED AND SEAMLESS STEEL TUBING

A new general catalog, No. CS-65, published by Ohio Seamless Tube Division of Copperweld Steel Company, covers the company's complete product range of electric resistance welded and seamless tubing in carbon and alloy steels for mechanical, structural and pressure applications. Tables are used to show tolerances (including new tolerances now applicable to Ohio's Drawn Over Mandrel ERW steel tubing). Comparative charts show a wide range of sizes in both seamless and welded products. Available materials and grades are listed and explained. A special section illustrates the wide variety of formed tubular parts produced by forging and fabricating operations. *Product Information Service, Ohio Seamless Tube Division of Copperweld Steel Company, Shelby, Ohio, 44875*

CIRCLE 412 ON INQUIRY CARD

### RANGE OF MATS AND RUNNERS

A new catalog on floor matting for commercial, industrial and institutional use has just been made available. Included in the catalog are full information and illustrations of mats, runners, stair treads and floor tiles. Types of products covered include non-slip matting scrapeage, matting to improve sanitation, mats for floors and entrances, and runners for carpet protection. *American Mat Corp., 1986 Adams St., Toledo, Ohio, 43602*

CIRCLE 413 ON INQUIRY CARD

### COLORED MASONRY CEMENT

Medusa's new brochure includes photographic color reproductions of 40 of the wide range of colors in which Medusa custom color cement is available. Also included are colored illustrations to show how the total color effect of a one color brick wall can be improved by simply varying the color of the mortar. The catalog also contains information on the company's color service and a specifications guide. *Medusa Portland Cement Company, P.O. Box 5668, Cleveland 1, Ohio*

CIRCLE 414 ON INQUIRY CARD

*more literature on page 296*

# a totally new concept in exposed aggregate

SO LIGHTWEIGHT — IT'S OPENING EXCITING AREAS OF USE

## *tuff-lite epoxy wall matrix*

New Tuff-Lite Epoxy Matrix allows greater freedom than ever in design using exposed aggregate. So light, it imposes no structural limitations. Just a $\frac{3}{8}''$ base replaces heavy pre-cast concrete for aggregate. Superior bonding strength allows aggregate to be more fully exposed, giving greater depth and dimension in the finished appearance.

Tuff-Lite can be applied over concrete, brick, wood, foam . . . on interiors and exteriors, around corners and columns, in new construction and remodeling.

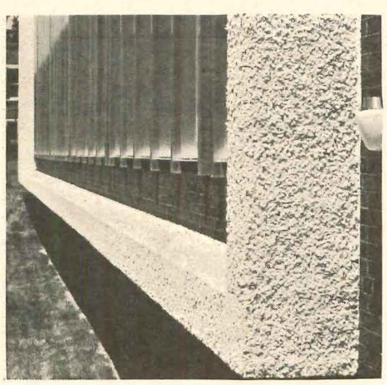
Tuff-Lite is available in pre-cast panels that can be nailed and sawed or in components that can be mixed and applied at the job site.

The finished Tuff-Lite wall is self-cleansing and color-fast; unchanging with age. It resists weather extremes and is unaffected even by 40° below zero temperatures. No maintenance is required.

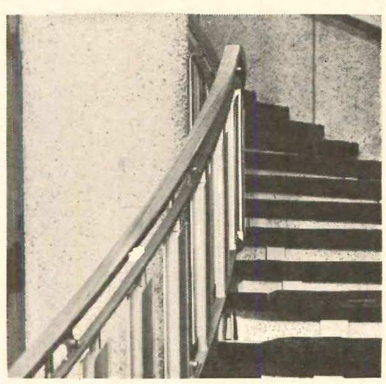
**SEND FOR FREE BROCHURE**
*This colorful folder shows the dramatic effects you can get using Tuff-Lite Epoxy Matrix. Shows simple installation techniques. Write to:*

tl tuff-Lite

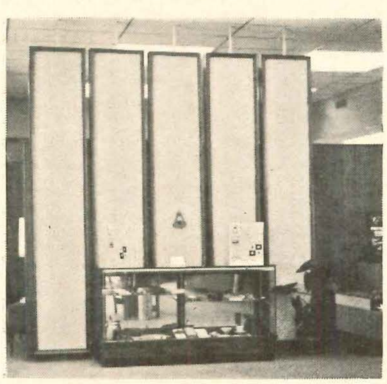
**H. B. Fuller Company**
1150 Eustis Street, St. Paul, Minnesota 55108



It takes corners



. . . or curves.



Pre-cast panels . . .

or on-site applications.

For more data, circle 142 on Inquiry Card


Communications
...a simple
problem in
YESTERDAY'S
HOSPITAL
but, how about today's modern complex facilities?
DUKANE
HAS THE
ANSWER!

DuKane does far more than engineer and manufacture hospital communications systems second to none. Through your local DuKane Franchised Distributor, you can take advantage of communications planning assistance. As a hospital communications expert, he can eliminate your costly guesswork, integrate systems for total hospital communications coverage, acquaint you with advantageous lease purchase plans, etc. A few of the systems in his depth of line are shown below. Call him today for full details with no obligation!

*"ALL-IN-ONE" AUTOMATIC HOSPITAL COMMUNICATIONS SYSTEMS*

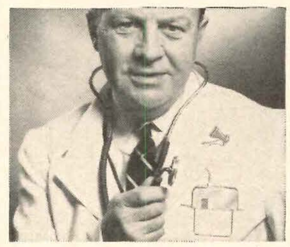
*Answer patient calls . . . relay to staff for action . . . automatically monitor critical patients . . . answer emergency calls . . . staff-to-staff communications . . . paging . . . contact patients . . . all with the speed of light . . . DuKane push button or simple two digit dialing.*

*PROGRAM/PAGING SYSTEMS*

*Condition hospital atmosphere to rapid recovery or convalescence through music/program distribution . . . total hospital paging coverage . . . individual complete patient program control with DuKane Multi-Function Pillow Speakers. Rack mounted paging/program distribution units with AM/FM radio tuners and 4 speed record player are centrally located.*

*AUDIO-VISUAL NURSES' CALL SYSTEM*

*Answer patient calls . . . relay to staff for action . . . emergency call alert and answering . . . staff-to-staff communications . . . patient contact . . . all with the speed and simplicity of DuKane fingertip push button control.*



*DOCTORS' POCKET PAGER*

*Locate doctors instantly anywhere in the hospital facility—even on elevators. Easily tied into overall paging system . . . compact unit readily fits into doctor's pocket. Improves patient care . . . increases overall flexibility.*

*ADMINISTRATIVE PRIVATE AUTOMATIC TELEPHONE SYSTEM*

*Fast, DuKane automatic and private telephone contact . . . talk direct to key personnel without switchboard delay . . . eliminate irritating delays . . . reduce call backs . . . keep outside lines free for important incoming or outgoing calls.*

*DOCTORS' REGISTER SYSTEM*

*Automatically or manually registers doctors in or out . . . simple flip of switch or easy two digit dialing—also alerts doctors of awaiting urgent messages—strategically located—multiple locations, if desired. Choice of styles.*

*DEPARTMENTAL INTERCOM*

*Instantly locate and contact key staff personnel . . . rapid relay of important information . . . tie together all areas . . . even remote ones . . . eliminate irritating patient and staff delays . . . immediate contact with DuKane push button simplicity.*

*NURSE-DORMITORY COMMUNICATIONS SYSTEMS*

*Instantly contact resident personnel . . . relay information . . . announce guests . . . security control of dormitory doors . . . no complicated switching, buzzing, or elaborate callboards . . . master telephone with 2 or 3 digit dialing . . . room stations merely press button-to-talk.*

CLIP AND ATTACH TO YOUR LETTERHEAD FOR PROMPT SERVICE—NO OBLIGATION

DuKane

COMMUNICATIONS SYSTEMS DIVISION
**DUKANE CORPORATION**
*DEPT. AR-114 • ST. CHARLES, ILLINOIS 60174*

- ☐ "ALL-IN-ONE" AUTOMATIC HOSPITAL COMMUNICATIONS SYSTEMS BULLETIN
- ☐ AUDIO-VISUAL NURSES' CALL SYSTEM BULLETIN
- ☐ PRIVATE AUTOMATIC TELEPHONE SYSTEMS BULLETIN
- ☐ INTERCOM SYSTEMS BULLETIN
- ☐ PROGRAM/PAGING SYSTEMS BULLETIN
- ☐ AUTO REGISTER SYSTEMS BULLETIN
- ☐ MULTI-RESIDENT COMMUNICATIONS SYSTEMS BULLETIN

NAME ____________________

TITLE ____________________

HOSPITAL OR AFFILIATED ORGANIZATION ____________________

ADDRESS ____________________

CITY ____________ COUNTY ____________ STATE ____________

For more data, circle 143 on Inquiry Card

## *Office Literature*

*continued from page 290*

### CAST ACRYLIC TUBES, RODS AND BLOCKS

Complete design, application and fabrication data on *Cadco* cast acrylic shapes is supplied in an eight-page illustrated manual called "Cast Acrylic Tubes, Rods, and Massive Castings." These shapes are widely used in the production of lighting fixtures, architectural detailing and decoration.

Physical and mechanical properties of cast acrylic shapes and their resistance to chemicals are charted. A special graph illustrates burst resistance of acrylic tubing of various wall thickness. The text outlines optical and light transmission properties, dimensional stability and strength, and resistance to chemicals, weather and ultraviolet radiation.

Fabrication techniques are discussed including machining, cementing and finishing. A special section examines hot forming of rods and tubing, a relatively new process in this country. *Cadillac Plastic & Chemical Co., 15111 Second Avenue, Detroit, Mich., 48203*

CIRCLE 415 ON INQUIRY CARD

### RADIO INTERCOM SYSTEM

An eight-page full-color catalog describes the new *Model 8409* deluxe radio-intercom system. Included in the new catalog is a complete description of the all-transistor system, with use photos, wiring diagrams, specifications, installation details and data on available accessories. *Fasco Industries, Inc., Rochester, N.Y.*

CIRCLE 416 ON INQUIRY CARD

### ALL-PURPOSE CHANNELS SUPPORT EQUIPMENT

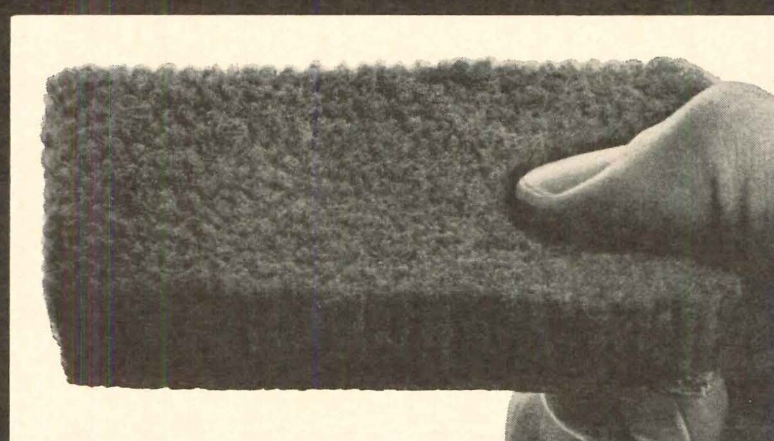
A wide range of galvanized steel Channel Bars for support of mechanical and electrical equipment is the subject of a new illustrated catalog.

Information contained in the catalog bulletin is supported by tables listing load deflections for simple spans, photographs and typical installation drawings. *Steel City Division, Midland-Ross Corp., 1207 Columbus Av., Pittsburgh, Pa., 15233*

CIRCLE 417 ON INQUIRY CARD

**Additional product information in Sweet's Architectural File*

# If you like the look of wool,



# specify Acrilan.®

Because Acrilan looks like wool. Even feels like it. But wool can only act like wool. While Acrilan acrylic fiber has been developed specifically to do what wool cannot. Acrilan is more resilient than wool. More durable. Tests prove that at a traffic level of 64,000 impressions, Acrilan loses only 15% of its pile height, while wool loses 30%.

ACRILAN
acrylic fiber
CHEMSTRAND

Acrilan is easier to maintain than wool; stains cannot penetrate the fiber. Colors last longer. And Acrilan is inherently mothproof, mildew proof, non-allergenic. All of which wool is not. For more facts, figures, performance data on carpeting made with Acrilan in the pile, write Contract Carpet Merchandising, Chemstrand, 350 Fifth Ave., N.Y. 1, N.Y.

THESE ARE AMONG THE MILLS NOW LICENSED BY CHEMSTRAND: FOR ACRILAN: BARWICK, BIGELOW, CABIN CRAFTS, CALLAWAY, CORONET, CRESTLINE, DOWNS, FORREST, HARDWICK AND MAGEE, HIGHTSTOWN, KARAGHEUSIAN, JAMES LEES, LOOMWEVE, MAGEE, MASLAND, MONARCH, PHILADELPHIA CARPET, ROXBURY, WUNDA WEVE. IN CANADA: HARDING CARPETS. CHEMSTRAND • GENERAL OFFICE: 350 FIFTH AVENUE, NEW YORK 1 • DISTRICT SALES OFFICES: NEW YORK 1; AKRON, OHIO; CHARLOTTE, NORTH CAROLINA • CANADA: CHEMSTRAND OVERSEAS, S.A., TORONTO • CHEMSTRAND MAKES ACRILAN® ACRYLIC FIBER AND CUMULOFT® NYLON FOR AMERICA'S FINEST MILLS. CHEMSTRAND, A DIVISION OF Monsanto

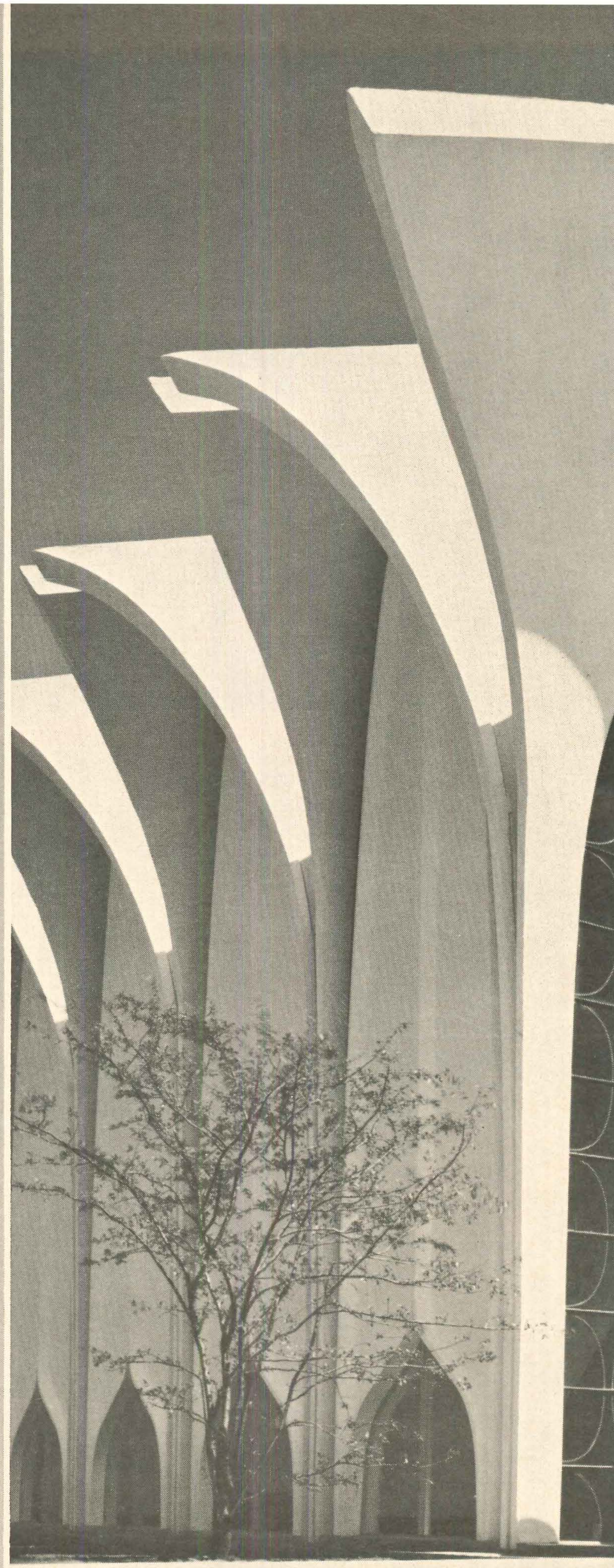
# ...for elegance

## monolithic reinforced concrete is the architects' design material

The coming of age of architecture in America lets architects exercise with complete freedom their artistic talents for highly creative building design.

In this architectural evolution, monolithic reinforced concrete is the preferred construction material. It can be molded freely into any contour and shape, and eliminates the many design restrictions imposed by all other construction methods for the achievement of architectural elegance, individuality, and sculptured form.

Decide now to utilize the great design opportunities of monolithic reinforced concrete in your next building. Through the use of this steel reinforced construction method, you can enjoy the same broad design latitudes of designers in all other creative fields.

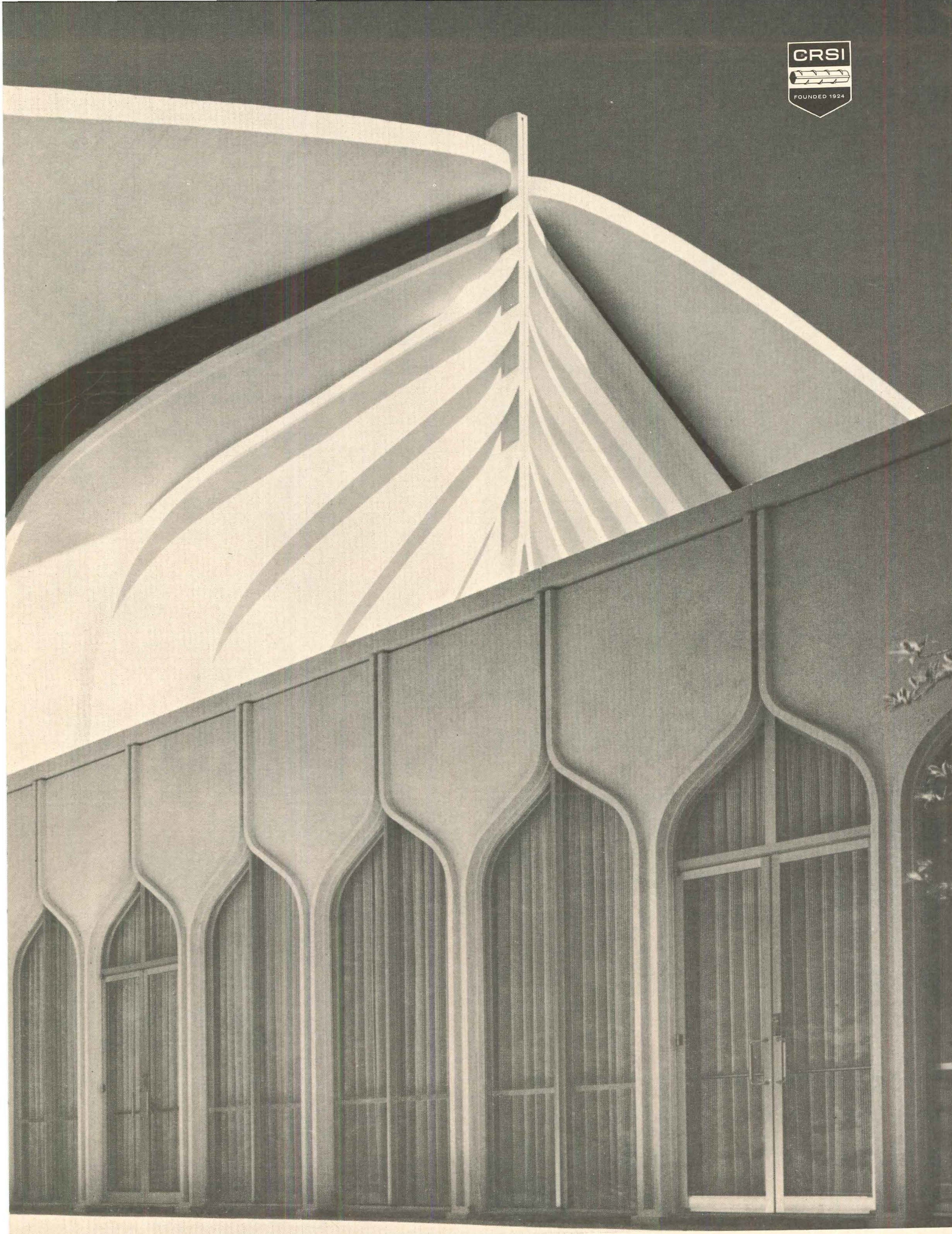


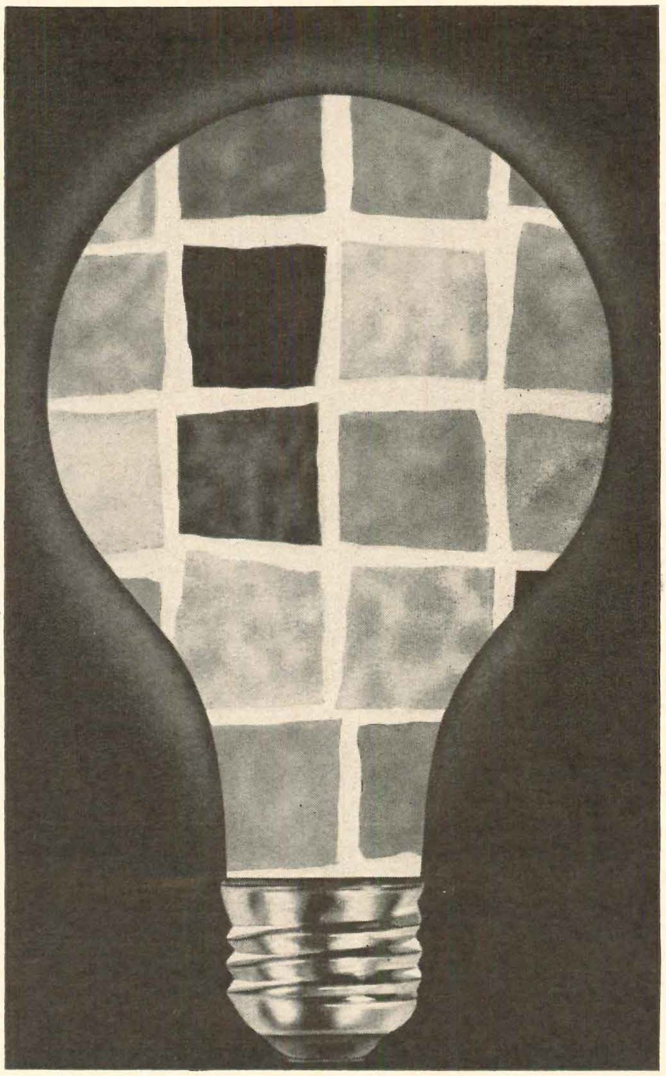
North Shore Congregation Israel, Glencoe, Illinois
Architects: Minoru Yamasaki & Associates, Birmingham, Michigan
Resident Architects: Friedman, Alschuler and Sincere, Chicago, Illinois
Structural Engineers: Worthington, Skilling, Helle & Jackson, Seattle, Washington
General Contractor: George A. Fuller Company, Chicago, Illinois

3-64

*Our 40th-Anniversary Year*

CRSI





# BRIGHT IDEAS IN TILE

**NEED SOME** bright ideas to make a new building sparkle ...to give it a touch of distinctive beauty and individuality? Why not let the Cambridge Design Staff suggest how permanent, colorful ceramic tile can do just that. This special Cambridge design service is available to all architects and decorators...without cost or obligation. Whether you need design suggestions for a special wall area or have an intricate mural that is ready for execution in ceramic tile, our design staff, under the direction of George Limke, is anxious and ready to serve you. Send us your plans or elevations for suggested tile applications or let us put your tile designs into layout form. Address your inquiry to Dept. AR-411.

**THE CAMBRIDGE TILE MFG. CO.**
**P.O. Box 71**
**Cincinnati, Ohio 45215**

*Producers of SUNTILE wall and floor tiles, SUNTILE mosaics, HORIZON tile and CERATILE 800.*

*Member of The Tile Council of America*

For more data, circle 147 on Inquiry Card

## The new look of luxury that speaks in a whisper

Low silhouette! Elongated bowl! Quieter by far! That's the new Case No. 4100 Silhouette. The price? Just $123.95*! Yet what features! Positively will not overflow. Flushes on 14 quarts of water. Operates on as little as 15 pounds pressure. Comes in 50 colors, plus sparkling black. Want more details? See Sweet's (26A) or write direct.

***Suggested consumer price in white*

**CASE MANUFACTURING**
***Division of Ogden Corporation***
**Dept. AR-114, Robinson, Illinois**

Case

For more data, circle 148 on Inquiry Card

**MAIN LINE**

# SHELVING

**FOR EVERY PURPOSE**

Main Line offers over 385 possible models and styles of shelving. Send for your free copy of the new 12 page, 2-color catalog, illustrating many models, assembly instructions and construction features—fill in the coupon below.


**SOUTHERN EQUIPMENT CO. • P. O. Box 7115 • St. Louis, Mo. 63177**

Please send the new MAIN LINE Catalog

NAME__________ TITLE__________
COMPANY__________
ADDRESS__________
CITY__________ STATE__________ ZIP CODE__________

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# SIMPSON BREAKS

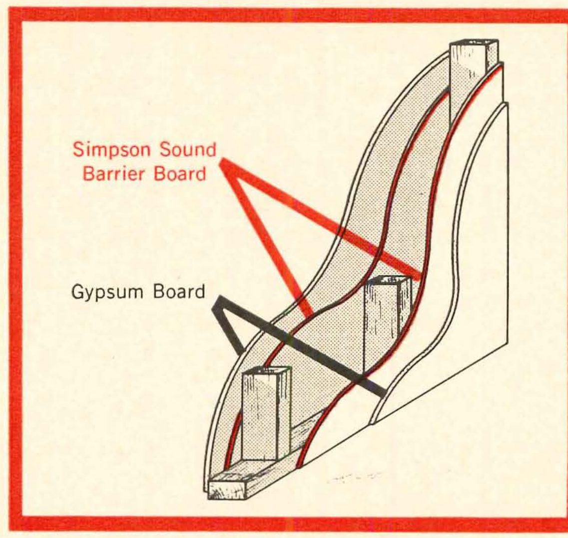
one hour fire rated

# THE SOUND BARRIER

## NEW PyROTECT SOUND BARRIER BOARD

**solves the problem of low-cost, fire-rated wall and partition systems with high sound deadening values.**

Most 1-hour rated systems require nailing or clipping procedures which allow undesirable sound transmission, but with this new Simpson system, contractors and builders can achieve both desired ratings without prohibitive cost. Normal in-line wood stud wall construction (2′ x 4′s at 16″ o.c.) can now attain a full 1-Hour Fire Rating plus Sound Transmission Class meeting most of the new requirements.




## Application is Easy

PyROTECT Sound Barrier Board is applied directly to studs by nailing at 24″ spaces on all studs. Gypsum joint compound is applied to the back of 5/8″ Type X Gypsum board in 6″ wide combed strips 2″ in from edges around perimeter and vertically down the center line. The gypsum board is then laminated to the wall by face-nailing with 8-penny cooler nails at 24″ intervals around edges and at third points on intermediate studs. All vertical joints are finished in the normal way. This system gave an STC rating of 45 and when tested according to ASTM E119 achieved a 70-minute load-bearing fire rating plus the hose stream, double-load test. For full information on this remarkable new product, see your Simpson Building Products supplier or write to the address below.

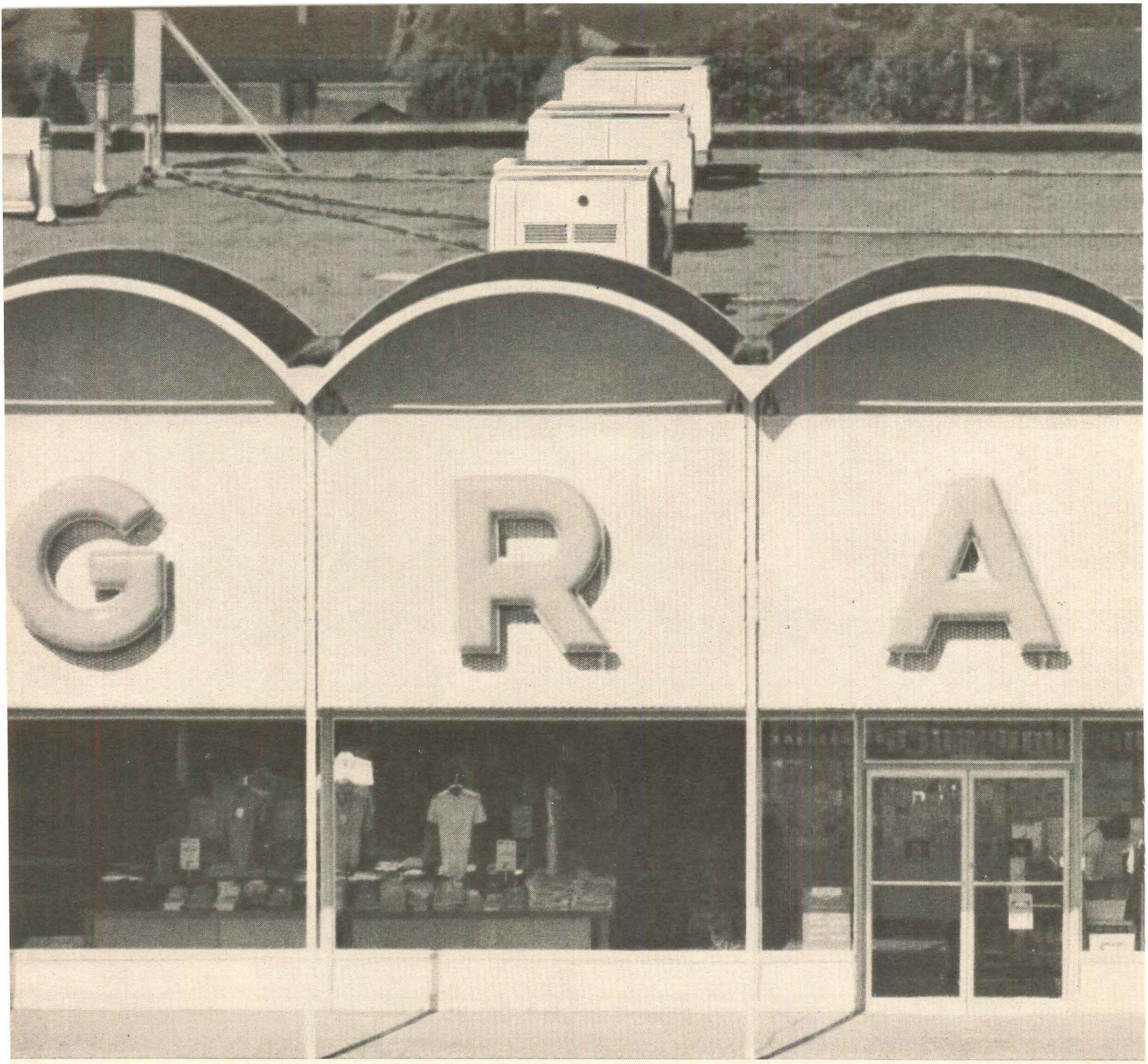
Simpson®

**SIMPSON TIMBER COMPANY**

ACOUSTICAL

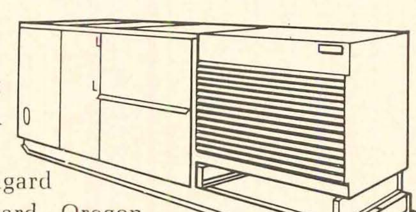
2041 Washington Building, Seattle, Washington 98101

For more data, circle 150 on Inquiry Card




They put the heating and air conditioning on the roof
to save money.
They used multiple units
to save money.
They specified Janitrol
to save money.


# Saving money has always been part of the "specs" with us at Janitrol.



Case in point: Eight roof-mounted Janitrol Skyliners at the W. T. Grant Company, Tigard Shopping Plaza, Tigard, Oregon.

The Skyliner package goes in fast with less labor. Equipment is shipped completely factory assembled, tested, charged, wired, ready to install. No water cooling towers, refrigerant piping or equipment rooms needed. Not a single cubic foot of usable inside space taken up. Conditioned air is circulated through a ceiling diffuser located beneath the unit or into a ducted system.

One or more Skyliner units can be used to provide zone-controlled comfort, with each Skyliner controlled by its individual thermostat.

A wide range of models fit the demands for each zone . . . allows more efficient utilization of heating and cooling capacity; cuts operating costs.

The Skyliner is completely enclosed in a weather-proof, insulated, low silhouette, aluminized steel cabinet.

Detailed information on Janitrol's complete line of heating and cooling equipment is available through your local Janitrol district manager or franchised Janitrol dealer. The name's in the Yellow Pages.

**JANITROL DIVISION**
Midland-Ross Corporation
Columbus, Ohio Phoenix, Arizona

**Janitrol gives you more to work with**

For more data, circle 151 on Inquiry Card

# HOW WILL LABOR ATTACK RESEARCH FOR BUILDING?

For the British construction industry, one of the key questions about the Labor Government will be what attitude it will take toward the programs instituted during the last two years by the Conservatives following their reorganization of the Ministry of Public Building and Works.

The object of the reorganization was to encourage the modernization of the building industry by ensuring that Government building projects—a major factor in British construction—were deliberately and consistently based on the most efficient and effective programing, planning, design and construction procedures. These efforts seemed to be leading to even more intensive coordination of an already rather impressive building research program.

Charles Pannell, the new Minister, inherits the same problems as were faced by his predecessor, Geoffrey Rippon, but he also inherits a radically reorganized Ministry with which to tackle them.

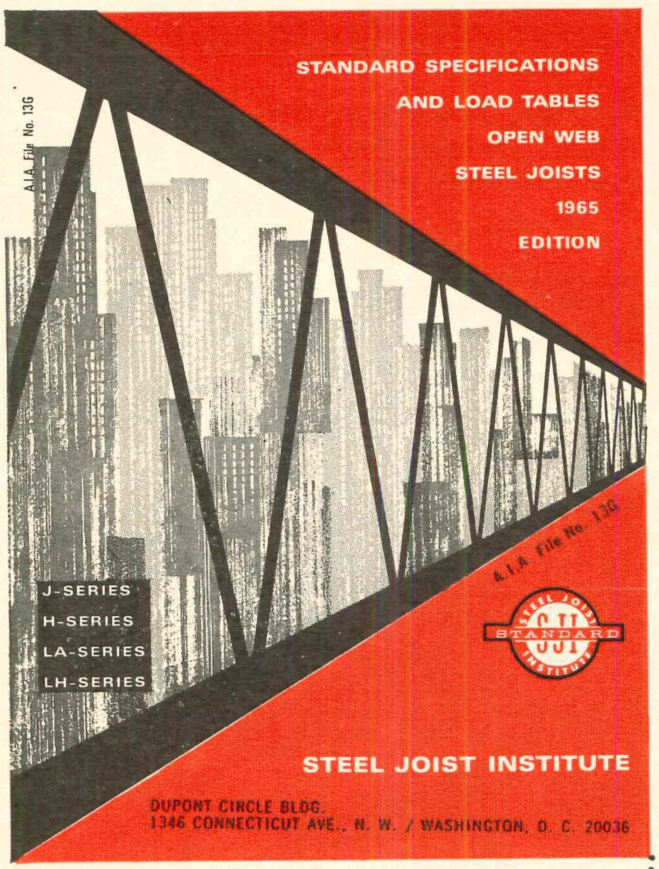
In Britain, as in many other parts of the world, the construction industries are now facing the task of dramatically expanding their output, but with virtually no increase in the labor force. If they are successfully to meet this challenge, the industries and the professions associated with them must develop and make the maximum use of modern techniques and materials. Recognizing the scale on which modernization was needed, the Conservative Government decided that the initiative in the national effort must come from within its own organization. It was essential for the Government to give a strong lead by using the full "weight of its building operations to help make known and exemplify the best planning, contracting and constructional procedures."

In order to achieve this end, a much greater concentration of forces was necessary, and in 1962 the Government embarked upon a program of major reorganization of the departments concerned with construction. The first decisive step in the campaign was the appointment in June 1962 of Geoffrey Rippon, the youngest and most energetic Tory Minister, as Minister of Public Building and Works. Under the Minister's leadership, it was proposed to concentrate the efforts of the four largest government works organizations—the Works Departments of the three services and the Ministry of Public Building and Works—by merging them into one integrated Ministry, which would be responsible for carrying out the great bulk of the constructional work directly undertaken by the Government.

This merger, which took place in April 1963, in effect demanded the creation, within the Ministry of Public Building and Works, of a wholly new Works and Supplies Organization, with an annual expenditure of some 250 million pounds. Details of the policy and framework of the new organization were set out in a Government White Paper (Command No. 2233) which was presented to Parliament last December.

*continued on page 312*

# NOW AVAILABLE!




## 1965 EDITION
## SPECIFICATIONS AND LOAD TABLES FOR HIGH STRENGTH OPEN WEB STEEL JOISTS

*including:*

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|---|---|
| J-SERIES | joists made from 36,000 PSI minimum yield strength steel. |
| LA-SERIES | longspan joists compatible with the J-Series |
| H-SERIES | high-strength joists made from 50,000 psi minimum yield strength steel. |
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Here's all the information you need for fast and accurate specification of joists to carry uniform loads on spans up to 96 feet. Send coupon today for your copy of this practical, up-to-the-minute, 36-page reference manual from the Steel Joist Institute.

**STEEL JOIST INSTITUTE**
DuPont Circle Bldg., Washington 6, D. C.

Please send me a complimentary copy of the 1965 Edition of Specifications and Load Tables

NAME____________________

FIRM____________________

ADDRESS____________________

CITY__________ STATE__________ ZIP_____

**STEEL JOIST INSTITUTE**
Washington, D. C. 20036

STEEL JOIST INSTITUTE STANDARD SJI © SJI

6410

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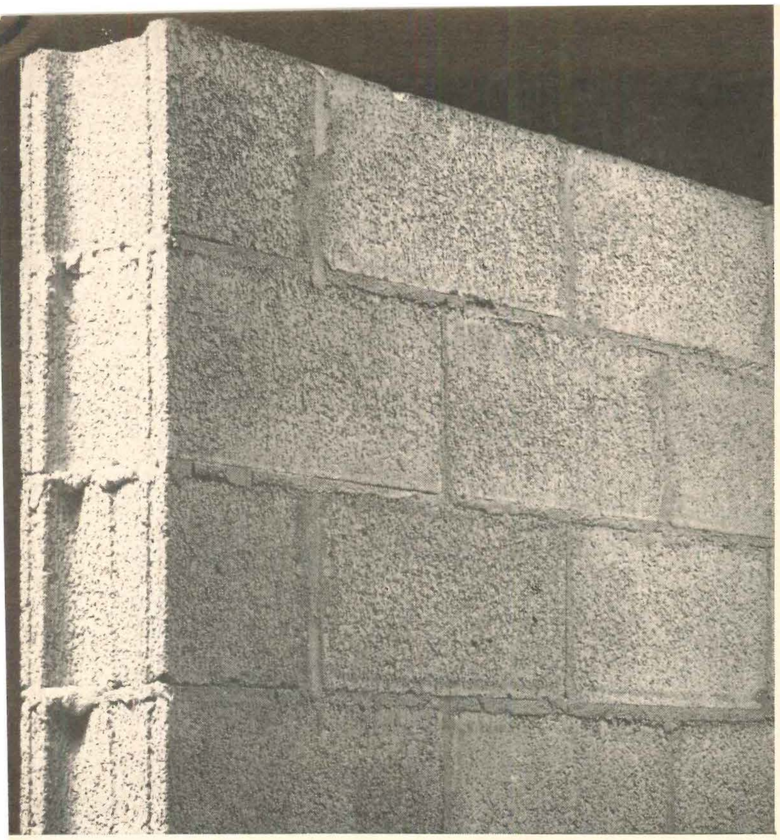
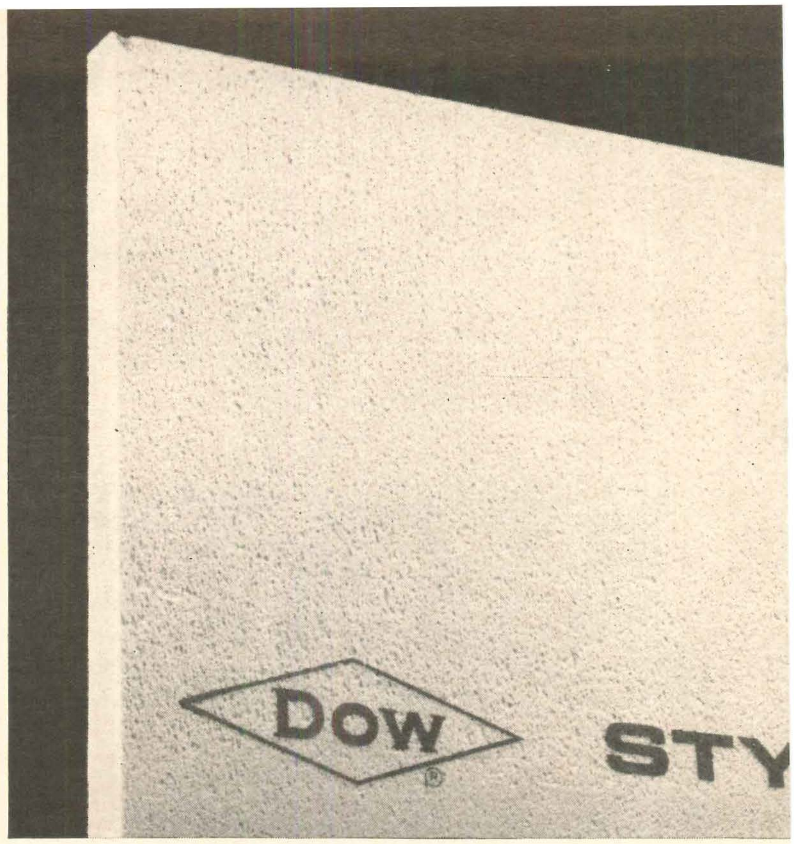
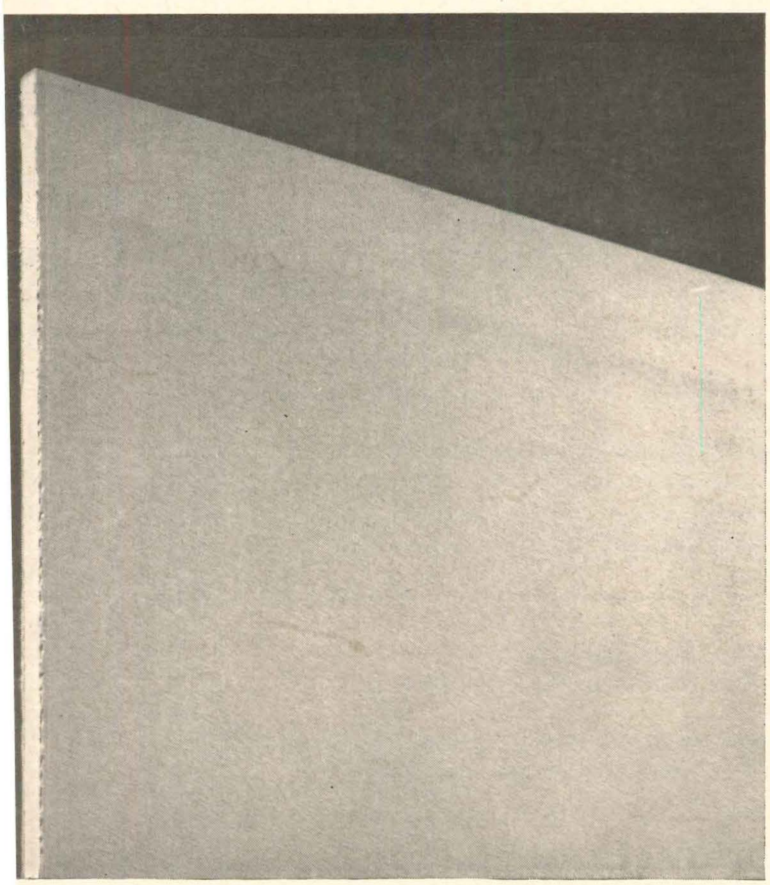


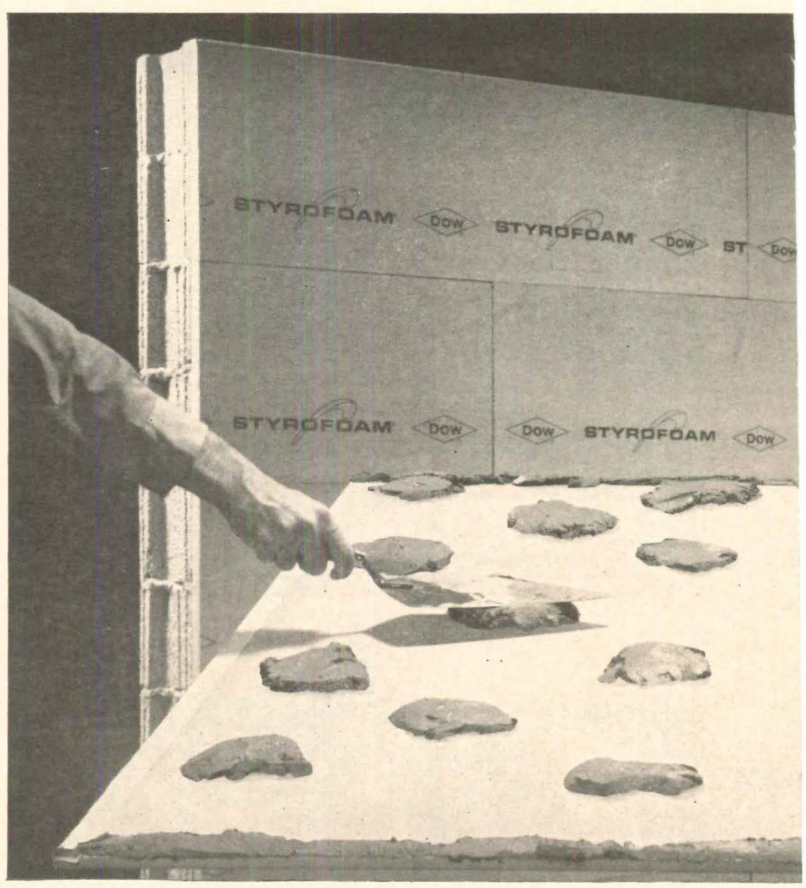
1. To insulate masonry walls economically:



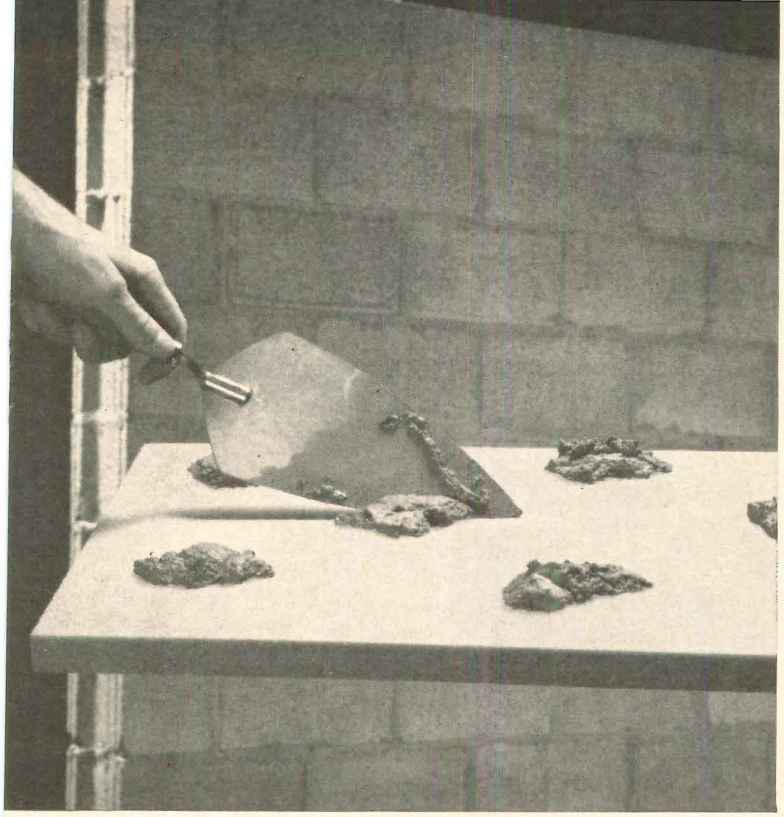

2. Remember Styrofoam® FR insulation board and specify it. It prevents moisture absorption and migration; keeps its low "k" factor (0.26) permanently.



5. Take wallboard. (No vapor barrier, no furring. You get a solid, insulated wall at almost the same cost as a furred, uninsulated wall.)

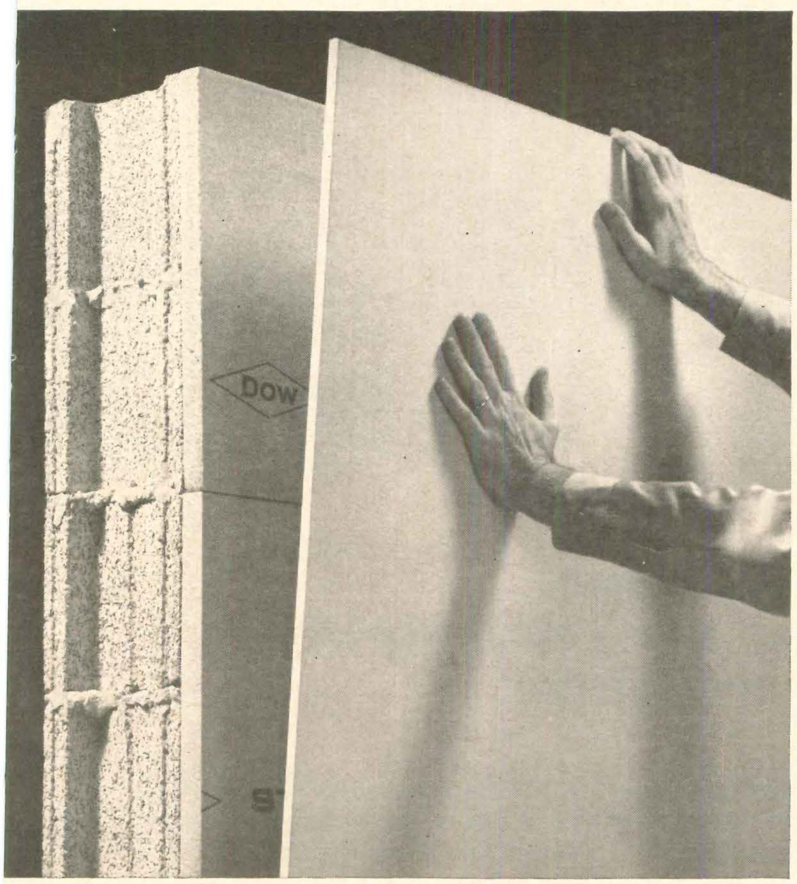



6. Styrotac goes on. Take your last look at Styrofoam FR.

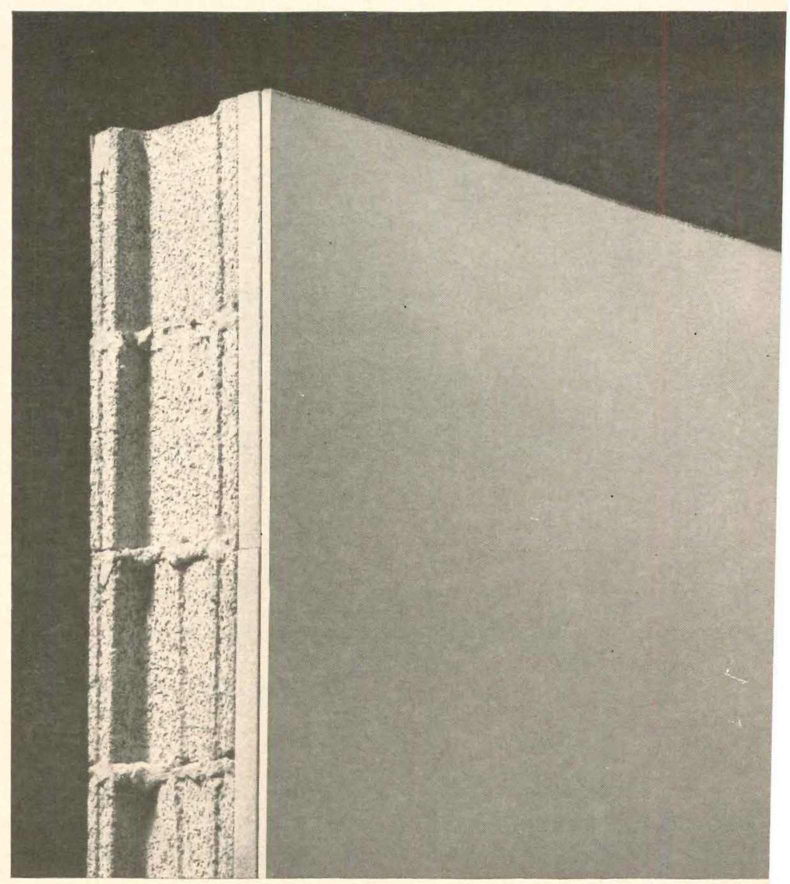


3. Spot-apply Styrotac® bonding adhesive.


4. Press Styrofoam FR into place. It installs fast, stays dry for year-round comfort.



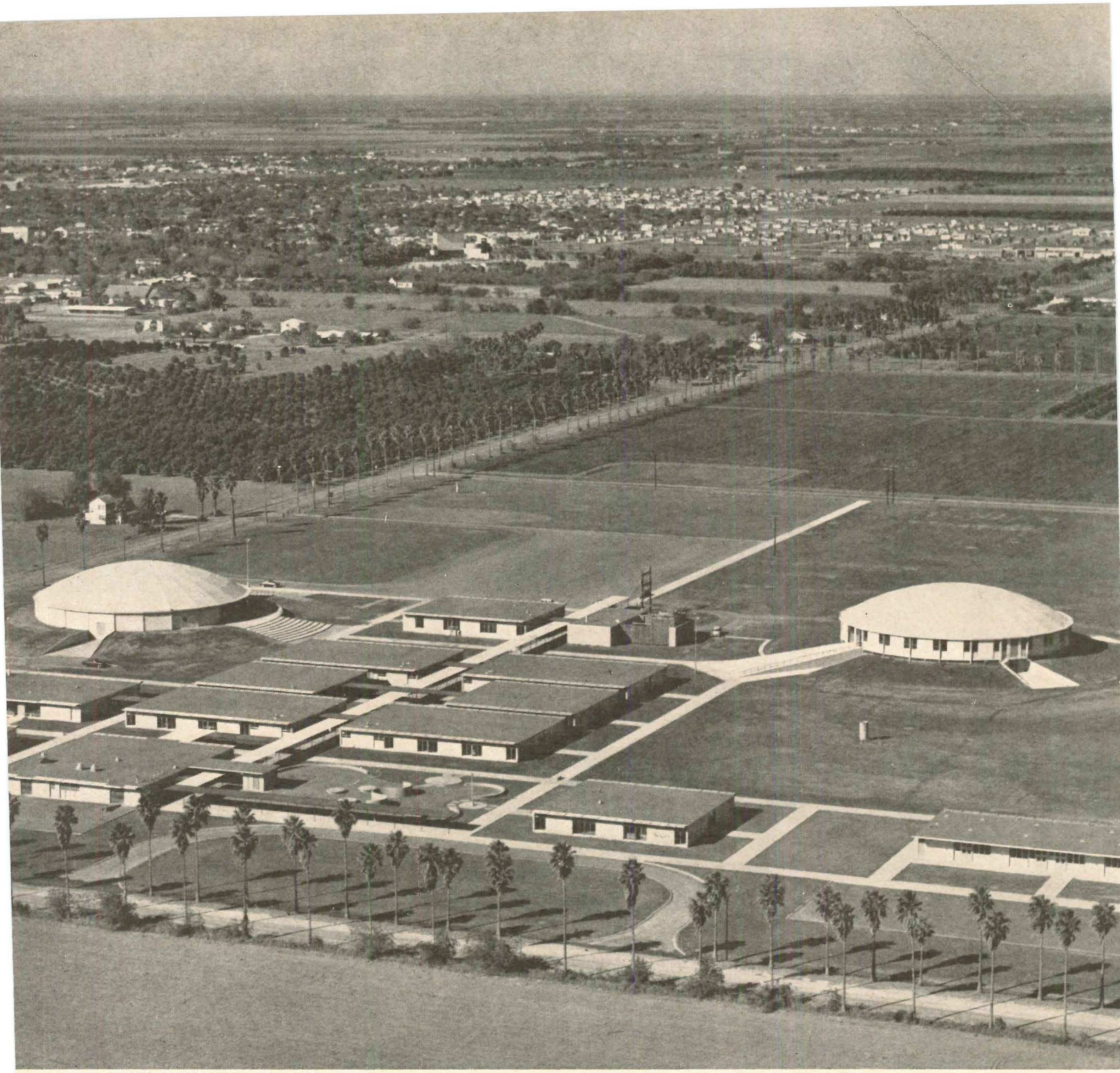

7. Wallboard goes up. Finished wall (8-in. concrete block, 1-in. Styrofoam FR) has "U" factor of 0.16.



8. OK. Now forget it. Styrofoam FR won't absorb water, won't let moisture pass, won't need attention —ever! Any questions? See Sweet's Arch. File 10a/Do. The Dow Chemicai Company, Midland, Mich.

DOW

For more data, circle 154 on Inquiry Card



CONSULTING ENGINEER: MADLEY & WINANS, BROWNSVILLE, TEXAS • ARCHITECT: BURKHART, TANIGUCHI & FORD, HARLINGEN, TEXAS • GENERAL CONTRACTOR: HAROLD HENDRICKS CONTRACTING CO.; MCALLEN, TEXAS
MECHANICAL CONTRACTOR: COASTAL ENGINEERING CO., SAN BENITO • SCHOOL ADMINISTRATOR: J. F. TOWNLEY, SUPERINTENDENT

# New campus-type school in the old Rio Grande Valley...kept cool by Carrier Gas-powered air conditioning

Pharr, Texas, down in the Rio Grande Valley, boasts an unusual new campus-type high school. The diversity of individual building loads—and the extreme temperature range—presented a real heating and cooling challenge. Solution: Pharr-San Juan-Alamo Senior High School was equipped with Carrier Gas-powered absorption refrigeration and a Multi-Zone Weathermaker® system. The central plant furnishes efficient heating and cooling through a water distribution system to classroom buildings and auditorium.

Because the same Gas-fired boilers used for heating also power the refrigeration equipment, installation and operating costs were at a minimum. And Gas costs are lowest of all fuels. Once again, Gas is proved the most efficient, dependable and economical power source for year-round air conditioning. For more information, call your local Gas Company. Or write Carrier Air Conditioning Company, Syracuse 1, N.Y. AMERICAN GAS ASSOCIATION, INC.

**For heating and cooling...Gas is good business**

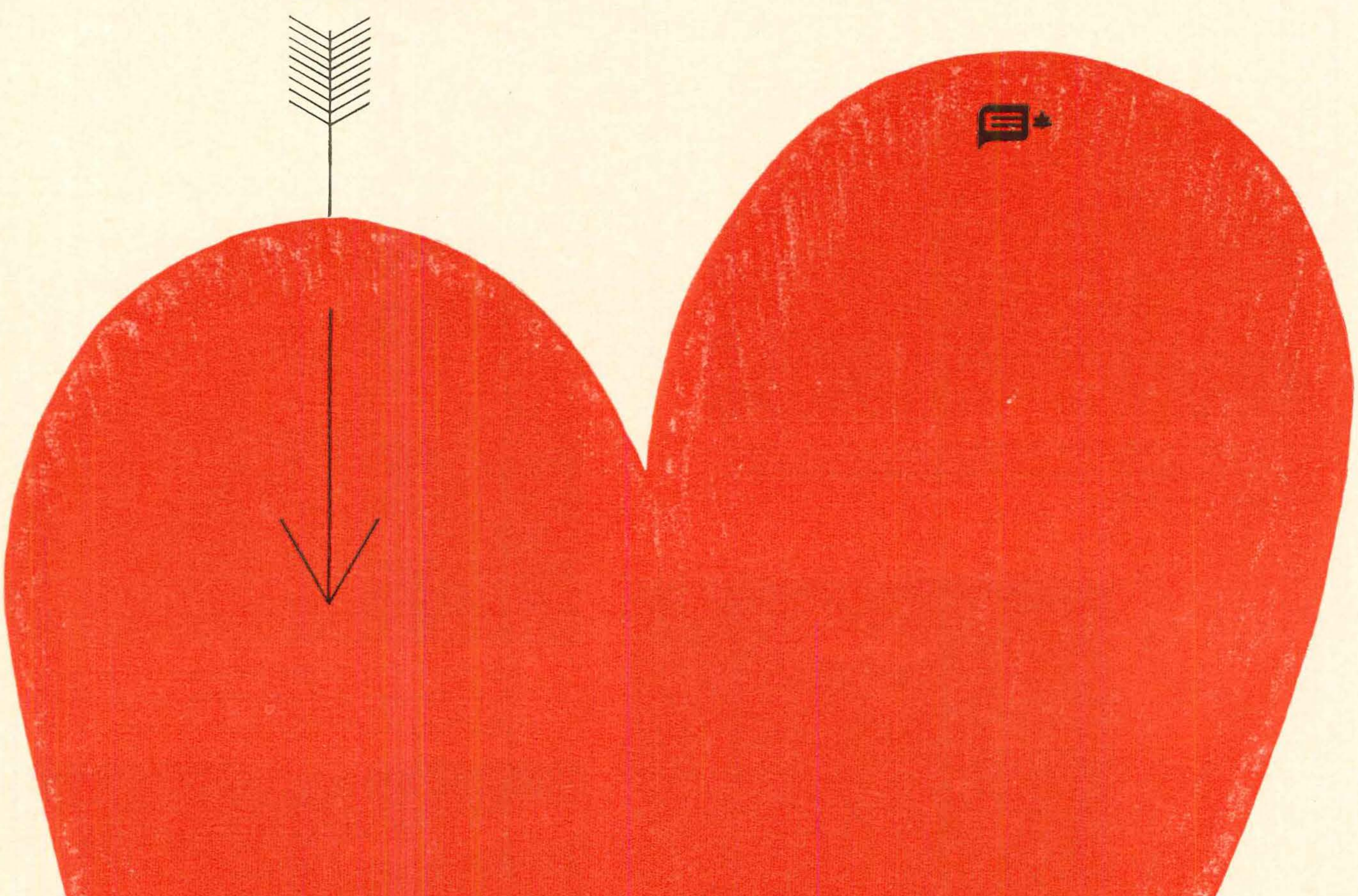
SEE THE CARRIER GAS-POWERED ABSORPTION OPERATING EXHIBIT AT THE FESTIVAL OF GAS PAVILION—NEW YORK WORLD'S FAIR 1964-1965.

For more data, circle 155 on Inquiry Card

## WHY ACCEPT STOCK PLYWOOD PANELS?

*Eggers custom crafted plywood doesn't cost that much more. (In fact, Eggers may even save you money by eliminating the waste of cutting stock panels to size.) But Eggers custom crafted plywood panels give you so much more — look so much better — outwardly demonstrate the care and attention you've given to the entire building. Eggers offers you real design opportunity for interior expression that can't be obtained from stock panels. Discover how Eggers will custom craft just the paneling effect you want. Incidentally, if you insist on stock panels, we make them, too.*

**EGGERS CAN HIT YOU WHERE YOU LIVE**

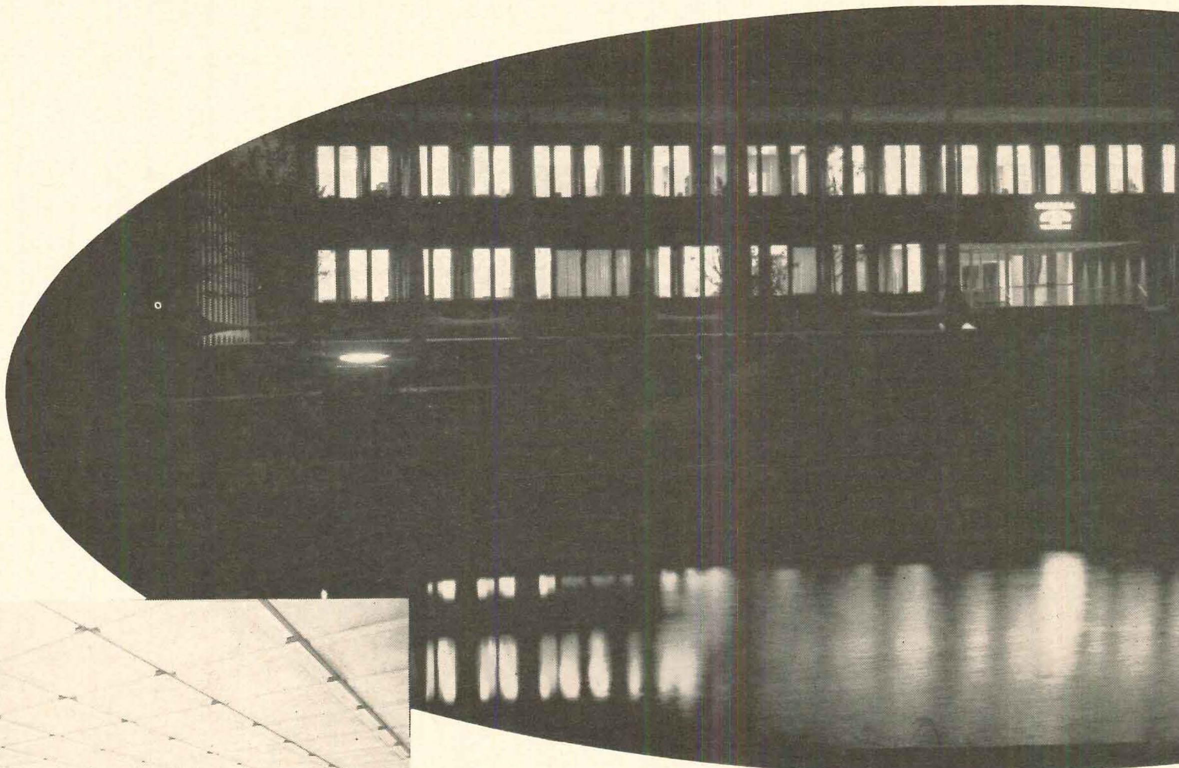


**Write for Eggers Custom Craft Plywood Paneling Booklet (a useful reference guide for specifying the effects you want).**

*This booklet tells and illustrates how you can specify: that doors match panels; that transoms match doors; that panels match panels regardless of height of panels (up to 16 feet). How, with Eggers, you may specify the color, grain, texture of the flitch for panels . . . the veneer match (book, slip, random, etc.) . . . the panel face match (running, center or balanced) . . . the panel construction. Why accept stock panels? Eggers will custom craft plywood to your exact design.*

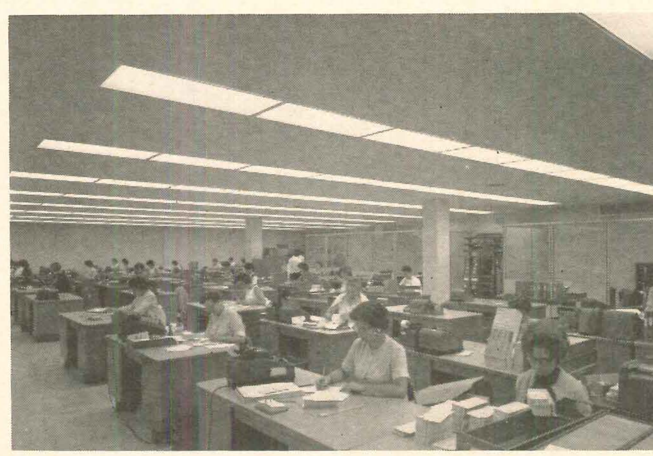
**Eggers Plywood Company of Two Rivers, Wisconsin / Phone 414-793-1351**

For more data, circle 156 on Inquiry Card



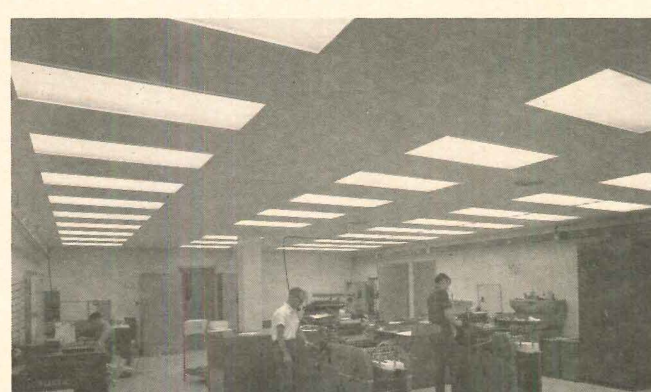
High above the lobby, Sylvania's Sylva-Lume System provides diffused, shadow-free illumination to the reception area below.

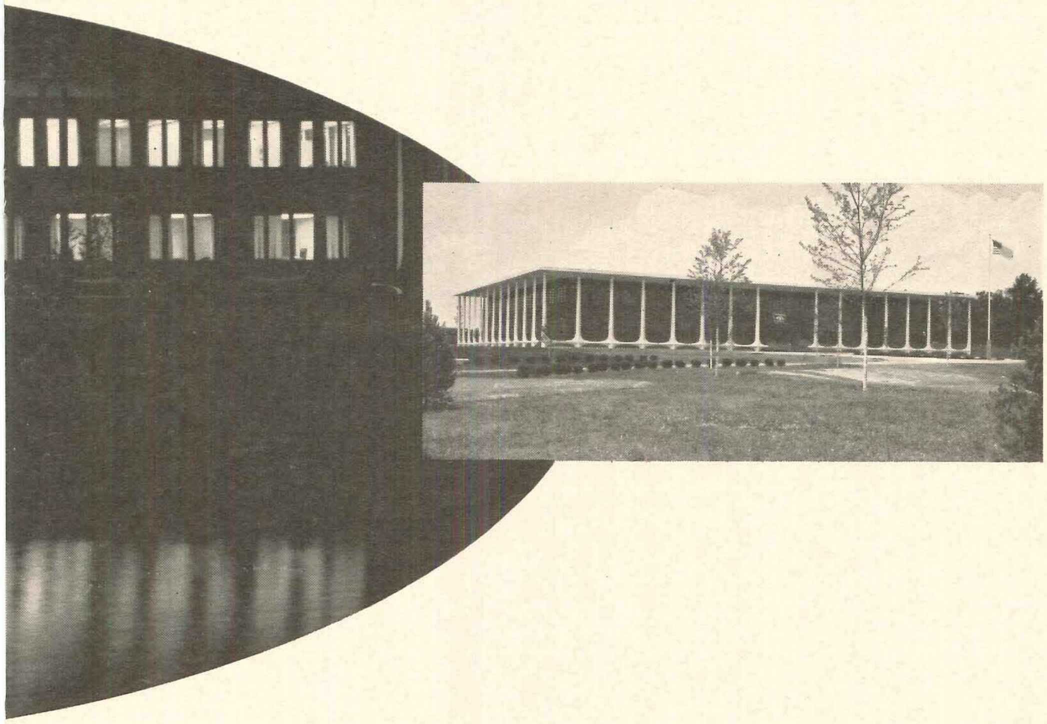
# Sylvania Fixtures 'Light U



2' x 4' Sylva-Flo Troffers combine the functions of quality illumination and air-handling in general and private offices, and in other working areas of the building.

Well-lighted corridors also utilize Sylvania's Sylva-Flo Troffers.





# eneral Telephone Company's New Marion, Ohio Building

Certainly it is not unusual for a firm to use the products of one of its subsidiaries. But when the application of the product results in a truly outstanding installation, it is worth talking about . . . and reading about.

Such is the case with the new General Office Building of General Telephone Company of Ohio, located in Marion, Ohio.

**ylvania's Sylva-Lume Lighting System adds to the beauty f this area in addition to providing excellent illumination.**

Sylvania Lighting Fixtures and Lighting Systems provide the illumination for this attractive and functional building.

In 'public areas', such as the main lobby and reception rooms, Sylvania's Sylva-Lume System of area lighting provides soft, glare-free illumination. Sylvania's Sylva-Flo (air-handling) Troffers are utilized in general and private offices to control both lighting and air conditioning.

Sylvania's wide range of lighting equipment—both indoor and outdoor—allows you to select the model, type and price to fit all of your normal plans.

We'll be glad to send you complete information.

SYLVANIA LIGHTING PRODUCTS
A Division of SYLVANIA ELECTRIC PRODUCTS Inc.
One 48th Street
Wheeling, West Virginia

***LIGHTING EQUIPMENT BY***

SYLVANIA

SUBSIDIARY OF
GENERAL TELEPHONE & ELECTRONICS GT&E

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## *Labor and Building*

*continued from page 304*

The new Works Organization was planned to a large extent on a regional basis, and for this purpose England was divided into seven regions with offices in Leeds, Manchester, Birmingham, Reading, Bristol, Tunbridge Wells and Cambridge. Except in cases where specialized handling was required, it was proposed that responsibility for construction works up to the value of 100,000 pounds should be delegated to the regions. Works costing over 100,000 pounds would only be delegated to regional offices, if the particular region had the staff and the capacity to carry them out. Each region was allotted a number of area offices, to handle minor works and maintenance assignments costing up to 10,000 pounds. A large part of the works programs for Scotland and Wales was expected to be controlled locally, but with close liaison with the London Headquarters. The Northern Ireland Government continued to have responsibility, on an agency basis, for a number of major construction works, but under the new organization, the Regional Office in Manchester would handle minor works and maintenance and some larger construction projects in Ireland. The regional pattern was planned on a similar basis overseas. It was estimated that by the time the new regional organization was fully operative, the value of contracts handled by offices outside London would have increased by 50 per cent.

The Government saw the main advantage of this policy of decentralization as having the effect of "broadening the responsibilities of the regional office, making it possible to exploit more fully the skills of outstationed staff, reducing delays and expense of traveling and making use of locally available staffing resources." Complete decentralization was not, however, advocated as this might involve "undue dispersal of scarce professional skills and the loss of opportunities for useful specialization."

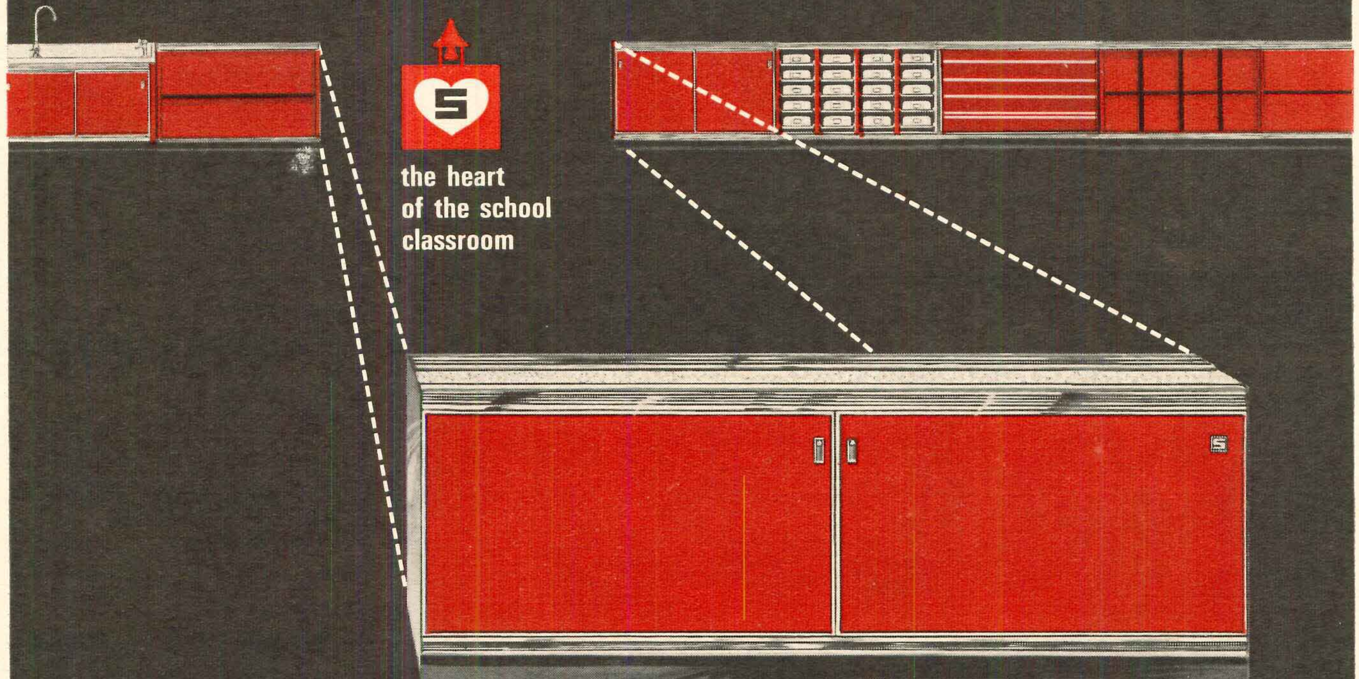
An important aspect of the new policy was the emphasis placed by the Minister on close co-operation at all levels between staff from the different professional disciplines and from administration. A group system of working was established throughout the Ministry organization with teams drawn from the relevant professions and administrative officers, working side by side. Special groups were set up to study particular building types. Directors of Works in particular fields were selected from the appropriate profession to share responsibility with assistant secretaries, representing the administration. This pattern of co-operation and team working was being repeated at all levels in headquarters and as far as possible in the regions as well.

Apart from its responsibility for the majority of Government building, the Ministry of Public Building and Works has additional and equally important responsibilities on the research and development side. These were described in the White Paper in the following terms:

(a) to be responsible for the develop-

*continued on page 320*

when it makes common sense to buy the best . . .

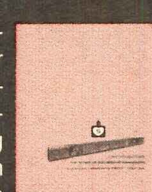



**SCHEMENAUER CLASSROOM UNIT VENTILATORS**

are the most thoughtfully engineered—*Heating or Cooling.* They last longer, perform better and cost less to operate and maintain *the entire life of the classroom.*

SEND TODAY FOR THESE TWO IMPORTANT BULLETINS

Discover the 7 vital differences that can make or break your buying decision. See how price differentials can be misleading and actually result in wasted dollars and high expense.



A complete Buying Guide and a "must" in any up-to-date file. Eight full-color pages with sections on design, customized cabinets, color, mechanical specifications. A factual report.

*"Guaranteed the finest Unit Ventilator any amount of money can buy."*

**SCHEMENAUER**
manufacturing company
HOLLAND, OHIO

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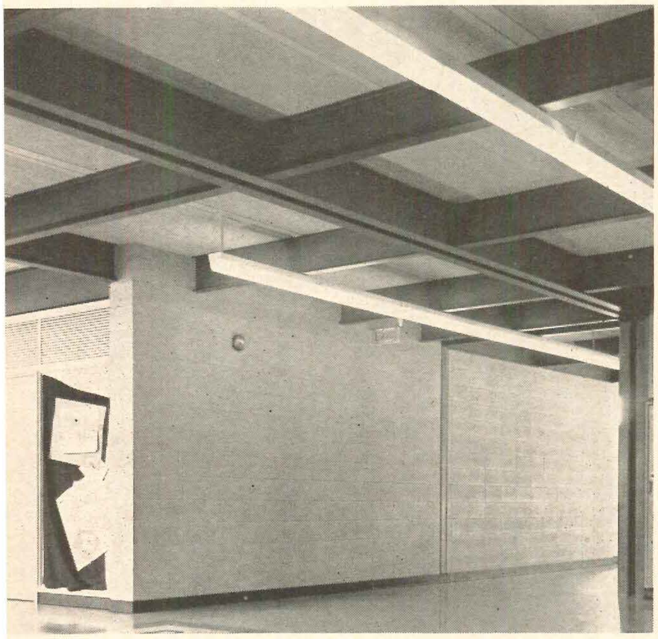
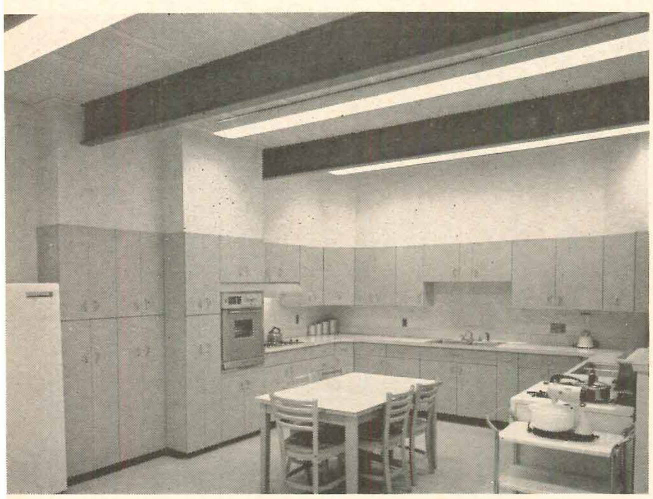
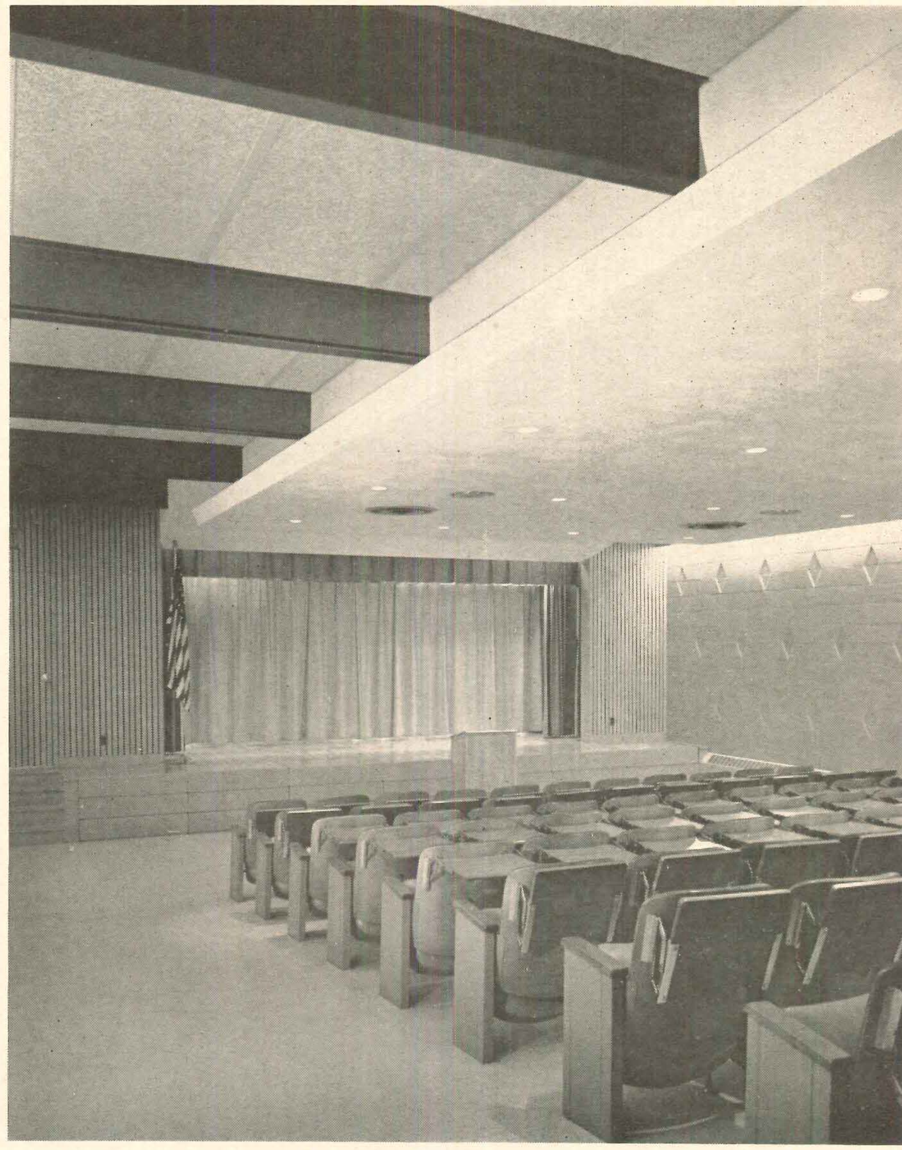
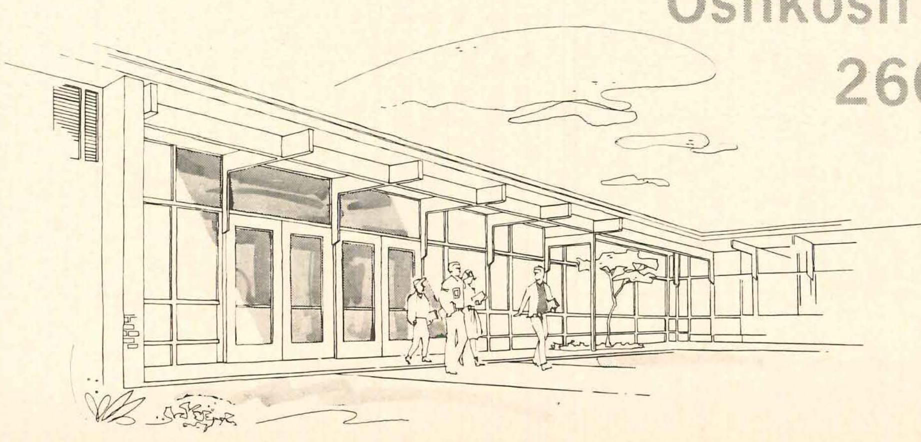
The Gold Bond difference in schools:

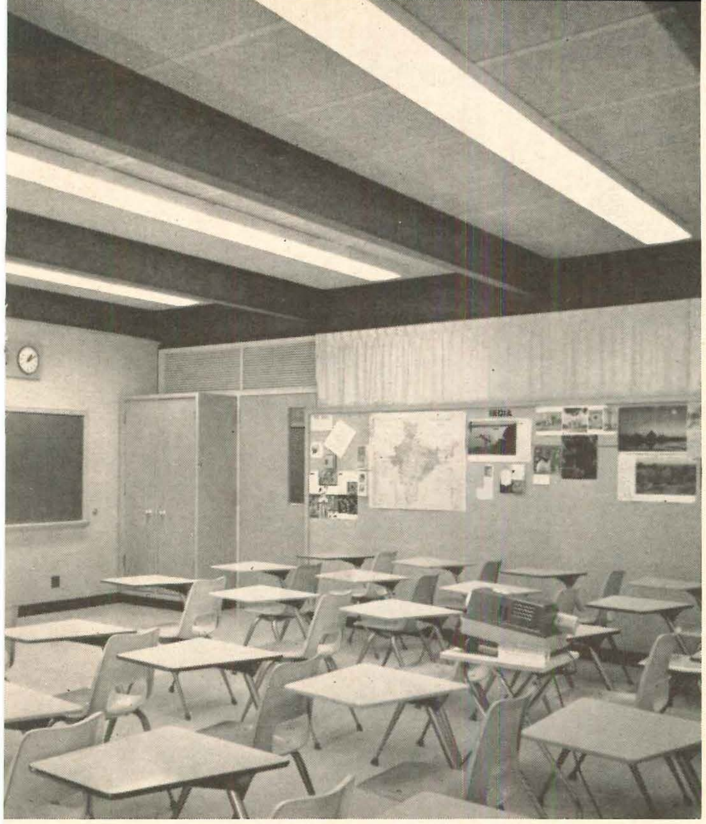




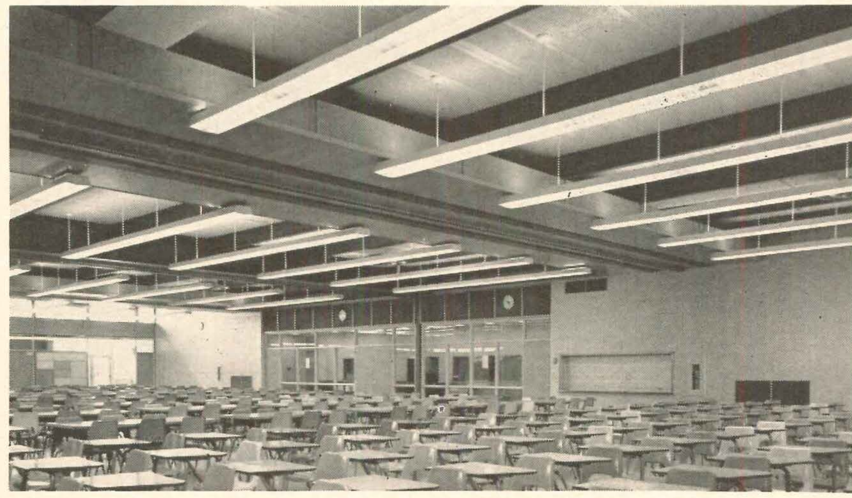


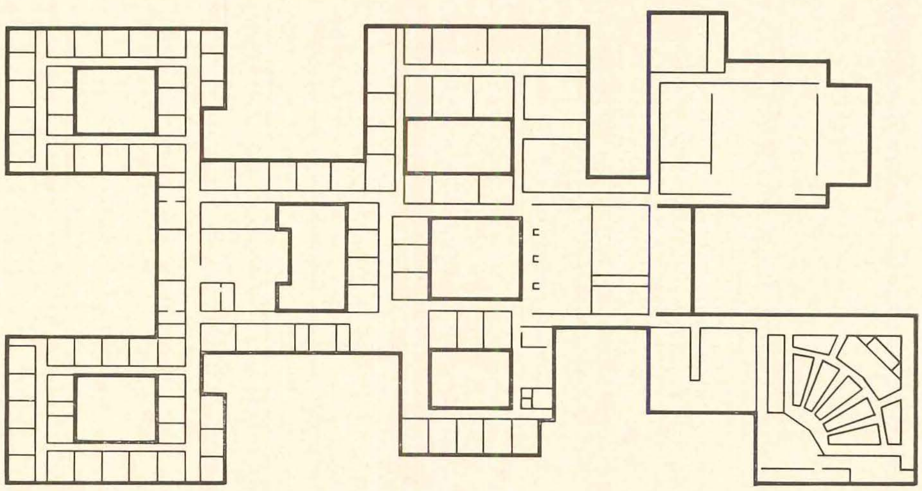
## "Speed of erection, appearance and acoustical properties"...that's why Oshkosh High School used 260,000 square feet of Tectum



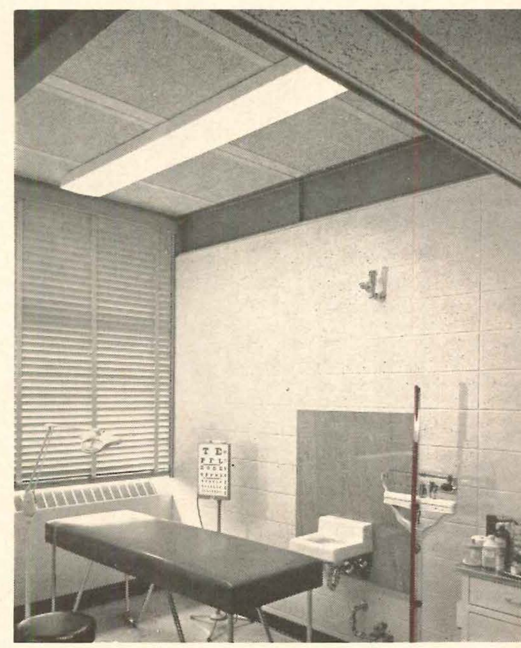


**Building:** Oshkosh, Wisconsin, High School
**Architects:** Perkins & Will, Chicago, Illinois
**General Contractor:** The Hoffman Company, Appleton, Wisconsin





Architects Perkins & Will designed rectilinear components around a central core to allow for simple, economical expansion. School has separate East and West academic wings to form two smaller schools under one roof. It is so big that floor plan maps are inserted in walls at corridor intersections.



Oshkosh High School is big (280,000 sq. ft.) and unusual (actually two-schools-within-a-school). Yet it's like every school ever built in that Architects Perkins & Will, Chicago, had to design the most school for the fewest dollars. A big factor in achieving the economy was Gold Bond Tectum. A total of 260,000 sq. ft. of Tectum was quickly and easily installed on bulb tees over junior steel beams to form both a structural roof deck and an attractive, fire-resistant finished ceiling. Tectum's warm, off-white texture was enhanced by painting structural beams terra cotta. This combination roof-ceiling also provided excellent insulating properties (U value of .15 for 3" planks) and acoustical control (noise reduction coefficient rating up to .90). One quality material . . . one time-and-cost-cutting operation . . . one more example of the Gold Bond difference. • The architects state that "Tectum contributed to the economy of operation and provided aesthetic values in addition to meeting structural specifications." The firm has used Tectum in many schools and plans to use it in future school buildings. Before designing your next building, why not learn why more than 600,000,000 board feet of Tectum are now used in more ways than any other wood fiber building product? Call your Gold Bond Tectum representative or write National Gypsum Company, Buffalo, New York 14225, Dept. AR1164.

Gold Bond®
TECTUM

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**The Building:**
Playa Del Oro Apartments
La Jolla, Cal.

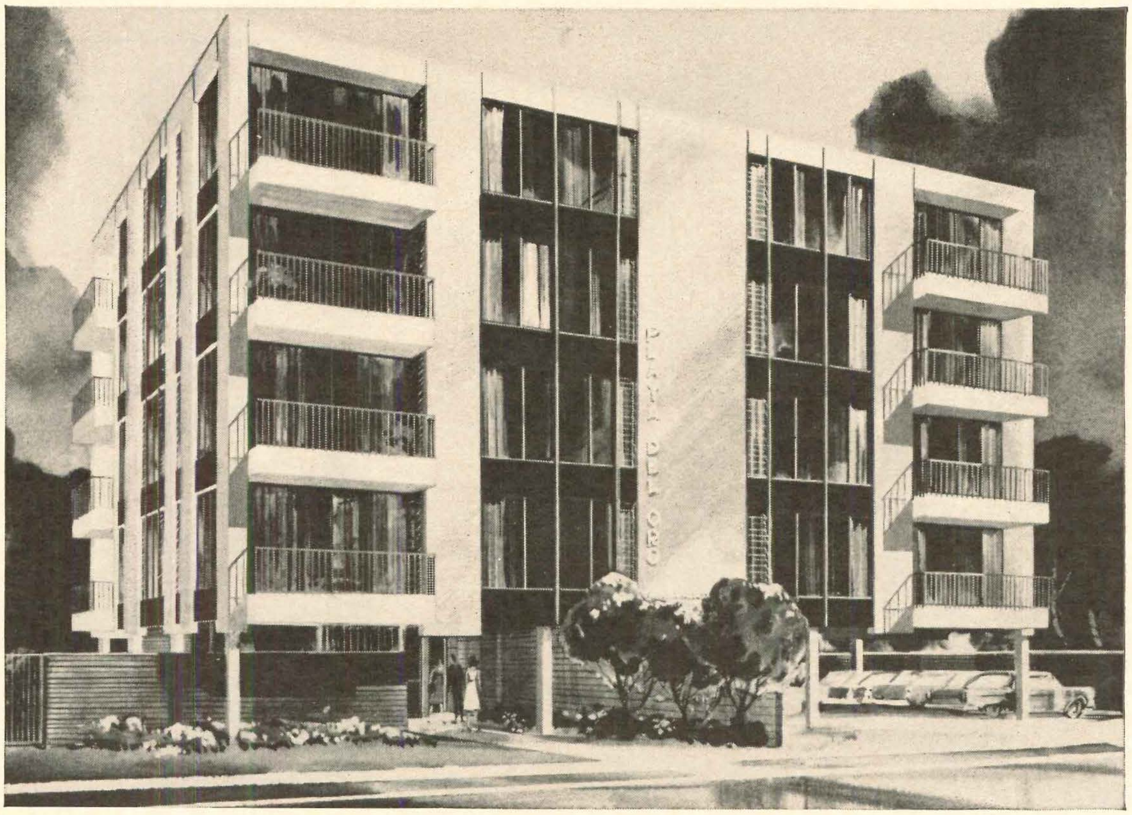
**Owner:**
Florence Scripps Kellogg
Estate

**Architect:**
Homer Delawie
San Diego, Cal.

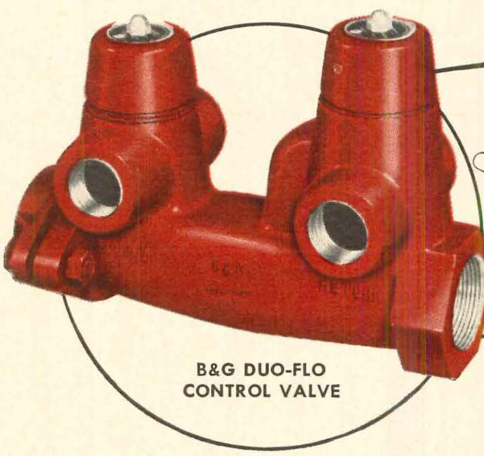
**Engineer:**
Merle Strum & Associates
San Diego, Cal.

**Builder:**
McKellar & Wyer
La Jolla, Cal.

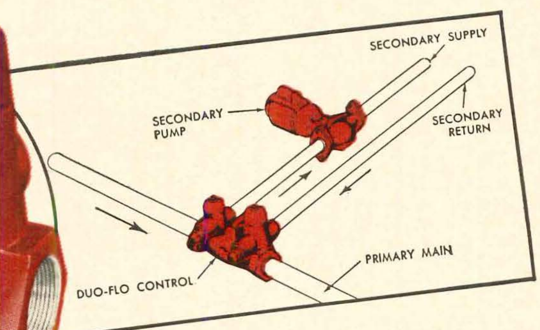
**Heating Contractor:**
Emory Plumbing Co.
Pacific Beach, Cal.



# THEY LOOKED AT ALL OTHERS...THEN SELECTED A B&G PRIMARY-SECONDARY SYSTEM WITH DUO-FLO VALVES



B&G DUO-FLO
CONTROL VALVE



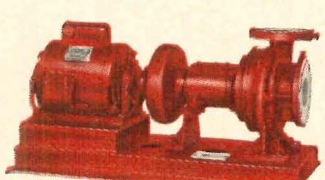

In Primary-Secondary Systems equipped with B&G Duo-Flo Controls, secondary zones are always positively controlled, even with high head primary pumps. Use of higher temperature drops permits sizable reduction in pump horsepower. A Duo-Flo Control eliminates 2 Flo-Control Valves, 2 shut-off valves, 2 or 3 tees and 6 nipples.

After the engineer and architect made an exhaustive study and comparison of other heating systems, a B&G Primary-Secondary System with baseboard radiation was selected for this deluxe apartment building. The evaluation of first cost, operating cost, comfort, appearance, life and other factors clearly indicated the system selected.

A typical B&G Primary-Secondary System consists of a continuously circulated primary main with smaller pumps drawing on the primary main to supply separate secondary heating zones. Each zone pump is under individual thermostatic control.

In the apartment building illustrated here, a primary loop runs from a boiler on the roof to ground level and returns to the boiler. Secondary zones are taken off to each apartment, each zone having its own B&G Pump, Duo-Flo Control Valve and thermostat. The temperature in each apartment is therefore directly controlled by the occupant.

For further information write to ITT Bell & Gossett Inc., *a subsidiary of International Telephone and Telegraph Corporation,* Morton Grove, Illinois, Dept. IG32.



**B&G UNIVERSAL AND BOOSTER PUMPS**
Designed specifically for quiet, dependable operation in forced hot water heating systems.

**BELL & GOSSETT**
a subsidiary of ITT

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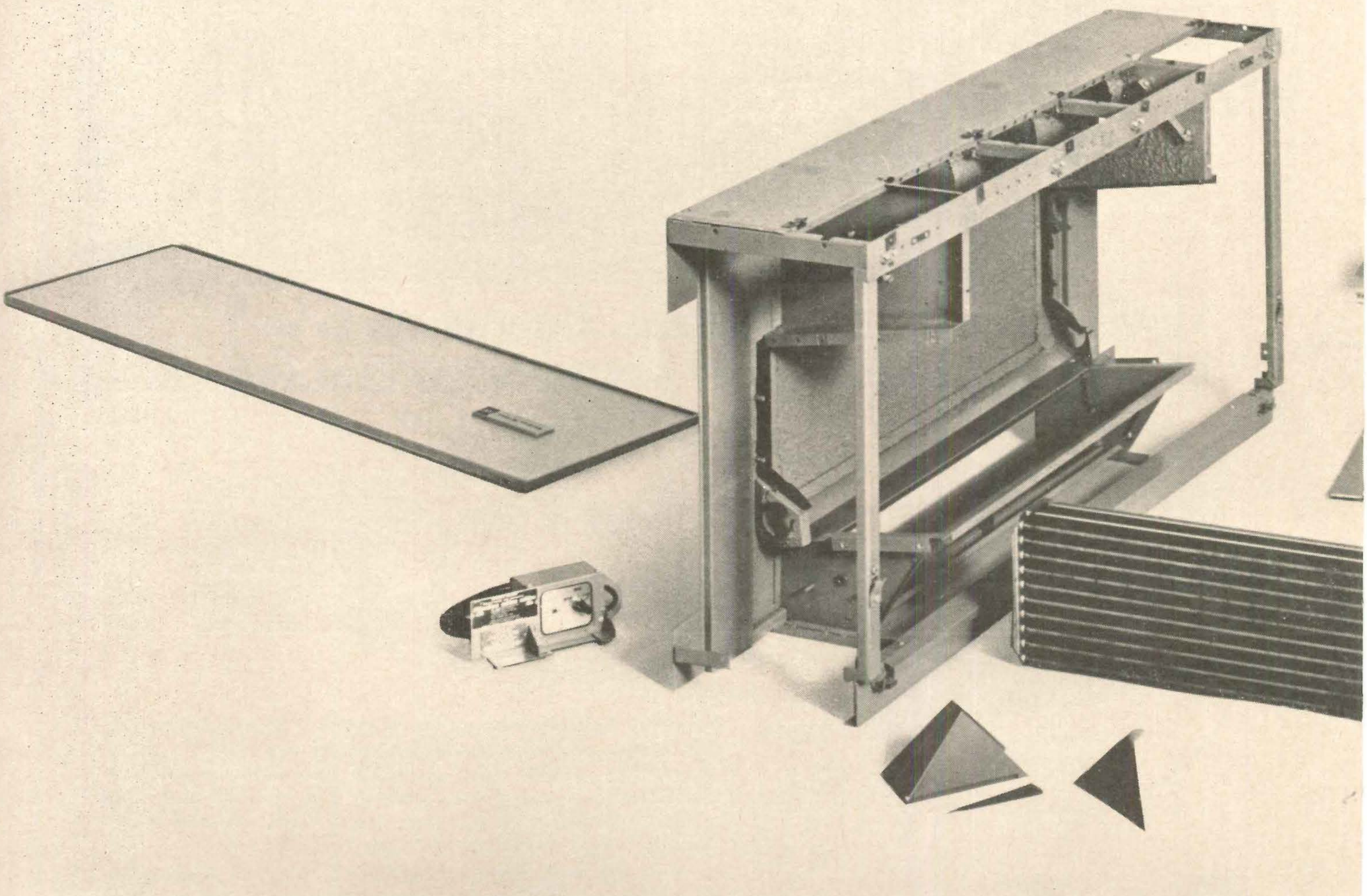
# Everything in sight is



## Herman Nelson classroom unit ventilator

TO TALK about quality is one thing; to *demonstrate* it is another. Herman Nelson not only warrants all unit ventilator parts for five full years but also the *labor* involved in repair!

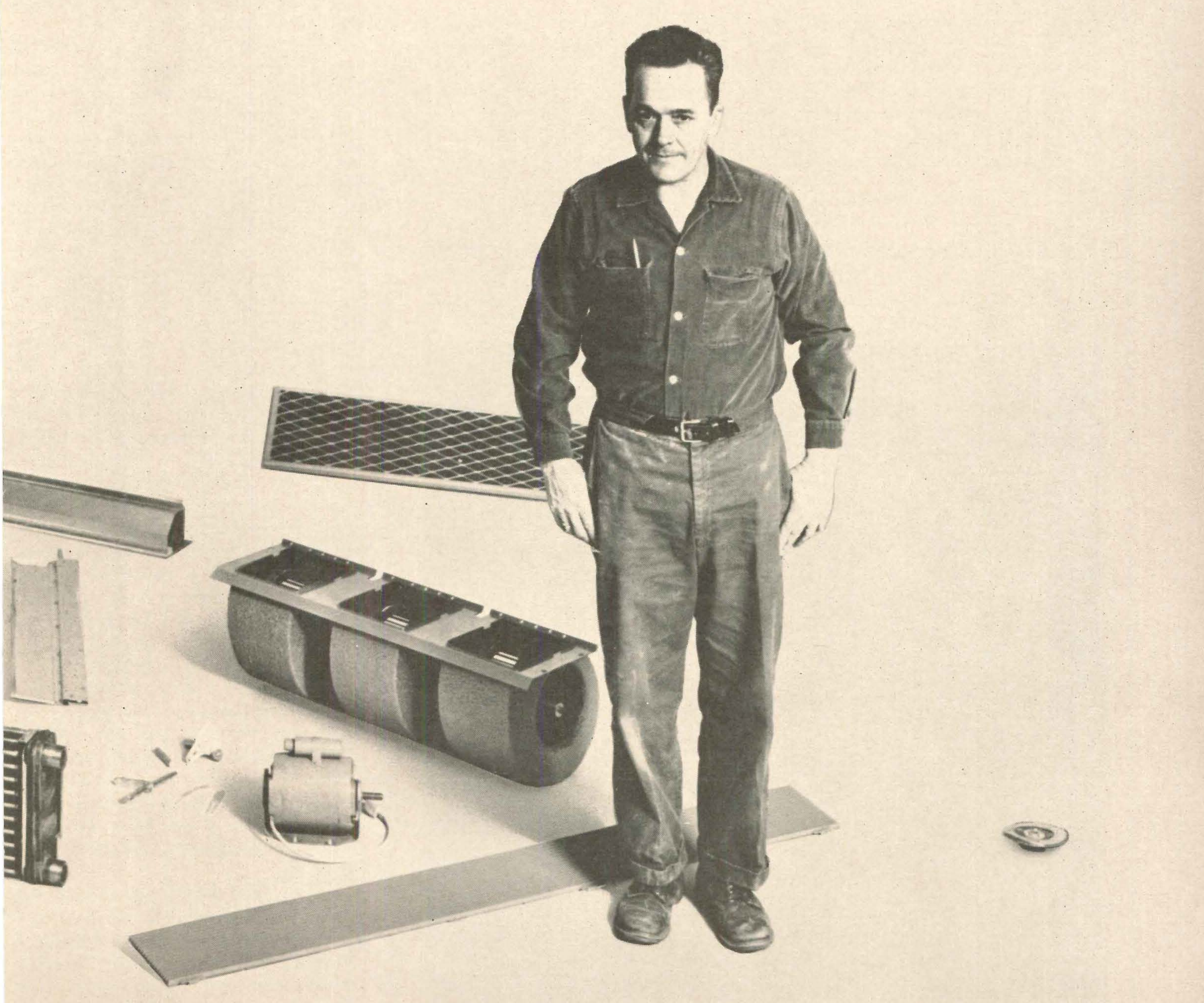
It's a real, bona fide, nationally published, five-year warranty. In 162 simple words it provides you with the full protection your school should have.

After all, the bricks in your new school are *real.* The mortar is *real.* The unit ventilator equipment is *real. The money that pays for it all is real.* Doesn't it make good sense to protect that equipment with a *real* warranty?

**Read the Herman Nelson warranty**

Write for a copy of the Herman Nelson warranty

# warranted for five years

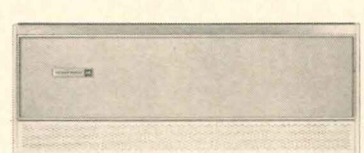


## warranty covers both parts and labor

(clearly marked "specimen only"). Compare its simple provisions with all the vague assurances you've ever heard.

Write School Products Department, American Air Filter Company, Inc., 215 Central Avenue, Louisville, Kentucky.

Do it now, while you're thinking of it.



**Herman Nelson**
SCHOOL PRODUCTS DEPARTMENT

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## *Labor and Building*

*continued from page 312*

ment groups in the Ministry and for co-ordinating and extending the activities of the various building research and development groups throughout the Government service;
(b) to encourage and develop generally the use of new and rapid methods of construction and to standardize the use and production of building components to the greatest possible extent; and
(d) to act as a link with the construction industries and to secure widespread dissemination of the best modern practices.

To handle these responsibilities, a Directorate General of Research and Development was set up within the Ministry framework, under the leadership of Sir Donald Gibson, formerly Director General of Works at the War Office. In February 1964, when responsibility for building control was passed from the Ministry of Housing to the Ministry of Public Building and Works, the task of formulating new national building regulations in England and Wales came within the auspices of the Research and Development Directorate.

The White Paper did not deal at length with the organization of the Research and Development side of the Ministry's work, except in so far as it is related to the Works and Supplies Services, but its effect has already been felt throughout the country. In the past year, more research and development work has been done by the Ministry than in the past half-century. In February of this year a National Building Agency, a semi-independent body, was set up to give a nation-wide advisory service on new methods of building. A. W. Cleeve Barr, previously Chief Architect to the Ministry of Housing, and an authority on industrialized building, has been appointed Deputy Chairman and Chief Architect. Proposals for another semi-independent body of national importance, a Building Research and Information Association, were discussed by the Minister and the building industry. It was recommended that this be established by means of compulsory levy on the industry of up to 5 million pounds per annum. If the builders had mixed reactions to this suggestion, they were undoubtedly heartened by Mr. Rippon's announcement that the formation of new national building regulations, to replace the intricacies and confusion of all the local bylaws would be completed before the end of the year.

Close links have been forged between the professional and administrative staff of the Works organization and their Research and Development colleagues at all levels. The Directorate General of Research and Development has undertaken a number of development projects on behalf of the Works organization, the lessons from which will be fed back to the Ministry as a whole and disseminated throughout Government departments and the construction industries. Experience gained by the Works Department from the execution of the Ministry's large annual construction programs will in turn be passed back to the Research and Development staff so that they can take it into account in the planning of new projects.

# AMELCO WINDOWS

## SELECTED FOR 1000 LAKE SHORE PLAZA

Distinction is the keynote in every feature of the new 1000 Lake Shore Plaza in Chicago . . . the ultimate in gracious, convenient high rise dwelling. Amelco windows contribute to this graciousness and convenience . . . dual glazing with venetian blind **between** the panes of glass reduce solar heat gain by 65% yet provide occupants with a picture window view. Amelco window vents pivot horizontally . . . the ideal ventilating position. In winter the Amelco window performs again . . . 2-inch air space, true thermal breaks in vent and frame and super-efficient weather seals reduce heat loss, eliminate "drafts" and reduce outside noise by more than 50%. You may want the entire Amelco story . . . write for the facts.

### QUICK AMELCO FACTS

**DOUBLE GLAZING**. . . two panes of glass enclose 2" air space.

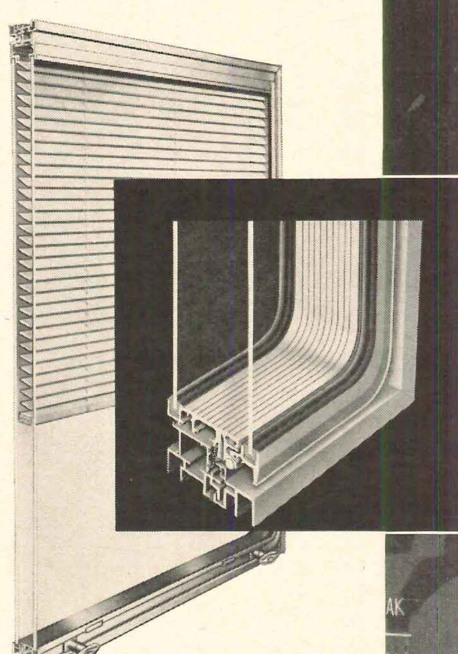
**BUILT-IN VENETIAN BLIND**. . . between panes of glass . . . virtually dust free . . . blind is concealed in top channel when raised.

**THERMAL BREAKS**. . . in vent and frame . . . no through metal.

**FINISH & MATERIAL**. . . heat treated, anodized and sealed aluminum alloy (.100") min. thickness.

**SIZES**. . . Available in sizes to 7' high and 10' wide not to exceed 46 sq. ft. per window.

**HORIZONTAL PIVOTING**. . . permits ventilation and cleaning of all glass surfaces from inside the building.



AMELCO

AMERICAN ELUMIN CO. • 1676 COMMERCE DR., STOW, OHIO

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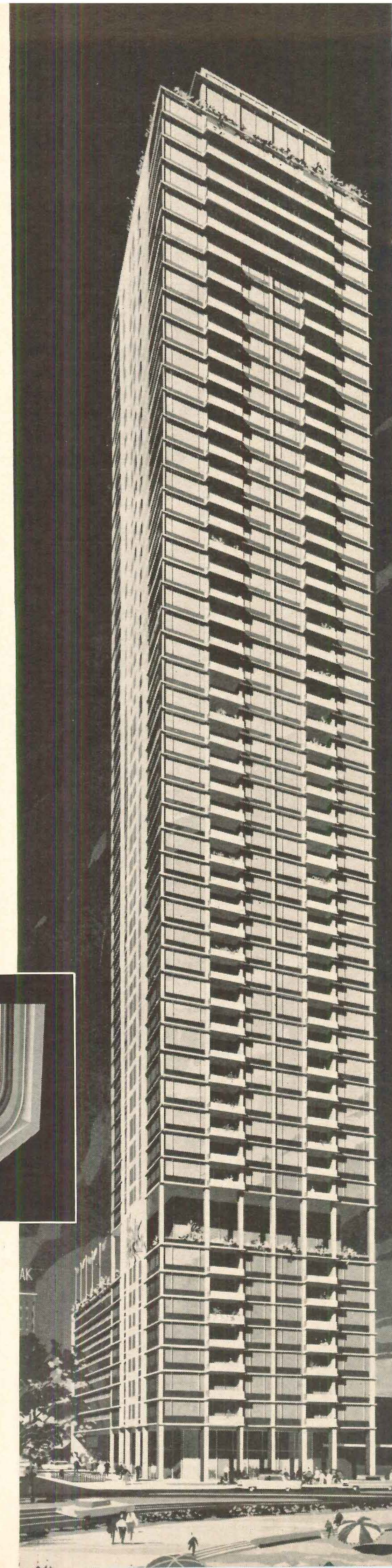
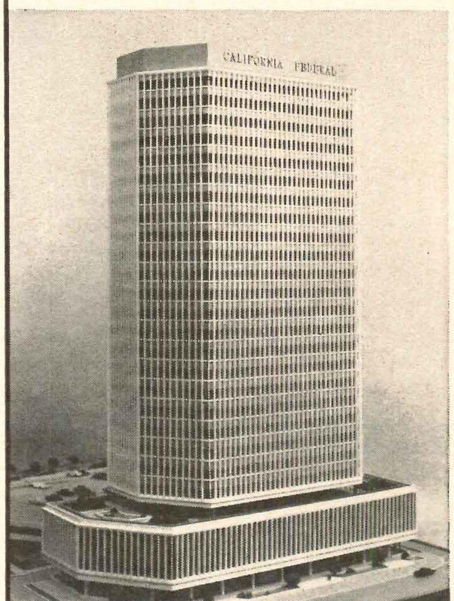
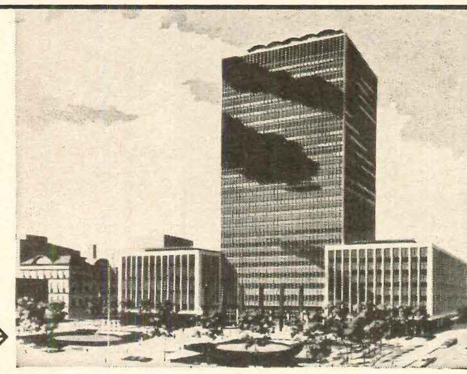


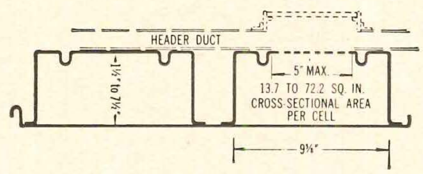
## Mark of Mahon . . . CONVENIENCE

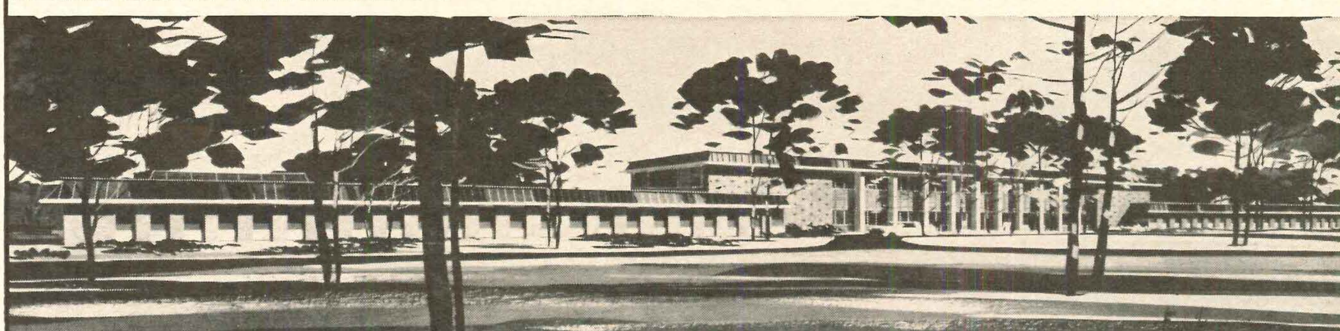



**California Federal Plaza Building,** Los Angeles, California. M-Floors go up simultaneously with the structural steel, eliminating the need for temporary safety platforms.

**City-County Building,** Indianapolis, Indiana. M-Floors are easily integrated into all types of non-residential low- or high-rise buildings.





**Pure Oil Company General Office Building,** Palatine, Illinois. High raceway capacity of M-Floors make them ideally suited for the extensive and complex cabling and wiring required by electronic data equipment.

# Easiest Sub-Floors You Ever Electrified

M-Floors were designed specifically for use in electrified sub-floors and they were designed for your *convenience* . . . to make it easy for you to install and to save you time and labor costs.

Super-wide cells provide you with 70% to 160% more useful raceway space than similar structural products, depth for depth. The key to this usability is *convenient* accessibility. Man-sized hand holes (big enough for a man's fist) allow quick location of wires, wire pulling, and cable installation without fuss or muss. Snap-on grommets close holes instantly.

Supplied in variations and combinations of gages and depths, versatile M-Floor sections can be *conveniently* matched or mixed on any particular project to meet all practical design loads consistent with normal and long-span framing conditions.

The next time you want to save time and money on electrified sub-floors—and still have high strength to weight ratio, flexibility and compatibility in depths, realistically-sized cells, reserve capacity to meet future requirements as well as carry today's power—specify M-Floors. The R. C. Mahon Company, 6565 East Eight Mile Road, Detroit, Michigan 48234.

MANUFACTURING PLANTS
Detroit, Michigan and Torrance, California

**MAHON**

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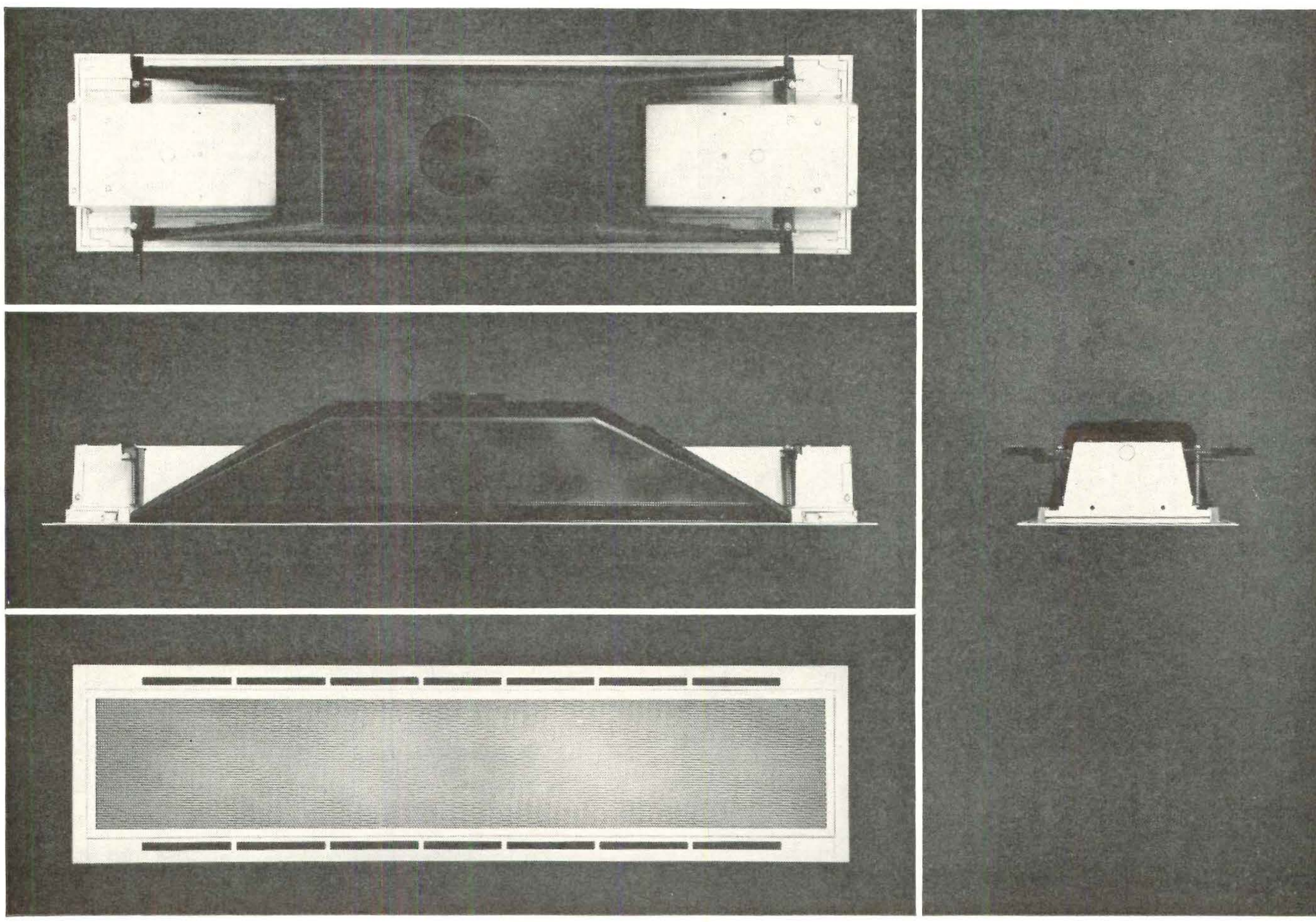
# New LPI air-handling troffer is the best way to control light and air



Some of the built-in values you can't see in these photographs of LPI's new air-handling fluorescent troffer are a host of mechanical, electrical, and photometric superiorities.

These LPI superiorities contribute unusual strength and rigidity; light-tight construction; ease of installation and maintenance; and efficient, controlled distribution of light and air.

LPI troffers are designed to operate in conjunction with Titus diffusers. They provide air supply and return and handle heat removal as well. Flange and lay-in styles in all standard sizes and a full range of shielding media can meet all your needs.

To see all the hidden value from top to bottom, ask your LPI representative for a look at this new air-handling troffer, or write for full details. LPI-4-211

® LPI FLUORESCENT LIGHTING

Lighting Products Inc., Highland Park, Illinois 60036

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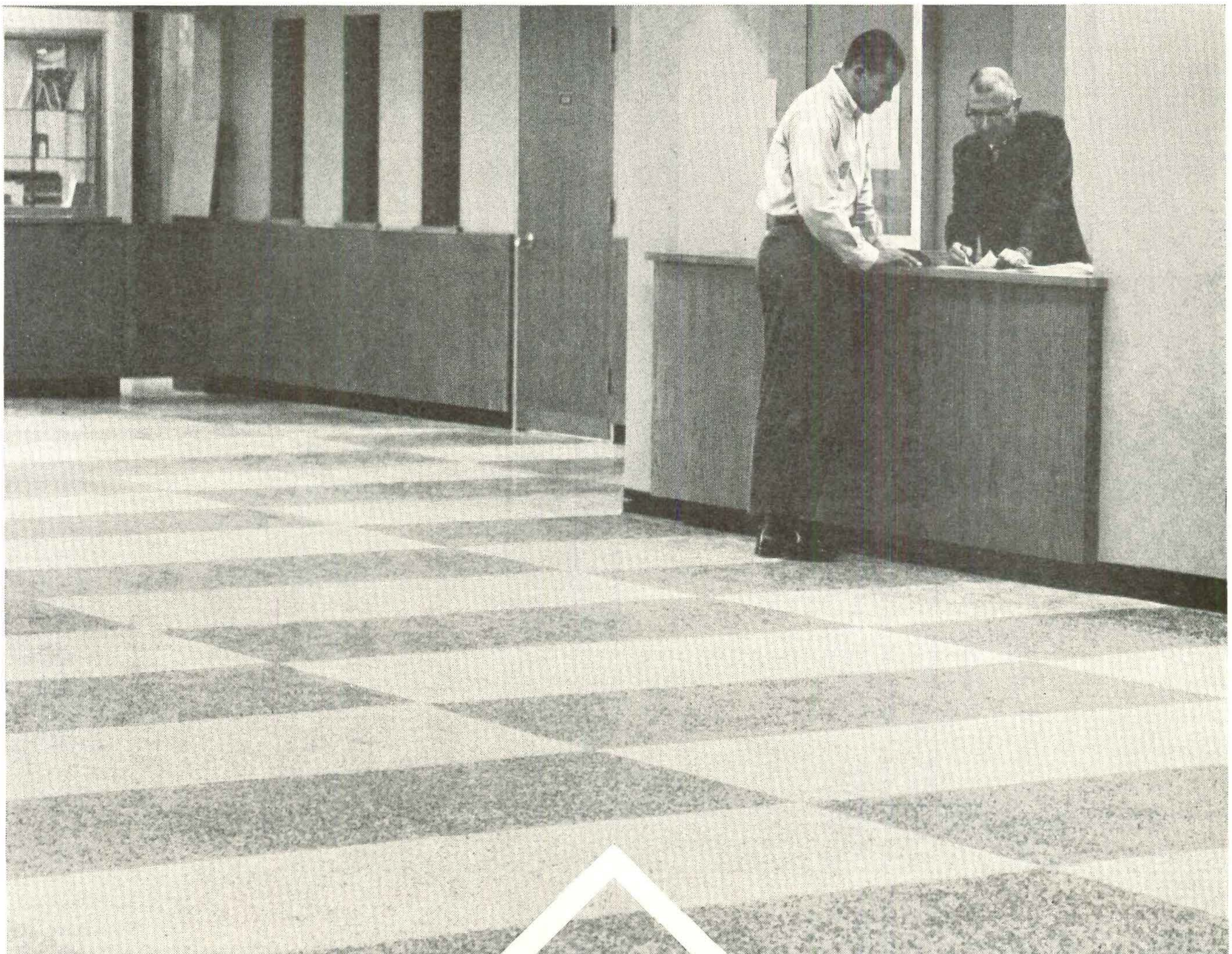
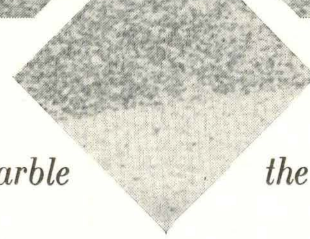
***alpine oak*** Crisp and clean as all outdoors—this newest member of the Royalcote family.

***fireside birch*** A wall of warmth, designed to hold its good looks for years.

Mt. San Antonio College Library Building. Architects: Austin Field & Fry, A.I.A., Los Angeles, California





*The beauty of marble* ... *the durability of concrete...*

# TERRAZZO cuts yearly maintenance costs by as much as $.50 p.s.f.

The striking beauty of terrazzo is only one reason for its growing popularity. Today, more and more architects are specifying terrazzo for its long-term economy as well.

One recent study of floor finishes, reported by the National Terrazzo & Mosaic Association, showed an annual per sq. ft. maintenance cost of $0.875 for terrazzo, $1.40 for asphalt tile, and $1.085 for vinyl tile.

Terrazzo needs no waxing or buffing . . . and since it has no wax coating to hold dirt, it needs mopping far less frequently. And terrazzo is a lifetime surface. When resilient tile floors need replacing in 8 or 10 years, the comparative cost advantages of terrazzo sharply increase.

To economy, add design versatility. Terrazzo can be laid in a wide range of colors and custom patterns. It goes beautifully with every style of architecture.

**PORTLAND CEMENT ASSOCIATION**

An organization to improve and extend the uses of portland cement and concrete

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# Furniture or millwork for dormitory built-ins?

## *Which to specify ...and why*

Student housing is big business today. Are you up-to-date with the developments and advancements made in recent years? Specifically, have you truly evaluated furniture built-ins versus millwork construction?

For years, the use of millwork was the primary if not the only way to install built-in wardrobes, desk units, bookcases, chests and other units. Then furniture built-ins came along (Simmons introduced Dorm Line in 1957). This changed several long-standing concepts. Many progressive dormitory planners and architects promptly recognized the fact that furniture in dormitory rooms no longer had to be carpentry.

### WHY THE TREND TO FURNITURE?

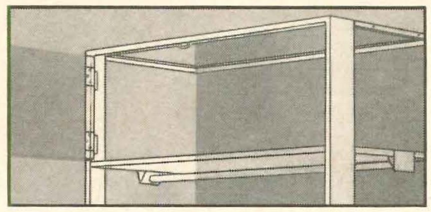
When you realistically compare furniture built-ins with millwork, you readily see the striking advantages that furniture offers.

Basically, there's one most important consideration: Furniture built-ins offer quality-controlled construction under strict production procedures which cannot be matched by jobsite construction. This is easily demonstrated by examining Simmons Dorm Line furniture in comparison to millwork.

Dorm Line furniture construction is quality-controlled by every conceivable process. Quality of the materials is prechecked, operation-checked and post-checked (never encountering problems such as the use of underaged wood, for example). Consistent quality of workmanship and materials does not allow variation.

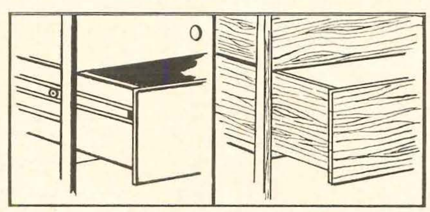
### FURNITURE ADVANTAGES DEMONSTRATED

There are several simple ways to see the superiority of furniture built-ins:

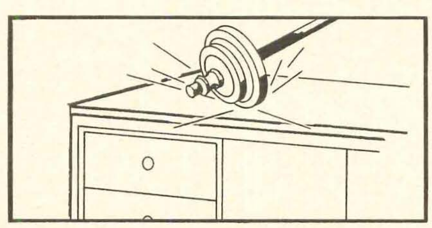


**Check** strength by examining corner joints. Here you see corner joints of Dorm Line wardrobes that are welded so securely that the front frame member could literally support the dormitory roof. Compare this with a millwork frame, with corners that are nailed, glued and possibly braced—but which possess only a fraction of the strength of Dorm Line frames.

**Try** the slam test for lasting utility—a Dorm Line wardrobe door has a precision-built tract assembly so well secured to the steel framework that constant, violent motion can't disturb continuing smooth operation.



**Check** durability and utility by comparing drawer construction—drawers and bases in a Dorm Line desk or chest quickly demonstrate their advantages over millwork. Fitted steel drawers ride on double suspension runners.



**Compare** service life by surface tests—try to abuse the quality-finished surfaces of Dorm Line units compared to millwork. Steel components with baked-on enamels over Bonderized steel are hard, durable, easy to maintain—not remotely duplicated by jobsite-applied finishes.

**Go further** if you'd like and compare the base units of Dorm Line and millwork wardrobes. Check desk features—no drawer pulls to drop off. Consider Simmons bed frames that withstand the weight of six hefty football players. Almost every feature of every Simmons Dorm Line unit will outcompare millwork unit features.

### DORM LINE BUILT-INS COST LESS, TOO

You pay less for Dorm Line built-ins, generally from the beginning, and certainly to the end. When on-site labor costs are isolated for millwork construction, and you add materials costs, the installation costs most often favor Dorm Line built-ins. Over long term, Dorm Line comes out way ahead—with lowest maintenance, lowest replacement costs of any furniture available. When you consider that built-ins are financed over a long term (minimum 18 years), you should consider—and expect—the units to deliver full-term service. Dorm Line built-ins and furniture do so!

Without exaggeration, the advantages are so favorable to Dorm Line furniture that their selection and specification seem worth considering every time. But, you may have additional questions—or want more evidence. We'll be glad to supply this. Simply call or write, and we'll contact you promptly.

Simmons Dorm Line includes built-in wardrobes, desk units, bookcases, chests, beds and all free-standing furniture units.

Simmons Company, Contract Division
Merchandise Mart Dept. AR-11
Chicago, Illinois 60654

☐ Please send me copy of Simmons Dorm Line Catalog and Specification File.
☐ Have a representative contact me.

Name________________
Firm or Inst.________________
Street________________
City________________
State & Zone________________

**SIMMONS COMPANY** CONTRACT DIVISION · MERCHANDISE MART · CHICAGO, ILLINOIS 60654 · PHONE 312-644-4060

For more data, circle 173 on Inquiry Card

## MEETING PLANNED ON ARCHITECTURE AND THE COMPUTER

A conference on "Architecture and the Computer" will be held Saturday, December 5, at the Sheraton-Plaza Hotel in Boston under sponsorship of the Boston Architectural Center.

Purpose of the conference is "to bring together architects working with the computer, and non-architects working in fields related to architecture, to explore the use of the computer as a tool to help architects make functional and visual decisions, and to discuss the limitations as well as the potentials of this approach to design."

Dr. Walter Gropius will make an introductory statement. The morning and afternoon sessions will consist of informative presentations by individuals "foremost in the field of computer-aided design and in man-machine systems." Computer demonstrations, movies and exhibits will supplement these presentations. In the evening a panel of invited architects and others will discuss philosophical and practical implications of computer use in their practice.

This is the first conference of a series planned by the Boston Architectural Center on issues important to the architectural profession. It is hoped that members of other professions whose interests relate to the theme will also be interested.

Further information and registration material may be obtained from: The Boston Architectural Center Conference, 320 Newbury Street, Boston.

## URBAN PROBLEMS ARE TOPIC FOR NEW YORK PROGRAM

Problems that plague urban areas around the world dominate the one-day program of the 19th annual Regional Plan Conference, to be held Monday, November 9 at the Statler-Hilton Hotel in New York.

Topics include: Capturing Open Space: Cluster Subdivisions to Regional Parks; Population Shifts and the Real Estate Market in the Older Cities and Inner Suburbs of the Region; Jobs for Unskilled Workers of the Region: How Many and Where; The Price of Remedies for the Cities' Ills; Constructing Complete Communities; Cultural and Commercial Centers for the Suburbs; and Public Transportation.

The larger roster of distinguished speakers includes the British economist Barbara Ward (Lady Jackson); Paul Ylvisaker, director of Public Affairs for the Ford Foundation; San Francisco builder Edward Eichler; William Ballard, chairman of the New York City Planning Commission; and Edward N. Bacon, executive director of the Philadelphia City Planning Commission.

# specify MAHOGANY...natural background for fashion

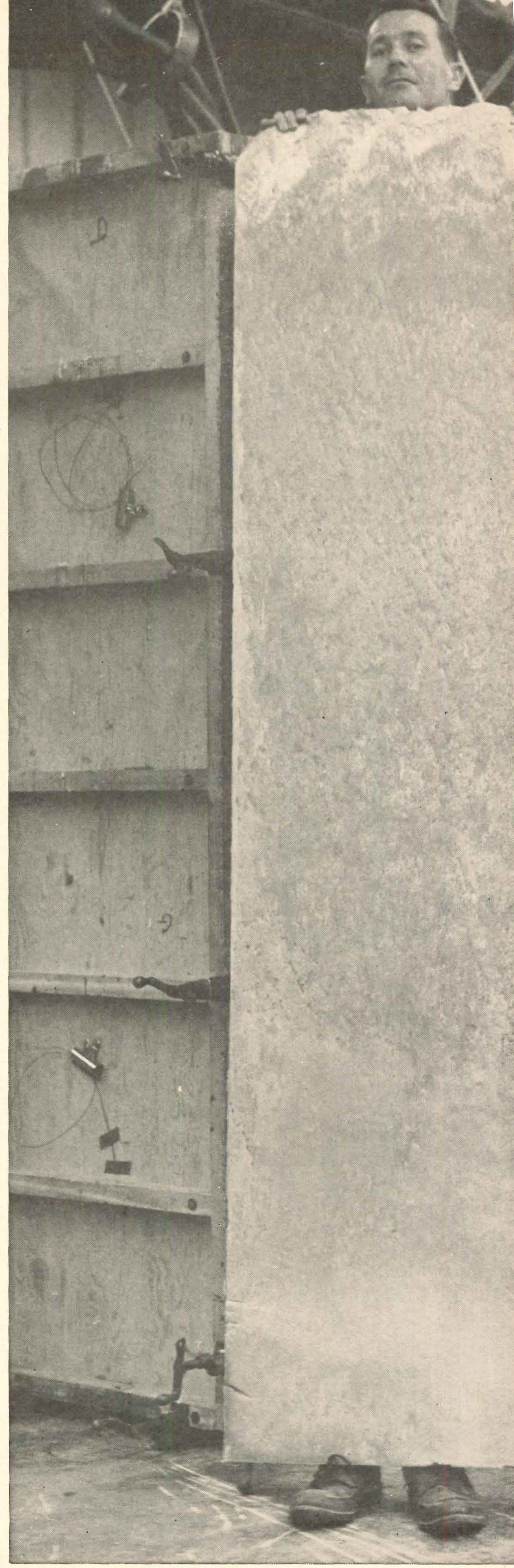
For centuries mahogany has been to the world of wood what leather has been to men's clothing. Both materials have built lasting reputations for beauty, performance, and long life. Little wonder that both leather and mahogany are imitated. Mahogany by so-called Philippine Mahogany, which is not a Genuine Mahogany but may be one of 14 different species of wood.

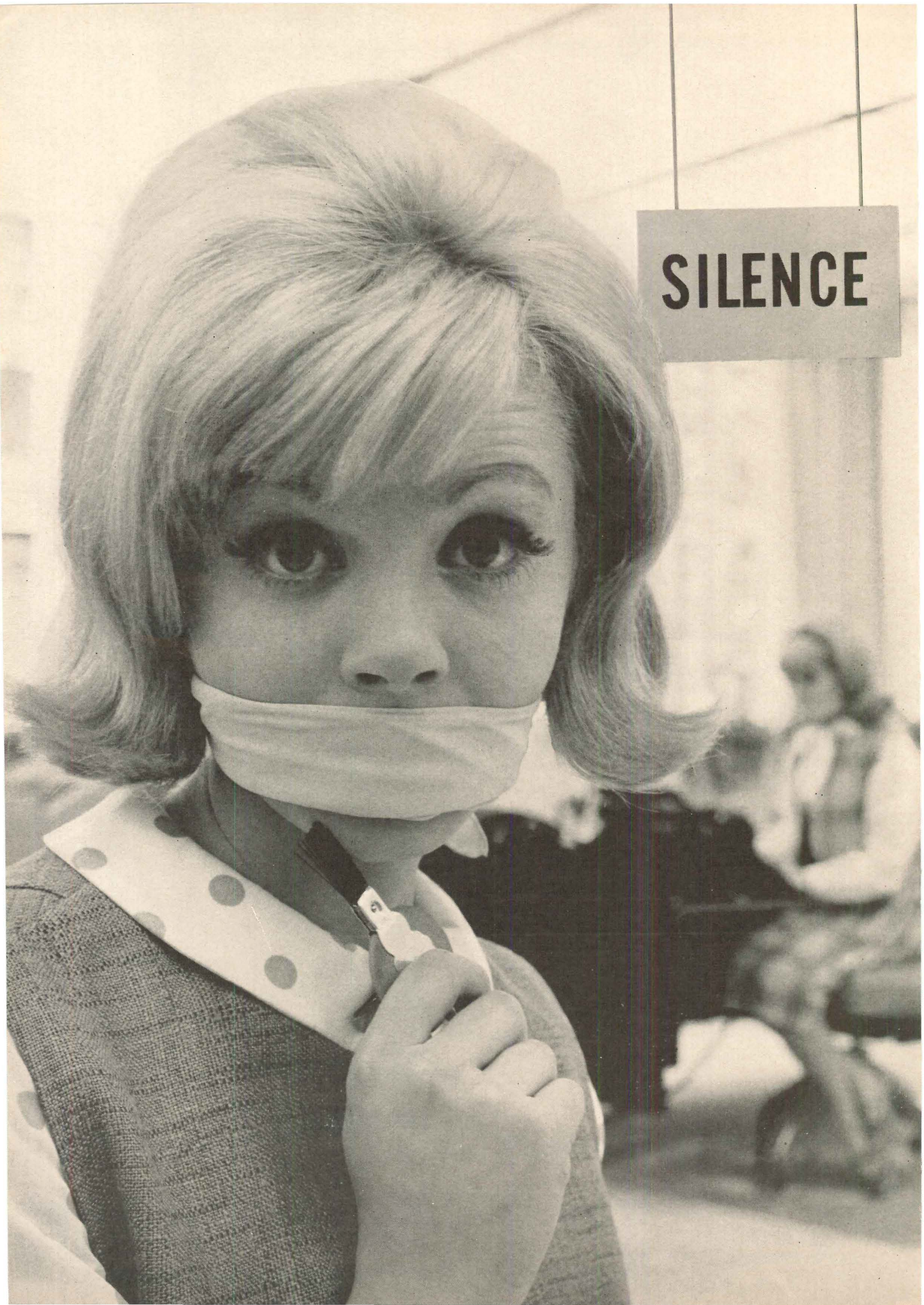
Just as a top tailor wouldn't think of using an inferior cloth for a fine suit, today's architects should insist on Genuine Mahogany rather than substitutes. One way to be sure is always buy from Weis-Fricker, world's largest producers of Genuine Mahogany. Weis-Fricker imports and manufactures only *Swietenia Macrophylla* from Central and South America. It's yours quickly in any quantity at prices that will please you—and at lengths up to 20 feet, widths to 24 inches, and thicknesses to 4 inches!

From Weis-Fricker you'll get the same magnificent material that tests by the U. S. Forest Products Laboratory and Cornell University show superior over all other popular hardwoods in nearly all properties for mortising, boring, planing, warping, shaping, and turning. And you'll join some of America's top architects who chose Genuine Mahogany recently for the interior of the luxurious Hotel Sheraton in San Juan, the Professional Golf Association's (PGA) clubhouse in Palm Beach, and the Library at the University of Chicago.

For name of nearest dealer to you, write today. Free mahogany kit on request. Contains samples with finishes in red, yellow, green, blue, brown, and violet, plus mahogany fact book with mechanical stresses and other information.

For more data circle 10 on Inquiry Card.




SILENCE

**ACOUSTI-SHELL*** The 3-dimensional, fiber glass, acoustical ceiling panel that adds height and interest to any room or area. Available in 24" x 24" and 48" x 48" units. N.R.C. spec range: .70-.80.

**SOLO-TILE*** Made of incombustible perlite and faced with aluminum. 12" x 12" tile available with random or diagonal perforations in white, silver, gold and copper finish. Wash or paint without loss of acoustical efficiency. N.R.C. spec range: .50-.60.

**FIREDIKE*** Qualifies as necessary components for 2-hour or 3-hour fire-retardant ceiling assemblies as tested by U.L. It is sold in 12" x 12", 24" x 24" and 24" x 48" units. N.R.C. spec range: .65-.80.

**SPANGLAS*** Made of strong glass fibers, it is available in large (24" x 24" and 24" x 48"), decorative, "lay-in" panels. Low initial cost and speedy installation make it economically ideal for even the tightest budget. N.R.C. spec range: .80-.90.

**PERMACOUSTIC*** Fissured, non-combustile tile made of fibers spun from stone. It has a white, factory-applied finish available in three styles: textured, fissured and striated. Choose 12" x 12" or 12" x 24" units. N.R.C. spec range: .65-.80.

*TRADEMARKS

# Five easier (and infinitely more subtle) ways to say s-h-h-h

Ears never had it so good. Or eyes! Because, no matter what the acoustical problem, there's a Johns-Manville ceiling that'll hush the noise. Beautifully! ■ The five products described above will give you some idea of the wide aesthetic and acoustical range of J-M ceilings. They're part of the most extensive line in the industry. You'll find all the details in a colorfully illustrated booklet that's yours free for the asking. Just write to Johns-Manville, Box 111, New York, N.Y. 10016. In Canada: Port Credit, Ont. Cable: Johnmanvil.

**Johns-Manville** JOHNS-MANVILLE JM PRODUCTS

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## NEW YORK GIVES 15 CITATIONS

Fifteen citations were awarded on a state-wide basis by Commissioner James W. Gaynor, at the 25th anniversary luncheon of the New York State Division of Housing and Community Renewal in New York City.

The Buffalo Housing Authority was cited for accomplishing the first conversion of a low-rent project to moderate income cooperative, in response to a changing housing market.

An outstanding record in the field of tenant relations was the basis for an award to the Binghamton Housing Authority.

A citation was given to the Kingston Housing Authority for outstanding achievement in two related areas of administration: excellent community relations and creative management.

The entire community of Rochester was honored for the joint effort of local leaders in business, civic affairs, and social welfare to develop and introduce a program to provide both jobs and housing for low-income families.

Joseph P. McMurray, commissioner of housing from 1955-58, was cited for his initiative in expanding and improving housing for the aging under the state's public housing program.

The New York City Housing Authority was honored for building the earliest housing for the aging, and for its continuing interest.

Also cited for its development in the field of housing for the aging was the Plattsburgh Housing Authority.

Also receiving citations were: Major General Thomas F. Farrell, former chairman of the New York City Housing Authority; the Isabella Home for the Aged in New York City; Abraham Kazan, president of the United Housing Foundation, New York City; George McCulloch, former director of urban renewal for the City of Syracuse.

Also John P. Riley, former director of development of the New York City Housing Authority; Herman T. Stichman, commissioner of housing from 1944-54; Roger Starr, executive director of the Citizens' Housing and Planning Council of New York City; and Edward Weinfeld, New York's first commissioner of housing.


ARCHITECT:
E. A.
GLENDENING
CINCINNATI, OHIO

# N.A.A.B. GIVES ACCREDITATION TO 53 SCHOOLS

The 1964-1965 List of Accredited Schools of Architecture issued by the National Architectural Accrediting Board includes 46 fully accredited schools and seven provisionally accredited schools compared with 47 fully accredited and six provisionally accredited on last year's list. Kent State University, listed with provisional accreditation in 1963, is now fully accredited. The University of Notre Dame and Texas Technological College, fully accredited in 1963, are this year provisionally accredited. At Rice University the degree offered has been changed from Bachelor of Science of Architecture to Bachelor of Architecture.

The new list is as follows:

University of Arizona, Tucson, Arizona (provisional); Arizona State University, Tempe, Arizona; University of Arkansas, Fayetteville, Arkansas; Auburn University, Auburn, Alabama; University of California, Berkeley, California; Carnegie Institute of Technology, Pittsburgh, Pennsylvania; Catholic University, Washington, D.C.; University of Cincinnati, Cincinnati, Ohio.

Also Clemson University, Clemson, South Carolina; Columbia University, New York City; Cornell University, Ithaca, New York; University of Florida, Gainesville, Florida; Georgia Institute of Technology, Atlanta, Georgia; Harvard University, Cambridge, Massachusetts; University of Houston, Houston, Texas; Howard University, Washington, D.C.; Illinois Institute of Technology, Chicago, Illinois; University of Illinois Urbana, Illinois; Iowa State University, Ames, Iowa; Kansas State University, Manhattan, Kansas (provisional).

Also University of Kansas, Lawrence, Kansas; Kent State University, Kent, Ohio; Louisiana State University, Baton Rouge, Lousiana (provisional); Massachusetts Institute of Technology, Cambridge, Massachusetts; Miami University, Oxford, Ohio; University of Michigan, Ann Arbor, Michigan; University of Minnesota, Minneapolis; Montana State College, Bozeman, Montana; University of Nebraska, Lincoln, Nebraska; North Carolina State College, Raleigh, North Carolina; University of Notre Dame, Notre Dame, Indiana (provisional); Ohio State University, Columbus, Ohio; Oklahoma State University, Stillwater, Oklahoma; University of Oklahoma, Norman, Oklahoma; University of Oregon, Eugene, Oregon; University of Pennsylvania, Philadelphia; Pratt Institute, Brooklyn, New York; Princeton University, Princeton, New Jersey; Rensselaer Polytechnic Institute, Troy, New York; Rhode Island School of Design, Providence, Rhode Island.

Also Rice University, Houston, Texas (provisional); University of Southern California, Los Angeles, California; Syracuse University, Syracuse, New York; Texas A & M University, College Station, Texas; Texas Technological College, Lubbock, Texas (provisional); University of Texas, Austin, Texas; Tulane University, New Orleans, Louisiana; University of Utah, Salt Lake City; Virginia Polytechnic Intsitute, Blacksburg, Virginia; University of Virginia, Charlottesville, Virginia; Washington University, St. Louis, Missouri; University of Washington, Seattle, Washington; Yale University, New Haven, Connecticut.


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Copper plumbing has many virtues. It speeds installation. It cuts assembly costs. It's durable. And it saves vital space on every floor.

In one 15-story hospital project, for example, architects saved **50,000 cubic feet** of space by specifying copper plumbing. And the mechanical contractor reported savings of **$40,000** in construction costs due to the ease and speed of installing copper plumbing as opposed to ferrous piping.

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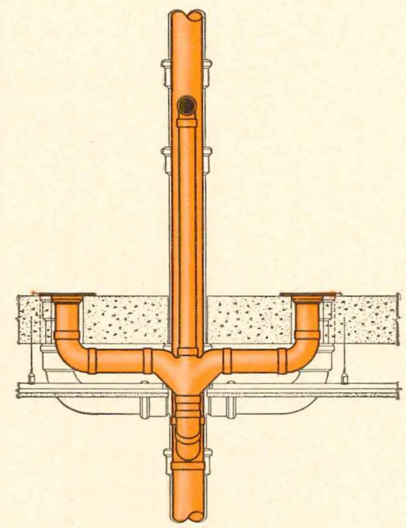
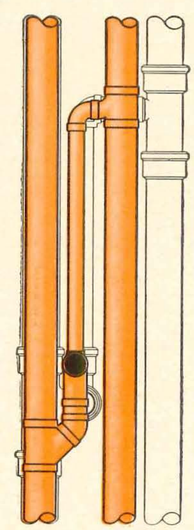
## Here's proof copper cuts building costs

When you specify copper, you realize substantial savings . . . savings that can be compounded throughout the project and that provide added revenue throughout the life of the building. Here's how:



**SAVES BETWEEN-FLOOR SPACE.** In this layout, the use of compact, space-saving copper for the sanitary drainage system saves 5½" of building height **per floor.** In a multistory structure, this could mean thousands of dollars saved in construction materials and labor.



**ADDS RENTABLE FLOOR AREA.** This comparison of space required for the risers shows why copper gives you more **usable** floor space. This space saving may be repeated many times on each floor, adding hundreds of square feet to the income-producing areas of high-rise buildings.

*Attach to your letterhead and*
*Check for descriptive booklet*
*Anaconda American Brass Company*
*Waterbury, Connecticut 06720*
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☐ Please send booklet, "It Pays to Specify Copper"

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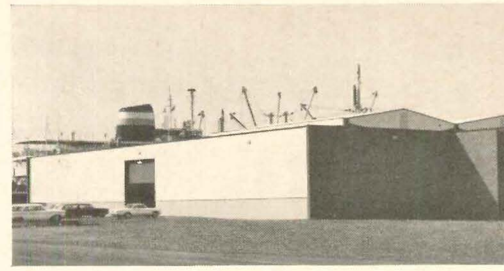
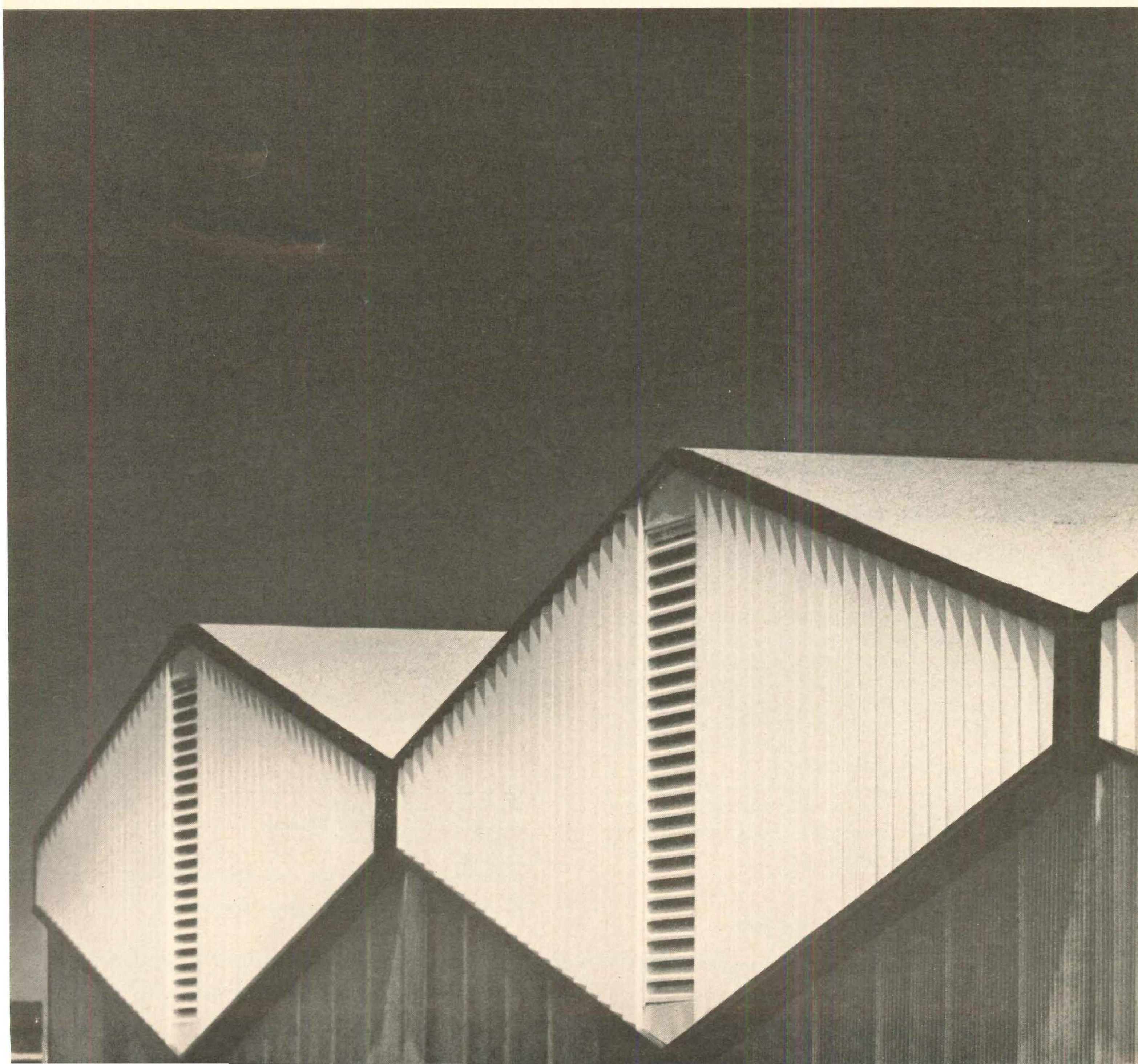
For more data, circle 187 on Inquiry Card →

# Siding on this lake-front building has a remarkable new finish that outperforms baked enamel 3 to 4 times: Du Pont TEDLAR®





Despite its location on the shore of Lake Erie, exposed to extremes of weather, the siding on this new Transit Building will stay fresh and new-looking for many years. It's surfaced with a new and amazingly tough finish: **TEDLAR*** **PVF** film.

Even though these panels with **TEDLAR** cost more than panels finished with baked enamel, maintenance costs will be lower because **TEDLAR** is three to four times more resistant to fading and chalking. And **TEDLAR** has a smooth, stain-resistant surface that does not trap dirt.

**TEDLAR** proved itself during construction of this building when strong winds spilled a bucket of tar over panels surfaced with **TEDLAR** as well as some painted parts stacked on the site. Workmen were unable to remove the tar from the painted surfaces, yet the **TEDLAR** was easily cleaned and restored to original appearance.

The metal building panels, surfaced with **TEDLAR**, are made and erected by Elwin G. Smith Co. More and more architects are specifying **TEDLAR** as the finish on roofing and siding. Du Pont Film Dept., Box 115A, Wilmington, Delaware 19898.

Transit Building, Department of Port Authority, Cleveland, Ohio
Architect: Alexander A. Papesh, Cleveland, Ohio
Engineer: Osborn Engineering Co., Cleveland, Ohio
Contractor: Geo. A. Rutherford, Inc., Cleveland, Ohio

*Du Pont registered trademark for its polyvinyl fluoride film.

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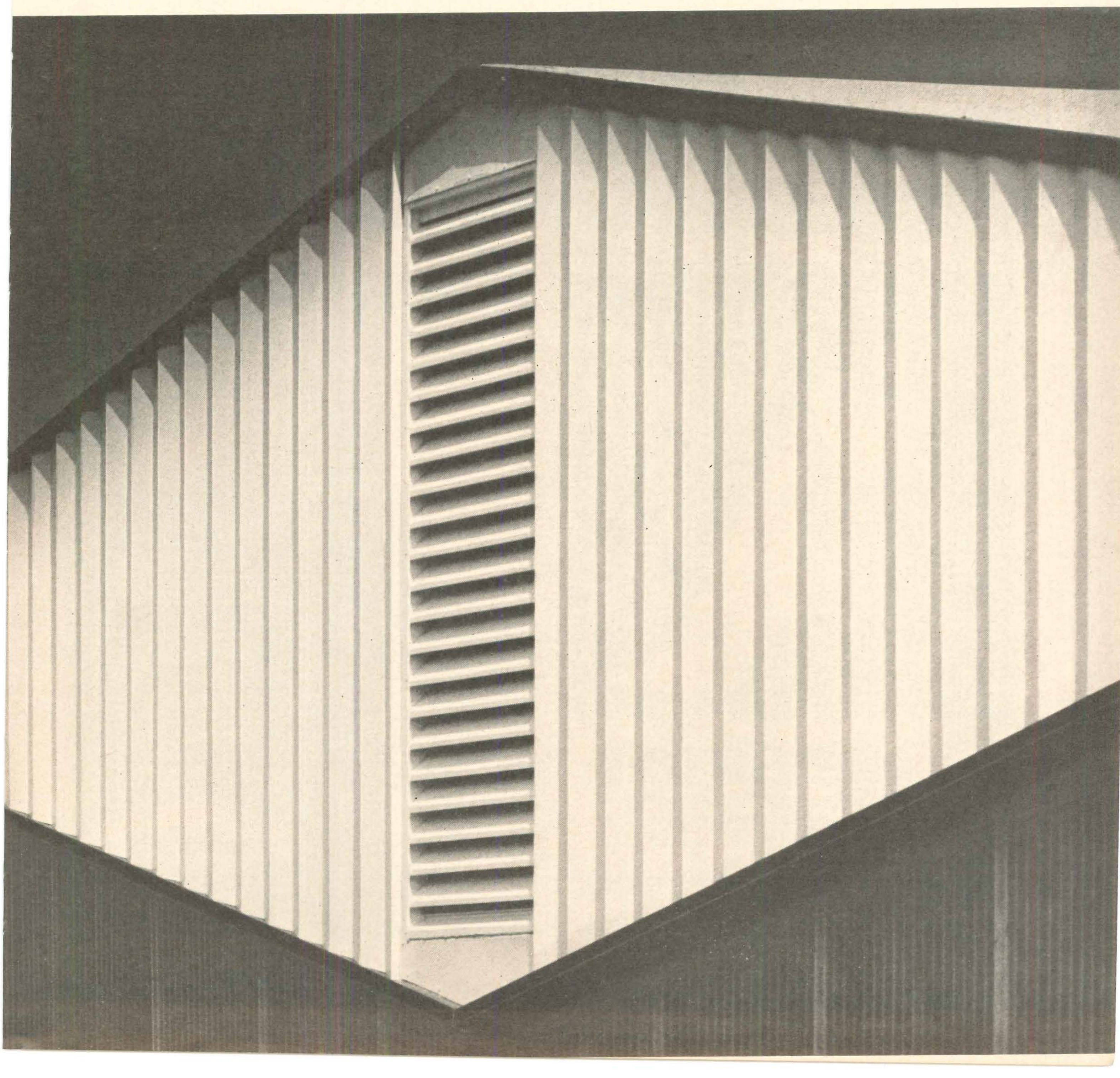
BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*



## CAN THIS GOOD LOOKING WALL ALSO FOLD?

Indeed it can. The difference between a FAIRHURST FOLDING WALL and an "accordion door" is apparent. Quite evident is the beauty of its near-seamless facade of wood veneer, plastic or fabric. Less obvious is the real reason Fairhurst has been first in Folding Walls for over 35 years—the patented folding mechanism which assures ease of operation and positive closure without motors or exposed hardware. A FAIRHURST FOLDING WALL is always sound-retardant. It won't sag, warp or jam and can be made fire retardant if you wish. Check your SWEET'S FILE or WRITE DIRECTLY FOR COMPLETE INFORMATION.

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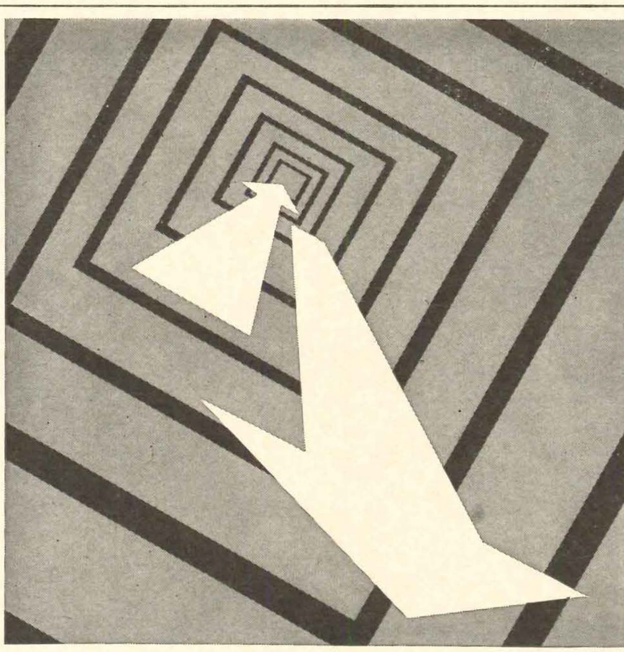

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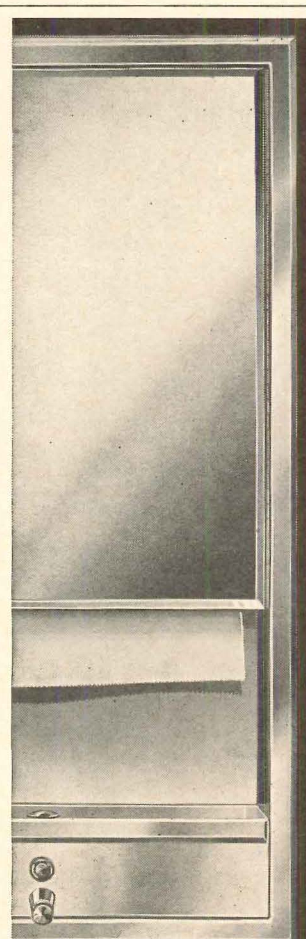

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Bobrick

SINCE 1906 THE FIRST NAME IN WASHROOM EQUIPMENT

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## REYNOLDS TO GIVE $25,000 AWARD

Nominations for the 1965 ninth annual R. S. Reynolds Memorial Award of $25,000 are being received until December 31. The award is conferred annually on an architect who, in the judgment of his profession, has designed a significant work of architecture, in the creation of which aluminum has been an important contributing factor.

The jury, which will consist of five distinguished architects, will be appointed by the Executive Committee of the Board of Directors of The American Institute of Architects.

To be considered for the award, an architect should notify the A.I.A, or be nominated by others, using the nomination form which is available by writing The R. S. Reynolds Memorial Award, The American Institute of Architects, 1735 New York Ave., N.W., Washington D.C., 20006.

The A.I.A. will send a data binder directly to the nominee who will fill it himself with photographs, plans, and descriptive material on his structure. The data binder, to be submitted by March 9, 1965, should contain the maximum amount of appropriate information for the use of the jury. The jury review will be held in Washington on March 10-11, 1965.

## TRAVEL GRANT OF $2,000 OFFERED

Applications will be received until December 1 for the $2,000 James Stewardson Traveling Fellowship by the New York Chapter of the American Institute of Architects. Candidates must be between the ages of 30 and 50 and must not previously have had a traveling fellowship. They must have been continuously employed—not as a principal—for at least one year immediately prior to the application in an architectural office in the territory of the New York Chapter. Copies of the application can be obtained from the office of the New York Chapter, A.I.A., 115 East 40th St., New York, New York, 10016.

# THOUGHTS FROM A FOURTH GRADER ABOUT

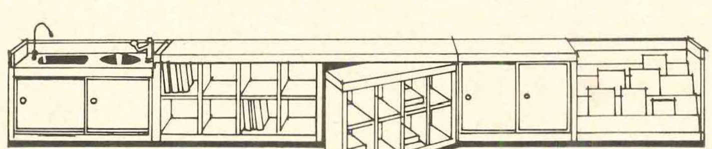
"Teacher says a comfortable classroom makes it easier to learn. She says that's why we have a Modine unit ventilator. It always knows just what temperature is best for us."

Modine Valedictorian unit ventilators are constantly alert, instantly responsive to students' comfort needs. A unique "weather control center" dictates the total heating, cooling, ventilating and dehumidifying function of the Valedictorian.

"It sure looks nice. Pretty colors and smooth, shiny edges. I can't spell Valedictorian but teacher says it means highest honors."

Valedictorian units have vinyl-clad front panels in a wide variety of solid colors and wood grains. Panels are edged with sparkling chrome. Modine also offers a complete line of custom-designed storage cabinets and other matching accessories.

A full line of attractive, functional accessories.

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# MODINE Valedictorian UNIT VENTILATORS

"Teacher musn't know how strong our Valedictorian is. She always scolds when I climb on it. But I never seem to hurt it any."

"Oh, oh, here she comes. Everybody sure gets quiet when teacher comes in the room. She says we should be like the Valedictorian . . . it's *always* quiet."

Valedictorian beauty is virtually student-proof. Heavily-reinforced, sturdy-steel construction! Durable, baked enamel finishes! Chip-resistant chrome! Scuff-resistant vinyl! Maintenance is further simplified by slide-out filters, pushbutton lubrication.

Quiet and vibrationless! Two-speed motor and low-speed centrifugal blower fans meet the most rigid acoustical requirements. And Modine design prevents small objects, such as paper clips, from falling into the fans, causing fan damage, or being hurled into the room.

**Modine** MANUFACTURING COMPANY
1510 DeKoven Avenue, Racine, Wisconsin

The Valedictorian is more sensitive to classroom comfort than the student body!

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## A.I.A. TO HOLD PLANNING SEMINAR

The Cincinnati Chapter of the American Institute of Architects will sponsor an urban planning seminar to be held in the Sheraton Gibson Hotel, Cincinnati, on December 4. The conference is part of a series intended to make governmental, professional, business and community leaders more aware of their esthetic responsibility in urban development.

Speaking at the seminar will be Robert Geddes of the Philadelphia renewal effort, Vincent Scully of Yale, Paul Spreiregen of the A.I.A. national staff and Richard Snibbe of New York, a member of the National Committee on Esthetics of the A.I.A.

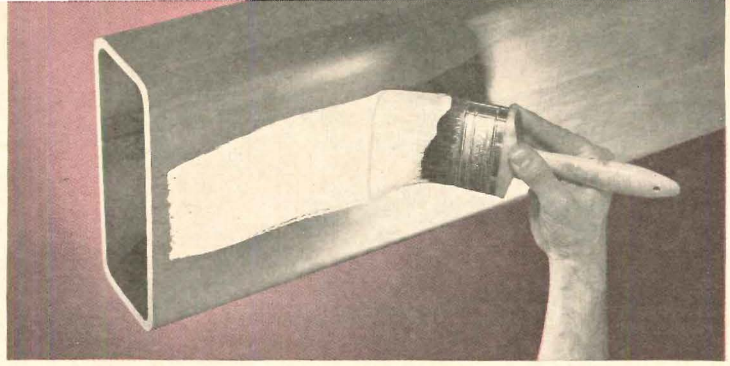
The Secretary of the Interior, Stewart Udall, and Louis Kahn of the University of Pennsylvania will participate if their schedules permit.

## LAND ACQUISITION TO BEGIN AT FIRE ISLAND

Secretary of the Interior, Stewart Udall, promised an immediate start on land acquisition for the new Fire Island National Seashore in a speech in Garden City, N.Y., October 21.

"We have already commenced work on appraising properties to be acquired and have conferred with officials in the Department of Justice concerning condemnation proceedings," Mr. Udall said. A land acquisition office was established in Patchogue, Long Island, on October 22, headed by the new seashore's superintendent, Henry G. Schmidt, former superintendent of Isle Royale National Park, Michigan.

Fire Island, one of the few remaining undeveloped segments of shoreline along the Atlantic Coast, was authorized for National Seashore status by President Johnson on September 11. It is one of four new National Seashores authorized by Congress since 1961. The others are Cape Cod, Massachusetts; Padre Island, Texas; and Point Reyes, California.



# paint

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*. . . and expose them for their beauty*

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Hollow structurals are ideal for exposed beams and columns . . . handrails, mullions, lintels . . . spandrels, roof trusses and joists, curtain wall systems, and space frame structures. Bethlehem Steel Company, Bethlehem, Pa. Export Sales: Bethlehem Steel Export Corporation.

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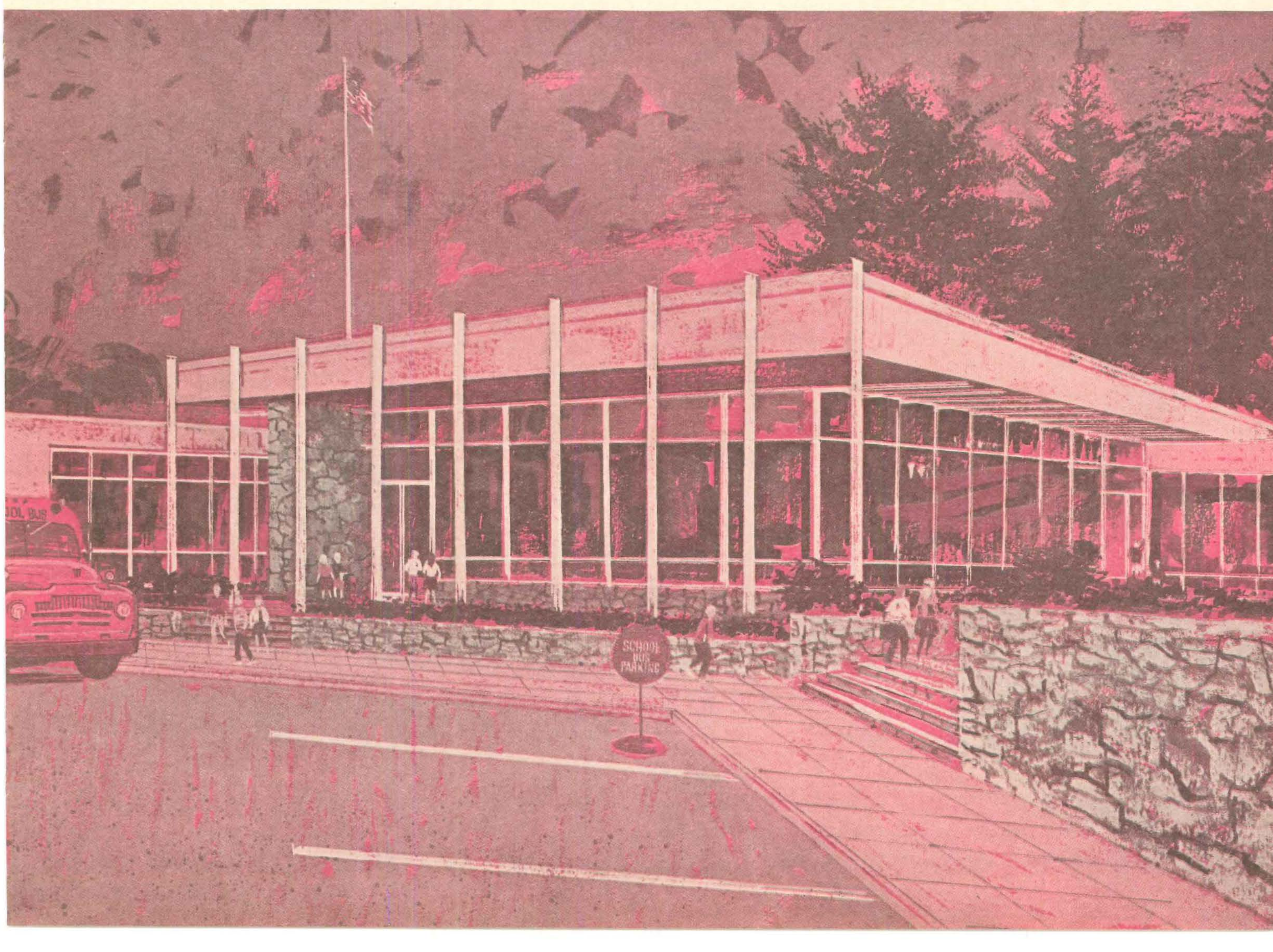
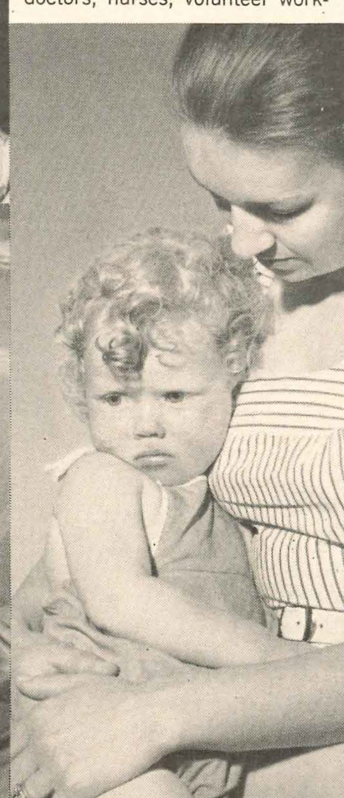
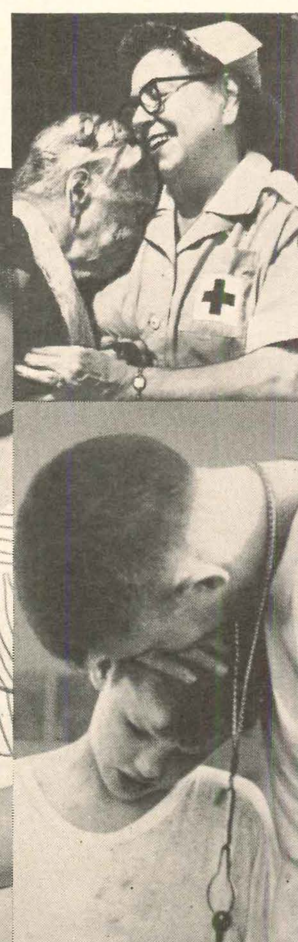
BETHLEHEM STEEL

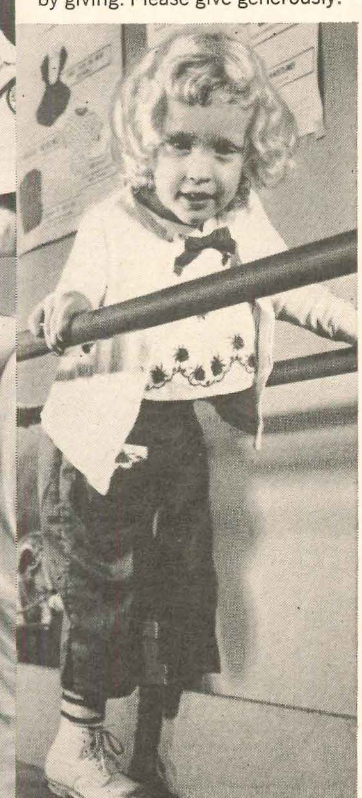


*One gift works many wonders*
*For children,*
*For the handicapped,*
*For distressed families,*
*For the sick, the aged,*
*For our community,*
*For our country. For you.*
*Give the United Way.*

We are all brothers. We are all one family. When trouble strikes one of us, we are all diminished. The neglected baby, the homeless grandmother, the crippled father, the teen-ager in trouble; teachers, doctors, nurses, volunteer workers, counsellors—we must join with them; for they are our family. Each year, through the United Way campaign, you can fulfill your responsibility to your family; to yourself. You can renew yourself by giving. Please give generously.







Space contributed as a public service by this magazine.

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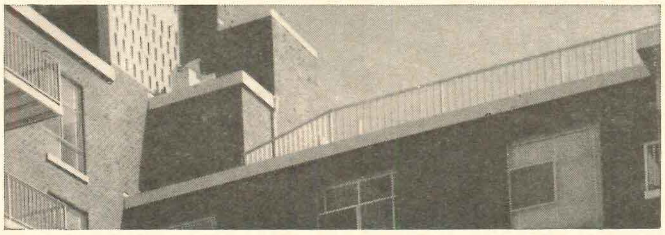
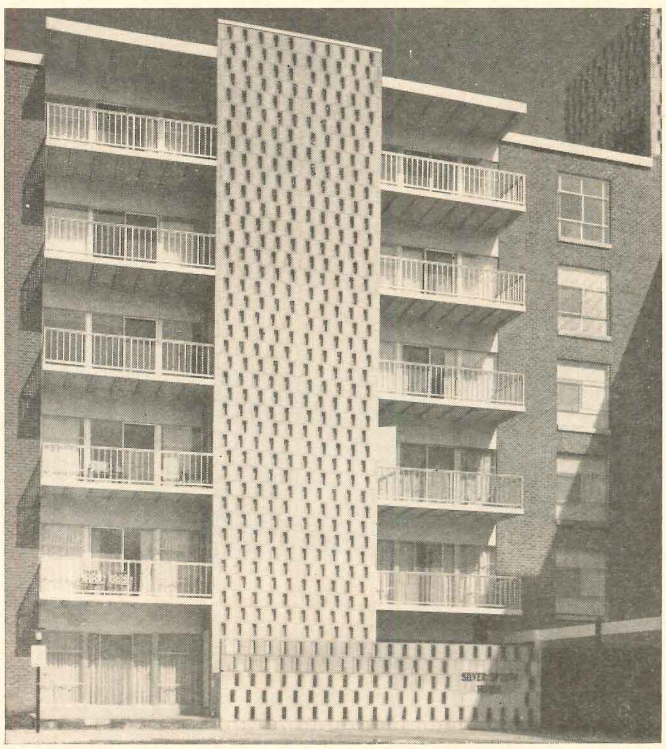


## up on the sun deck . . .



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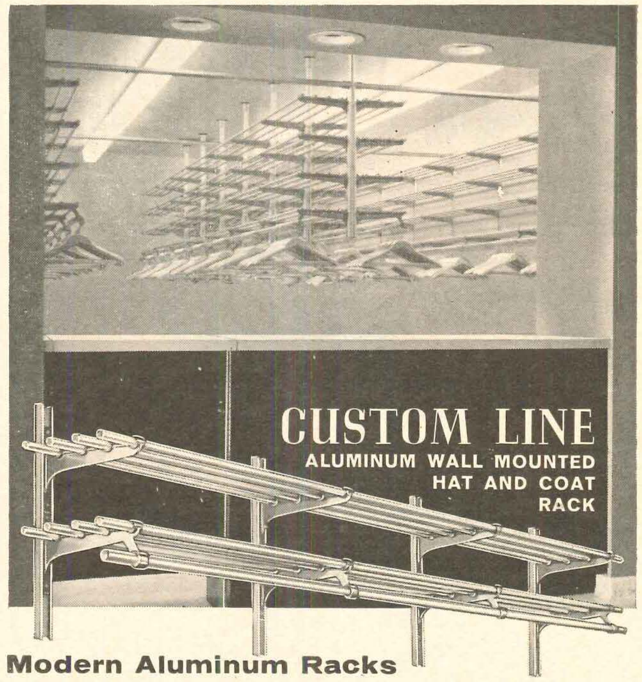


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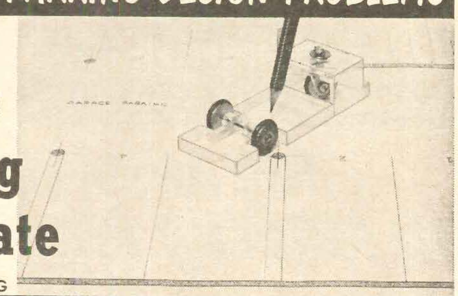
**NEW! SOLVES YOUR PARKING DESIGN PROBLEMS**

# Mobile Parking Template



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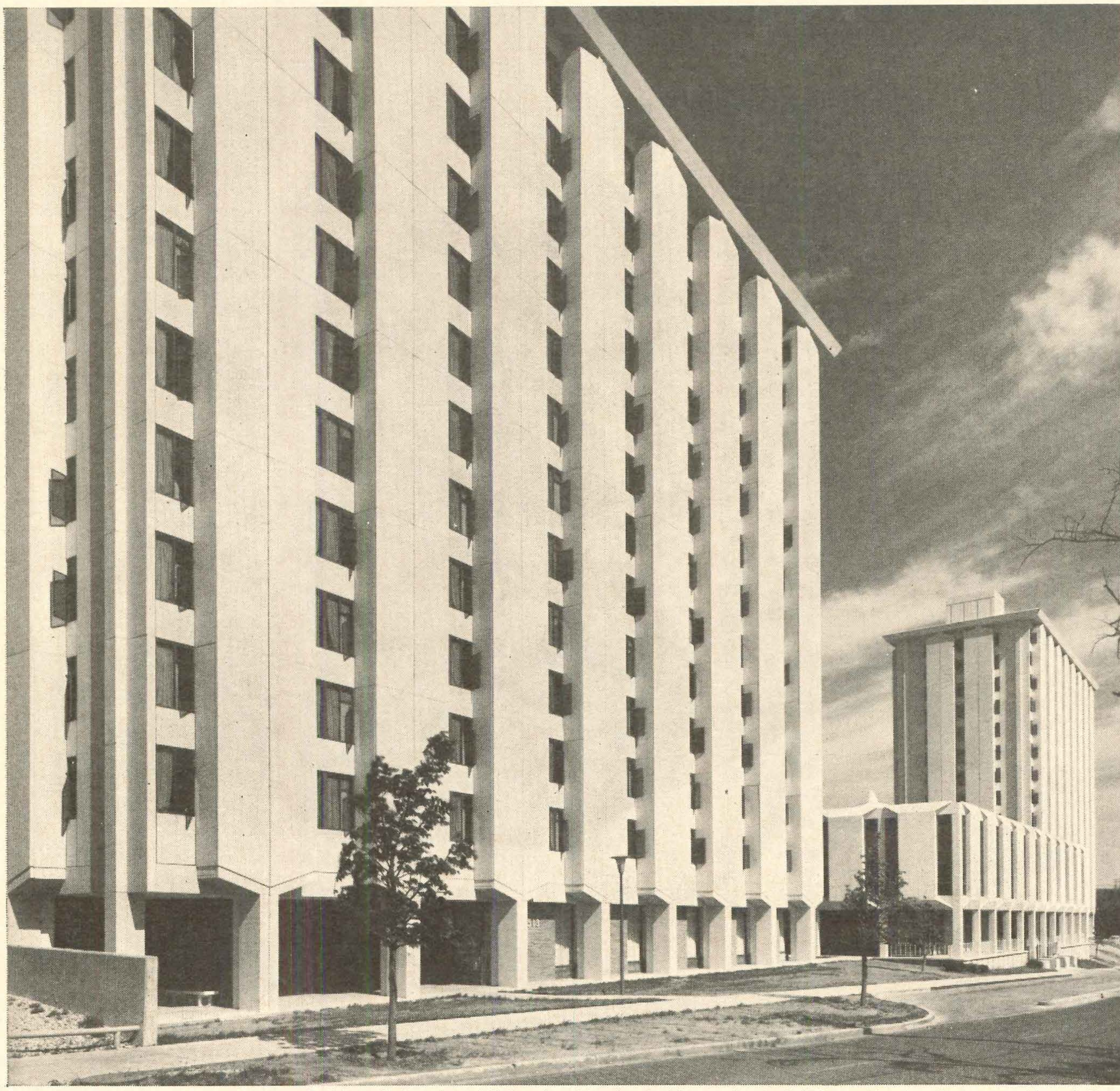

Dormitory Towers and Food Services Building, University of Nebraska, Lincoln. **Architects:** Davis & Wilson, Lincoln. **Contractor:** Lippert Bros. Inc., Oklahoma City. **Concrete Panel Manufacturer,** Nebraska Prestressed Concrete Co., Lincoln. **Panel Erector:** Electric Properties Co., Lincoln.

**DAVIS & WILSON chose precast white concrete** for the 150,000 square feet of panels enclosing this student-living project at the University of Nebraska. Made with ATLAS WHITE portland cement and a quartz aggregate, all concrete panels on the two 13-story towers are identical in size. This facilitated manufacture, delivery and erection of the units. The four 2-story panels between windows form rectangles which are the closets for the rooms. Largest panel on the towers is 5′1¼″ x 20′2″ x 3½″; largest on the 4-story building between them is 7′7″ x 22′. Much of the erecting was done in dead winter, which would have been virtually impossible with other building materials. ■ Today, more architects are specifying precast white concrete for its ease of installation as well as the design freedom it offers. It can be cast in a great variety of sizes, colors, shapes and textures. ■ For specific information, consult your local precast concrete manufacturer. For literature, write Universal Atlas, 100 Park Ave., New York, N.Y. 10017.

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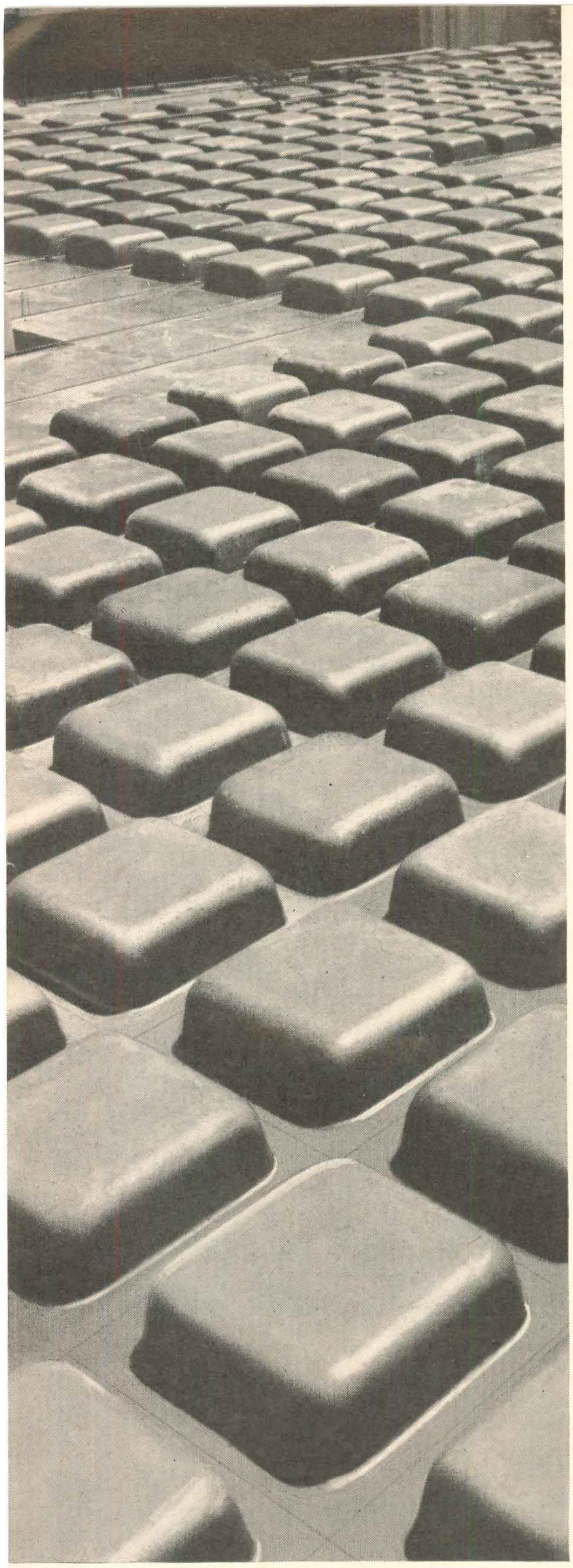
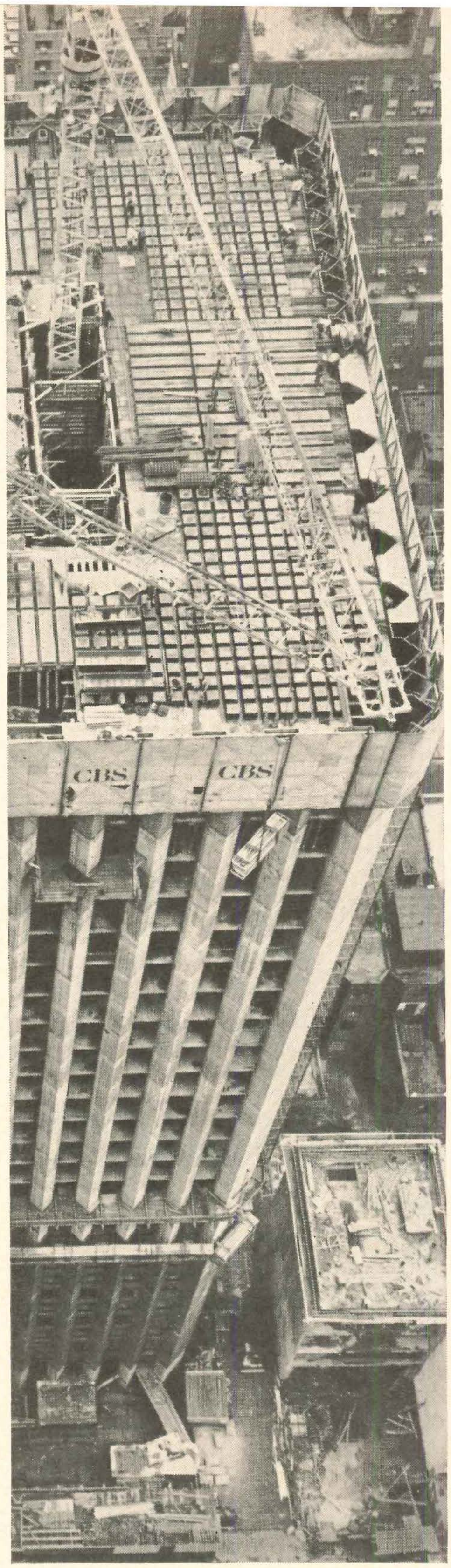
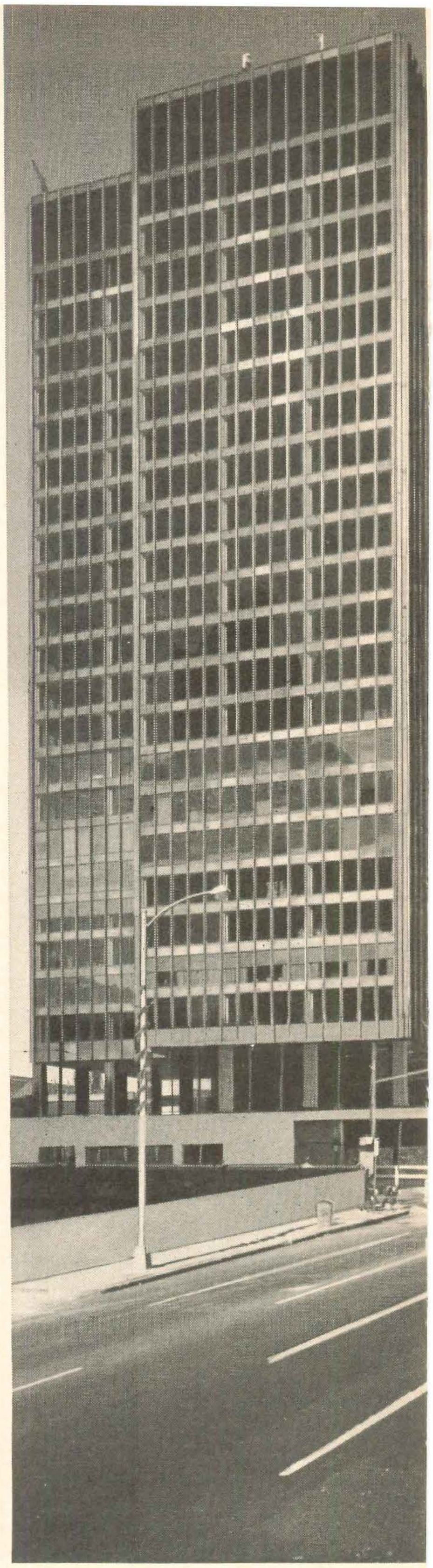


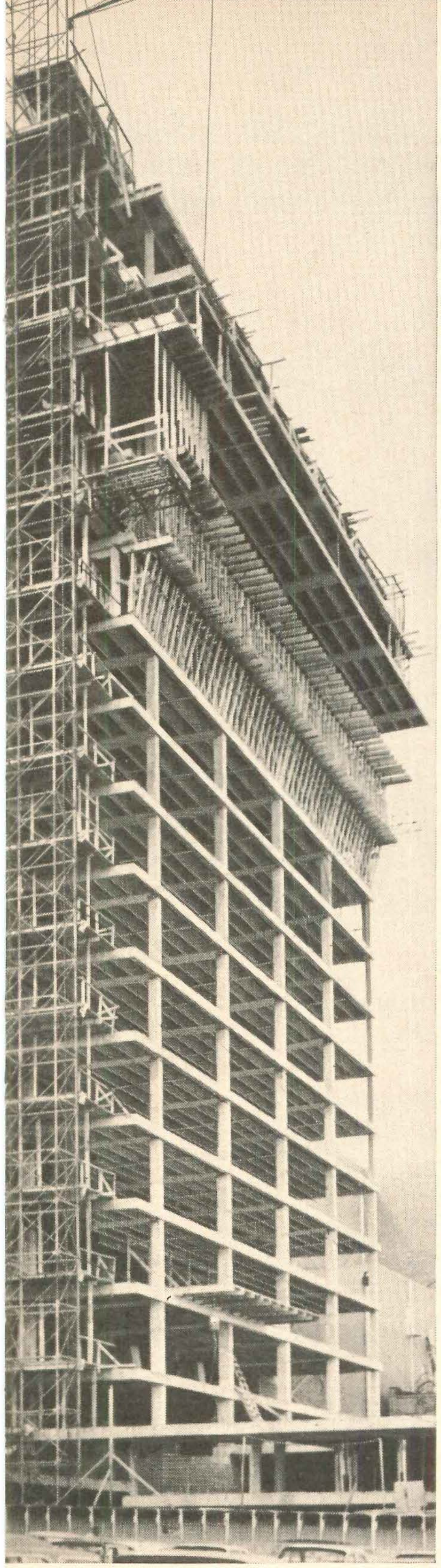


Ceco Steelform Service (Steeldomes illustrated) includes (1) furnishing, erecting and removing shores and open wood framing (centering), and (2) supplying the necessary Steelforms and labor for their erection and removal. Ceco Service takes the guesswork out of floor forming. The architect, engineer, contractor and owner know the final cost before the job starts. A firm quotation from Ceco takes the variables out of cost estimating.

Another Ceco high-rise project, under construction (Ceco Steeldome, Longform and Centering Service) / Columbia Broadcasting System, Administration Headquarters, New York City / Eero Saarinen & Associates, architects / Paul Weidlinger, structural engineer / George A. Fuller Company, general contractors / Brennan & Sloan, Inc., reinforced concrete construction / This 38-story project was erected on a tight schedule—a floor completely poured every four days.

Typical high-rise Steeldome project (Ceco Steeldome and Centering Service) / One Charles Center Building, Baltimore, Md. / Mies van der Rohe, architect / Farkas & Barron, structural engineers / Metropolitan Structures, Inc., general contractors / Bollinger-Leland Construction Company, concrete contractors / This waffle flat-slab design, with high-strength bars and lightweight concrete, cost 50¢ per square foot less than the alternate structural steel design.



In the Southwest, still another high-rise building (Ceco Flangeform and Centering Service) / Petroleum Club, Tulsa, Oklahoma / Kelley & Marshall, architects / T. C. Bateson Construction Company, general contractors / Ceco also formed the flush beams for the floor system, and the beams around elevator shafts and stair openings. Further, Ceco did the shoring for the roof overhang (illustrated). Call on Ceco for experienced forming service.

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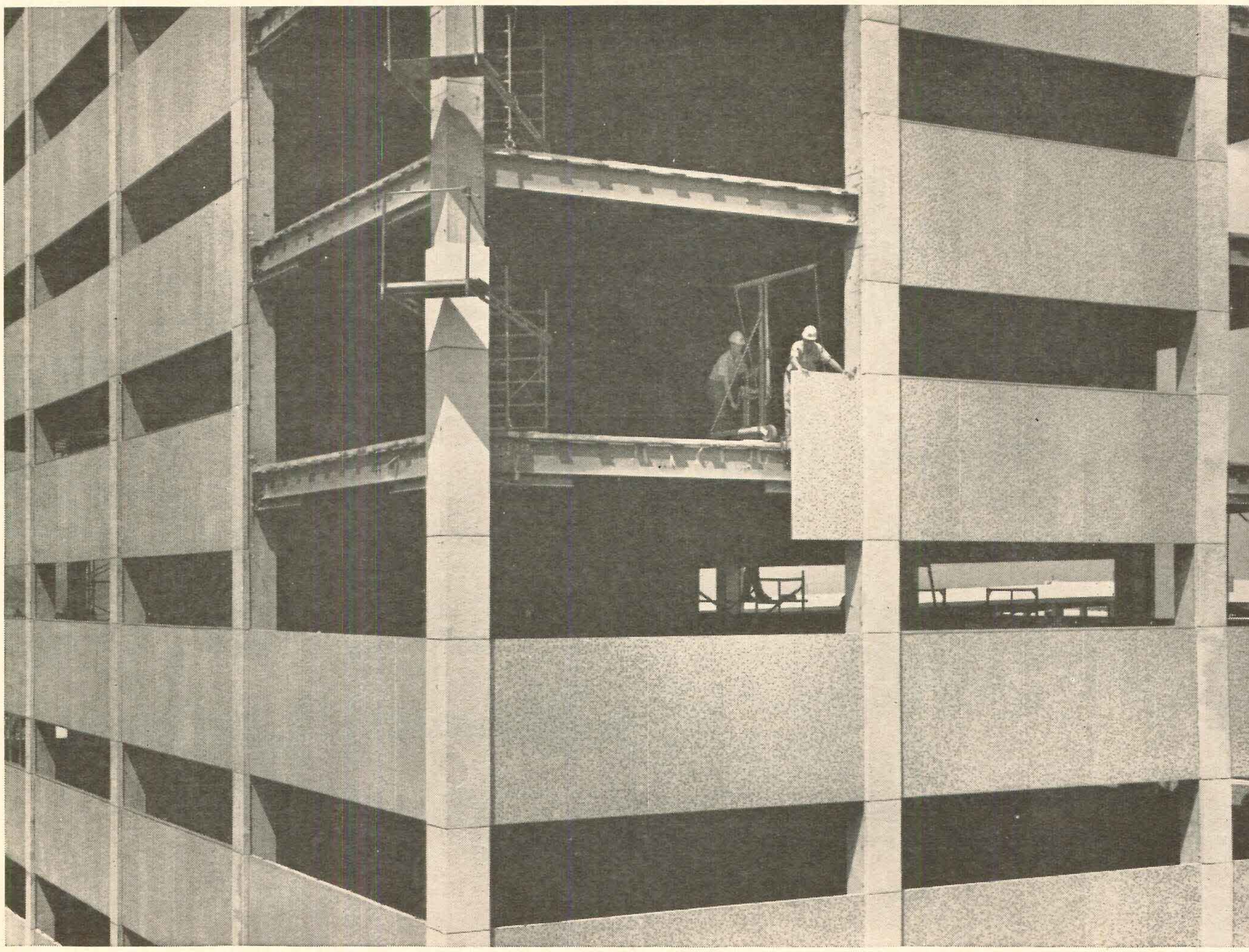

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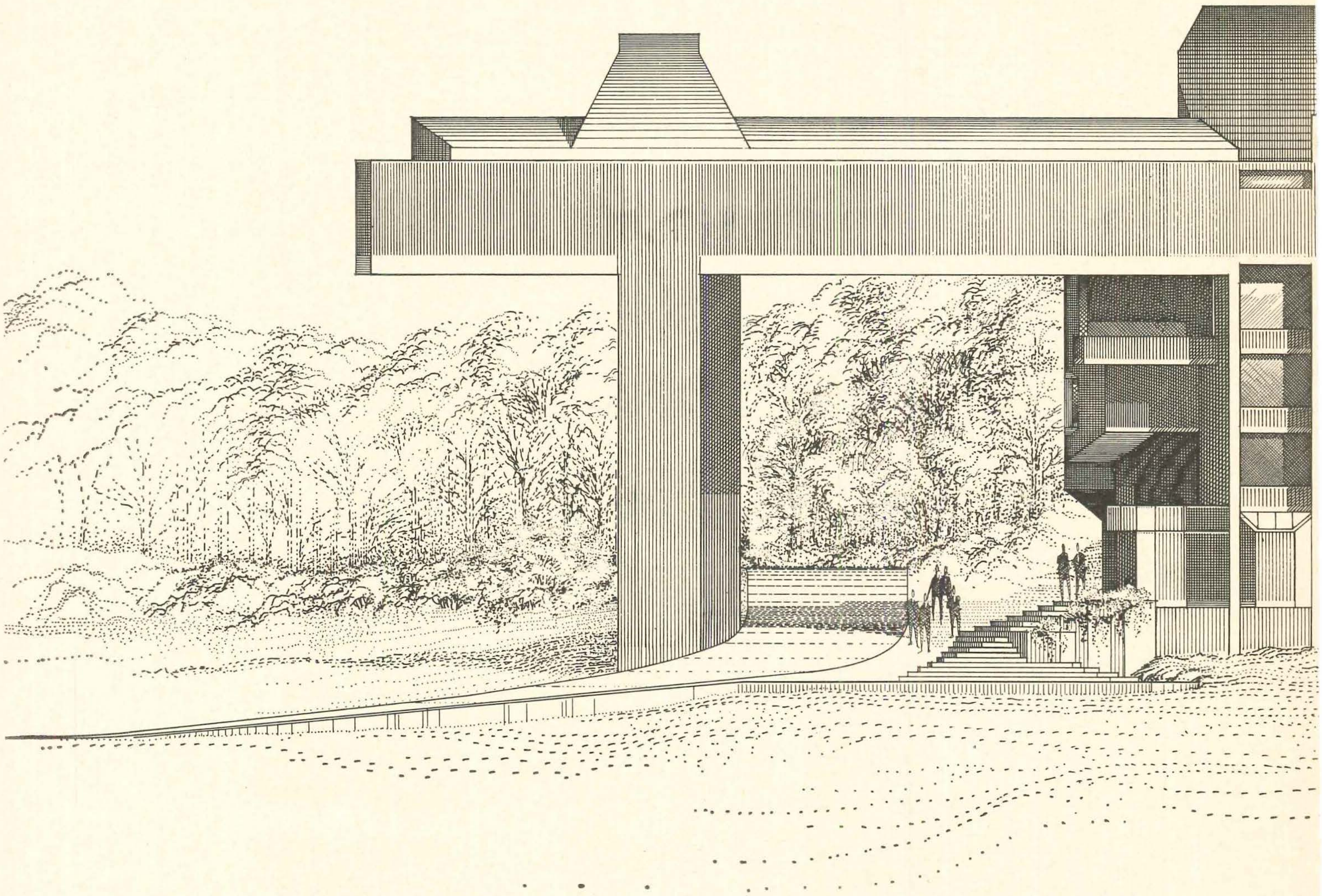

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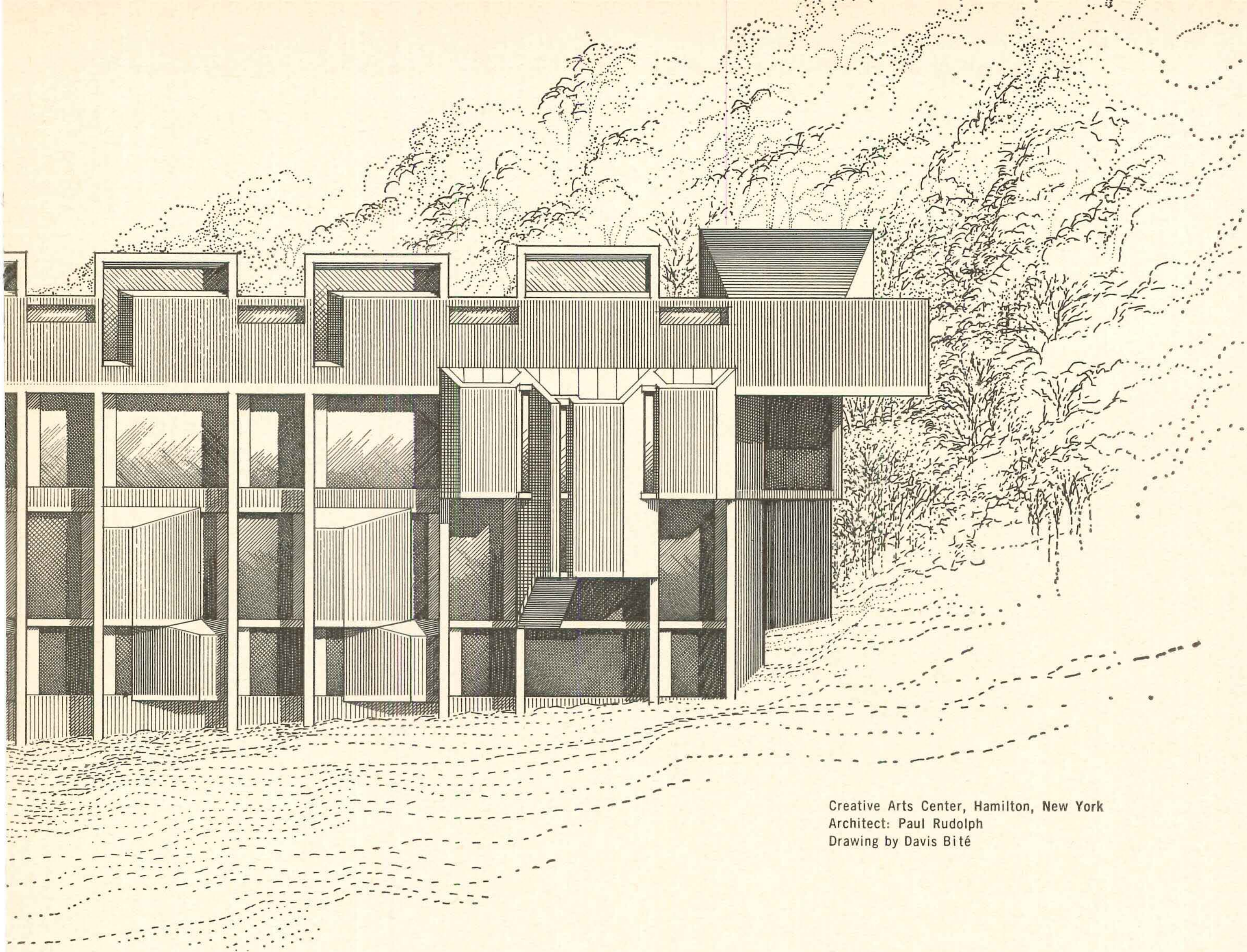

Creative Arts Center, Hamilton, New York
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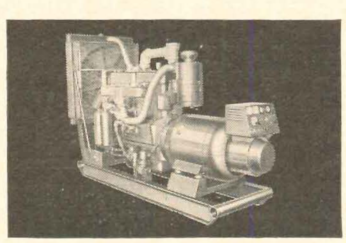

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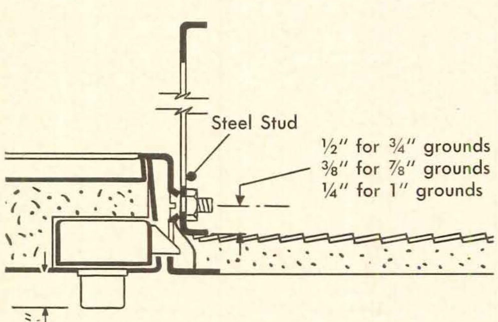


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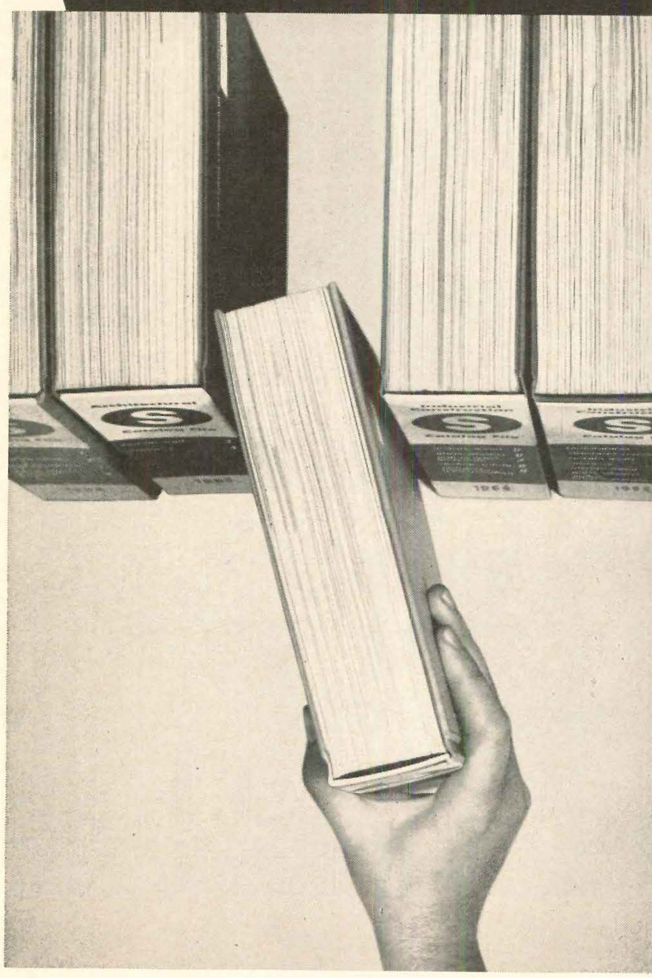

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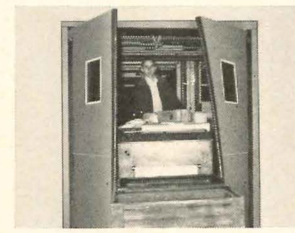

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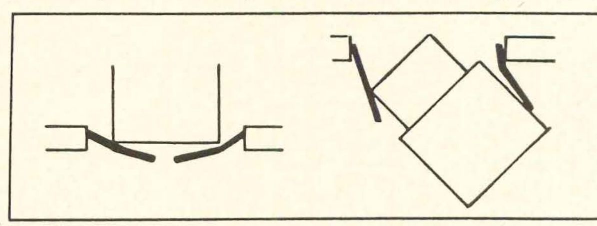

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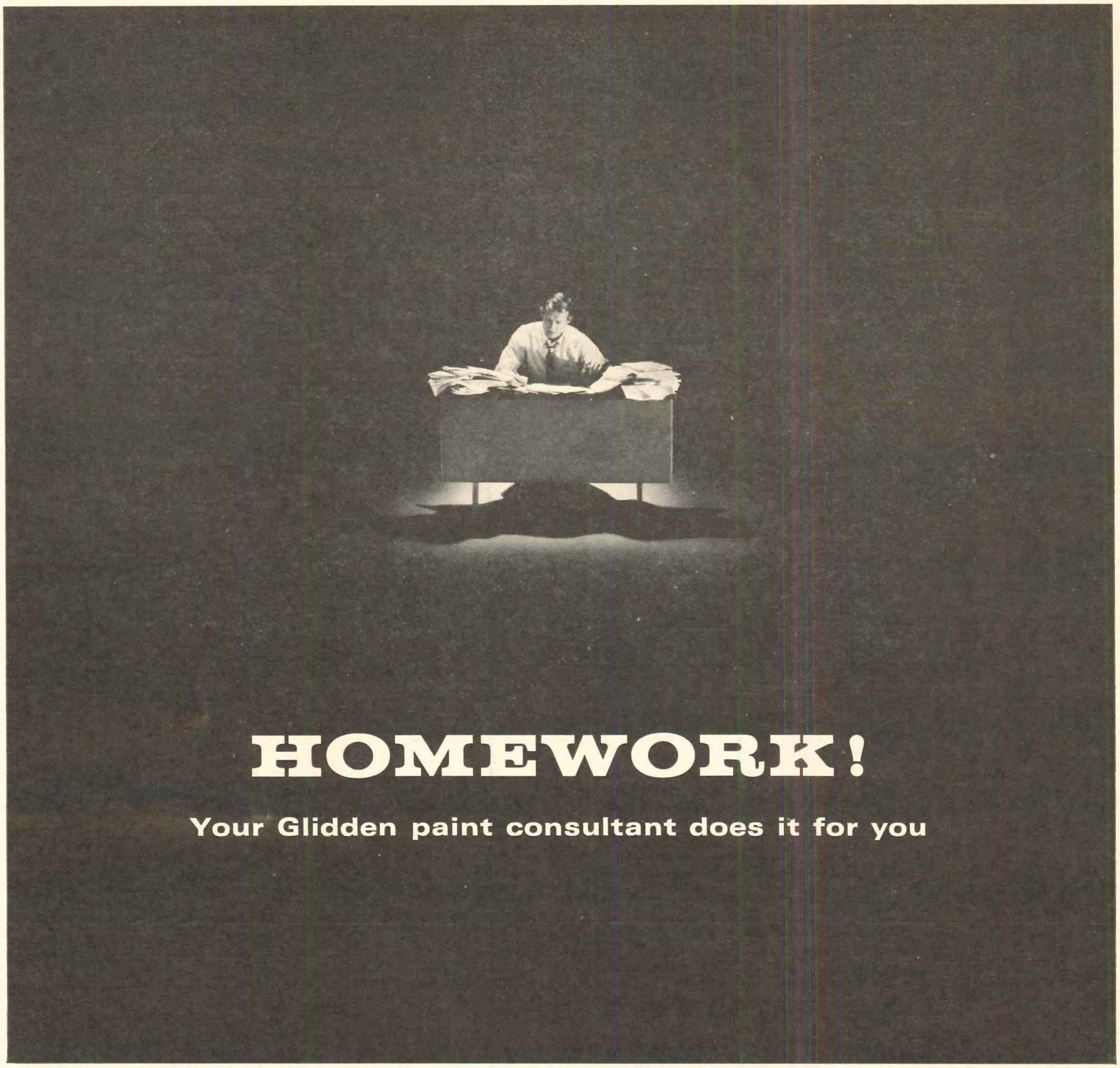


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