



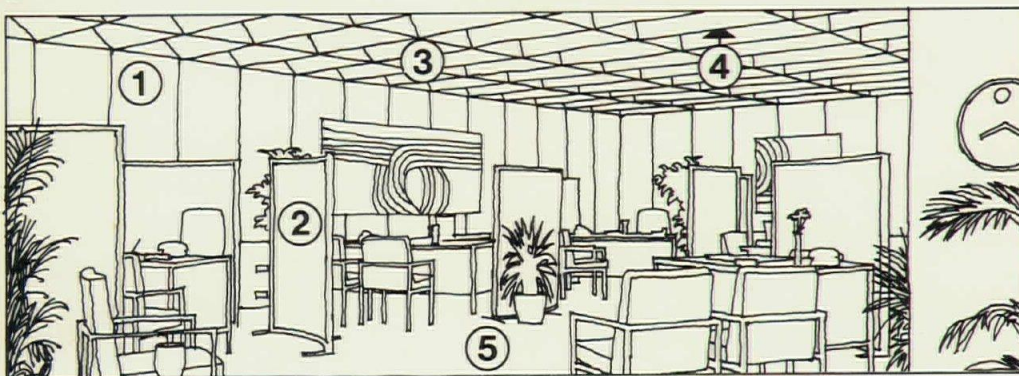
ELKHORN AT SUN VALLEY, IDAHO BY SASAKI, WALKER AND KILLINGSWORTH, BRADY & ASSOCIATES
RECORD INTERIORS OF 1974
VISUAL COMPLEXITY AND SPATIAL VARIETY IN A COLLEGE BUILDING
HELPING DOWNTOWN COMPETE WITH THE SUBURBS, BY JONATHAN BARNETT
BUILDING TYPES STUDY: LAND PLANNING AND DESIGN FOR SKI RESORTS
FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

JANUARY 1974 **1** A MCGRAW-HILL PUBLICATION THREE DOLLARS PER COPY



Armstrong introduces the first pre-engineered package of products for the open plan office.



It combines acoustical and visual privacy, air distribution, and quality lighting, with good looks, too.

Until now, you've had to deal with as many as five or six different suppliers to put together the various elements required for a successful open-office plan.

Now, Armstrong offers a complete product package, designed not only to function well but style-and-color coordinated to look as good as it works. Armstrong provides, for the first time, a single-source supply and a single-source responsibility.

1. Soundsoak™ Wall Panels*

These panels are made of an acoustically efficient special mineral fiberboard mated to a soft modacrylic fabric. They can be easily installed on interior walls and other flat surfaces and make a substantial contribution to the control of reflected sound. (NRC range .55 to .65)

Available in a wide choice of modern colors, Armstrong Soundsoak Panels are decorative as well as functional. They're 30" wide and available in either nine- or ten-foot heights.

*Patent pending



2. Soundsoak Divider Screens

Screens are an indispensable element in efficient open-office planning. They provide effective separation of work stations, contribute to acoustical and visual privacy, and add splashes of color to the room. Freestanding and easy to move, they are covered with a tufted-nylon fabric in a wide choice of colors. Both curved and straight types are available in five-foot widths, and there is a choice of five- or six-foot heights.

3. C-60/30 Luminaire Ceiling System

The most important factor in open planning is acoustical privacy, and the ceiling is the key element in achieving that privacy. The Armstrong C-60/30 Luminaire Integrated Ceiling System provides not only acoustical efficiency but also other important open plan environmental factors such as quality lighting and draft-free air distribution.

In the 100%-vaulted configuration,

using a special 1" Classic Open Plan ceiling board, the C-60/30 System complies with the GSA PBS-C.1 performance specifications for a Speech-Privacy Potential of 60.**

4. Sound-Masking System

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5. Armstrong Floors

To complete the open plan visual package, Armstrong offers a selection of flooring materials. If carpet is your choice, there is a wide range of colorful Armstrong Commercial Carpets that will add warmth and quiet to any open plan.

Where the practicality of resilient floors is called for, Armstrong Quiet

Zone™ Vinyl Corlon® is the answer. Thanks to its generous foam-cushion backing, it's both quiet and comfortable.

That's the Armstrong five-in-one open plan package. For more information, just mail this coupon to Armstrong, 4201 Rock Street, Lancaster, Pa. 17604. In Canada, write Armstrong Cork Canada, P.O. Box 919, Montreal 101, Quebec.

Please send me information on the Armstrong package of open plan products.

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Company _____

Address _____

City _____ State _____ Zip _____

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** at 10' 6" interzone distance.



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CONTINENTAL

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Dover now offers four completely designed and pre-engineered Oildraulic® elevators ready to fit into your building plans.

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Fleetwood—Capacity of 2000 lbs., car platform 6'4" wide by 4'7" deep. Choose either plastic laminate or removable panel walls. Stainless steel or wood-grain handrail. Single-slide doors, right-hand or left-hand.

Continental—For light-traffic situations. Capacity 1500 lbs., car platform 5'2½" wide by 4' deep. Single-slide right-hand door. Plastic laminate or removable panel walls.

Dover's pre-engineered Oildraulic elevators are manufactured to our uniform high quality standards. And that's your best guarantee of an elevator system that will give years of dependable, trouble-free service.

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Letter to a reader

Should a publisher usurp valuable editorial space (like this) for a letter to readers? There are two decidedly negative views: one is that publishers shouldn't write (their prose almost inevitably betraying an unseemly commercialism); the other is that they *cannot* (else wouldn't they be editors instead of publishers?).

A strong case—and wheeling in an exception or two doesn't weaken it much. As to the first view, I acknowledge that my chief responsibility is to maintain the viability of ARCHITECTURAL RECORD in a competitive world. My sense of pain (without this sense all of us, including editors, would quickly blunder into oblivion) is very much alive to red ink. If you look at our masthead, you will see that my name appears on the "bottom line"—an appropriate and inescapable spot for me. I hasten to add lest I offend that I do not regard my associates, whose names appear above mine, as a burden on "net," but as the generators of the subscription and advertising revenue without which we could not survive long beyond this very issue.

Of course I should be pleased if by writing you an open letter from time to time I helped to sell one more subscription or, should a stray advertiser stumble upon my column, an additional quarter-page advertisement; but I do not consider that a serious possibility. If such were my aim, I would reflect longer upon the wisdom of what I am doing, for there is seldom an opportunity for profit without a corresponding risk of loss. Frankly, all I really want to do is talk with you occasionally as a friend of the magazine about various matters that, while off our regular editorial "beat," may nonetheless be of some slight interest.

That is, I think, an honest statement of my purpose, a word by the way that seriously engaged the attention of our first editor at the birth of this magazine over 80 years ago. In the very first sentence of the first issue in July 1891, Henry Desmond wrote, "Men play the hypocrite oftener with their purposes than with their actions . . . There is perhaps no occasion—unless one finds a parallel in politics—where the temptation to parade purposes . . . is stronger than in introducing to the public (with interested motives) a new publication. . . . We know of no publication started avowedly for the sordid but not disreputable purpose of making money. . . . The print-

ing press is always set in motion to publish some new gospel, to restate some old one unheeded, to vindicate some human right tyrannized over or despised, but for gain—never!" Desmond continued, "We hope this frankness has not cut the ground from under our own feet, for we want to say that The Architectural Record is a publication with somewhat of a purpose over and above a primarily commercial one!"

Of course it is and long has been, and I am quite sure that if our 12 full-time editors believed that profit, however reputable, was the overriding concern of this magazine or its publisher (or even his column!) the view from my office would be of a long row of vacant chairs.

Oh, perhaps one would still be occupied; there is bound to be one renegade in a dozen editors!

Now, as to my writing ability, it will be no literary disaster if I do not perform with the grace of the Earl of Chesterfield or Editor Wagner. This column is "small beans" in the magazine as a whole. If any theme at all is envisaged, it is simply an expression of appreciation for the strong support you have given our magazine over the more than two decades I have worked for it.

In saying "our" I mean yours and as well as ours, for it is a refreshing, and to me inspiring, fact that many readers (perhaps you are one) take a strong proprietary interest in ARCHITECTURAL RECORD!

Best,
Blake Hughes, publisher

Letters to the Editor

Your November 1973 editorial was electric! Practical, gutsy, optimistic.

Rarely have I been stirred to action so quickly, but you mentioned something about making your Representatives aware so—I put the IBM copier on 10 and sent the first one to the Honorable Paul McCloskey (Rep.-Cal.); the others will be going out in short order. You have presented your case so well, it seemed to be the quickest way of doing something.

Was it the line about, ". . . may their punishment be many nights worrying about whether some sharp young reporter . . ."; or was it ". . . ponder long the fact that they not only handed over their personal integrity . . .?"

Whatever it was—the total impact was explosive.

Ms. Daryl Company, San Francisco

Calendar

JANUARY

14-15 Seminar on How the Architect and Engineer Can Profit as a Builder-Developer, Regency Hyatt, San Francisco. Contact MCI, 505 Park Avenue, New York, New York 10022. Phone (212) 759-5830.

20-24 National Association of Home Builders convention-exposition, Houston Astrohall. Contact NAHB, 1625 L Street, N.W., Washington, D. C. 20036.

25 Downtown Development Seminar and Regional Conference of the International Downtown Executives Association, Olympic Hotel, Seattle. John Portman will speak. Contact Downtown Seattle Development Association, 1318 Joseph Vance Building, Seattle, Washington 98101.

FEBRUARY

3-7 ASHRAE Semi-annual Meeting, Los Angeles Hilton. Contact ASHRAE, 345 East 47th Street, New York, New York 10017.

11-12 Architect as Builder-Developer seminar, Hyatt Regency O'Hare, Chicago. (See January 14-15 listing.)

12-13 Contract Marketplace—New York, a combination contract furniture market—educational program for specifiers, Hotel Commodore, New York City. Contact Samuel L. Greenspan, Incorporated, 52 Vanderbilt Avenue, New York, New York 10017. Phone (212) 725-5130.

21-22 Seminar on How to Market Professional Design Services, Washington, D. C. Contact Building Industry Development Services, 1914 Sunderland Place, N. W., Washington, D. C. 20036.

22-26 School Administration Convention, Atlantic City.

25-26 Annual conference on the energy crisis and its impact on housing and construction, Housing Research Incorporated, Washington, D. C. Contact Gordon Jensen, Stanford Research Institute, 333 Ravenswood Avenue, Menlo Park, California 94025.

25-27 Second Annual Joint Engineering Legislative Forum, Sheraton Park Hotel, Washington, D. C. Contact NSPE, 2029 K Street, N. W., Washington, D. C. 20006.

MARCH

14-15 Seminar on How to Market Professional Design Services, Atlanta. (See February 21-22 listing.)

18-19 Architects-Engineers Public Affairs Conference, Washington, D. C. Contact AIA, 1735 New York Avenue, N. W., Washington, D. C. 20006.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER)

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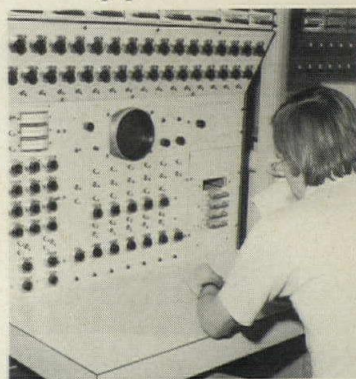


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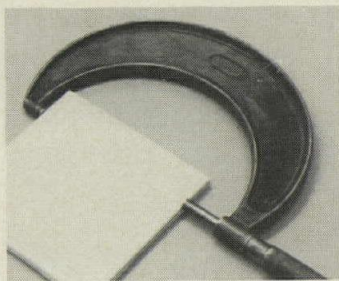
New Standards for Color. Control of color and color uniformity are perhaps the greatest benefits of this new process. You get fewer shading problems because of uniform thermal



treatment during firing. Temperature stability during firing is maintained with solid state logic at a consistent 2080°. Colors are regularly measured for accuracy by today's most advanced color measuring computers.

What's more, the complete line of fashion colors is double-glazed for beauty, intensity and value.

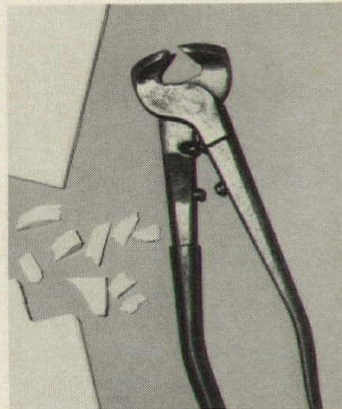
Better Dimensional Properties. Size, thickness, warpage and wedging, common problems in most natural clay products, are more uniformly controlled by this new process than ever before. Dimensionally accurate spacer lugs which have been carefully cleaned of excess glaze offer more uniform installations, better size reliability and superior grout adhesion.



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In Rehoboth Beach LUXURY OCEAN-FRONT CONDOMINIUM AND RESORT HOTEL rapidly framed in structural steel

The rapid fabrication and erection of a structural steel framework during the winter permitted on-time occupancy of a new residential structure at Rehoboth Beach, Delaware. Henlopen Condominium provides spacious luxury for summer living or for permanent residence.

Although many comparative framing systems were examined, the advantages of steel-framed construction pointed the way to the most practical design for the condominium hotel.

In addition to architectural design requirements, economics and erection speed directed the designers to a framework of structural steel. Primary considerations included:

- restrictions placed on construction during the summer tourist season limiting the use of heavy construction equipment meant that fabrication and erection had to be carried out rapidly, during the winter months;
- the lack of a trained labor force in the beach community required bringing in skilled workmen; a desire to employ these workers for the shortest duration;
- the scheduled completion date.

Owner: Henlopen Developers, Inc.; architect/engineer: H. D. Nottingham & Associates; (phase one) fabricator: Adams Fabricated Steel Corporation; erector: George L. Elliott & Son, Inc.; (phase two) fabricator: Budd Metal Company, Inc.; erector: Max Ambach & Sons; general contractor: Max Ambach & Sons.

Provides 248 housing units

The basement, first floor at ground level, and second floor of Henlopen Condominium are concrete slabs. Two towers—an L-shaped condominium apartment tower and a rectangular hotel tower—are framed with structural steel, rising from the second to the eighth floor.

The first floor level provides condominium and hotel lobbies, commercial space along the Rehoboth Beach boardwalk, hotel service areas and mechanical space, and parking areas which supplement basement parking facilities. Condominium and hotel units begin on the second floor. A promenade area connects the towers at this level. There are 146 housing units in the condominium section and 102 units in the hotel tower.

A restaurant and kitchen occupy the entire eighth floor of the hotel.

The condominium features a swimming pool on the roof.

The total project incorporates almost half-a-million square feet with the dominant portion (434,700 sq ft) devoted to the condominium. Construction cost for the Henlopen project is approximately \$10,000,000.

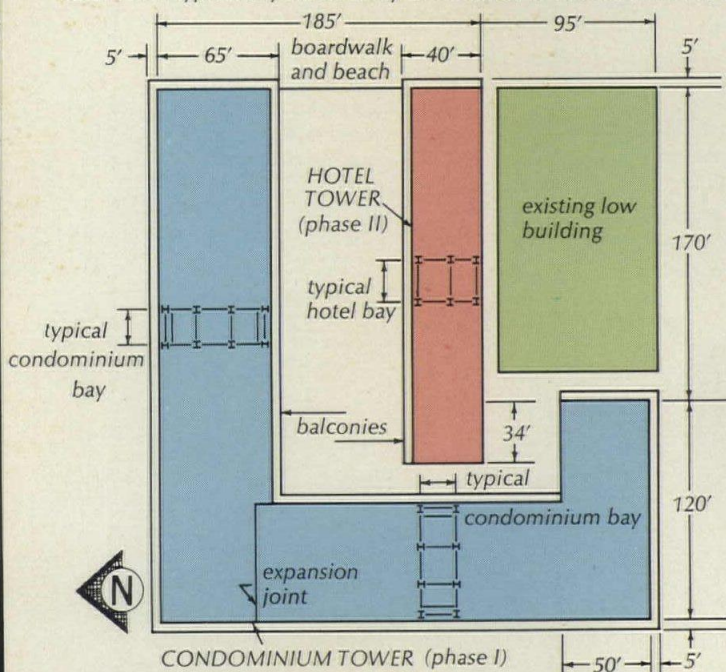
Two construction phases merged

The condominium/hotel structure was designed to be built in two phases; phase one included the basement, first and second floor, and the condominium tower. During construction, however, the developers opted to proceed with construction of the hotel.





Bay size in the condominium is typically 20 by 20 ft. W12 members are used for girders and spandrels with 12J3 floor joists. In the hotel tower typical bay size is 20 by 24 ft framed with W12 and W16 sections.



The condominium/hotel structure was designed to be built in two phases; phase one included the basement, first and second floor, and the condominium tower. During construction, however, the developers opted to proceed with construction of the hotel.

Fabrication of 950 tons of Bethlehem structural steel for phase one began in early November, 1972, and erection began two weeks later. In late January, 1973, fabrication of 320 tons of Bethlehem steel framing was started. Erection of the ASTM A36 structural steel framework was completed in mid-April.

Whether you are planning a high-rise or low-rise structure, steel framing has advantages that can save owners dollars and time. Our district sales engineers are ready to show you how. Give them a call, or write: Bethlehem Steel Corporation, Bethlehem, PA 18016.

Bethlehem 



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THE RECORD REPORTS

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Maybe this is a year that we
 find time to stop and think

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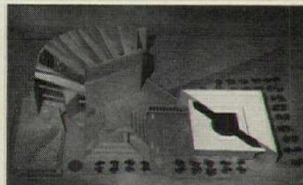
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 indicating steady business conditions.
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 selection. U. S. Postal Service
 selects master contractor for
 \$3 billion construction program.
 Energy situation seems to have
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 Security Bank, Birmingham, Alabama.
 Oxon Run Educational Center,
 Washington, D. C. John Player and Sons
 Factory, Nottingham, England. BMC
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 H. Maynard Blumer.

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Architect J. Karl Justin's thoughts
 on the genesis and role of construction
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 are penetrating, irreverent
 —and his own. He comes by them
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 involvement in design and management
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 now includes case histories by
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Complexity of form and variety of spatial experience make these new buildings an important landmark.
- 127 **"Helping downtown compete with the suburbs," by Jonathan Barnett**
An excerpted chapter from Mr. Barnett's new book, *Urban Design as public policy: practical methods for improving cities*, analyzing proposals and actual case histories of urban centers that have maintained the downtown economic health.
- 133 **Lambert Houses, Bronx, New York**
A low-cost urban housing project by Davis, Brody Associates demonstrates a fresh approach for urban renewal, revitalizing a declining neighborhood.

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- 141 **Land planning and design for ski resorts**
Skiing need not be a detriment to the environmental beauty in which it takes place, provided the use of the land needed for its various facilities is carefully studied, and the buildings it requires are sensitively designed.
- 142 **Northstar-at-Tahoe, California**
From its inception, Northstar has been planned with the preservation of the environment in mind. The heavily forested area is interlaced with old logging roads which have been easily converted to ski trails. All buildings are set in groves of trees. Parking is in one area, almost hidden by trees. Master planners were Eckbo, Dean, Austin and Williams. Architects are Bull Field Volkmann Stockwell.
- 148 **Kirkwood Meadows Lake Kirkwood, California**
A base lodge is essential at ski lifts if there is no nearby resort development. The lodge at Kirkwood Meadows is the first phase of a planned development. Architects are Bull Field Volkmann Stockwell.
- 150 **Elkhorn at Sun Valley, Idaho**
The village of Elkhorn, like many an Alpine village, is in a valley all but devoid of trees. The buildings are concentrated in a small area, surrounded by a golf course, so that the remainder of the valley can be open. In such a circumstance, the character of the building design is important. The architects devised an architectural approach slightly reminiscent of Swiss and Bavarian design, but individual. Master planners were Sasaki, Walker & Associates. Architects are Killingsworth, Brady & Associates.



Lars Speyer

ARCHITECTURAL ENGINEERING

- 156 **Low-energy lighting fits a school's design**
Mercury-lamp floodlights aimed at the raked ceiling of Hollis, New Hampshire Middle school provide 50 footcandles of indirect illumination at only 2 watts per square foot. The in-space air-handling units contribute to the school's low cost—\$22 a square foot.
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BUILDING TYPES STUDY 457: INDUSTRIAL BUILDINGS

The rate of construction for manufacturing buildings continues to increase—despite talk of a general economic slowdown in 1974. Some sources feel that expenditures for plant expansion may be one of the major factors in stemming the downward tide. With labor agreements now stressing fringe benefits, the working environment in the new facilities is bound to become a hotter issue—as is neighborhood compatibility through the rising interest of community groups and conservationists. In the February RECORD, we will explore new buildings which consider the workers within and prove that industrial buildings can be good neighbors.

NEW ITALIAN ARCHITECTURE A REPORT FROM FLORENCE

This Italian city has been a brilliant center of the arts since the days of Brunelleschi. The art of architecture still breathes there and today four generations of architects are doing exciting work. Some distinguished current examples will be included in the next issue.

PROTOTYPES FOR OLIVETTI

Richard Meier & Associates have been commissioned by Olivetti to design four buildings—two of them repeatable; these elegant, machine-like projects will be shown in detail.

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Seating has never been
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All-Steel—a collection of contemporary office seating designed for style, styled for comfort. With back support where you need it most, in the lumbar area. Make your decision a simple one. Specify one source...The 200 Series meets every job requirement. Write All-Steel Inc., Aurora, Illinois 60507.



1974: Maybe this is a year that we find time to stop and think

We enter the year 1974 in what clearly is a gloomy mood. We thought it was bad when half the people were furious about Watergate and the other half were furious about attacks on the President by the first half. We stagger along under controls that seem to be very effective when it comes to wages for me and thee, but don't seem to control prices of the things we need to buy—like, say, food. And just in time for our Happy New Year we find out that the energy crisis everybody had gotten sick of hearing about is not just talk but a problem of explosive dimensions—involving not just slowing down to 50 mph and lowering our thermostats, but already threatening thousands and thousands of jobs and already slowing some industries (notably in the petrochemical area) not to 50 mph but to 25. We see some pretty unattractive responses to these problems: trade associations holding special Washington meetings to try and get more than their share of short resources, cattle raisers and meat wholesalers holding meat off the market until the controls come off, truck drivers blockading highways because they think that the price of fuel is too high, speed limits are too low, and besides that they sure don't want any of *their* highway taxes going into mass transit.

A fresh-for-the-New Year point of view came over me a few weeks ago when—as is the custom and habit of many New York City commuters—plowing through *The New York Times*. James Reston had an editorial page piece which suggested that “What America *really* needs is more shortages. It is not our shortages that are hurting us. Too much gas, too much booze, too much money, talk, noise, and—fire me tomorrow!—too much newsprint are our problem. We need to cut down, slow up, stay home, run around the block, eat vegetable soup, call up old friends and read a book once in a while. Americans have always been able to handle austerity and even adversity. Prosperity's what's been doing us in.” Well, Mr. Reston, while clearly employing one of the favorite techniques of journalists—a little poetic license—sure has a point. It's a point about people—what they do, why they do it, and what they really want. I sometimes think we don't think enough about what we really want and why.

▪ Take the practice of architecture. For example, Scott Ferebee talked about the trend to bigger firms in a recent speech: “Interdisciplinary offices are adding expertise that would

have been considered completely foreign to architectural organizations just two decades ago—including planners, economists, and occasionally even attorneys and sociologists. . . . To obtain solid financial support for large practices some firms have sold their businesses to conglomerates and, in a few cases, have gone public—selling stock across the counter to obtain the necessary resources for rapid expansion.” We've also observed more than a few mergers of firms—mergers of big firms to make bigger firms.

The question we might ask ourselves for the new year is why? Put aside the questions that have been asked about some of the recent changes in practice—questions like: Can an architectural practice be owned by a conglomerate and its principals maintain their professional integrity? Can a publicly-owned design organization provide the personal and moral responsibility normally identified with professional service? Should architects participate in design-build proposals where their loyalties may be oriented more to the team than to the client—or to the user?

If you put aside those real questions, you haven't really answered the personal question—why? I know quite a few good designers whose firms have gotten so big that they don't have time to design anymore—and the work of their firm shows it. You can't delegate your own design skills. With a few notable exceptions, very big firms don't do great design because they can't—they haven't got time because they have to run their businesses.

If I may be permitted a very personal observation, the happiest people I know are architects who 1) are first-rate designers, and 2) have firms ranging from two or three to 20 employees—firms small enough that they can have an everyday control over the quality of the work.

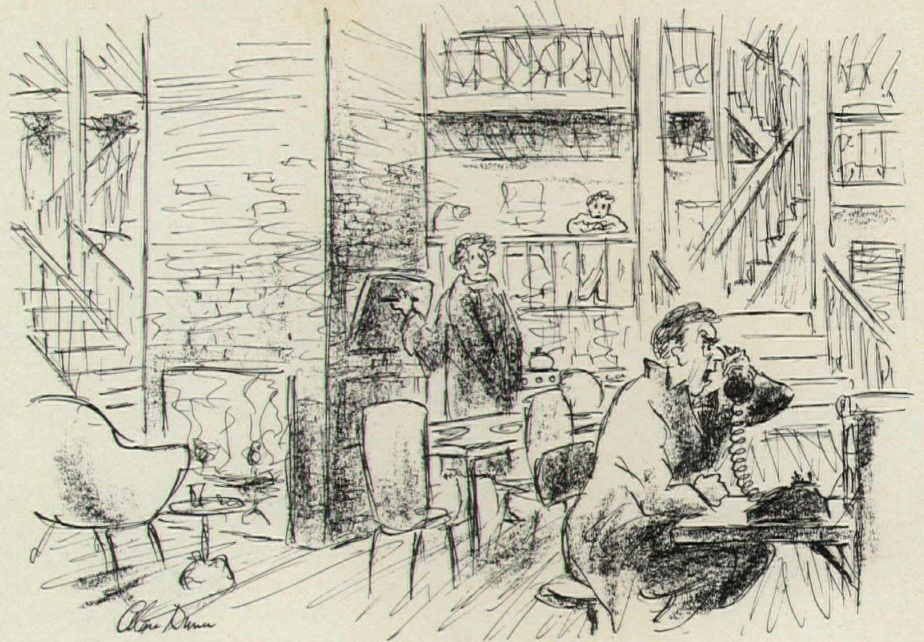
So maybe one of the things that some architects may want to stop and think about this year is just that—what's it all about, this practice of architecture? Design for people? Personal satisfaction with the quality of work? Or is it all really just a business where everybody wishes he were General Motors?

▪ Another thing we might think about during the new year is where we're going with standards. Everybody knows that fire safety standards are (I almost said the hottest thing around) on the front burner of research. Many manufacturers of materials that can burn or give off

noxious fumes are so uptight they won't even come to meetings on the subject. Down in Washington, the scientists are devising new and improved test cells to check flammability and flame spread and heat and smoke and fume detection. And no one is allowed to say: "But . . . but . . ." Because if you do, someone always says: "Are you putting a price on one human life?" There is—on standards—always a trade-off. Including human life. We sure make compromises with the safety of ourselves and our children in our automobiles. At the drop of six per cent of our oil supply, we drop environmental standards—hard-won over many years—within a week. Maybe, to go back to fire safety, we can this year take time to think about what it is we're trying to do: Prevent fires at any cost?—Or get the people out? Every historic precedent indicates that making a building totally fireproof will cost a great deal of money—and this added cost could, for example, cause needed schools to be turned down at local referendums, or needed housing to be much too expensive for the people who need it. So suppose we accepted some compromise with fire proofness and worked on the question of fire safety for the people who live or work there. One example is the semi-fireproof construction of New York City apartments by Davis, Brody Associates—shown on page 133 of this issue. It has, for instance, a wooden floor system—but every family has at least two and mostly three alternate escape routes. That makes a lot more sense than the recent demand by the fire marshall of our Connecticut district that flashing red lights be added to the fire gongs in the halls of our new public school so that any deaf children will know that the alarm is on. Please don't think that I am willing to risk the life of one deaf child . . . but 1) I cannot imagine that his or her classmates would leave a deaf child behind, or 2) that his teacher would leave the child behind, or 3) that the child could not leave by the operable windows of the one-story school along with his or her classmates. Might not the considerable amount of money have been better spent on special training . . . ?

Would it maybe not be a good time, in 1974, to stop and do some thinking about what standards are about? They're about people.

▪ Happily, people are the subject of architecture's two major conventions this year. The students got theirs in first: On November 23-25 in Miami, The Associated Student Chapters of the AIA held a conference on "A New Approach to People." The students' topic—with speakers that included architecture critic John Pastier and architect Morris Lapidus—was the positive and negative political, industrial, and commercial influences on planning. AIA's 1974 convention in Washington, to be held May 19th to 24th, will be built around the theme of "A Humane Architecture"—defined by president Archibald Rogers as "an architecture which satisfies the needs of its users while retaining esthetic qualities, is functional, economically feasible, and remains in equilibrium with nature." And that kind of architecture is something worth stopping and thinking about in 1974. —Walter F. Wagner Jr.



"I ask you, Mr. Commissioner, how do you 'close off a few rooms,' in an open plan?"

RECORD seminars on how architects can become developers

For professionals across the country, RECORD this year will present two series of seminars.

▪ The first is "How the Architect and Engineer Can Profit as a Builder-Developer"—a two-day seminar that had its opening in New York last month, but will be held in San Francisco on January 14-15, and in Chicago on February 11-12. These seminars are intended to help professionals find new profits for their firms by taking any of a variety of equity positions in development building. With a faculty drawn from men with practical experience in all phases of project development—architects, builders, attorneys, lenders, and marketing men—the seminar will cover project feasibility studies, land acquisition, project financing, legal and ethical implications of involvement in building, professional liability, organization and choice of partners, and a series of case studies. Conference chairmen are Sanford Goodkin and William Becker, the well-known management and marketing consultants.

The first session (in New York) is underway as this is written, and is being well-received by 35 architects—some from large firms, others from small firms who clearly are considering hard the possibility that there's gold in them thar hills of becoming—at least part of the time—entrepreneurs.

For most of the architects there, I think, the seminar has proved both an eye-opener—and a bit of a warning. The speakers chosen by RECORD editors and Management Concepts International—joint sponsors—talk a tough, profit-oriented language. Their view of the role of the architect is somewhat different than the average architect's view of the architect. But that is the purpose of the exercise. A seminar explaining the rules of the development game has to explain the rules, we like them or not.

But for those who are tempted to try the game, I wouldn't miss the seminar—again in

Chicago on January 14-15, or in San Francisco on February 11-12.

For complete details, information on fees and reservations, call Management Concepts International, toll-free, at 800-223-5681.

Another seminar series—on marketing professional services—begins soon

The second series of seminars is on "How to Market Professional Services" and is being produced for RECORD by the Continuing Education Division of Building Industry Development Services of Washington. For the faculty, B.I.D.S. has assembled successful, sales-oriented directors of business development from small and large firms alike, and client representatives from both the public and private sectors. There will be sessions on understanding marketing fundamentals, organizing for business development, how to attract new clients, evaluation markets, using business-development tools, intelligence gathering and investigation of leads, effective selling presentations, joint ventures . . . and much more. These two-day workshops are planned for Washington February 21-22, Atlanta March 14-15, Boston April 17-18, and other cities later. For details, see the ad in this issue (page 194), or call Gerre Jones at B.I.D.S., 202/785-2133.

Reprints of "A Plea for Planned Communities" will be available

All the work that went into RECORD's December issue—a "spotlight issue" on new towns—has been worth it. The initial and immediate response has been wonderful. So many readers have already asked for additional copies that we've begun reprinting the 60-page main section of the issue—in glorious Technicolor as it originally appeared.

To obtain additional copies, send \$3 for each copy needed to Architectural Record Books, 1221 Avenue of the Americas, New York City, New York 10020.

16TH ANNUAL COM



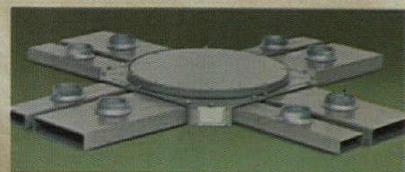
A communication problem isn't a ho-hum affair.

The communications boom isn't a bunch of boring statistics. Fact is, it's more phones and more new equipment than you ever dreamed of. With wires meeting all over the place. So don't get caught

napping. Put a Walkerduct Underfloor System in your building specs. It will help keep the income from dropping off.

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WAS IN BUSINESS
SEVENTY THREE
YEARS BEFORE
THEY SPECIFIED
JOIST GIRDERS
FOR THE FIRST
TIME. ELEVEN DAYS
LATER, THEY DID
IT AGAIN.**

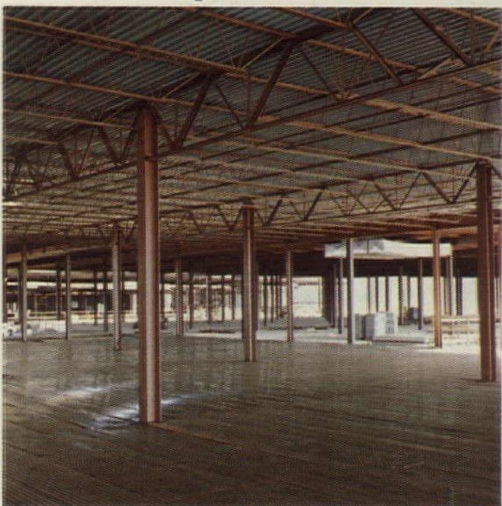
Joist Girders. The advantages they had over I-beams were more than enough for Berlin Steel to specify them for the Sage-Allen Department Store they were building in West Hartford, Connecticut. So much



Joist girders have a simple span design. Which explains why ponding calculations are easier. And why design time is shortened.

more, that eleven days later they specified them again. Only this time for National Plastics and Plating Supply Co. in Plymouth, Connecticut.

Where did Berlin Steel learn about those advantages? From meeting with Vulcraft. The people who knew as



Joist girders need fewer foundations and columns. Which means less work for you and larger bay areas for your clients.

much about joist girders as Berlin did about steel fabricating.

And the first thing the Vulcraft engineers did was show Berlin Steel

why joist girders are easier to specify and erect. By explaining that the simple span design of joist girders make ponding calculations easy. And shorten design time.

By telling them about the larger bay areas possible with joist girders. And by talking about the fewer foundations and columns needed with joist girders than with I-beams.

Then came the subject of the advantages joist girders offer after they're erected.

And to explain that topic Vulcraft talked about the modified Warren truss configuration used in joist girders. And that it gave joist girders a high strength to weight ratio.



Joist girders have a modified Warren truss configuration using hot rolled double angle sections for top and bottom chords and single and double angle sections for web members. What that means is a high strength to weight ratio.

They mentioned further, that bar joist erection was faster. Because top chord panel points show joist location, eliminating a lot of measuring.

Finally, the matter of ducts, pipes and conduits came up. And Vulcraft explained how these things go right through a joist girder. Something no one can say about an I-beam.

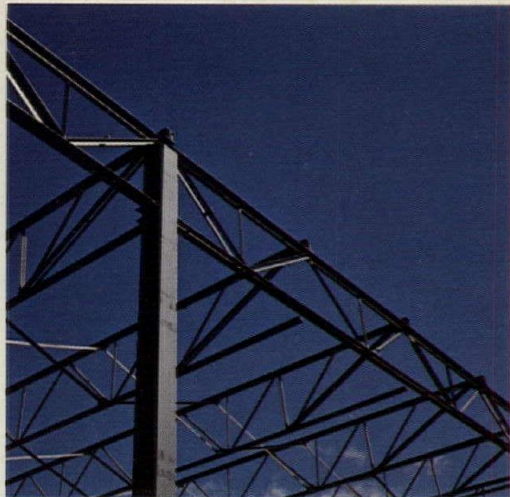
What it all added up to for Berlin Steel was a change. A change from I-beams to another roof-framing system. A roof-framing system that was more economical and easier to erect



Joist girders have top chord panel points that show joist location. Which makes a lot of measuring unnecessary.

for anything over 10,000 square feet.

It wasn't surprising to Vulcraft, though. Because architects and engineers all over the country are discovering the advantages joist girders have over I-beams.



Joist girders already have spaces for pipes, conduits, and ducts to run through. So you don't have to cut them yourself.

If you'd like more information about how joist girders can work for you, send for Vulcraft's Joist Girder Specification Guide. Just contact your local Vulcraft sales office. Or write P.O. Box 17656, Charlotte, N.C. 28211. Or call (704) 366-7000. You'll find a few things even Berlin Steel didn't know. Until they asked.

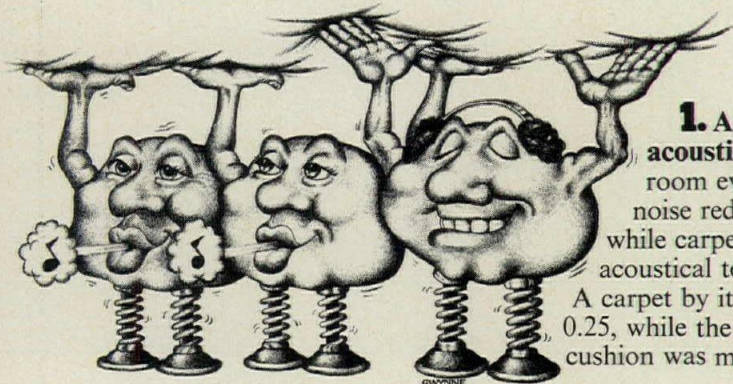
VULCRAFT

Sage-Allen Department Store, West Hartford, Connecticut; Architect: Associated Architects, Farmington, Connecticut / General Contractor: Bartlett-Brainard & Eacott, Inc., Bloomfield, Connecticut / Consulting Engineer: Hallisey Engineering Associates, Inc., Hartford / Steel Fabricator: Berlin Steel Construction Company, Inc., Berlin, Connecticut. National Plastics and Plating Supply Co., Plymouth, Connecticut; Architect: Andrew C. Rossetti, Bristol, Connecticut / General Contractor: S. Carpenter Construction Co., Bristol / Consulting Engineer: Hallisey Engineering Associates, Inc. / Steel Fabricator: Berlin Steel Construction Co., Inc.

For more data, circle 8 on inquiry card

Before you pull the padding out from under another rug, read this.

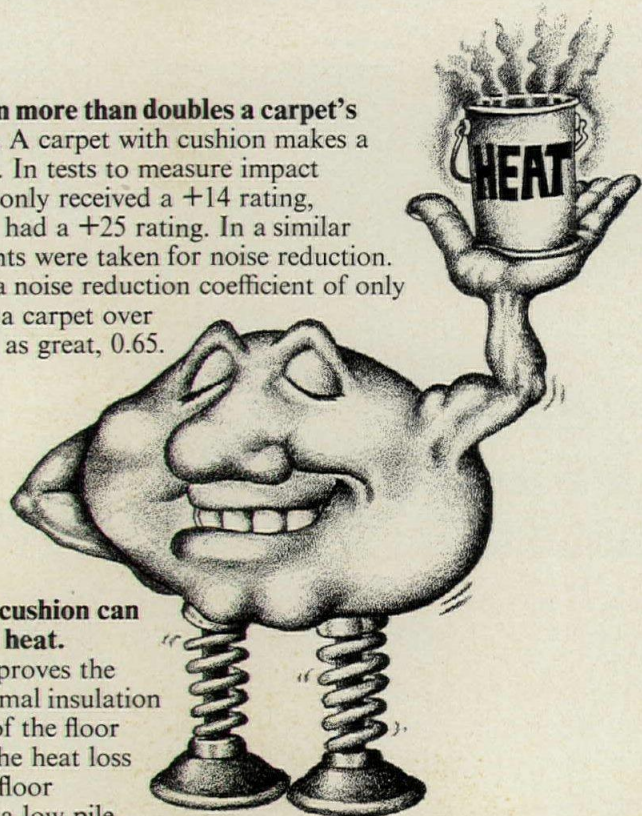
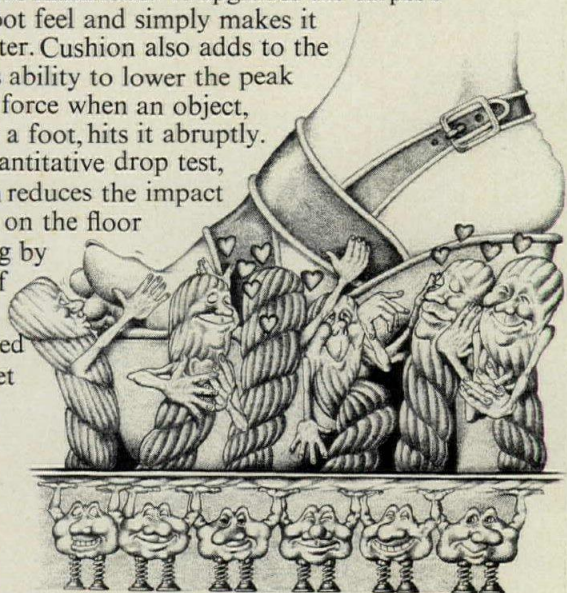
Whenever your carpeting budget is up against the wall, the first thing you're tempted to do is pull out the cushion. Before you do, consider the underlying contributions carpet cushion can make to your next installation.



1. A carpet cushion more than doubles a carpet's acoustical properties. A carpet with cushion makes a room even more quiet. In tests to measure impact noise reduction, carpet only received a +14 rating, while carpet over cushion had a +25 rating. In a similar acoustical test measurements were taken for noise reduction. A carpet by itself measured a noise reduction coefficient of only 0.25, while the coefficient for a carpet over cushion was more than twice as great, 0.65.

2. Separate cushion makes a carpet seem thicker and more luxurious.

It upgrades the carpet's underfoot feel and simply makes it feel better. Cushion also adds to the carpet's ability to lower the peak impact force when an object, such as a foot, hits it abruptly. In a quantitative drop test, cushion reduces the impact exerted on the floor covering by one-half when compared to carpet alone.

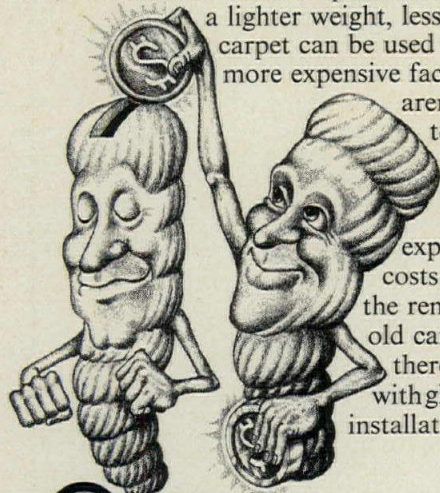


3. Carpet cushion can help retain heat.

Cushion improves the overall thermal insulation properties of the floor covering. The heat loss factor of a floor covered by a low pile carpet and a cushion is about one-third of what it would be with the same carpet alone.

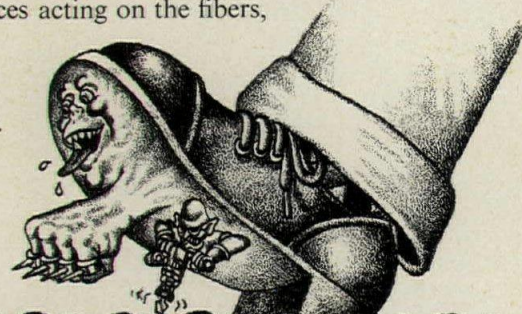
4. The initial cost of a cushioned carpet need not be more expensive. Instead of putting money into a sub-floor, you can put it into a cushion. A cushion plus carpet can mask surface irregularities so that a lower-grade, less costly finish on sub-floors can be specified. In addition,

a lighter weight, less expensive carpet can be used since the more expensive face yarns aren't needed to provide cushioning. And there are no expensive labor costs involved in the removal of an old carpet, as there can be with glue-down installations.



5. Separate cushion makes a carpet easier to maintain.

It lowers the maximum forces acting on the fibers, thereby reducing the pile crushing and the grinding action of imbedded dirt that can cut and fray fibers. That means a cushioned carpet—given a fixed maintenance cost—will look better for a longer period of time than a non-cushioned carpet.



6.7.8. and more reasons why carpet cushion will add life, and cost less to install, can be found in our new brochure. For your free copy of "The Supporting Facts about Carpet Cushion," write: Carpet Cushion Council, P.O. Box 2048, Dalton, Georgia 30720 (404) 278-3176.

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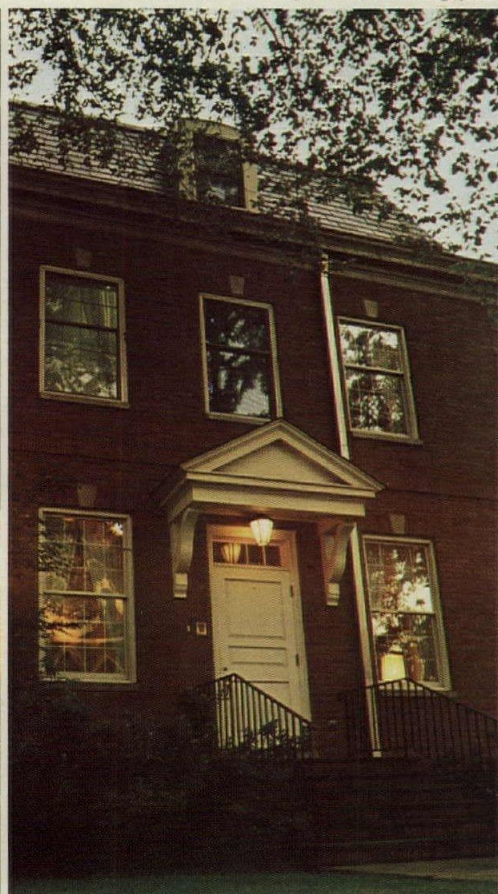
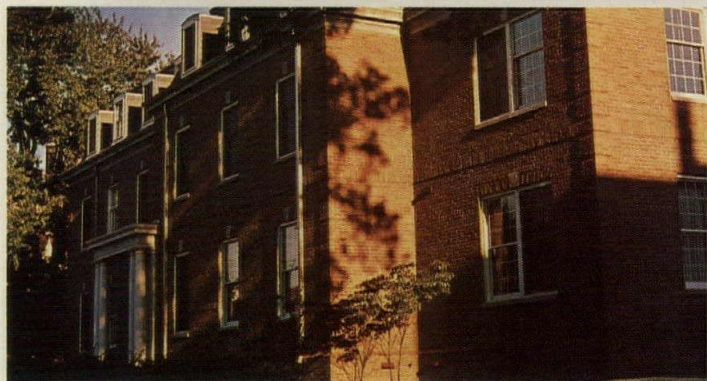


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Architect: Franklin, Douden & Associates, Pittsburgh, Pa.
Builder: Navarro Corporation, Pittsburgh, Pa.



The Children's Home of Pittsburgh staff has more important things to take care of than windows.

That's why the architect specified Andersen Perma-Shield® Narroline® double-hung windows in his design of the adoption agency's new building.

He liked the way Perma-Shield Narroline windows provided traditional beauty without the traditional bother... at a traditionally reasonable price.

All window surfaces exposed to weather (except the sash) are enclosed in a sheath of tough, durable, attractive vinyl that won't rust, pit or corrode.

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Narroline's wood sash is protected by a special patented 4-step factory finishing process that won't chip, crack or peel, or require painting for at least 10 years.

Heating and cooling costs are reduced substantially, too... thanks to Andersen's close-fitting tolerances and double pane insulating glass.

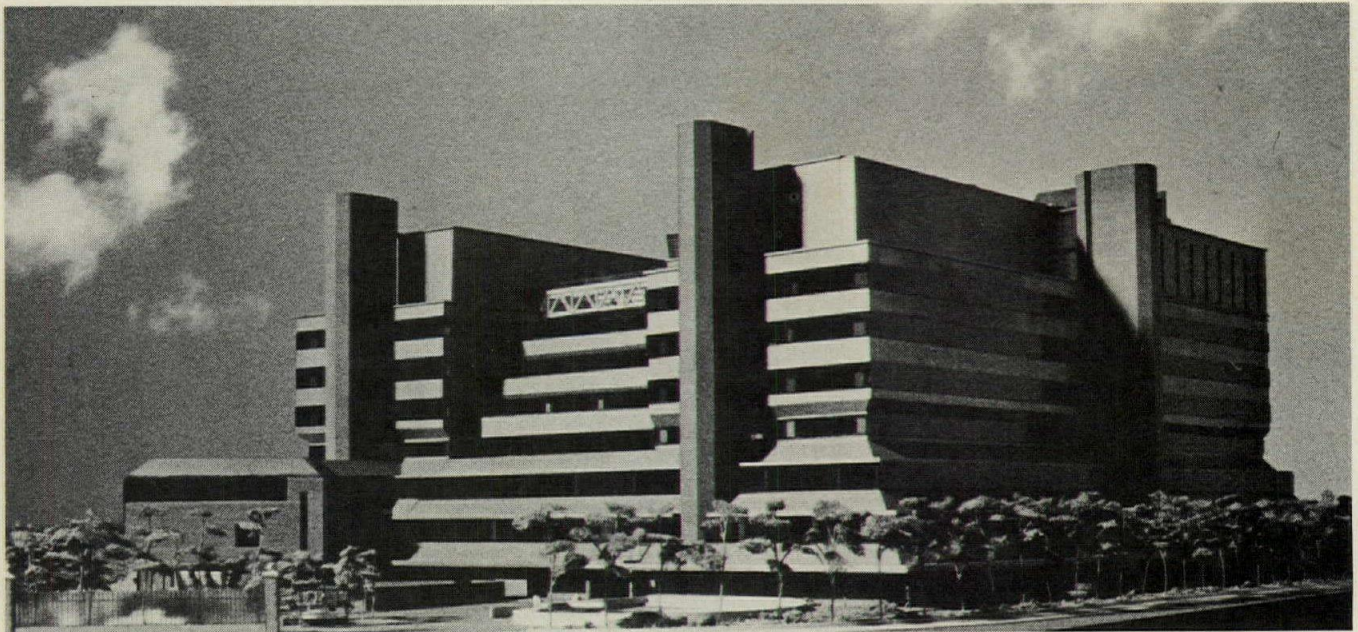
Staff and babies are draft-free and comfortable year-round.

If your people have more important things to take care of than windows, specify Andersen Perma-Shield Narroline double-hung windows. Or any one of the Perma-Shield family.

For further details, see your Andersen dealer or distributor. He's in the Yellow Pages under "Windows, Wood." Or check your Sweet's File (Sections 8.16An. and 8.6/An.) or write us direct.



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Contractor: Baltimore Contractors, Inc.

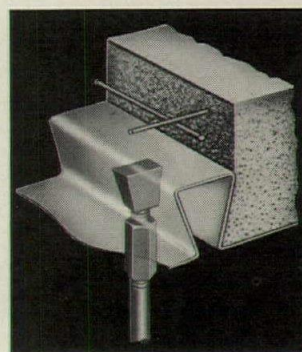
**Arthur W. Lookup, P.E.,
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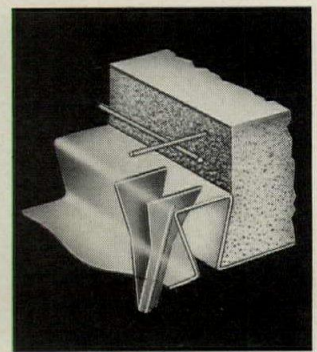
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- A. Wedge bolt hanger
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Construction Boss

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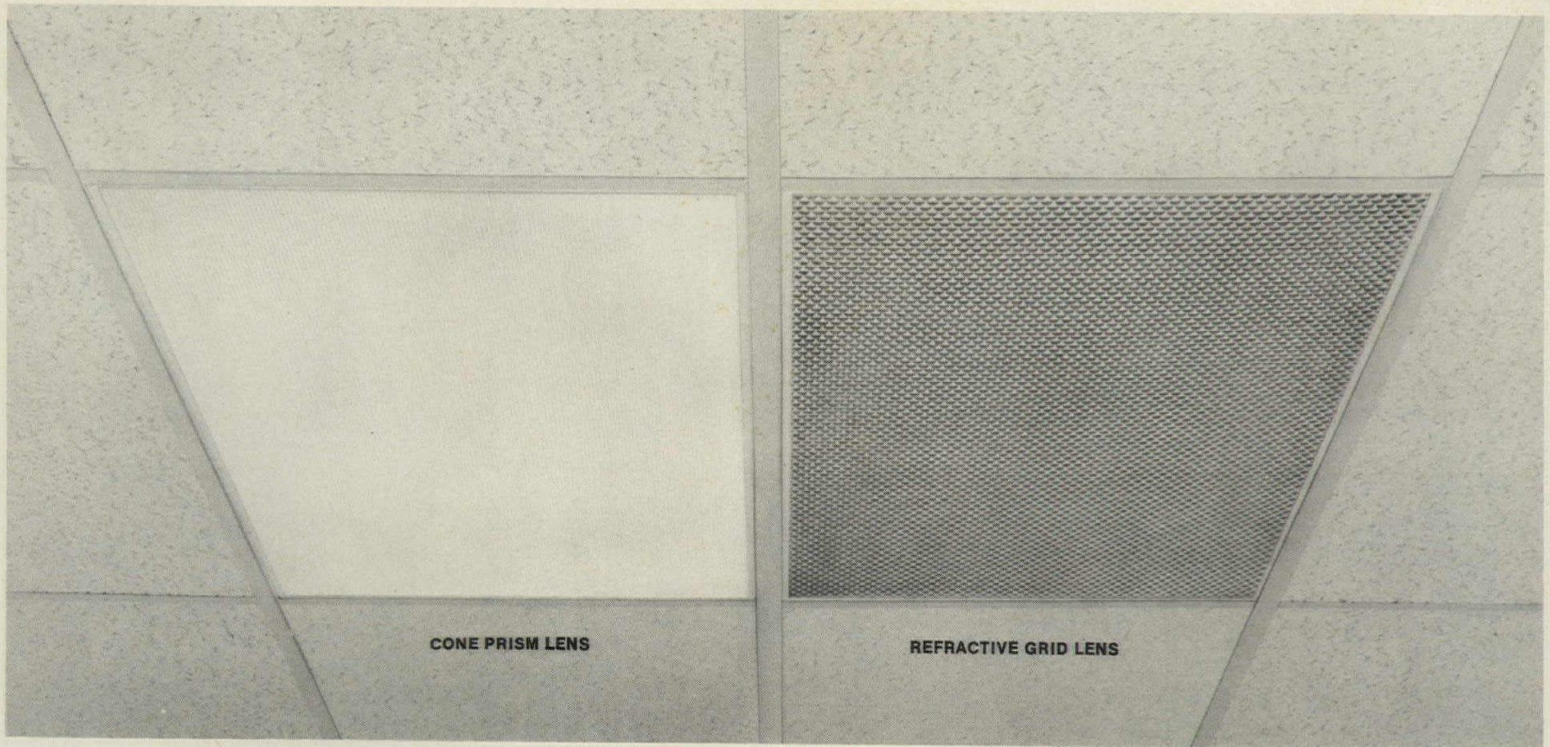
Look for the Dow Badische Performance Certification label on a carpet. There are a lot of people behind that label making sure for you.

Take our "construction bosses." They provide carpet manufacturers using our specially engineered products with exact style and construction specifications for every one of our carpet fibers and yarns. And if these specifications are followed in the manufacturing, the carpet you specify for a specific end use, will perform the way you want it to. For sure? For sure—or you won't find our Performance Certification label on it.

Look for that label whenever you specify contract carpet. It's the only way to be sure, when you're not sure.



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The lens on the left looks nice and bright. That's what's wrong with it.

The new lens on the right reduces high-angle brightness up to 70%, yet increases useful light. That's what's right with it.

The REFRACTIVE GRID CONTROLENS® is a major scientific breakthrough in prismatic light control. At the same time, it opens up new vistas for architectural expression in ceiling appearance.

First, let's look at what REFRACTIVE GRID does for viewing comfort.

REFRACTIVE GRID lighting is so easy on the eyes you can use it in rooms of any size and still be sure of a VCP (Visual Comfort Probability) of 70 or above. Often well above.

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Red cedar shingles help turn urban blight into beauty.

This one-time service station for cars was transformed into a service station for animals. In the process an urban eyesore turned into an eye-ful of beauty. Thoughtful design, attractive landscaping, and extensive use of red cedar shingles all contributed.

Red cedar shingles bring unity to the animal clinic. Their uniform application establishes a single personality for the original building and

its new, enclosed wing.

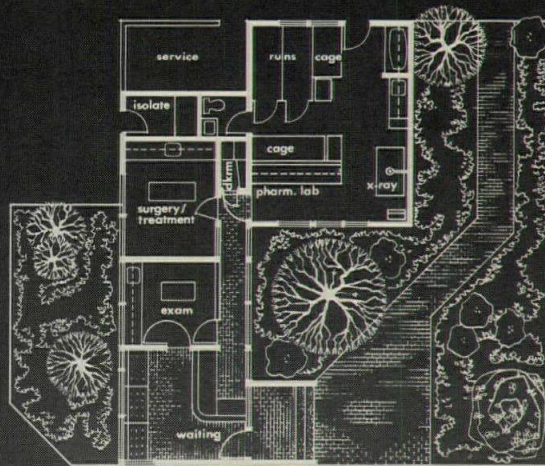
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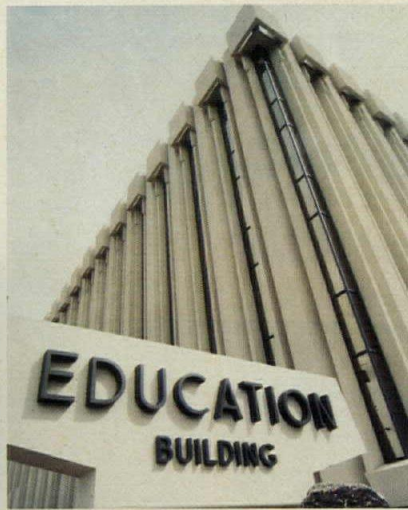
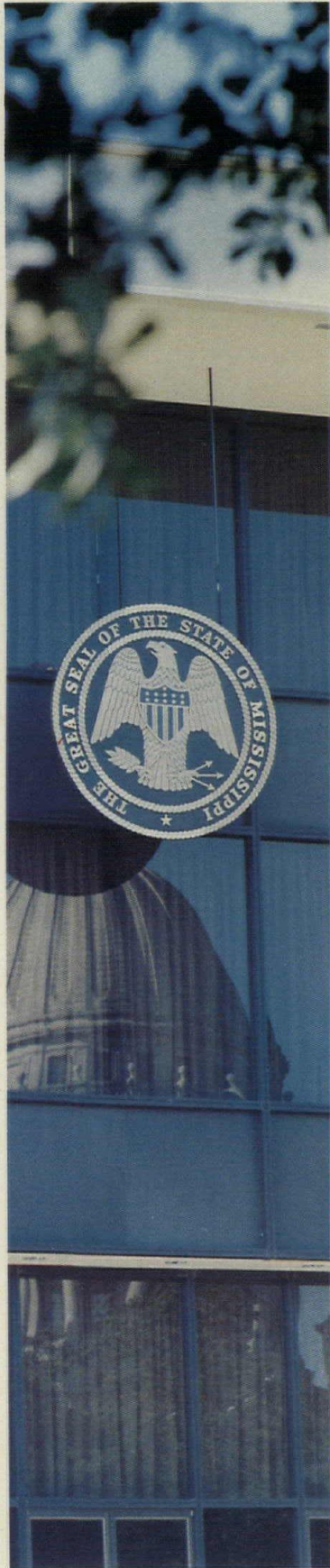


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(a)

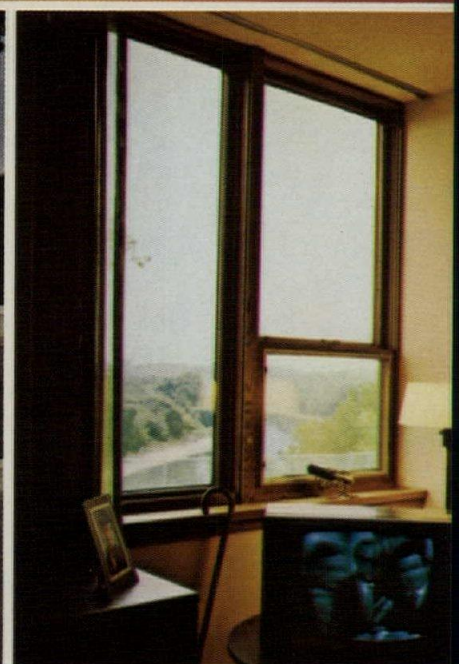
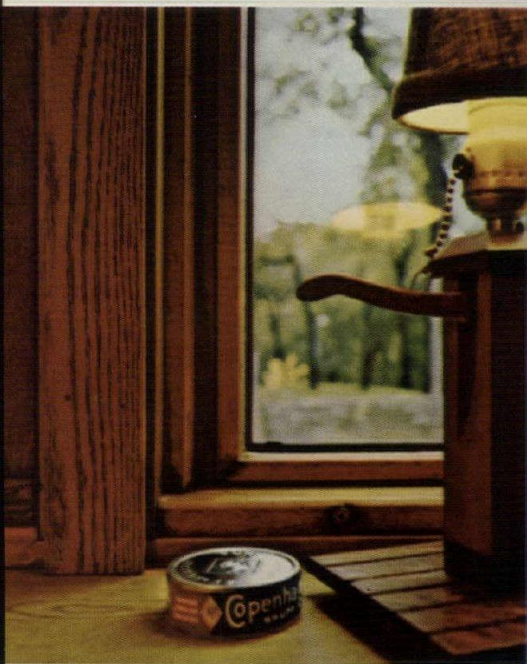
Inside, the unspoiled beauty of a carefully-crafted wood window.

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(b)

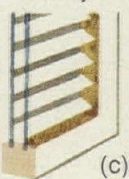
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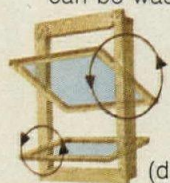
The removable inside storm panel gives you any number of interesting options. Like using our unique Slimshade® (c) to control sunlight, privacy and solar heat gain and loss. Housed between the panes, this fully adjustable blind remains virtually dust-free. The system also accommodates our snap-in wood muntins, and the selective use of privacy panels. But flexibility is not the system's only strong point. The 13/16" air space between the panes does a better job of insulating than welded insulating glass.



(c)

Afterward, the ease of washing a counterbalanced, pivoting sash double-hung window.

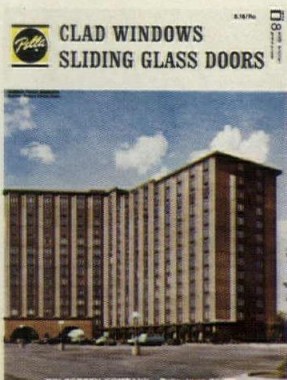
Window cleaning is another maintenance factor that must be considered. And here again, Pella design makes an easy job of it. Our Double-Hung Window has a spring-loaded, vinyl jamb liner which allows the sash to pivot. So the outside surfaces can be washed from inside the building. And because each sash pivots at its center point (d), the weight of the sash is counterbalanced. Which makes the whole job just that much easier. Reglazing can also be accomplished from inside, along with sash removal.



(d)



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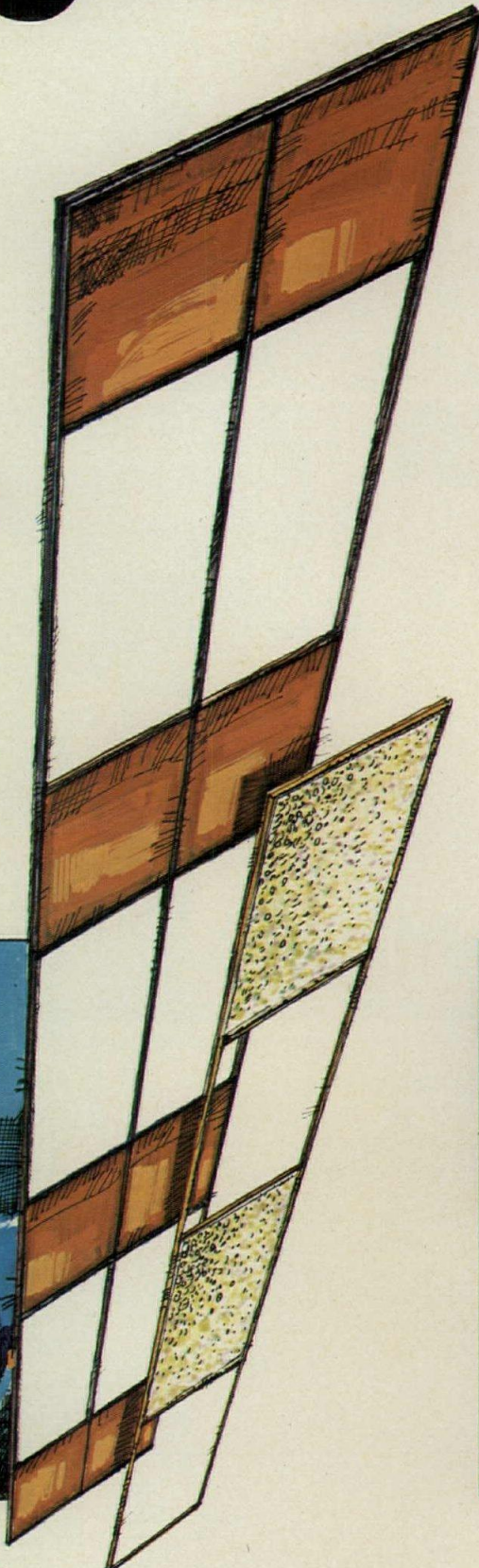
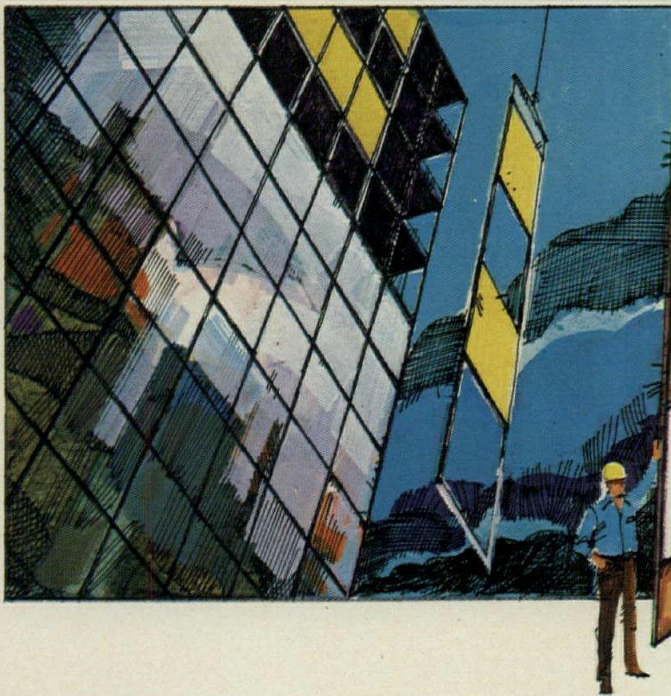
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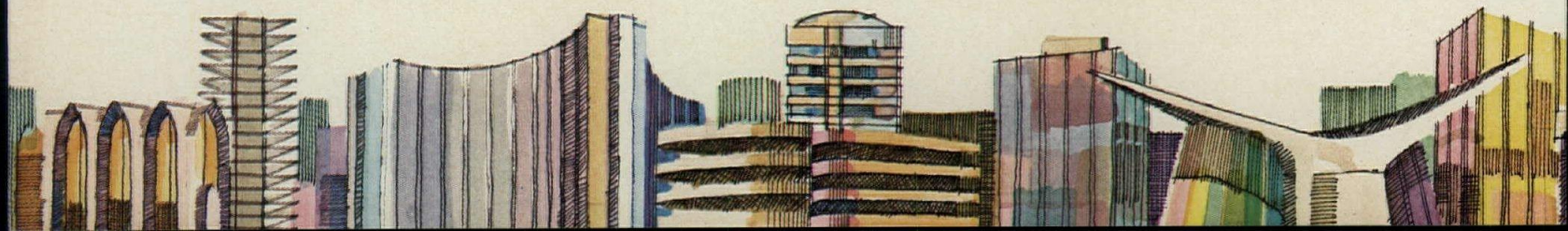
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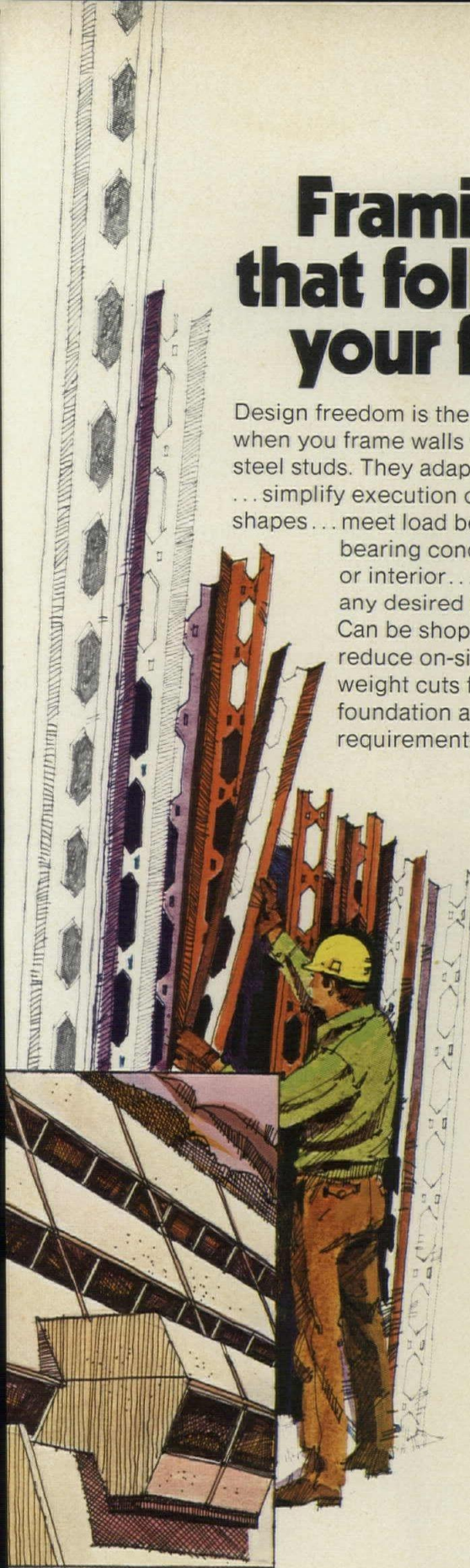


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Archibald C. Rogers, Baltimore, was installed last month as 1974 AIA president, succeeding S. Scott Ferebee Jr., in ceremonies held in Washington, D. C. In addition, five other officers were installed including the new first vice president (president-elect) William Marshall Jr., of Norfolk, Virginia. Three national vice presidents installed are Van B. Bruner Jr., Louis R. Lundgren and John M. McGinty. Joseph Tuchman is the 1974 treasurer. Mr. Rogers, who is chairman of the board of the architectural firm RTKL Incorporated has served as chairman of the AIA's National Policy Task Force, the Institute's effort to promote the establishment of a policy for urban growth and land development. He was elected a Fellow of the Institute in 1967.

Robert F. Hastings, AIA past president, died December 21st. Mr. Hastings, who was chairman of the board of Smith, Hinchman & Grylls of Detroit and served as AIA president in 1971, suffered a heart attack outside the SH&G office. His deep concern about the regrowth of the cities, about education in all design disciplines, and about the profession's handling of its responsibilities to the public set high standards, which he lived personally and instilled in all who would listen. Editors note: Bob Hastings was for many years a valued consultant and contributor to this editorial staff, and a close personal friend of many of us. We shall very much miss his wise counsel and his friendship.

A practice reciprocity agreement between the United States and Australia has been signed by the National Council of Architectural Registration Boards and the Architects Accreditation Council of Australia, at a recent meeting in Hilo, Hawaii. Although both organizations cannot ensure that all their member boards will recognize the agreement, each is committed to achieve professional reciprocity and eliminate legal barriers.

The 1974 construction outlook shows a slowdown and a generally hostile construction climate, according to George A. Christie, vice president and chief economist, McGraw-Hill Information Systems Company. Mr. Christie's outlook places the value of new construction at \$101 billion, only two per cent above last year's \$98.7 billion. Tight money, frozen housing subsidies, impounded public works funds and the energy crisis are adding to the uncertainties facing the industry this year.

Steel shortages, specifically for rebars, could cause a 25 per cent construction cut-back, according to the Associated General Contractors. Export demands are cited as a chief reason for the shortages. Other materials are expected to be in short supply as well. Details on page 34.

Federal regulations for A/E contracting have been endorsed by five engineering and architectural societies. The new regulations are applicable to all civilian agencies and require establishment of evaluation boards to review qualifications. Details on page 34.

No move for a special fuel allocation to general contractors is planned by the Federal government, in spite of a petition presented to the Federal Energy Administration by the Associated General Contractors. The only construction allocations referenced so far are for "essential construction" pertaining to fuel and energy generating facilities. Without fuel guarantees, AGC says the construction industry will suffer a 20 per cent curtailment in activity and a loss of one million workers from the current force.

Business reported an anticipated \$4 billion increase in capital outlays in the fourth quarter of last year, according to the Commerce Department. Spending of \$3.2 billion more is expected for the first quarter of this year and \$3.8 billion additional in the second quarter. These figures do not, however, reflect worries about the energy shortages. There are reports that many industries are suspending projects until they get a better reading on the supply of fuel not only to build, but to use new facilities.

The U. S. Postal Service has selected the Ralph M. Parsons Company to manage its \$3 billion construction program. Associated with Parsons will be Day & Zimmerman, Inc., Lester B. Knight, Inc., The H. I. Yoh Co., and the Office of Max O. Urbahn. The three-year contract is initially valued at \$13.2 for a variety of services. Details on page 34.

January 31 is the deadline for submitting entries in the 1974 Plywood Design Awards. Projects must have been completed after January 1, 1970 and before January 31, 1974 and must include APA grade-trademarked plywood. Winners will be displayed at this year's AIA convention in Washington, D. C. For details on entry procedures, contact APA, 1119 A Street, Tacoma, Washington 98401. Phone (206) Broadway 2-2283.

The National Institute for Architectural Education has announced several competitions and cash fellowships such as the \$6000 1974 Lloyd Warren Fellowship 61st Prize for one year of travel and study abroad. For full details on this and other NIAE programs, contact the National Institute for Architectural Education, 20 West 40th Street, New York, New York 10018.

Survey shows materials scarce, not energy

Has the energy crunch and materials shortage begun to be felt in the construction industry, and if so to what extent? We put that question to architects and engineers around the country and this is the result.

Los Angeles architectural firms of Charles Luckman; C. Martin, and Gruen Associates report no significant hikes in bidding due to shortages, although considerable price changes are anticipated. Contractors in the area seem to feel the crunch has arrived, with shortages of rebars, roofing products, transformers, and as one contractor put it, "jobs are slowing down and we think materials will become more scarce."

Concern is great in the San Francisco Bay area about materials prices, availability and the implications of the energy crisis. Lee Windheim, architect with the office of Leo A. Daly & Company, noted that the California Public Utilities Commission recently said it was considering a moratorium on new electrical hookups, if all other voluntary and mandatory cut-backs fail. Windheim—who has done a study of energy conservation for the Ford Foundation—also said, "we are in for some serious dislocation in the construction industry." He noted that construction could be one of the early industries hit by an energy supply shortage.

In his own firm, with a large work force previously involved with new building, Windheim says they are looking toward defensive actions, such as making analyses for remodeling or retrofitting existing buildings to be more conserving of energy.

Many other firms in the San Francisco area report no undue delays or stoppages in their projects due to fuel shortages, but all complain about materials shortages and prices, with such items as reinforcing bars up 50 per cent in three months.

Although the Pittsburgh area reports no fuel-connected building problems, one engineer at a large contracting firm said the practice is spreading of making bids subject to fuel availability.

Price escalations for materials were recently articulated by Charles Sikes, president of Neuhaus & Taylor, who said, "we don't know what to price a project and if we can price it, we don't know whether we can get materials. I have never seen, in my lifetime, a situation in the profession as today." Sikes said the guesstimating that has to be

done requires a great deal more work on the architect's part, and if the pace of escalation continues, there is a real danger that construction will come to a grinding halt.

Further in the Houston area, bidders are reportedly bidding jobs much higher than they would ordinarily to protect themselves from future increases.

In Boston, a construction industry recession is reportedly underway, aggravated by the petroleum supply prospects. Contractor and union sources claim unemployment is approaching 20 per cent of the total available work force.

Another side effect of the materials situation is stepped-up interest in construction management, according to some reports. Ben Maibach, president of Barton-Malow Company of Detroit said, "in the last six months, we have had an about face on construction management. More of our customers are going for it, even after years of satisfactory competitive bidding." Substitutions are the name of the game today. Alfred Entenmen Jr., president of Gifels Associates, Detroit, reported that the materials situation is partly responsible for his firm getting fewer bids on jobs.

As is evident all is not good or bad in the construction industry, but the prognosis appears gloomy.

GSA directed to set energy guidelines

The architect's role in the deepening energy crisis took on an added significance last month as the White House announced the formation of a new Federal Energy Administration and the House passed a measure directing the General Services Administration to develop design criteria for assuring the best use and conservation of energy in Federal buildings, existing and new.

The American Institute of Architects' energy task force met in Washington and reviewed progress on the publication of new guidelines on the subject, and the Institute's research corporation was involved with GSA in developing new criteria.

The House-passed measure was specific in stating that "architectural features and site orientation as well as insulation and elimination of excessive fenestration" would be considered in the selection of materials for a building at any given site. New techniques for energy supply generation and transmission would also be studied.

The House Public Works Committee, chaired by Rep. John Blatnik (D.-Minn.) authored the energy conservation bill, one of many similarly oriented which are before various committees. This one seems to have a chance.

Wainwright Building slated for saving



In a major new policy development for its upcoming 25th anniversary this year, the National Trust for Historic Preservation has taken steps directed toward saving one of the world's first modern office buildings, the Wainwright Building in St. Louis. The Trust has taken an option to purchase the landmark structure that was designed by Louis Sullivan in 1890-92.

This is the first time the National Trust has been involved in saving a major urban commercial structure and finding an economically suitable use for it, although the Trust has been active in saving other historic structures, districts, and sites for many years.

Rebar shortages may curtail construction

After a recent meeting of the Associated General Contractors material shortages committee, the organization called a press conference to announce its findings that the shortage of reinforcing steel alone could cause a 15 to 25 per cent reduction in construction spending this year. The situation with regard to the rebar supply, particularly in smaller diameters, is becoming more serious day by day, the contractors and some leading steel producers warned. The shortages have been mounting steadily over the past three months, they said.

Summarizing reasons for the shortage, the committee cited: 1) Worldwide construction demands; heavy mill exports while imports to the U.S. decline. 2) Price controls on rebars. Sales of mills are

going to satisfy foreign orders where much better prices are evident. 3) Export. Demand for ferrous scrap is unusually high, yet exports from the U.S. are almost 50 per cent higher than the average of the past decade. 4) Pollution controls.

The association would like to see an immediate embargo on export of ferrous scrap and relaxation of price controls on reinforcing items, it says.

Parsons to manage USPS construction

After months of pondering the future of its \$3 billion construction effort, and after it was decided the Army Corps of Engineers would no longer handle facilities construction, the U.S. Postal Service announced retention of Ralph M. Parsons Company, Los Angeles, as prime contractor for management and technical support. The three-year contract for a wide variety of services is initially valued at \$13.2 million. The second- and third-year terms will be negotiated as the time nears.

It was expected the fees to Parsons would exceed \$20 million as renegotiations continue.

While the winning concern will have a broad range of responsibilities in assisting USPS with its mail handling program, specific requirements are set out in the design area. It is obliged to provide technical experts, as USPS put it of an architectural and engineering nature.

Associated with Parsons for the postal work are Day & Zimmerman, Incorporated, Atlanta; Lester B. Knight, Incorporated, Chicago; The H. I. Yoh Company, Philadelphia; and the Office of Max O. Urbahn Associates, New York.

Of particular interest to architects is a clause in the contract which covers what the Postal Service terms technology transfer. This, it explains, will enable USPS to acquire the most advanced industrial and professional techniques from the private sector and to obtain help in areas of technology, methods, procedures and organization.

Early in 1971 the Army Corps of Engineers entered an agreement with the Service to handle the construction of facilities along with the design work entailed. But the Office of Management and Budget ordered that terminated last February and since that time the USPS has been planning transition to a plan under which it would again assume the overall direction of its huge construction program.

AIA board hears regional reports

The American Institute of Architects board of directors, meeting in Washington, D.C. last month, reviewed regional reports indicating, on the whole, steady business conditions and with little exception healthy and improving local AIA activities.

There were complaints of tight money and material shortage problems, but difficulties resulting from the kickback and payoff affairs of a few months ago received surprisingly little attention.

As so often is the case, spotty situations regarding architectural activity are being reported. New York said its general architectural economic health was "depressed," mentioning as cause reductions in public construction programs.

Tight funds have curtailed activity to some degree in California and costs there are high, but the economic health of smaller offices was said to be good while larger offices experienced severe lay-off problems. In central states, over half the AIA chapters report conditions improved since last January and much stronger activity is forecast for this year.

High interest rates have been affecting construction volume in Illinois, but work moves ahead now on the assumption the market won't improve spectacularly. A special problem for Chicago: tougher tax assessments reportedly have virtually stopped building; developers are preoccupied with converting condominiums and there is a 12-year new office space surplus. The city also is said to be faced with the inevitable passage of a design review ordinance in the guise of a special zoning provision affecting all structures over 100 feet high and all structures bordering Lake Michigan.

The Pennsylvania region reports one of the more discouraging situations with the large city areas there generally depressed with little hope for improvement.

Florida is feeling the tight money crunch but believes prime interest rates have peaked and construction there is going strong. In Hawaii, tight money is holding residential construction down.

In the Northwest, most areas are enjoying a healthy amount of work. Building material shortages are reported, with deliveries of steel and plumbing fixtures slowing down. (Illinois had reported that brick has become a long lead-time item;

fabricated steel takes six months for delivery and "cost defies estimating." Small diameter rebars have disappeared from the market.)

The mid-Atlantic states reported improved architectural business conditions. Offices are busy although tight money has slowed housing and costs continue to rise.

Offices also are busy and have healthy backlogs in Michigan, where the design-build process continues to make inroads and material shortages hamper construction.

Texas architects continue to be busy and the effect of the high interest rate syndrome has been minimal there. Ohio architects report cautious optimism.

New England conditions have improved over the past six months. The tight money situation has not affected business too much, but if it continues beyond mid-winter, the area will suffer, it is believed.

A mixed condition was reported for the East Central region with some communities active, others quiet. In the Central States region there has been little unemployment among architects and draftsmen.

These reports to the national office were prepared before the latest crisis related to energy shortages.

Federal procurement regulations adopted

The nation's five leading architectural and engineering societies today commended government adoption of new Federal Procurement Regulations covering A-E contracting. The new regulations are applicable to all Federal civilian agencies and require establishment of evaluation boards to review qualifications and technical proposals from competing A/E firms.

In issuing the new regulations, General Services Administration Administrator Arthur F. Sampson set forth the criteria to be considered in selecting design services. His order clarifies procedures for publicly announcing A/E procurement opportunities, maintaining in-house data files, inviting technical proposals, observing statutory fee limitations, developing governmental cost estimates and negotiating contracts.

According to Leo A. Daly of Omaha, chairman of the Joint Committee on Federal Procurement of Architect-Engineer Services, "these new Federal Procurement Regulations will increase competition by encouraging proposals from more firms, by stipulating review of

qualifications by independent and unbiased evaluation boards, and by assuring adherence by all parties to the government's own cost estimates. In response to questions, Daly suggested that similar regulations should be adopted at state and local government levels.

The Joint Committee on Federal Procurement of A/E Services is comprised of representatives from: the American Consulting Engineers Council; the American Institute of Architects; the American Road Builders Association; the American Society of Civil Engineers; and the National Society of Professional Engineers.

Federal legislation may boost solar energy

Three days of Congressional hearings on a proposed solar heating and cooling demonstration law have produced a sizable compendium of information on the present state of the art and many diverse proposals for future direction.

The hearings concentrated on a new bill introduced by Mike McCormack (D-Wash.), chairman of the energy subcommittee of the House Science and Astronautics Committee. This would authorize a three-year demonstration program of 2000 solar heating units and a five-year demonstration of another 2000 in residential dwellings, mobile homes, town houses and at military bases. It also calls for an outlay of \$50 million in research and development funds.

Speaking for HUD, Peter A. Michel, acting deputy Assistant Secretary for policy development and research, said it is now technically possible, and may even be economically feasible, for solar energy to provide as much as one-half the energy needs for buildings. The HUD experts, he said, feel that solar heating and cooling of domestic water, has the greatest potential for technological accomplishment in the shortest period of time.

Three major subsystems were described in detail—the collector, the working fluid plus thermal storage, and the heating or refrigeration device. Of these, the second has received the most intensive study. The absorption heat pump was said to hold some potential since it can be driven by thermal energy captured from the sun and also receive assistance from an auxiliary electric system.

The committee plans to consider later proposed legislation providing tax incentives for solar energy.

Energy, metrication discussed at BRI

Speaking at a recent energy conference at the Building Research Institute in Washington, Tom Casberg, deputy Assistant Secretary of Defense said "there's a real rough energy shortage and it will be with us for 15 years. Engineering thinking is geared to yesterday when it should be geared to tomorrow. We must throw out past clichés and adopt bold new approaches."

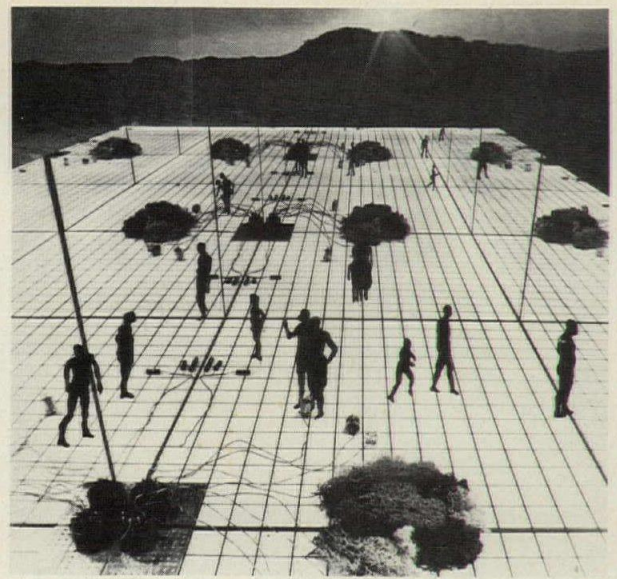
Casberg recommended building power plants in central city areas to reduce pipe runs, and thus energy losses, and said buildings may have to be built closer together.

The subject of metrication was discussed at the meeting and England's experience was detailed by Gordon Bowen, director of the British Metrication Board. He told of the Royal Institute of British Architects Council authorizing as early as 1970 the publication of a recommendation that: 1) Architects should take the initiative in designing in metric. 2) Metric dimensionally coordinated products should be specified where ever possible. 3) Where necessary a mixture of coordinated and non-coordinated products should be specified.

The construction industry program for metrication adaptation is pretty much on target in England but it will be some time this year before substantially all work on site will be metric and the country is said to be a long way from achieving comprehensive use of dimensionally coordinated design and construction.

Another speaker in this conference, Joseph Stein, P.E., vice president, Tishman Research Corporation, New York, told of a random and casual sampling of key construction executives he conducted, learning their "gut feeling" was to take a passive role in metrication and to monitor both the Federal legislation and its implementation. These men felt, he said, that the construction industry would be pulled along by the design professions and the building product manufacturers, with the key problems being cost, training and confusion during conversion.

"The construction industry should not sit idly while others dictate the course it will have to follow," Stein remarked. "Government should also not be permitted to walk away from the problems it legislatively creates, but should be responsible as well for planned, orderly, intelligent implementation."



Italian visionary architecture tours United States

Some 60 drawings, lithographs and photomontages are touring the country, approximately half representing the work of Milanese architect and industrial designer Ettore Sottsass, Jr.; the remainder document the utopian visions of Superstudio, a group of five Florentine architects who exhibit and publish communally. None of the works has previously been exhibited in the United States. The exhibition was organized by Walker Art Center in Minneapolis. Ettore Sottsass, Jr. is best known in this country for his design for Olivetti office equipment. Born in Austria in 1907, Sottsass has worked in a variety of media including painting, ceramics, tapestries and furniture. His portable plastic shelter designed for the 1972 Museum of Modern Art exhibition in New York, *Italy: The New Domestic Landscape*, bears witness to his desire to create furniture "from which we feel so detached, so disinterested and so uninvolved that it is of absolutely no importance to us," furniture that will decondition us "from the psychoerotic indulgences of possessions." The five architects—Piero Frassinelli, Alessandro Magris, Roberto Magris, Adolfo Natalini and Cristiano Toraldo di Francia—who comprise Superstudio have worked together since 1966. Their futuristic photomontages are parables of metacities transcending design, communication grids covering the entire earth (shown above), and "continuous moments" encompassing "rediscovered architecture."

Here is the schedule:

- Everson Museum of Art, Syracuse, N.Y. January 27-February 24, 1974
- Herbert F. Johnson Museum of Art, Cornell University, Ithaca, N.Y. March 17-April 14
- Art Museum of South Texas,

Corpus Christi, June 23-July 21
 ■ Fort Worth Art Center Museum, August 11-September 8
 ■ Long Beach Art Museum, September 29-October 27
 ■ Joslyn Art Museum, Omaha, December 1-January 12, 1975.

Quoting Mildred S. Friedman's introduction in the show catalog, "All of these designers respond to our planet's declining habitability with evocations of strange utopias—wistful, sometimes sardonic counter-images to the current reality. Expressed in drawings, lithographs and photomontages, their visions expand our attitudes about man's relationship to nature and to technology. Within the tradition of visionary architecture their hallucinatory landscapes of improbable structures suggest a redefinition of architecture and a reconsideration of architectural functions. Similar visionary concepts have been realized in the past: NASA's spaceships surpass the fantasies of H. G. Wells; the arcaded romanticism of Louis Kahn's buildings fulfill the prophecy of an architecture of abstract forms free of embellishment, implied in Etienne Boullée's 18th century drawings. Any doubts about the possibility of giving form to fantasy are dispelled by the achievements of two American architects, Buckminster Fuller and Paolo Soleri. Fuller's synergetic domes and Soleri's miniaturized megastructures embody ideas that were impossible visions only 30 to 40 years ago and, more recently, the German architect Frei Otto's pneumatic structures and the multi-sensory environments of the English group, Archigram, have been absorbed into current architectural vocabulary. In the future, some of the suppositions made by Sottsass and Superstudio may also take actual form."

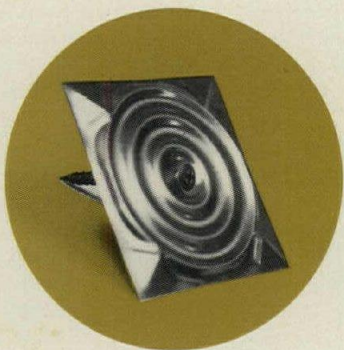
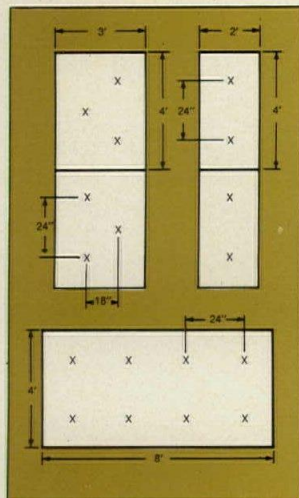


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Perma-Fastner system is FM and UL approved. Specify Perma-Fastner for positive protection against wind uplift, vibration and construction movement.

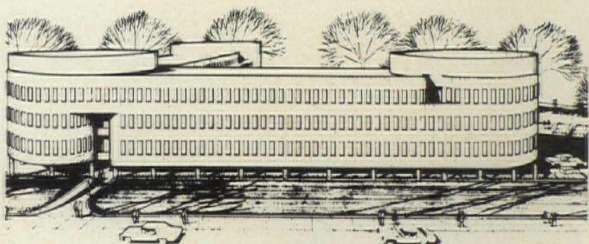
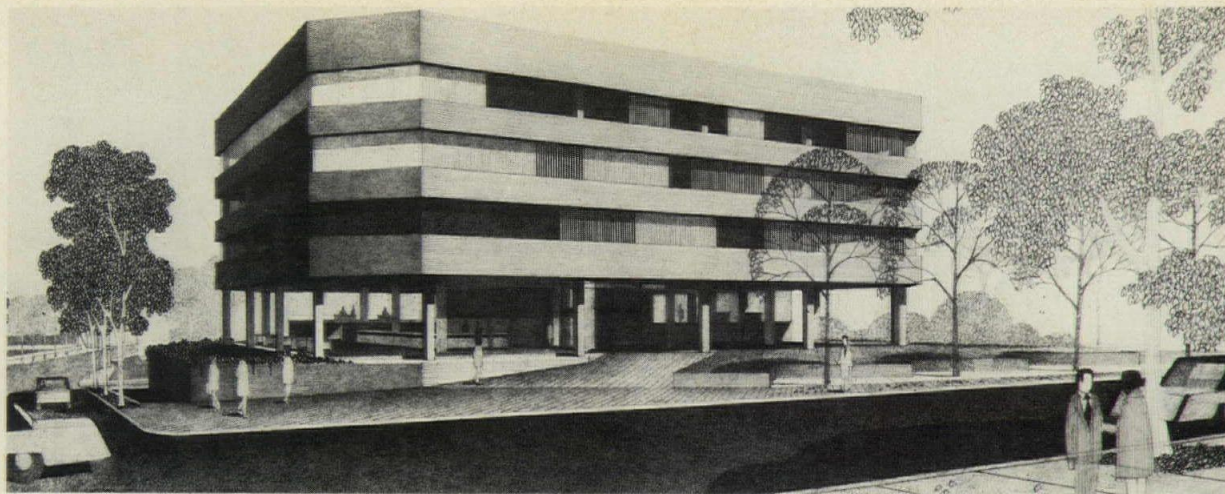


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Fully automated bank for Massachusetts city

Stahl/Bennett Incorporated are the architects for this five-story bank, the first commercial bank in Fall River, Massachusetts in 50 years. Being built for the B. M. C. Durfee Trust Company, the facility is to be fully-automated, incorporating television transmission and pneumatic tube systems for customer transactions. The 62,000-square foot building is expected to open in early 1975 at an estimated cost of several million dollars. John Bennett is the partner-in-charge.



Office building takes "boomerang" form from site

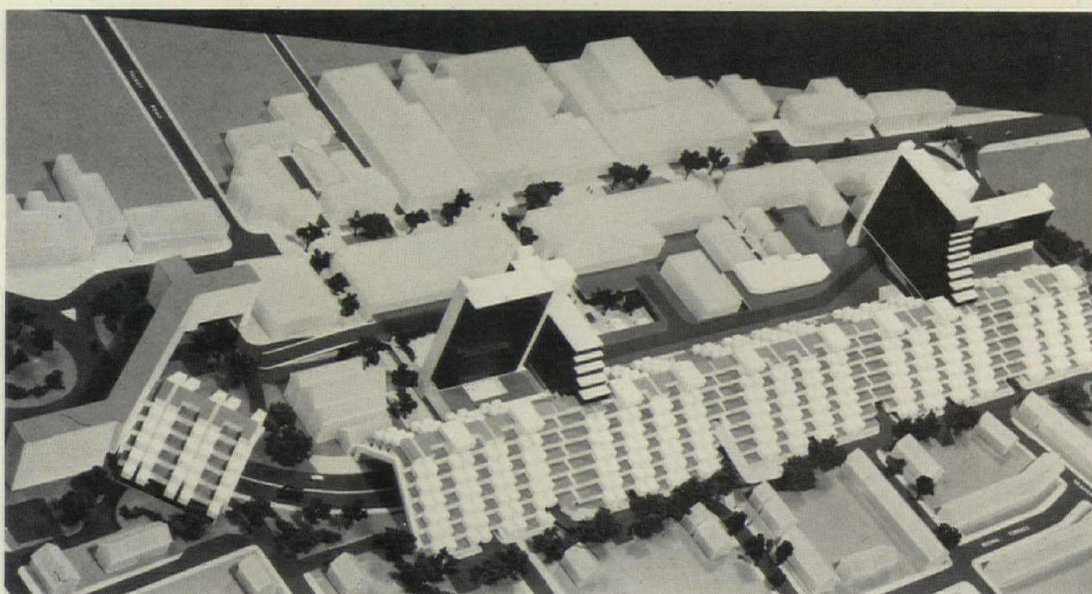
The sloping triangular site for this McLean, Virginia structure suggested a boomerang shape, with two- and three-story elements to fit the land contour. Designed by Segreti, Stillwell & Hasselman, the building is

framed in steel and clad in pre-assembled asbestos wall panels and pneumatically-sealed plastic window bubbles. Circular mechanical equipment pods are located over executive suites at both ends.



Cigarette factory winner of British industrial award

The Financial Times of London recently announced the John Player and Sons factory, Nottingham as the winner of its 1973 Industrial Architecture Award. The building by Arup Associates is said to include vast areas of maple flooring, carefully placed view windows for the production floor and a ceiling design that creates a stimulating work space. The roof structure is of steel "N" girders, and the remaining structure is situ reinforced concrete.

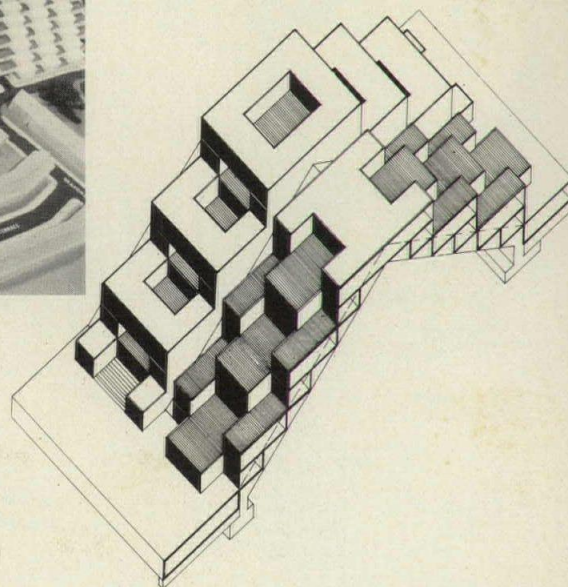


British architect designs a housing system for use over rail, motor ways

Siege Systems Limited of Britain has announced a housing system for construction over rail and road ways. The idea of architect M. F. Grzesik and consulting engineer J. D. Winders is based on a series of inverted V-shaped structural frames of post-tensioned concrete units with a 215-foot maximum span.

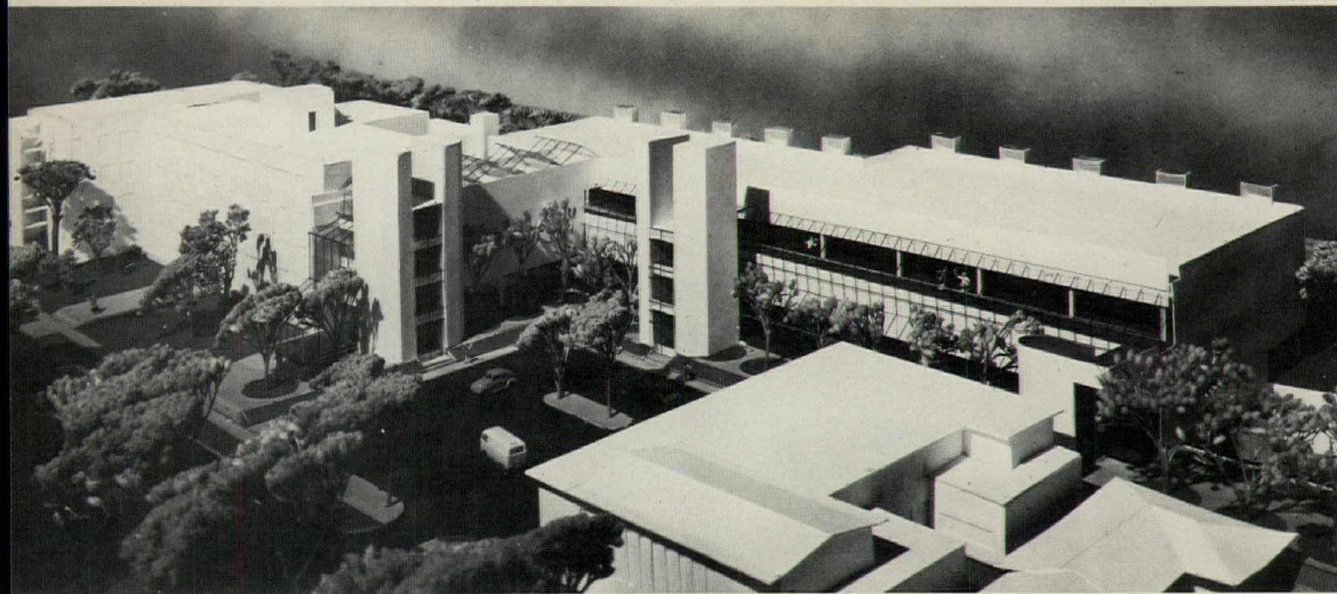
A specially designed crane straddling the road would lift the frames for mounting on anti-vibration bearings. Noise protection would consist of a lightweight concrete outer fireproof skin and a 10-inch thick floor. Two-story houses would be constructed on each step with a maximum height of the total

structure reaching seven stories. A spokesman for Siege Systems said that public housing constructed in this way could result in a 30 to 40 per cent savings over conventional construction, meaning savings would result from the use of air space and from use of pre-fabricated components.



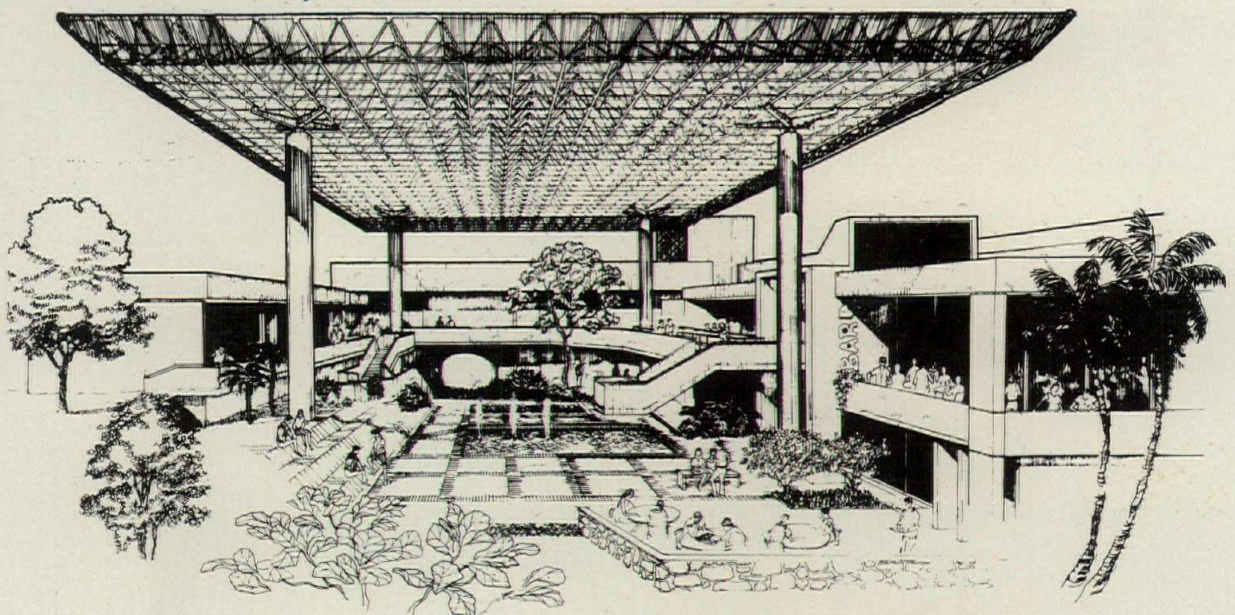
Major expansion for California hospital

Construction has begun on a \$5.6 million expansion project at Mercy Hospital in Bakersfield, California. Architects are Caudill Rowlett Scott in association with Eddy Paynter Renfro & Associates. The 86,000-square-foot, four-story addition will feature a reinforced concrete foundation, steel frame superstructure, and a metal stud and stucco exterior wall. A major highlight of the design is said to be the cascading solar bronze glass window wall, creating a greenhouse effect for all exterior corridors. The fast-track project will take 18 months.



Cultural center for Florida condominium has roofed promenade

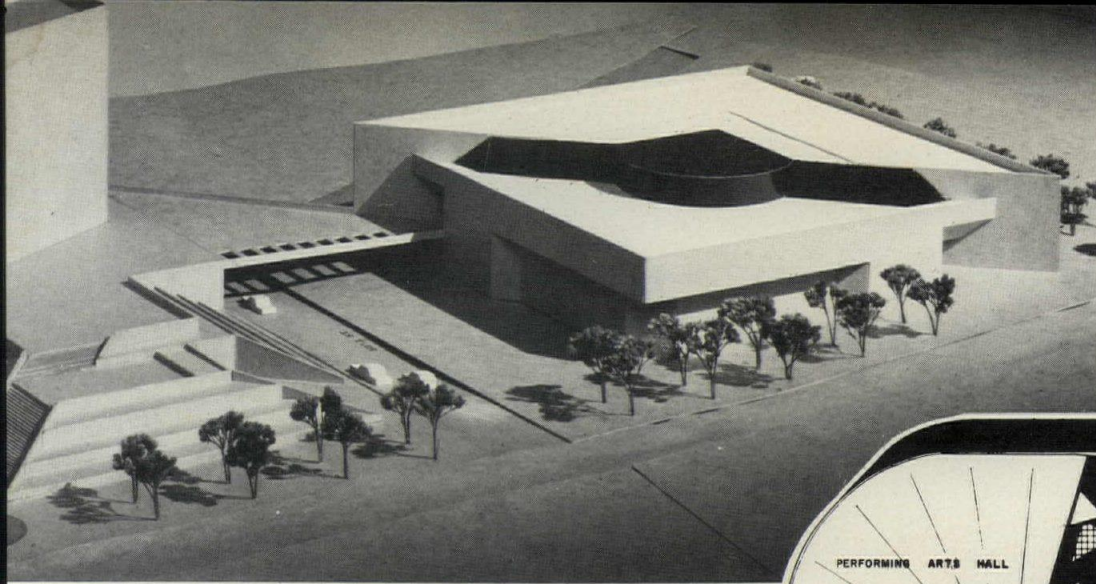
The most striking feature of this Fort Lauderdale condominium complex is a 15,000-square-foot space frame above a landscaped promenade. Designed at a cost of \$2 million by Roy D. Smith, the spotlighted structure is visible from a distance of several miles, and is designed to be the focal point of the entire community. Bordering the space frame and garden is a cultural center housing an auditorium, restaurants, health spa, bowling alley and specialty shops.



Washington's largest new school designed for full community use

The Oxon Run Educational Center, under construction in the Capital, will be the first school in the District of Columbia to accommodate both primary and secondary grades. The facility designed by Perkins & Will is meant for after-hours use by the community for a variety of educational and recreational pursuits. The open-plan design for 2700 students contains 350,000 square feet on three levels. A 90-foot-wide open space runs the length of the building, flanked on both sides by a 30-foot-wide bay for laboratories and support facilities. Service cores extended beyond the face of the building contain the stairs, toilets and mechanical systems. This method effects economies in construction and keeps the teaching spaces free. Construction will end in 1975.



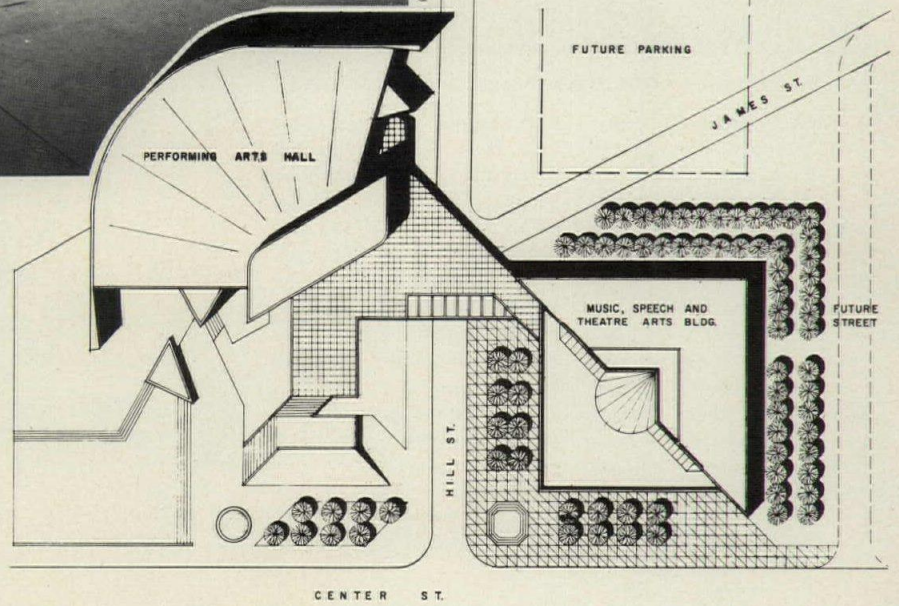


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Phase II announced for Akron Performing Arts Center

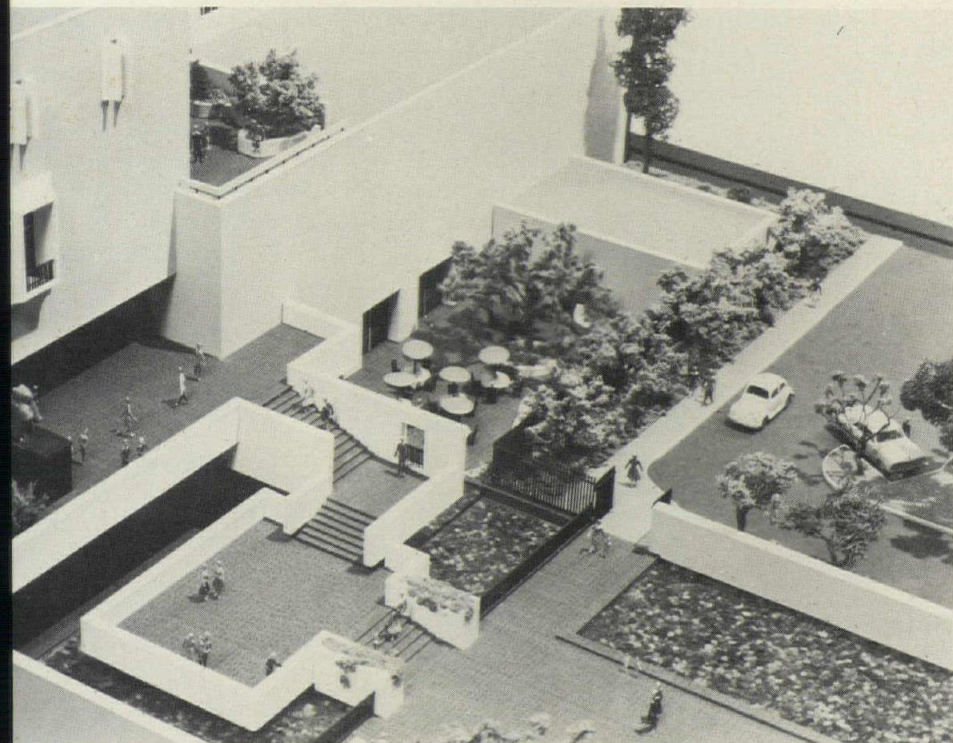
In the November issue of the RECORD, page 38, we covered the opening of the Edwin J. Thomas Arts Hall at the University of Akron (Ohio). Planned for addition to that facility is this one, a \$4.5 million music, speech and theater arts building designed by Thomas T. K. Zung. The proximity of this new academic building to the existing

restaurant, although this portion of the design is not part of the architect's contract. Included in the new three-level building will be a 300-seat recital hall, a small experimental theater, and a number of practice rooms of varying sizes. A skylight articulates the spatial thrust into the building and accents the central two-story atrium which will serve as a performing arts space. Completion is in 1975.



Birmingham, Alabama bank announced

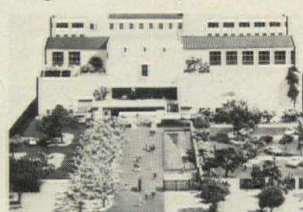
John Carl Warnecke & Associates, New York and Russell McCaleb & Associates, Phoenix are the architects for this 18-story bank and office tower, which will feature aluminum trim and grey tinted glass. At ground level, the glass is to be set back 6 feet, emphasizing the exterior columns of stainless steel. The colorful banking floor will have two balconies, and the ceiling will rise to 36 feet at one point.

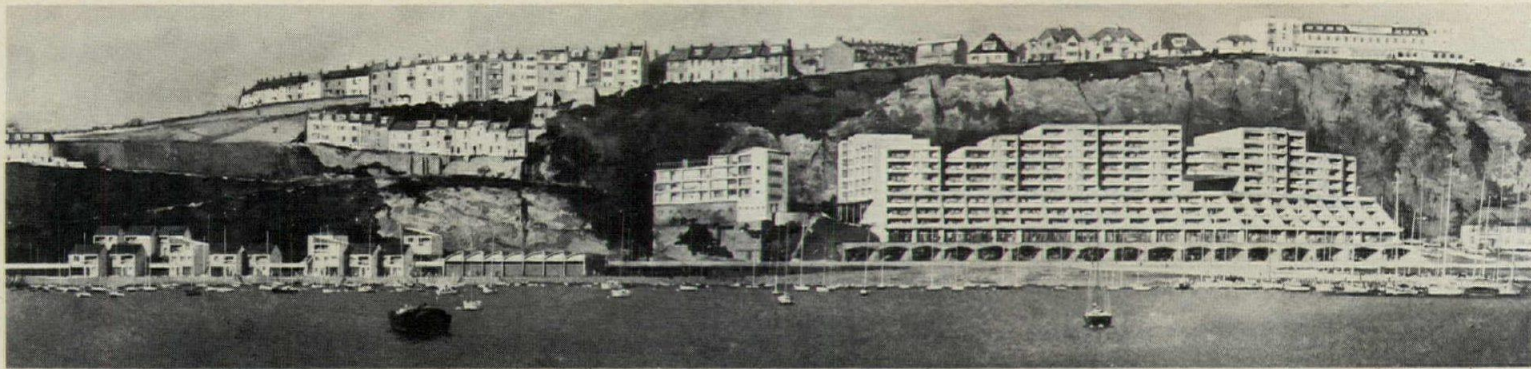


Expansion planned for Natural History Museum of Los Angeles County

The 62-year-old natural history museum in Los Angeles will undergo a \$7.2 million expansion and modernization program beginning in the fall of 1974. Included in the program is the construction of a 56,000-square-foot, three-story wing

(shown). A broad terrace and stairway, cantilevered over a two-level reflecting pool will lead to the new main entrance at the second level. An indoor-outdoor dining area is planned. The design is by George Vernon Russell & Associates.

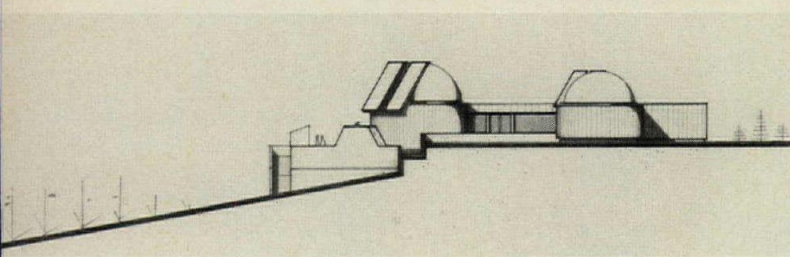
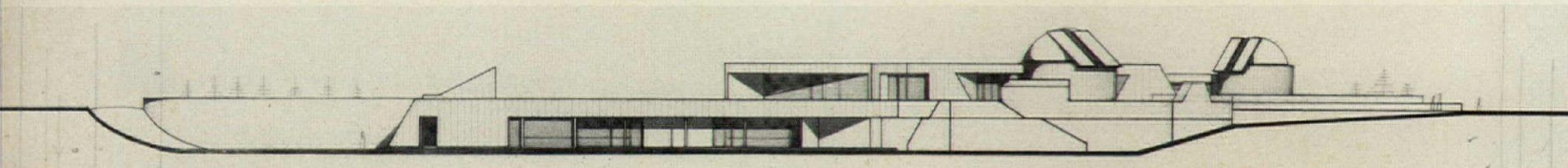
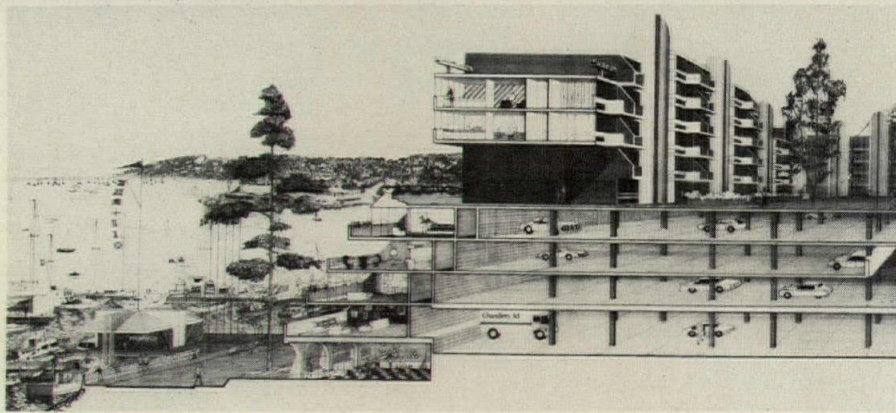




Marina complex proposed for English coastal town

A major development at Brixham, Devon, which will provide a new breakwater to enclose the whole outer harbor and a marina-recreational center for 800 moorings, is currently under consideration by local authorities. The scheme is the joint effort of architects Michael Twigg, Brown and Partners; engineers Walter C. Andrews and Partners; and Costain Civil Engineering. Shown above is a composite photo il-

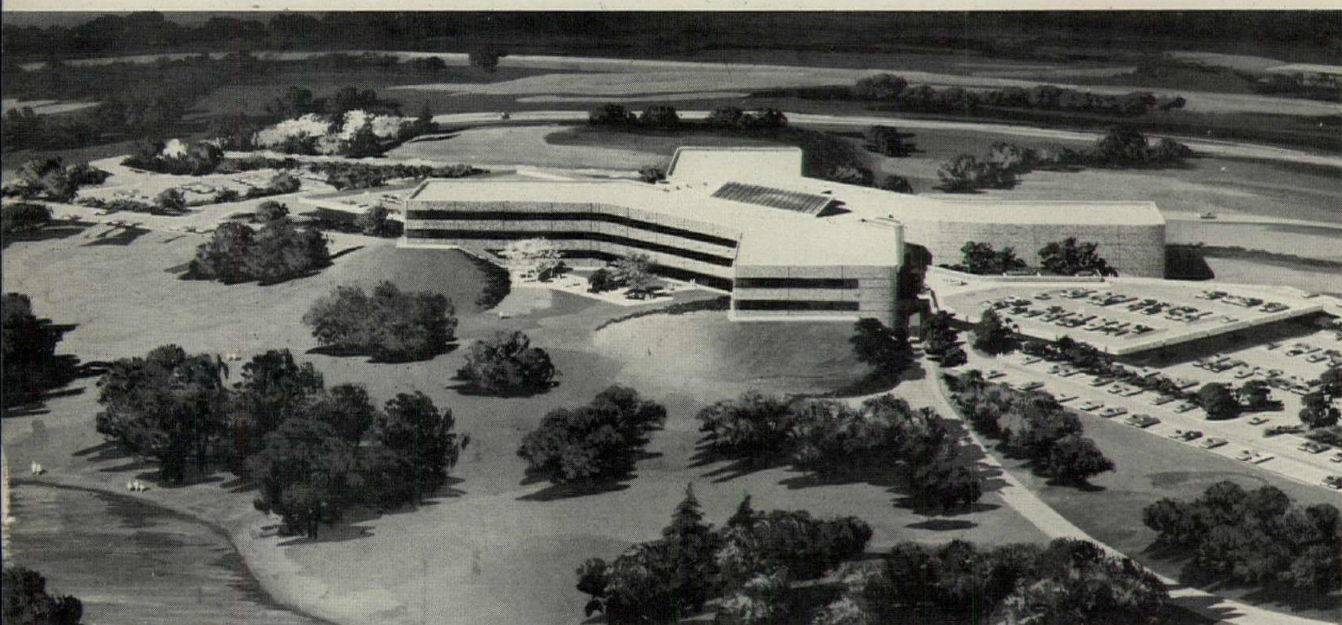
lustrating how the new facility will look. A recreational center, flats, parking, stores and other facilities for residents will rise from a landscaped podium. Staggering the height of the elements is meant to assure that the complex does not interfere with the views from the top of the cliffs. Balconies of the flats will have planting areas, and all parking is to be below the podium. A pontoon network will provide moorings.



Preliminary plans announced for observatory in New Hope, Pennsylvania

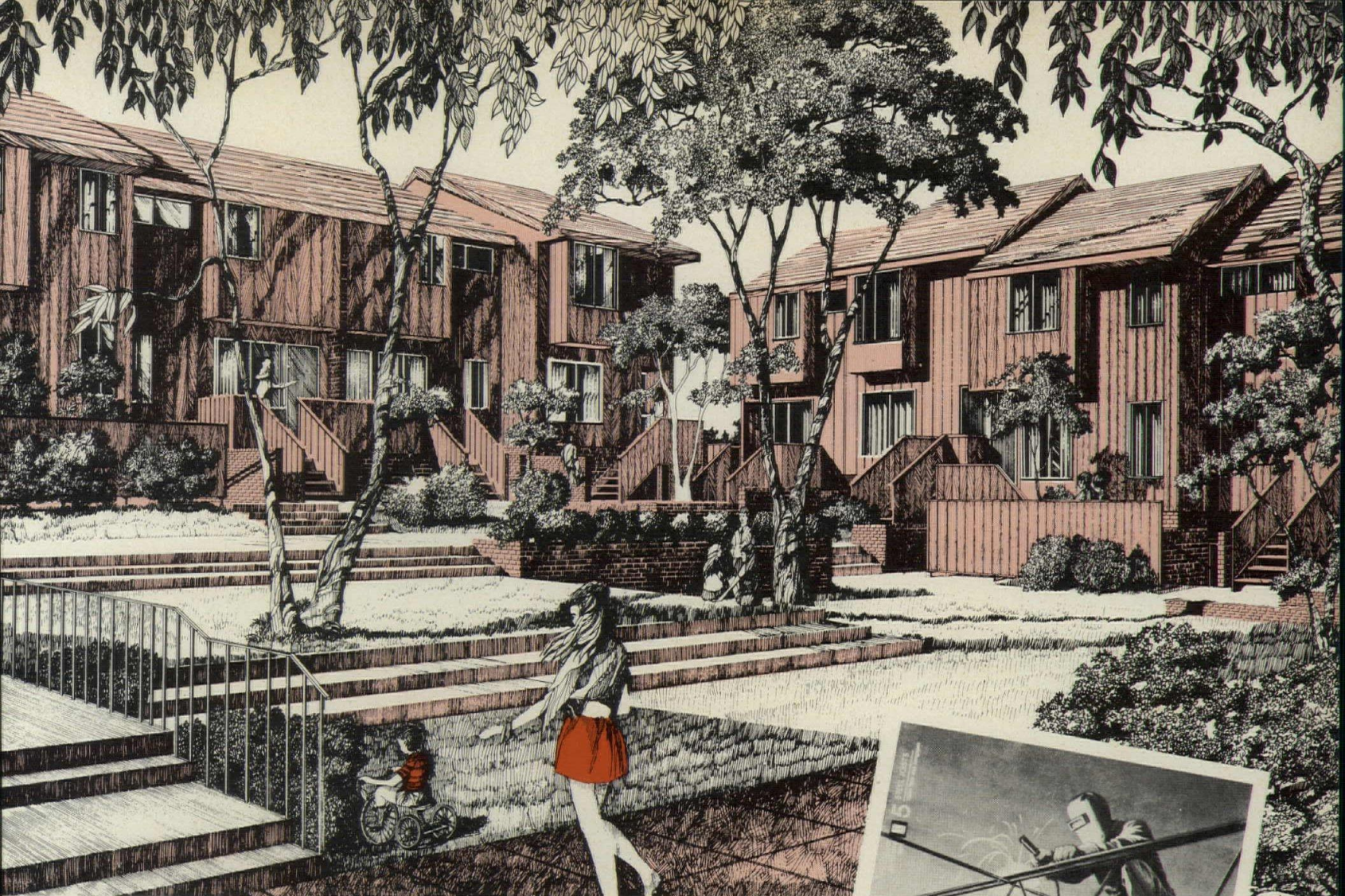
This proposed observatory and research center headquarters for the American Astronomical Research Group is the design of Dicran Levon Gedickian. With an estimated cost of \$335,000 excluding equipment, the building will contain dormitory

space, general offices, an exhibit area, executive offices, classrooms and special observing platforms. Phased construction is planned, with Phase I calling for construction of the main dome, laboratories and offices.



Nabisco headquarters by The Grad Partnership

World headquarters for Nabisco Incorporated will be built in Morris County, New Jersey, with completion set for mid-1975. The three-story, 300,000-square foot building will be located on a 121-acre site, positioned to view the countryside and distant New York skyline. Precast granite-like gray concrete panels and gray solar glass will enclose the building, with strong horizontal expression accomplished by butting the glass and eliminating vertical mullions. In plan, the building is formed by two back-to-back U-shapes joined by a skylighted interior court providing central circulation. Multilevel parking will penetrate the building form.



Why steel joists were the right answer to this building need

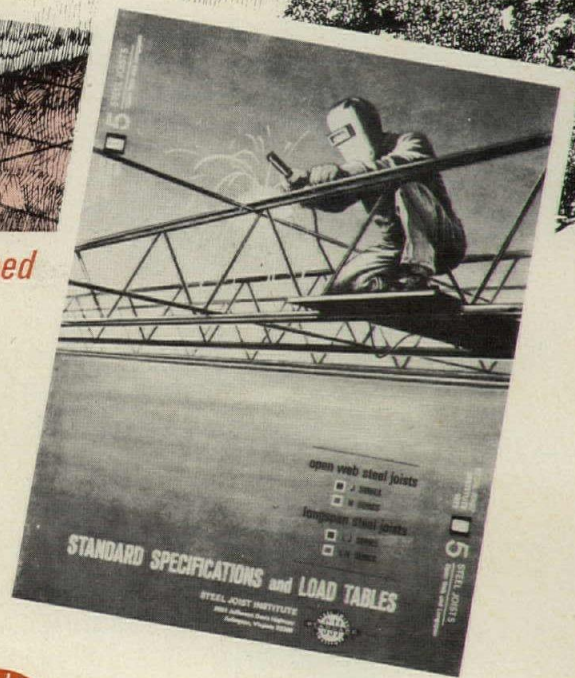
"THE WESTERLIES": STEEL JOISTS HELPED KEEP THE PRICE DOWN BUT THE LUXURY UP

Located in the highly affluent McLean, Va. area outside Washington, D.C., this 67-unit condominium complex with three condominiums per unit, offers residents the utmost in gracious living at moderate cost. The key to economy was total planning and judicious use of design, construction and material selection...including versatile, cost-cutting steel joists.

First floor construction includes open web steel joists, J-series, 12" deep, space at 24" centers with horizontal bridging. Drywall ceiling is attached to the bottom chords, and 3" batts of fiber glass insulation are installed over the ceiling and between the joists.

"We chose this type of floor construction," stated Richard Collins of architects-engineers Collins and Kronstadt, "to provide 2-hour fire resistance rating and reduce sound transmission. We also used the open webs for easy passage and concealment of pipes, wiring, ducts and conduits within the floor depth, for installation economy."

Want to learn more about open web steel joists and their value to modern construction? Write for new edition of Specifications and Load Tables for Open Web Steel Joists and Longspan Steel Joists. Mail coupon for your free copy.



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Mod pods are roomy (4'2" x 4'2" x 3'1"). Perfect for motors, luggage, paints, poisons and caustics, clothing, golf clubs and so on. All kept secure, visible, ventilated — and readily available.

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When product promotion helps design

MAYTAG ARCHITECTURAL PLANNING GUIDE, prepared by The Maytag Company in consultation with The Architects Collaborative; Esherrick, Homsey, Dodge & Davis; and Francis Associates; The Maytag Company, Newton, Iowa, 1973, 107 pages, illus., \$20.00.

In promoting construction products, manufacturers produce an infinite variety of printed materials, some of which are more considerate than others of the architect's real information needs. We find one recent publication from a manufacturer to be particularly generous in its concept, and in its provisions for the designer's information requirements.

The *Maytag Architectural Planning Guide* for multi-family housing and related projects is the result of more than a year's study by architects, designers and engineers into the various methods of installing laundry equipment. If the book is lacking in good design itself, it does provide some good facts on materials, location of equipment, equipment requirements, technical data and typical installations. Skipping some superfluous philosophy—we doubt that a tenant's lifestyle could be much influenced by his laundry facility—the user of this guide will find sections organized in this way:

Design criteria—here the authors focus on considerations that architects need to keep in mind when planning the laundry. Safety, security, ventilation, light, sociability and amenities are dealt with concisely.

Location—this section presents guidelines for selecting the appropriate location in a variety of apartment building types including high-rise and low-rise structures. Central facilities, zoned laundries, on-each-floor laundries and detached laundry plans are discussed in a pro and con fashion which would probably save the designer some leg work of his own.

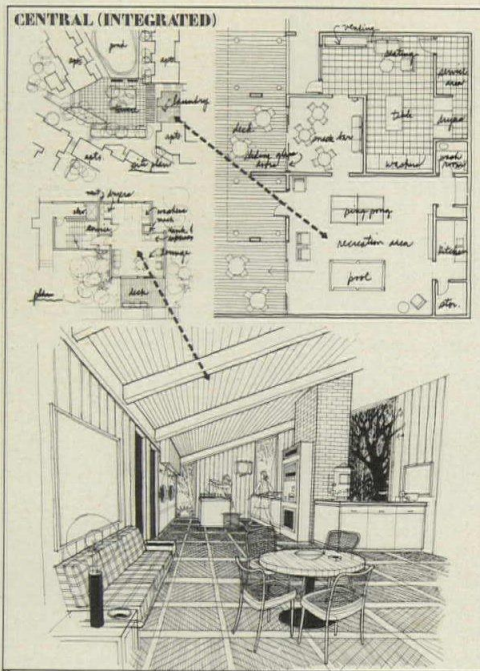
Quantities and sizes—here the guide can help determine the proper number of machines for various apartment building types, with a consideration of the make-up of the apartment dwellers. Equipment requirements will vary, for instance, when the tenants are comprised primarily of students, the elderly or families. Sizes of Maytag equipment and critical dimensions are covered here also.

Arrangement—arranging equipment within the area selected is presented in plan form, and recommended work areas, service spaces and clearance allowances are also covered.

Functional relationships—schematic sketches suggest the possible ways in which laundry facilities might interact with other building or complex elements.

Typical installations—illustrations of good-to-excellent laundry solutions within various

apartment types show such installations as roof-top laundries, basement locations, and others. One of the pages of the guide is reproduced here.



Technical information—detailed specifications and pertinent technical data that focus on venting of dryers within high- and low-rise apartments are presented as follows: venting and primary air, technical data, installation details and specifications. This is a useful section, but will make more work than necessary for the user. Tables of data on Maytag equipment are not easily read, but complete.

Design and materials—Suggested layouts and designs for high-rise and low-rise apartments in this section include plans, perspectives, details and materials selection guidelines. The discussion of various material combinations in laundry facilities should be helpful, as should the illustrations for folding tables, soffit designs and pre-fabricated bulkheads.

The final section of the guide is a listing of advantages to using the company's leasing program which is an obviously favored solution involving the placement of a washer-dryer pair in each apartment. Kitchen equipment is also part of this package.

Architectural firms contributing to this were The Architects Collaborative, and Esherrick, Homsey, Dodge and Davis. Engineering consultants were Francis Associates. It is, as said earlier, a guide generous in concept and information, but it also could have been more sparing of gimmickry and extraneous art.

However, the name of each purchaser

will be registered by the company so that the loose-leaf guide can be updated periodically, that, too, a considerate response to the architect's needs. To obtain the guide, write The Maytag Company, Newton, Iowa 50208.

Also Received

LAND USE WITHOUT ZONING, by Richard H. Siegan; D. C. Heath and Company, Lexington, Massachusetts, 1972. 271 pages, illus., \$10.00.

The author of this book is a lawyer who specializes in real estate law; here he discusses the economic, social and legal aspects of zoning. By detailed reports on existing zoning policies the author concludes that they act to limit housing production and deny to many people the opportunity for better housing and housing conditions. *Land Use Without Zoning* offers specific ways to implement what its author regards as innovative solutions to the zoning problem.

THE USE OF LAND: A Citizens' Policy Guide to Urban Growth, edited by William K. Reilly; Thomas Crowell Company, New York, 1973, 318 pages, illus., paperback, \$3.95.

This compendium of observations on land use is a report of a task force sponsored by The Rockefeller Brothers Fund.

SWIMMING POOLS, by Jacques Debaigts, translated from French by J. A. Underwood; Charles E. Tuttle Co., Rutland, Vermont, 1973, 160 pages, illus., \$17.75.

This is the American edition of a trilingual European book. It presents technical information, which the author regards as useful, and a parade of examples, which he regards as distinguished. The technical information is on the whole not as illuminating as that in *Architectural Graphic Standards*, and the examples—mostly European and mostly residential—are disappointing.

That they are disappointing seems not to be completely the author's fault. For one thing, swimming pool builders (at least in this country) seem unduly nervous about details and designs that stray even a single degree from the straight and narrow, and, for public pools, codes add a further set of constraints.

For another thing, most swimming pools appear to have been designed to harmonize with the shapes of some adjacent building or with the character of the surrounding landscape. Surprisingly little attention is paid to the real requirements. What, for instance, is needed for real swimming? Or for diving? Or for simply flopping about in the water?

Some Hard Facts about outdoor lighting, visibility

Energy can be conserved without sacrificing aesthetic values and safety in our night time environment.

The first step is to understand that the purpose of outdoor lighting is to provide good visibility. The next step is to use luminaires which provide good visibility without wasting light (energy) in blinding glare and misdirected illumination. To reach the ultimate of effective visibility at minimum energy consumption we must examine some old myths regarding "lighting efficiencies."

Myth No.1 *"The more light you get out of the luminaire the better the lighting."*

Fact! The only light that does any good is that which is properly directed, towards the ground. Light directed into a viewer's eyes does more harm than good. This is glare, and nothing is more destructive to vision or more distracting to the observer. Since visibility is sharply reduced by glare, lighting levels must be increased to compensate for this loss of visibility. This means more units and more energy consumed.

Myth No.2 *Lighting effectiveness can best be measured by the "average footcandles" in an area.*

Fact! This literally means a 10 sq. ft. hot spot of light directly below a luminaire reading 15 footcandles surrounded by 90 sq. ft. of darkness, results in an average of 1.5 footcandles for 100 sq. ft. This has to be a poor concept. The only proper way of measuring the effectiveness of illumination is by the lighting provided at the least illuminated point between poles and the uniformity of lighting throughout the area.

Myth No.3 *The architects and engineers have an "either or choice" between efficient lighting without good looks or aesthetic lighting without efficient performance.*

Fact! You can have both aesthetic values and good performance. Let's examine only two of the many handsome units in the Moldcast line that provide truly exceptional performance, the Sans-Serif and the Pericline Contemporary. Although entirely different in appearance both do an excellent job of eliminating harmful glare and spread effective illumination over remarkably broad areas.

The Sans-Serif, with its highly sophisticated reflector system, allows pole spacing up to 5¾ times the mounting height with good uniformity of illumination. Yet it is completely free of glare from normal viewing angles. More than this, from most angles it virtually eliminates the appearance of all light at the top of the pole. The results of this unique capability is shown in the comparison photographs of the Sans-Serif on the left and a typical roadway luminaire on the right.

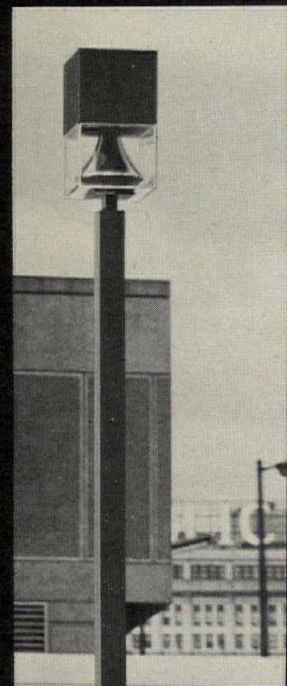
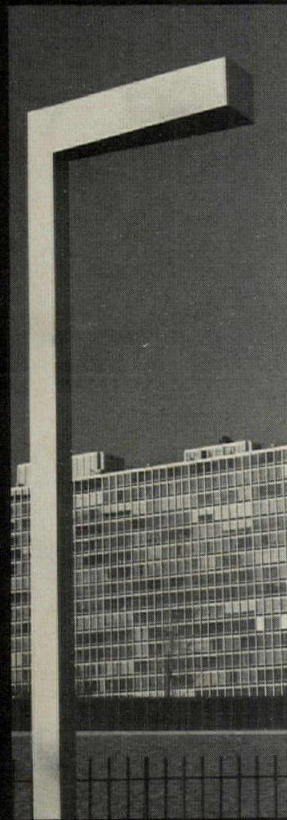
The visual confusion caused by the high glare of the typical unit is evident. Compare this with the complete focusing of light on the roadway produced by the Sans-Serif without any waste or harmful glare. The message, in terms of energy consumption, is clear. The excellent lighting qualities of the Sans-Serif allows the reduction of wattage (power consumption) without sacrificing good visibility.

The Pericline Contemporary is definitely a decorative unit and yet is also probably the most efficient area lighting luminaire ever designed. The 400 Watt High Pressure Sodium model provides an excellent .6 foot candles at the furthest point between units spaced 140' x 130'.

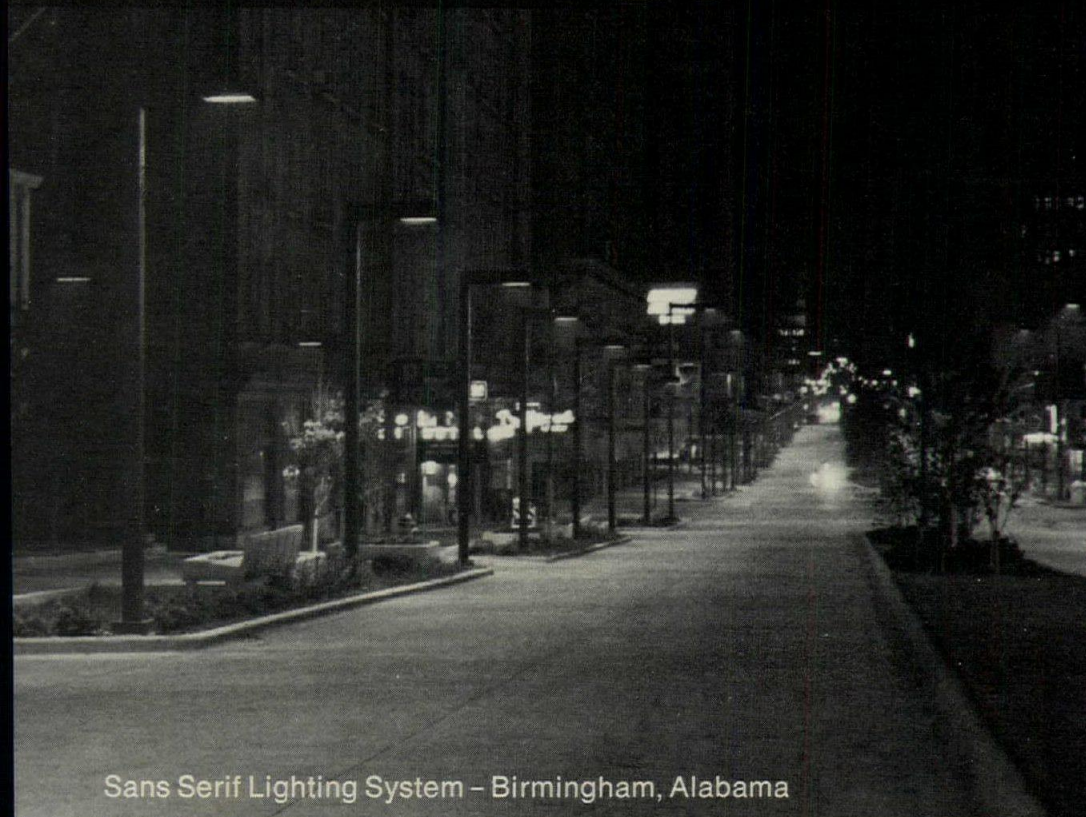
Fact: That's only one watt of energy for each 45 square feet of ground surface without a bit of glare. Only a soft luminosity appears within the luminaire defining its shape at night.

The photograph at the right shows two of the smaller Pericline Contemporaries creating a glare-free environment with uniform level of illumination spread across a broad area.

We hope we have increased your understanding of the relationship between outdoor lighting, visibility and energy consumption. You can still provide architecturally distinctive lighting fixtures without sacrificing perfect visibility or comfort and achieve at the same time an economical use of energy. Write us for more detailed information on the subject.



and energy consumption.



Sans Serif Lighting System – Birmingham, Alabama

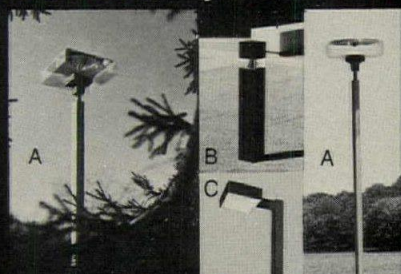


Typical Street Lighting Luminaires



Pericline Contemporary Lighting System

Other high performance lighting products are also available for a wide variety of environments.



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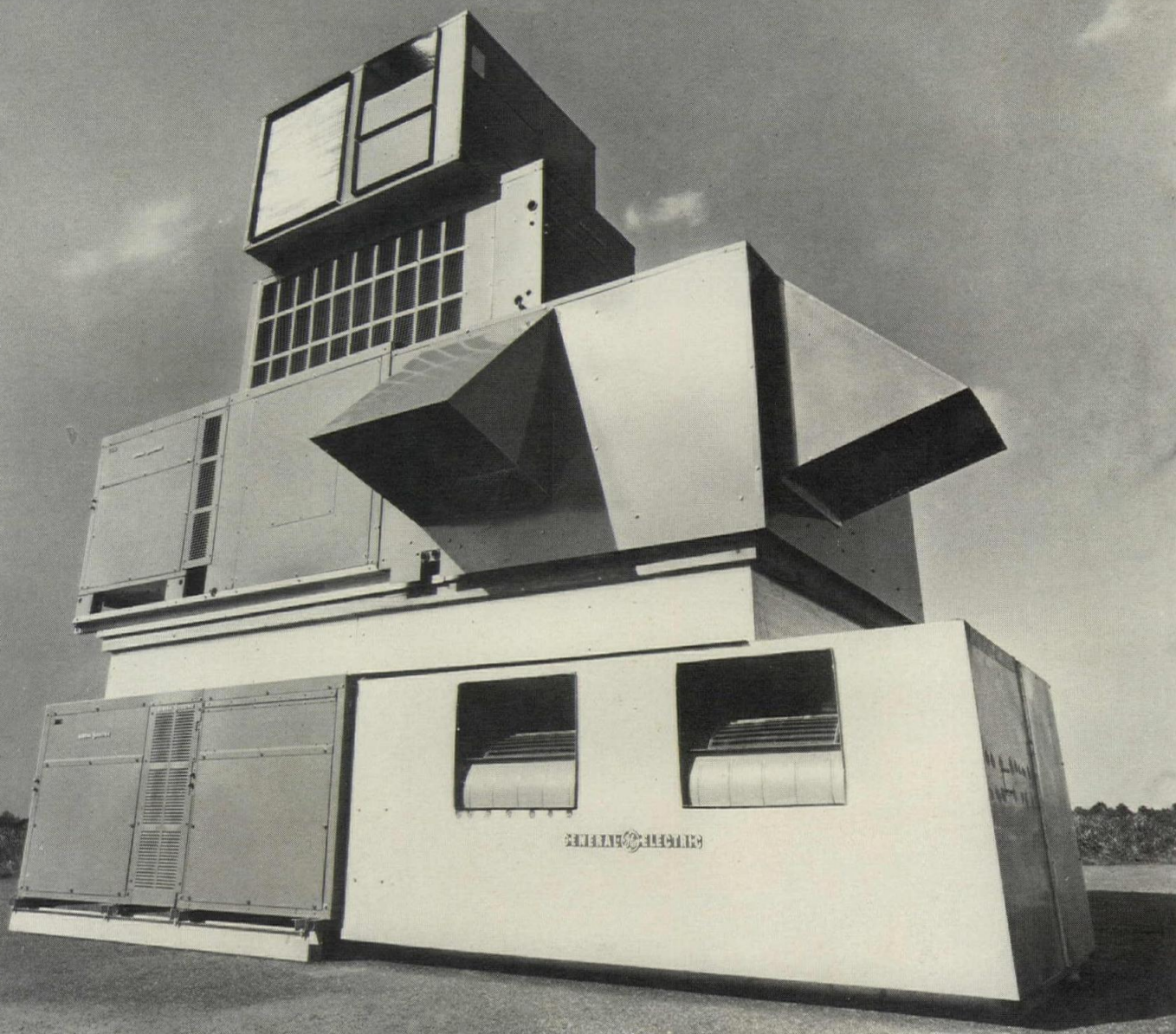
comfort and convenience. These units, with cooling capacities up to 20 tons, may be used in multiples where greater heating and cooling requirements exist, with the added benefit of zonal temperature control.

Split cooling systems? GE has a large selection of condensing units available in capacities from 12,500 BTUH through 240,000 BTUH. GE also has cooling coils with capacities from 12,000 BTUH through 120,000 BTUH in "A" configuration to couple with virtually any warm air furnace. ("Flat" coils are available in capacities from 24,000 to 60,000 BTUH).

Count on GE for a wide selection of indoor and outdoor air handling sections to accommo

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Joseph H. Gauss, Vice President and General Manager, Air Conditioning Products Division.



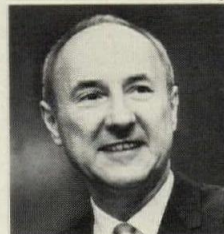
date a variety of supplementary electric heaters in capacities from 12,000 to 480,000 BTUH. Also available: steam and hot water coils, return plenums and air distributors.

Then there is the GE Weathertron® heat pump—an all-weather heat pump that provides year 'round comfort and convenience for commercial and industrial buildings. Used in multiple units, GE heat pumps cool and heat tremendous areas with the added advantage of zone-by-zone temperature control. Split systems are available from 18,000 to 240,000 BTUH and packaged equipment from 29,000 to 120,000 BTUH. The 7½ and 10 ton Weathertron units are compatible with roof top accessories.

So, as you see, we're in the central air conditioning business in a big way. And we intend to be in it in a bigger way all the time.

If you're contemplating an air conditioning installation, get in touch with a General Electric central air conditioning dealer. He's in the Yellow Pages under Air Conditioning Equipment and Systems.

"We're going to be in this business for a long time!"



Joseph H. Gauss

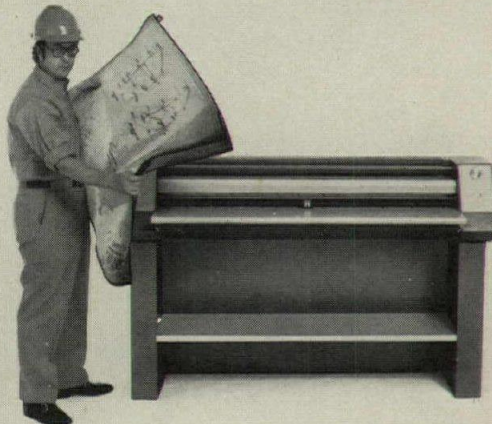
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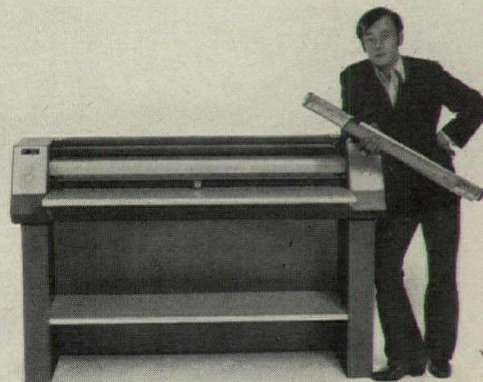
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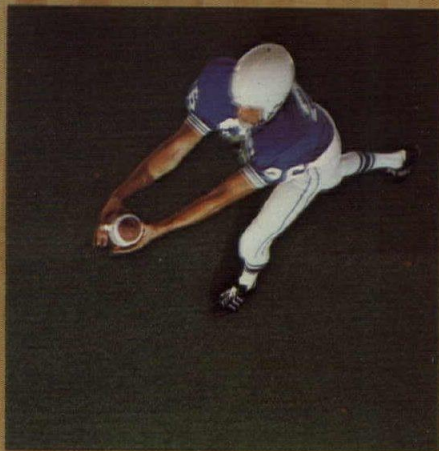
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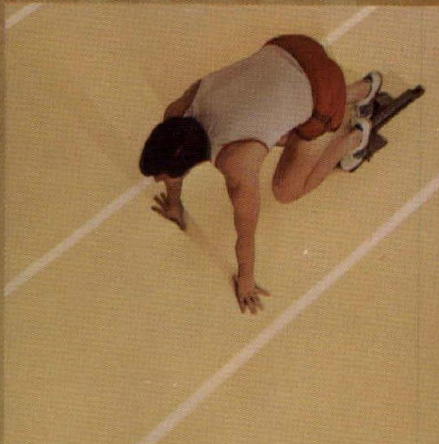
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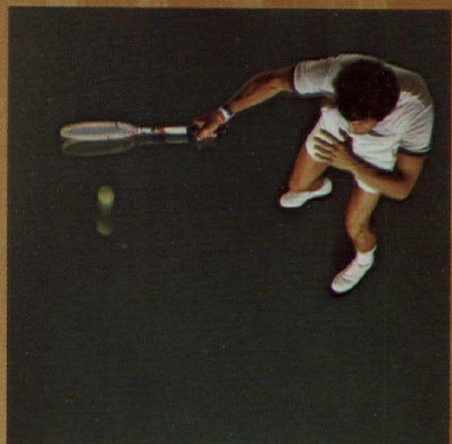
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The night we ran an airline on diesel power.

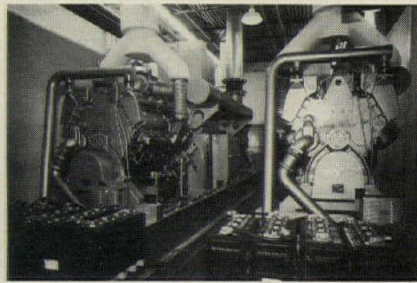
Heat is a year-round resident of Central Texas. But in summer its presence is awesome. It stretches its sweaty arms across the barren countryside and wraps them around every city and town.

In Dallas, the population retreats to isolated nooks and crannies where frustrated fans and air conditioners work overtime to help conquer the heat. However, twice in recent years the heat has won . . . the power drain has resulted in silent darkness.

But not at Braniff International's \$15,000,000.00 computer installation. Here, despite the lack of electricity elsewhere in the city, Braniff's blinking network of computers continued to coordinate schedules, seating, baggage, meals, passengers and flight crews.

Continuous electrical power is provided by a fail-safe power system called UPS (uninterrupted power supply) developed for Braniff through the skill and cooperation of the Detroit Diesel Allison distrib-

utor in Houston. The intricate system consists of three static inverters, a bank of heavy-duty batteries and two 1,000 KW generators, each with a pair of 12V-149 Detroit Diesels.



Why were Detroit Diesels chosen for the job? Three reasons: (1) These engines have proven their reliability in countless hours of the toughest kind of work. (2) They are basically simple engines, easy to maintain. (3) And, most important, the Detroit Diesel Allison distributor had the know-how to handle the entire job, from start to finish.

Each time the local power failed, UPS took over. And to provide instant emergency reaction and service during any future crisis, both engines (only one of which is actually needed

to handle the power load of the three computers) are tested weekly.

Throughout the country, people in the air, in factories, in offices and in hospitals are depending on Detroit Diesel engines. If part of your job is finding and specifying power people can depend on, you should know more about Detroit Diesel Powered Electric Sets.

Check with your nearest Detroit Diesel Allison distributor. He'll work with you. He'll actually help custom build an electric set for your particular job. Any job, whether it's standby power for emergency use or prime power for an entire community.

To find out more, just clip this coupon and we'll send you the latest catalog on Detroit Diesel Powered Electric Sets.



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Until now, durable window beauty like this didn't exist. Caradco made it happen . . . in our all-new CARkote C-200' casement units. Look first at CARkote . . . Caradco's exciting, exclusive finish. It lasts twice as long as field-applied finishes. Factory-applied, the CARkote system combines: 1) water-repellent preservative; 2) primer; 3) rich acrylic enamel coat; plus 4) a tough top barrier that actually fuses all 4 coats into 1.

The CARkote discovery means beauty that really endures. Lasting eye appeal. Because CARkote resists everything from ice to dirt to salt fog to dents. Outside, the C-200' stays clean longer. Comes bright again with a quick rinse. Inside, warm unfinished wood lets you decorate at will.

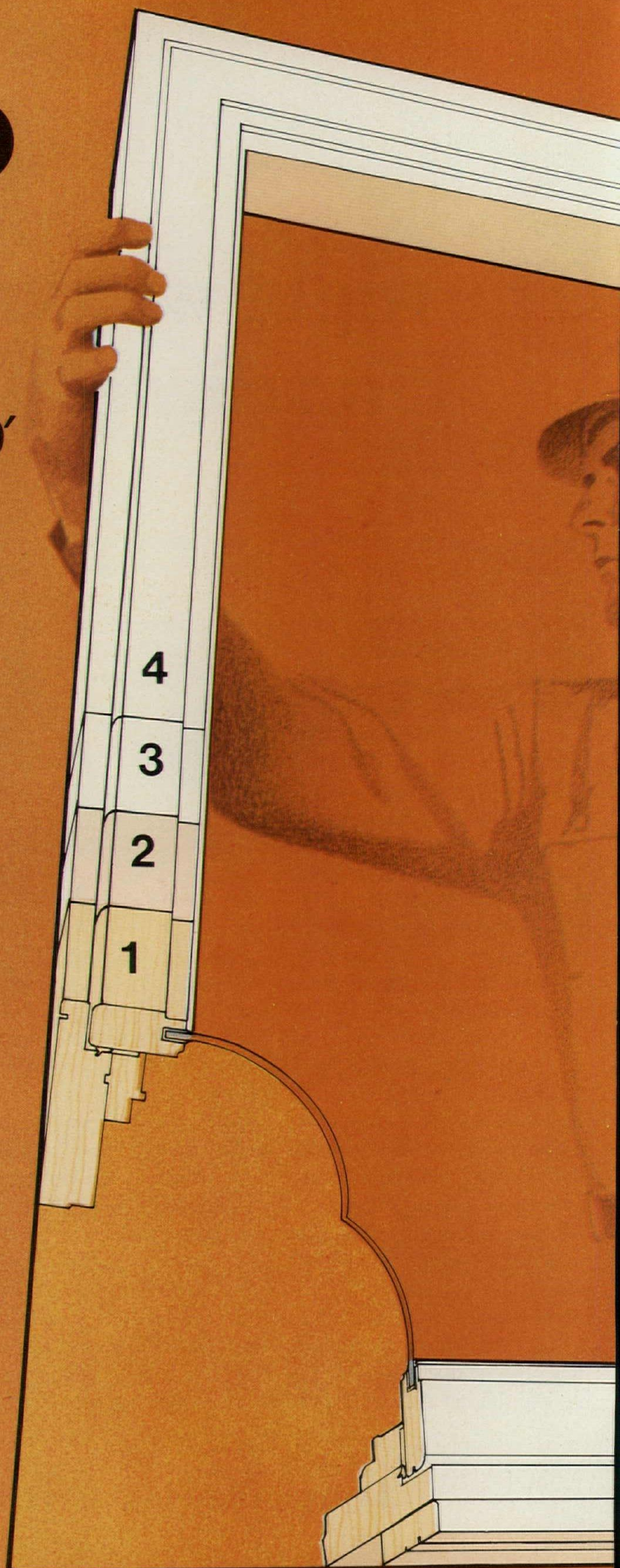
Over all, kiln-dried wood (nature's best insulator) gives basic strength and beauty. And a clean, slim profile adds distinction to your homes and apartments. Insulating glass set in a leak-proof vinyl gasket saves fuel, assures comfort. A double weatherstripping system seals out drafts and rain. For easy 90° opening, concealed hinges work with a Chestnut Bronze worm crank and nylon rollers. Beautiful. Practical. So are the removable matching vinyl grilles (optional) for the divided pane look.

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Formed aluminum industrial siding products with deep profiles for added strength (V-Beam) . . . profiles that blend texture and shadow line (Bold Rib I and II sheet and Box Beam) . . . profiles that combine function and economy (4-inch and 8-inch ribbed and corrugated sheet) . . . and special-purpose profiles (perforated corrugated and curved corrugated). Plus a roofing system that resists water leakage by eliminating through-fasteners (Snug Rib® roofing). All Alcoa industrial building products

can be finished in any of the 10 attractive colors of Alcoa Super Aluma-lure® finish, a baked-on, factory-applied, fluoropolymer enamel, rich in beauty and color integrity.

What doesn't

Aluminum's hidden advantages. Begin with the fact that aluminum takes care of itself *and* your budget. It resists corrosion by forming a protective film of aluminum oxide. So, unpainted aluminum is all some buildings need.

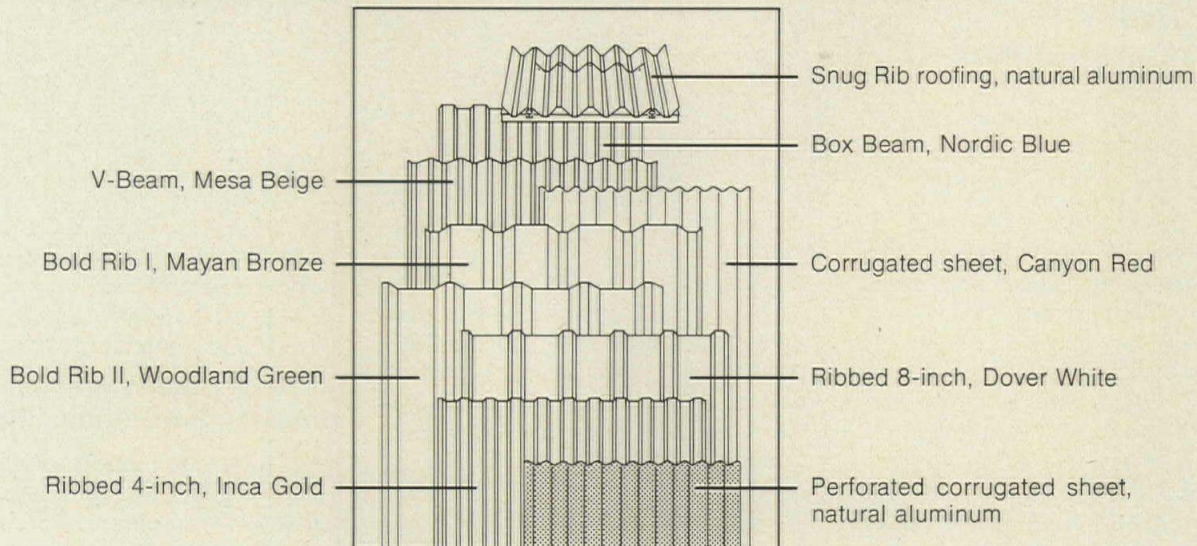
However, if you want color, all the more reason to choose aluminum. It's the substrate that provides additional protection should the coating be scratched. The natural aluminum oxide film that forms, resists corrosion and discourages flaking or adhesion

loss, staining or streaking. Aluminum actually *helps* a coating last. It holds a finish beautifully.

And, the Super Aluma-lure finish is a long-lasting film that won't peel, flake or chip. Its fluoropolymer resin is tough, durable Kynar* that gives a high degree of protection from chemical attack and has a projected service life of more than 20 years, based on exposure and weathering tests.

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Announcing the 1973 winners of the Owens-Corning Energy Conservation Award.



Weyerhaeuser World Headquarters Building, Tacoma, Washington.

Six designs have received the Owens-Corning Energy Conservation Award since we initiated the Award Program in 1971.

These designs won't solve the energy crisis. But we think they're a major step in the right direction.

Look over the latest winners. You may find an idea your company could use to save energy and ease the pinch of rising fuel costs.

Weyerhaeuser World Headquarters Building, Tacoma, Washington.

An all-electric heat-recovery system with heat storage tanks is ex-

pected to save 4.37 million KW/hr./yr. in energy over the lifetime of the building.

A specially designed air-troffer system provides 75 FC of light at desk height with only 2.9 watts/sq. ft. of electrical energy. (4-7 watts is not uncommon in many new office buildings.)

Other energy-saving features: Rectangular, low-profile design to reduce energy requirements by 15 percent. Wide overhangs. And extensive use of thermal insulation (U factor of .09 BTU/hr./sq. ft.).

Result: an energy cost of only 21.35¢/sq.ft./yr. versus costs

ranging from 23.15¢ to 60.11¢/sq. ft./yr. for other new office buildings in the same area.

Design by Skidmore, Owings & Merrill, San Francisco, California.

Boca Raton Community Hospital, Boca Raton, Florida.

Five rotary, air-to-air energy-recovery exchangers reduce cooling capacity requirements 45 percent. Annual energy saving: \$24,230, plus a \$562,800 first-cost saving on equipment.

There's also a sizeable reduction in heating-boiler horsepower requirements.

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

Performance tests on the system—which features a unique “total energy” recovery wheel—show that it is 75.9 percent efficient. So savings should increase as energy costs continue to rise.

Design by The Smith, Korach, Hayet, Haynie Partnership, Miami, Florida, previous winner of an Owens-Corning Energy Conservation Award.

General Electric River Works Program, Lynn, Massachusetts.

Couples a 19.5 megawatt gas turbine electrical power generator with a 190,000 pph heat-recovery system for projected annual savings of about 2 million gallons of fuel oil—about \$240,000 a year.

Special note: Both the gas turbine and steam generator burn *residual* (#6) fuel, yet meet all applicable and anticipated pollution statutes within the state. During normal operation, there is no visible plume above the plant stacks.

Design by GE's Construction and Engineering Section in Lynn, Massachusetts.

Three Honorable Mention Awards.

The Owens-Corning Energy Conservation Award Jury found three other designs worthy of special attention.

The Thomas Glass Factory, Am-

berg, Germany. A-frame design acts as a giant flue hood to exhaust intense heat from glass manufacturing process. Design by The Architects Collaborative, Inc., Cambridge, Massachusetts.

The Massachusetts Audubon Society Building, Lincoln, Massachusetts. Features a solar-energy collector to power heating and cooling equipment. Design by Cambridge Seven Associates, Inc., Cambridge, Massachusetts.

The Oregon Board of Higher Education Recreational Facility, Eugene, Oregon. Minimizes need for mechanical ventilation

by capitalizing on existing natural phenomena and energy sources. Design by Unthank Seder Poticha, A.I.A., Eugene, Oregon.

How the Award Program works.

Owens-Corning offers an Energy Conservation Award in four building design categories:

Institutional—schools and hospitals, for example.

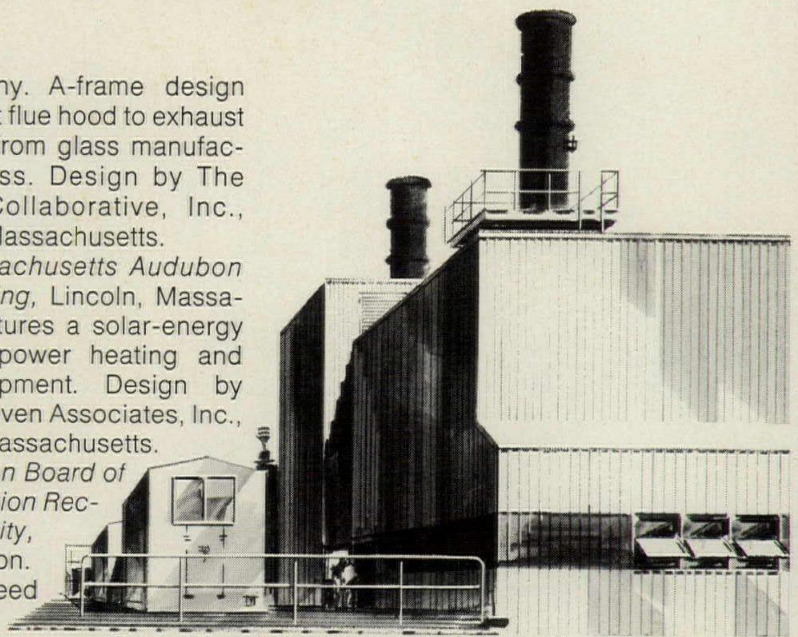
Commercial—office buildings, shopping centers, retail stores and similar structures.

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

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

Any registered architect

or professional engineer in the U.S. is eligible to enter a design. The only requirement is that the



General Electric River Works Program, Lynn, Massachusetts.

design be a *commissioned* building project. (The use of Fiberglas* insulation—although an excellent way to conserve energy—is not a requirement.)

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

Send for free Energy Conservation Award Program brochure.

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

Owens-Corning Fiberglas Corporation, Att.: C.W. Meeks, Fiberglas Tower, Toledo, Ohio 43659.



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



Boca Raton Community Hospital, Boca Raton, Florida.

Owens-Corning is Fiberglas **FIBERGLAS**

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Pampering Picky Patients

Let's face it. When we don't feel well, we soon become irritable and picky. Even the best of food soon becomes tasteless, the most comfortable bed becomes a couch of nails, and plumbing fixtures and fittings that aren't really suited to the needs of the convalescent seem like medieval torture instruments.

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Each one was designed for maximum ease of use, comfort and convenience, to pamper the picky patient. You'll find these fixtures, plus over 290

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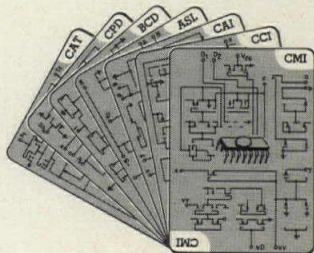
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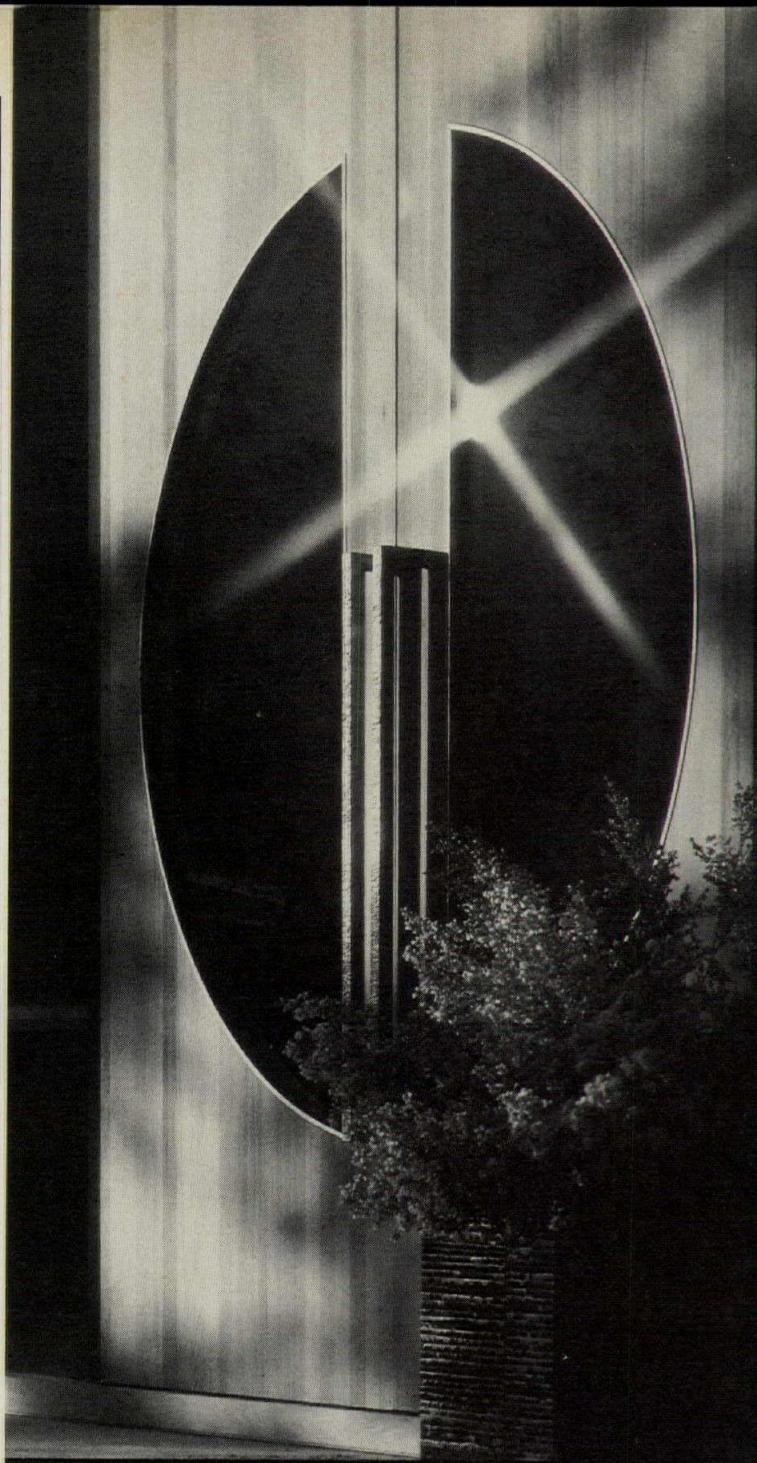
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While it's true that we're

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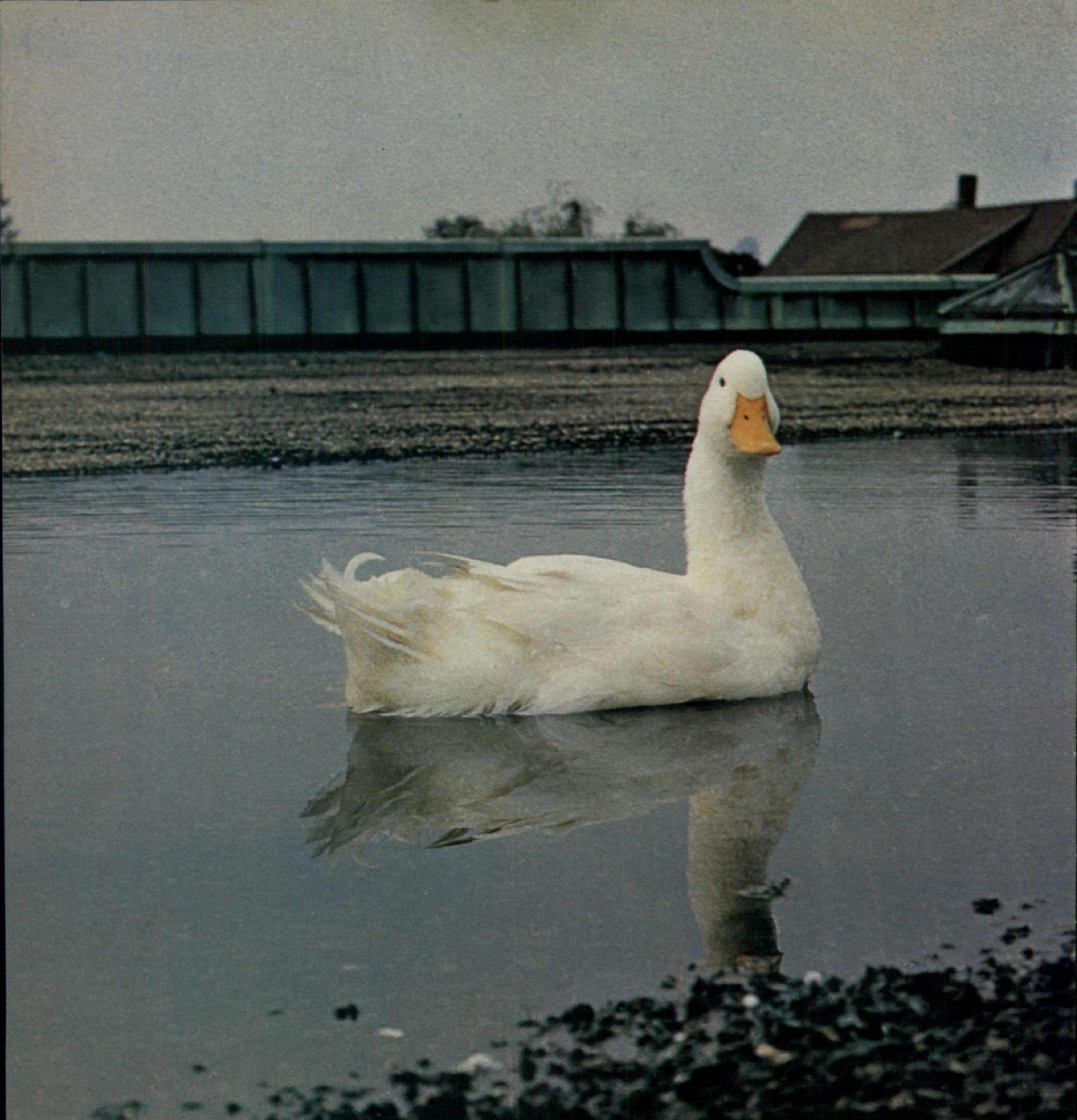
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Ponding is the start of everything bad.

Prior approval: architect's answer to the or-equal spec

H. Maynard Blumer, associate in charge of materials research and specifications for Guirey Sruka & Arnold, Phoenix architects, tells how a formalized system of requiring the architect's approval of substitute materials prior to bidding by contractors maintains the architect's control and eliminates change-order hazards of the "or-equal" specification.

Approval of substitute materials prior to bidding is a procedure becoming increasingly popular in the preparation and enforcement of bidding documents. It has stood the test of the courts and each year sees an increase in the number of agencies at all levels of City, State and Federal Government accepting the technique as an "equal" to the "or equal" clause which they have long required.

Why do Architects prefer "prior approval" to performance and "or equal" specifications? The answers are threefold centering around 1) responsibilities, 2) economics, and 3) work relations.

Working relations between Contractor, Architect, and Owner during construction are often strained over acceptance or rejection of a substitute material. The Contractor is trying to better (or protect) his margin of profit. The Architect wants to protect his "Architecture" or liabilities. The Owner doesn't understand it, but is sure someone is unfair.

Economics are made "proper" when substitutions are approved prior to bidding. Architects most frequently invest more time in processing procedure. Contractors have been made or destroyed in the gamble of bidding on the assumption "it will be accepted." Many suppliers have found themselves purchasing their competitor's product to meet obligation contracted without benefit of prior approval when they were unable to establish the equality of the product.

Responsibilities are most apt to stay where they belong under the "Prior Approval" system. At the time prior approval submittals are made the "unwritten requirements" of the project are fresh in the mind of the Architect and his staff. In the case of "or equal specifications" months or possibly a year will have lapsed before submittals are made; turnover in staff, additional experiences, and focus of attention of all, contribute to the risk of approving an unsuitable material or more severe requirements.

When submittals are approved prior to bidding, there are no Architect-Contractor arguments of this nature to strain relations; there

is no economic risk to the bidder in quoting on an approved material; the Owner gets what he pays for; the Architect performs with his greatest efficiency and competency; responsibilities are clear.

The key to "Prior Approval" procedure lies in the establishment of a clear concise "system" which includes "Instructions to the Bidder," "Conditions of the Approval" and "Procedures for Processing."

The "Instructions to Bidders" which is literally what the title implies, is the proper document to utilize to explain the substitution procedures which will be followed through the "Bidding and Construction" phases of the project. The writer should not lose sight of one vital point—this document is normally not a Contract Document; its validity should end with the execution of the Owner-Contractor Agreement. I recommend organizing the substitution instructions into the following paragraph and sub-paragraphs.

1. SUBSTITUTIONS: Except as the Drawing and Specifications may be modified (prior to the opening of Bids) by Addenda, the successful Contractor will be held to furnish under his Lump Sum Bid all work as specified. Substitutions will be allowed only by procedures described herein. All materials and articles of any kind necessary for this work are subject to the approval of the Architect and his judgment and decision shall be final and conclusive.

The submission of a Bid shall be taken as prima facie evidence of the Bidder's compliance with these Instructions.

1.1 PRIOR APPROVAL of equal items of equipment and/or materials before submission of Bids. If a Bidder wishes to use items of equipment and/or materials other than those specified or those identified by trade or manufacturer's name, model, or catalog number in the Specifications (under the "or equal" provisions of General Condition 8)* he shall submit in writing his request for "Prior Approval" to the Architect. Submittals shall be in Architect's office not later than (insert: Hour, Day, and Date). Each request shall include all basic data and characteristics or the proposed item, so that a *direct* comparison can be readily made. It is the sole responsibility of the Bidder to submit complete descriptive and technical information so that the Architect can make proper appraisal.

All requests shall be in writing, addressed to the Architect at (Insert Architect's complete office address). All approvals will be issued in writing and will be mailed to all persons filing addresses with the Architect for this purpose.

*Insert if General Conditions of an agency has an "or equal" condition.

1.2 AFTER EXECUTION OF CONTRACT, changes of brand named, trade named, trade marked, patented articles, or any other substitutions, will be allowed only as outlined in AIA General Conditions 12 and Supplementary General Conditions 4 and 12.

The Conditions of the prior approval action will not logically appear in the valid contractual documents since it is an event which has happened prior to the execution of the Owner-Contractor Agreement. If the Architect renders an approval of a material he should include the material in an Addendum which in effect places the material in the Specification on the same basis as the original specified material. Should the Architect have reservation in his decision and wish to impose conditions on the action, which might be the case, for example, when connections to other materials, or limited space available might be involved, the following preface may be inserted in the "Prior Approval Addendum."

1. Prior Approval

1.1 This Addendum is solely concerned with "Prior Approval" of equal items of equipment and/or materials before submission of bids as provided under *Instructions to Bidders*, Paragraph _____. Items added to the Contract Documents by this Addendum are the only proposed "Substitutions" received and approved by the Architect in accordance with those provisions. No other items shall be substituted or bid as "equals."

1.2 It is understood that all items allowed by this Addendum are subject to the full provisions of the original Contract Documents and all modifications thereto, and as such shall match standards of original specified items with respect to materials, workmanship, design, size, capacity, type, function, finish, performance, quality, warranty, etc. Nothing in this Addendum shall be construed as altering those original standards or modifications thereto.

To clarify the total Substitution System the following Supplementary General Conditions are added to the AIA General Conditions on responsibilities of the "Contractor" and "Changes in the Work."

ARTICLE 4—CONTRACTOR

4.1 Refer to AIA General Condition 4.13. The Contractor shall coordinate "Substitution" materials or specified materials with characteristic other than indicated on Drawings, with other materials, details, and dimensions of the work.

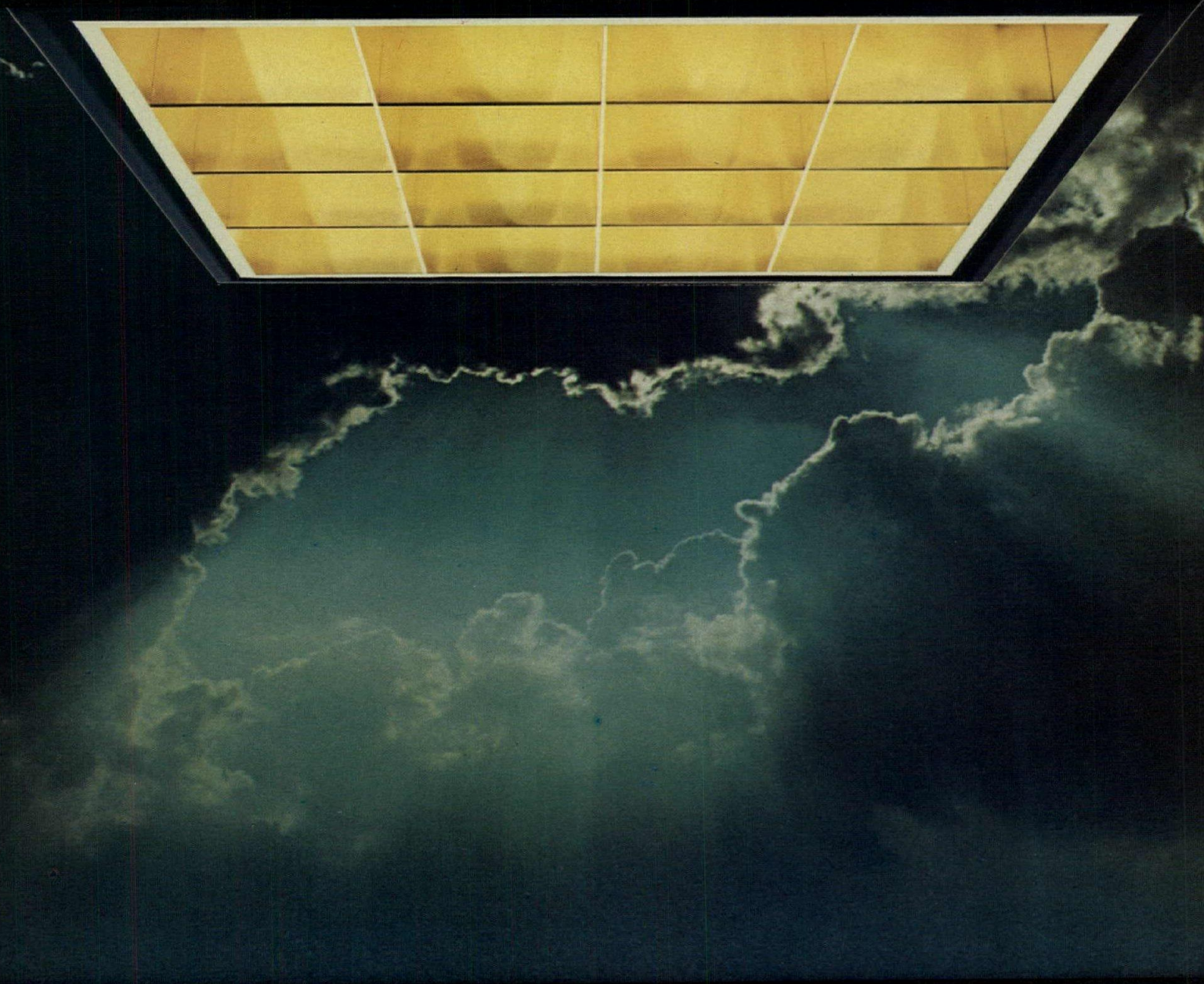
ARTICLE 12—CHANGES IN THE WORK

12.1 Substitutions.

12.1.1 After execution of contract, substitutions

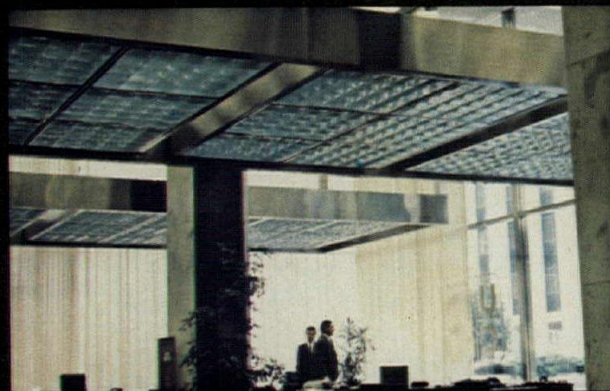
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An architect's notes on construction management

Architect J. Karl Justin has been close to the design and management of many large projects over years of association with Max O. Urbahn Associates, John Carl Warnecke and Associates and, at present, Evans, Delehanty & O'Brien. His thoughts on the genesis and role of construction management and on the architect's primary involvement in the process are penetrating, irreverent—and his own.

Descriptions of construction management are a lot like descriptions of the elephant by three blind men in the well-known fable. It all depends on which part of the animal you grip. From the trunk end, it seems pretty much like exploratory research. From any of the four corners, the legs give it the semblance of supporting function. And from the hindquarters, it is much like your favorite adversary. In fact, before we leave the elephant analogy, the beast often seems just too ponderous to tackle some jobs fruitfully at all.

One service that construction managers have been asked to perform is to advise on "packaging" of job components into various separate prime contracts.

Usually this subject comes up on projects that are "fast-tracked"; i.e., in which some phases of construction start before plans are completed.

Because the construction proceeds while plans are being finished, this requires of the designers what a friendly wood butcher I knew used to refer to as "very sure-footed handling." But even more important it forces the resolution of such questions as:

Should the door bucks be bid separately as a material-only supply item and installed under the dry-wall contract, or as a "quantity" item within the stair contract, or as part of the earlier structural steel work contract, or as part of an early miscellaneous iron package?

Should the wooden doors be bid as part of the dry-wall contract or should they be bid in the carpentry contract?

Should the metal pan portion of decks be bid as part of the stair contract, or as a separate item furnished and installed; or possibly with structural steel or with miscellaneous iron?

There are many more examples, but generally the groupings are implicitly sequenced in the order in which construction proceeds. In this way, fast-tracked projects can result in 30 or more (though sometimes less) separate prime contracts. These are then coordinated and administered in the field as a further part of the construction management function.

The large number of prime contracts thus generated sometimes seems unnecessarily cumbersome and it would seem that we have reached the point where it is appropriate explicitly to question in a more fundamental sense just what optimum packaging really is.

On analysis in this light it seems clear that "optimum" packaging really is packaging that, in addition to an early completion of construction, will achieve: a) the maximum number of highest quality bidders on respective contract groupings; b) the minimum number of total separate prime contractors to reduce the amount of "interfacing" between them.

In applying these criteria, a first step is to investigate bidding histories in the geographical vicinity of the project and to catalogue them according to:

- 1) the trades on which bids were taken,
- 2) the size of the respective contract awards,
- 3) the number of bids actually received,
- 4) the general quality of the bidding firms,
- 5) similarity of work bid to the project under consideration.

The second step is to determine from these data the best estimated dollar size for each sub-contract specialty and attempt to divide the project as nearly as possible in accordance with these figures. Admittedly there is a log of "particularity" to bidding results depending on timing, market conditions and the like. But knowing the odds on the "morning line" improves the probability of success.

The third step is to examine possible bidding combinations in the light of the data obtained, and to scrutinize their practicality.

One possibility is that of taking bids on a single general contract including all items. On many jobs, this will be the best answer. However, on large projects the number of bidders is often so limited (primarily due to problems of financing) that bids are artificially and substantially escalated. This is to say nothing of the months that would be lost in completing documents to allow this kind of bid before construction can start.

As an alternative, the usual kind of fast-tracking might be examined, involving numerous prime contracts. Here, on very large projects one usually finds that, although the dollar volume of each of the contracts is much smaller than that of a single general contractor, "sub-trade" bidding is still generally limited to only the few largest firms in each specialty (those capable of the large jobs). On examina-

tion, this could hardly be considered an optimum condition. Also, although time will be saved, the number of "interfaces" between contracts is at a maximum with all that implies to the burden of coordination and expediting.

In between these two approaches, of course, lies one that is often required by public law; the approach of taking separate prime contract bids for hvac, electrical, plumbing and remaining general construction. This approach may therefore be the only one open. It may even be beneficial. Most experience, though, indicates that it combines the worst features of the other approaches.

If the investigation is carried further, as suggested, consideration of the number and quality of bidders for various sizes of contracts in each trade yields interesting information. For instance, in one area it was recently determined that an hvac contract of from one to two million dollars characteristically will attract six to ten bidders in the locality of the project. Amounts from three million dollars upward attract noticeably less. And at much under a million dollars the number of bidders actually goes up so high that the firms with the most desirable performance records drop out. The result was that hvac work was subdivided as nearly as possible into two- to three-million-dollar contracts consistent with logical divisions of the building (and contracts of other trades).

On the other hand in the same area it turned out that single contracts for all work on the job in demolition as well as in excavation and foundations, and also in structural steel would get an adequate number of bidders. With all of this in mind the prime contract "packages" were divided as follows:

■ Work in trade on entire project:

- 1) Demolition, 2) excavation and foundation, 3) structural steel, metal deck, metal pan stairs and attached railings, 4) hvac contract for purchase of heating and refrigeration plant equipment on installed basis (time critical).

■ Building Section A:

- 1) General construction, 2) hvac, 3) electrical (including installation of heating and refrigeration plant equipment), 4) plumbing (including installation of heating and refrigeration plant equipment).

■ Building Group B:

- 1) General construction (including landscaping for entire project), 2) hvac, 3) electrical, 4) plumbing.

■ Heating and refrigeration plant:

continued on page 77



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Prior-approval specs

concluded from page 73

for specified materials constitute "changes in the work" and may be proposed by Contractor only on condition that either:

- .1 The specified material cannot be delivered and incorporated into the work in the time allowed *due to conditions beyond the control* of Contractor, or
- .2 The Owner will benefit by a reduced cost or an improved project. NOTE: Owner to receive full benefit of any cost reductions. Contractor to reimburse Owner's costs of Architect's investigation and processing of substitutions.

12.1.2 Request for substitution to include:

- .1 Statement of cause for request with substantiating documents.
- .2 Documentary proof of equal or superior quality, delivery time, and costs in the form of certified quotations from suppliers of both specified and proposed material. Approved substitutions will be incorporated into the work by Change Order under conditions of Article 12.

To complete the system a clear unchanging procedure for handling and processing of prior approval submittals must be established and clearly stated. The Architect must build his case for fair play and justice on an equal basis to all submitters upon the manner in which he handles the submittals. The entire system crumbles and the liabilities are born when a disgruntled submitter establishes someone received special handling or consideration. For three years I have used the following "Prior Approval Processing" procedure.

PRIOR APPROVAL PROCESSING

COMMENTS: Procedure for processing of Request for Approval of Substitute Materials prior to submission of Bid will be as follows:

1. When possible the exact date and hour for closing of the invitation to submit proposals for substitutions should be given in the Bidding Documents.
2. Submissions will be received by the Architect from any supplier provided it is addressed to the firm with reference to the specific project.
3. Submission to be "Received Dated" immediately upon arrival.
4. Submissions will be placed by the receiving person (any one of staff) in a receiving basket designated for that purpose.
5. Submittals will not be reviewed for completeness or compliance until *after* the hour set for closing of the receipt of submittals.
6. Submittals will be reviewed by a member of the staff or staff of the respective consultant. The reviewers will not be designated until after the closing of receipt of submittals.
7. The reviewer's general attitude will be:
 - a. The burden of proof is upon the submitter of the substitution.
 - b. The reviewer should not be required to complete the submittals, that is: select from options, or between models or lines.
 - c. The reviewer should not be required to seek information from the manufacturer's literature on file in the office or information in other locations.
 - d. The product must be equal or better in the features or performance which the job requires and the specified product will provide.

e. Review is complete when, in the reviewer's opinion, significant deficiency(ies) are established. In such case, review of data covering other points of the specification is not required.

8. The reviewer will note action (approved or disapproved), the date and his initials.
9. If a submittal is disapproved, the reviewer will make additional notations that will be adequate to guide a later reviewer to the same conclusion.

Sample notations:

- a. Vague. b. Incomplete. c. No sample.
10. All submittals received after closing time will be "Received Dated", marked "Late", initialed by the reviewer and filed without review.
11. All submittals will be filed in the Architect's office until completion of the project, and then destroyed.

The only problem which I have experienced in this prior approval system lies with the understanding of the submitter. The Plan Service must realize the importance of the "Prior Approval Cut-off Date" and advertise it in a manner comparable to the "Bid Date." Then the submitter must make a complete valid submittal. The Architect should not tell the submitter what to submit, the submitter knows his product and available data best. To guide the submitter in preparation of his submittal I keep a supply of my Processing Procedure readily available as a hand-out to any inquiring or new supplier. I have found that the submitter who studies these procedures will have fewer submittals disapproved.

—H. Maynard Blumer

Notes on construction management

concluded from page 75

1) General construction, hvac, electrical, plumbing.

In this way, although the over-all project schedule is just as short as for normal fast-tracking, the total number of separate prime contractors on the job was limited to 17 (rather than 30 or more) with field coordination therefore correspondingly simplified.

Further, with about six highly qualified bidders for each contract both cost and performance could be optimized. As the subject project is not yet completed, the proof of the pudding will still have to be in the eating. But as of this writing bids so far have been substantially under the budget, and have been won by well respected contractors.

Actually all this isn't new. It is applied common sense and has been done for ages. What's new is the degree to which the approach has become explicit—and of course, the razzle dazzle PR nomenclature.

It is like what Oscar Levant said of a celebrated conductor-composer: that he has been disclosing musical secrets that have been well known for over 400 years.

So we describe CM but can't define it

Incidentally, at the outset I referred advisedly to "descriptions" of construction management, rather than to "definitions." I really believe that descriptions of the "Happiness-is-a-

thumb-and-a-blanket" sort are the best that can be expected in this field at this time. True definitions of the Aristotelian genus-and-differentia variety are here themselves not possible; ironically "by definition." We can establish the genus well enough, but there doesn't seem to be enough differentia to go on.

The genus, in the case of construction management, is "a form of sub-professional service in the building industry." Part of the differentia (in common with several similar services) is that it takes as its province neglected areas properly part of other specialisms, develops a jargon, creates a mystique, then sells its services directly and independently as new and unique. Finally, it starts a "professional" society of its own, and begins to act to preserve the status quo.

But that's where I run out of differentia. When I try to identify those areas in which construction managers are most active I can't think of one that (according to my own personal bias) shouldn't properly be considered part of the services an architect offers to his client. Certainly from the standpoint of professional liability it is hard to see how the architect's situation could become the worse if he is also construction manager—and control over the job might well be improved.

Much of the purported service of construction management is in fact necessarily stillborn—such as the often promised advice on technological innovation in the building

trades—where any significant improvements are killed before birth by building trades.

All this is not to dismiss the need for construction management consultants who function in relationship to architectural firms much as structural, mechanical, electrical, landscape, acoustical and other consultants do now. Admittedly there have developed more technological and administrative construction complexities than even the traditional "master builder" architect could stably staff up permanently to service.

And certainly on public work we not only can't bridge the gap through a "negotiated general contract," but in most states the multiple bid laws have made it impossible for the general contractor to be of assistance even after the contracts are awarded.

As many supporting specialisms as there might be, though, it must remain the role of the architect to provide the creative leadership for each and produce an integrated whole.

The packaging concept discussed above is an excellent example of this kind of conceptual leadership taking advantage of the now special help. The experience of a construction manager was most helpful in obtaining the required information most expeditiously and expanding on the concept. But it was architectural considerations and accommodation by other specialisms, mandated by the architect, that created the idea and got the integrated result.

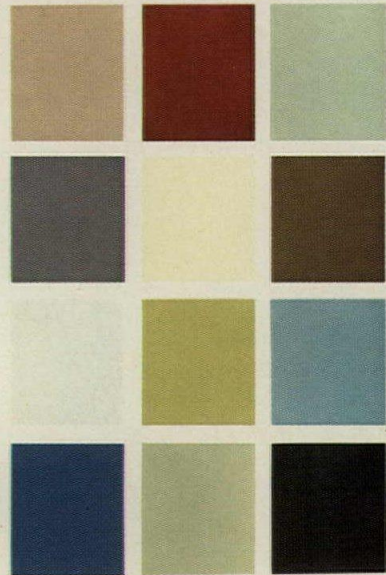
—J. Karl Justin, AIA

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Building cost calculator now includes typical case histories

Typical case histories of building costs have been added to the continually updated Dodge Building Cost Calculator and Valuation Guide, published by McGraw-Hill Information Systems Company, as a simplified reference on costs to replace or duplicate both new and old buildings.

The new feature breaks down the total costs of typical structures into 17 parts, ranging from site improvements to roofing and plumbing, and states the cost of each part as a percentage of the whole. These figures enable users of the Dodge Calculator to estimate total costs on the basis of incomplete information.

Another new feature is the inclusion of air frame structures in the section of the Dodge Calculator devoted to commercial and industrial buildings. Photos show examples of air frame warehouses and recreational structures and reflect the growing use of this inexpensive method of construction.

The latest edition of the Dodge Calculator retains its division of cost information into six sections devoted to residential, commercial and industrial, public, medical, educational and religious, and farm buildings. In each section, costs per square foot are given for structures of different sizes and qualities. Accompanying photos of typical buildings help subscribers quickly identify the cost data that most closely relate to their own projects.

*John H. Farley, senior editor
Dodge Building Cost Services*

INDEXES: January 1974		1941=100.00 (except as noted)				% change last 12 months
Metropolitan area	Cost differential	Current Indexes				
		non-res.	residential	masonry	steel	
U.S. Average	8.1	438.7	412.0	429.3	419.1	+11.98
Atlanta	7.5	552.4	520.8	540.5	528.7	+ 9.56
Baltimore	8.1	484.5	455.6	472.4	459.1	+13.22
Birmingham	7.3	408.2	388.7	393.9	389.5	+12.36
Boston	8.8	444.4	420.0	438.2	427.4	+11.13
Buffalo	8.7	477.5	448.5	469.6	456.1	+10.67
Chicago	8.4	516.7	491.3	498.2	492.0	+14.58
Cincinnati	8.5	469.4	441.7	456.3	445.3	+12.71
Cleveland	8.7	469.6	441.9	458.7	448.3	+ 7.78
Columbus, Ohio	7.9	452.7	425.1	440.4	431.4	+ 9.77
Dallas	7.5	441.3	427.3	430.7	422.4	+13.01
Denver	7.9	467.0	439.4	458.9	444.4	+11.10
Detroit	9.5	507.0	483.5	510.4	490.9	+15.79
Houston	7.0	396.9	372.8	386.3	379.9	+ 7.27
Indianapolis	7.5	397.4	373.2	388.2	380.0	+ 9.11
Kansas City	7.9	412.0	389.3	402.6	392.3	+10.71
Los Angeles	8.4	516.3	472.0	501.2	490.3	+18.89
Louisville	7.4	436.6	410.1	426.1	417.0	+11.83
Memphis	7.7	433.2	407.2	416.4	410.7	+17.07
Miami	7.7	453.5	432.1	439.7	430.8	+10.16
Milwaukee	7.9	478.9	449.7	468.9	455.2	+ 8.71
Minneapolis	8.5	462.1	434.8	453.9	443.7	+10.58
Newark	8.4	419.8	394.2	412.2	404.3	+10.06
New Orleans	7.3	426.9	403.0	420.6	410.9	+13.88
New York	10.0	497.4	462.6	485.3	427.8	+14.82
Philadelphia	9.0	491.4	468.2	486.8	473.6	+15.76
Phoenix (1947 = 100)	7.7	251.2	235.9	243.1	239.0	+12.45
Pittsburgh	8.5	430.0	404.6	424.9	411.9	+11.73
St. Louis	8.4	450.9	425.6	443.5	433.4	+10.48
San Antonio (1960 = 100)	6.9	160.8	151.0	155.5	152.4	+ 6.31
San Diego (1960 = 100)	8.0	181.0	170.0	177.0	173.4	+17.77
San Francisco	9.2	647.3	591.8	640.9	621.6	+12.80
Seattle	8.4	436.3	390.6	431.4	415.4	+14.37
Washington, D.C.	7.5	406.6	381.8	394.4	385.9	+ 8.74

Cost differentials compare current local costs, not indexes.

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

HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES										1941 average for each city = 100.00							
Metropolitan area	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972 (Quarterly)				1973 (Quarterly)			
										1st	2nd	3rd	4th	1st	2nd	3rd	4th
Atlanta	306.7	313.7	321.5	329.8	335.7	353.1	384.0	422.4	459.2	472.5	473.7	496.1	497.7	516.4	518.0	543.8	544.8
Baltimore	275.5	280.6	285.7	280.9	295.8	308.7	322.8	348.8	381.7	388.1	389.3	418.8	420.4	441.8	443.6	474.5	475.5
Birmingham	256.3	260.9	265.9	270.7	274.7	284.3	303.4	309.3	331.6	340.4	341.6	356.7	358.3	371.7	373.2	401.1	402.1
Boston	244.1	252.1	257.8	262.0	265.7	277.1	295.0	328.6	362.0	377.3	378.5	392.8	394.4	414.0	415.6	436.8	437.8
Chicago	301.0	306.6	311.7	320.4	328.4	339.5	356.1	386.1	418.8	422.8	424.0	442.7	444.3	465.3	466.9	507.6	508.6
Cincinnati	263.9	269.5	274.0	278.3	288.2	302.6	325.8	348.5	386.1	399.9	401.1	400.1	410.7	430.4	432.0	461.4	462.4
Cleveland	275.8	283.0	292.3	300.7	303.7	331.5	358.3	380.1	415.6	415.2	416.4	427.7	429.3	436.7	438.3	461.2	462.2
Dallas	253.0	256.4	260.8	266.9	270.4	281.7	308.6	327.1	357.9	364.9	366.1	385.0	386.6	407.3	408.9	435.4	436.4
Denver	282.5	287.3	294.0	297.5	305.1	312.5	339.0	368.1	392.9	398.3	399.5	413.8	415.4	429.5	431.1	460.0	461.0
Detroit	272.2	277.7	284.7	296.9	301.2	316.4	352.9	377.4	409.7	416.9	418.1	431.5	433.1	463.4	465.0	500.0	501.0
Kansas City	247.8	250.5	256.4	261.0	264.3	278.0	295.5	315.3	344.7	348.7	349.9	365.4	367.0	387.7	389.3	404.8	405.8
Los Angeles	282.5	288.2	297.1	302.7	310.1	320.1	344.1	361.9	400.9	407.8	409.0	422.9	424.5	453.3	454.9	503.2	504.2
Miami	269.3	274.4	277.5	284.0	286.1	305.3	392.3	353.2	384.7	391.5	392.7	404.8	406.4	419.0	420.6	446.2	447.2
Minneapolis	275.3	282.4	285.0	289.4	300.2	309.4	331.2	361.1	417.1	401.7	402.9	411.3	412.9	430.6	432.2	455.1	456.1
New Orleans	284.3	240.9	256.3	259.8	267.6	274.2	297.5	318.9	341.8	350.9	352.1	368.1	369.7	382.1	383.7	419.5	420.5
New York	282.3	289.4	297.1	304.0	313.6	321.4	344.5	366.0	395.6	406.5	407.7	421.5	423.1	453.5	455.1	484.3	485.3
Philadelphia	271.2	275.2	280.8	286.6	293.7	301.7	321.0	346.5	374.9	394.2	395.4	417.9	419.5	459.3	460.9	484.1	485.1
Pittsburgh	258.2	263.8	267.0	271.1	275.0	293.8	311.0	327.2	362.1	364.5	365.7	378.7	380.3	406.3	407.9	423.4	424.4
St. Louis	263.4	272.1	280.9	288.3	293.2	304.4	324.7	344.4	375.5	385.5	386.7	400.9	402.5	427.8	429.4	443.2	444.2
San Francisco	352.4	365.4	368.6	386.0	390.8	402.9	441.1	465.1	512.3	535.3	536.5	559.4	561.0	606.4	608.0	631.3	632.3
Seattle	260.6	266.6	268.9	275.0	283.5	292.2	317.8	341.8	358.4	363.0	364.5	369.9	371.5	388.4	390.0	423.4	424.4

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



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Energy and construction: where the trouble-spots lie

Regardless of how the Middle East oil situation is ultimately resolved, periodic shortages of energy will be a fact of life over the near-term. And, since it stands in the unique position of being, a) an aggrieved party, b), a part of the problem, and, c), a key instrument in the solution of the problem, the impact of these shortages on construction warrants consideration.

Construction's claim to the aggrieved party status is a pretty straightforward and obvious one: energy is needed to manufacture building materials, to run construction equipment, and to service the project when it is ultimately completed.

The manufacture of some building materials, of course, requires significantly more energy than others. Brick and tile, cement, and aluminum producers, for instance, spend up to 20 per cent of the value that their products add to GNP on the purchase of energy. Steel, building paper and copper are other big energy users.

But, over-all energy consumption is not necessarily the most important criterion to use in assessing whether or not energy shortages will lead to shortages and higher prices of the product being manufactured. The type of energy used and the ease of convertibility to other sources are also significant determinants. The aluminum industry, for instance, is a big purchaser of electrical energy. Less than one-fifth of its energy expenditures goes directly for fossil fuels. So, to the extent that the short-term problem is with fossil fuels, aluminum's energy problems really lie with its suppliers of electricity and the means by which they generate their power. Brick and tile, and cement, on the other hand, allocate between two-thirds and three-fourths of their energy purchases for fossil fuels. And, in basic steel production it's about the same. But, among the big users of fossil fuels there are differences too. With brick and tile, nearly three-fourths of its fossil fuel purchases are for natural gas, while in the production of cement less than half the fossil fuel purchases go for natural gas. Coke and coal have been used more extensively.

In addition to the technical requirements of the manufacturing process, the extent to which firms can convert to alternate fuel sources is also a function of the physical accessibility of these alternate sources.

On balance, the building materials that will be most affected by shortages of "energy" are the ones that use energy fuels as a raw material; particularly plastics and asphalt products. How well the remaining materials pro-

ducers cope will be determined by how easily they can convert from the energy source in shortest supply in their particular area to one that is not so scarce. Indications are that most materials needed for construction will be available this year, but, at higher prices.

While diesel fuel will be subject to the same tight conditions affecting all petroleum products, it's become a matter of national policy to cut back on the production of gasoline by some 15 per cent in order to produce more heating oil. This will compound the problem of finding sufficient fuel to power construction equipment on the jobsite. Shortages of propane (used to heat the jobsite during cold weather construction) are another complicating factor.

Direct petroleum consumption accounts for between one and two per cent of the total value of construction contract awards in any given year. But, in categories like highways and large public work projects, the fuel consumption proportion (including asphalt building products) gets as high as six and seven per cent of the typical construction contract. These are the categories that will feel the jobsite energy pinch most severely.

The reaction will be to use substitutes like electrically powered equipment and manual labor, where feasible. What shortfall remains will be reflected in reduced productivity and in slowdowns and stretch-outs of construction projects. And, oh yes, increased costs.

A good deal of uncertainty still surrounds the question of whether adequate energy will be available to service newly completed construction projects. The type of energy used to service (provide with heat, light, etc.) existing structures differs considerably from one region to another in accordance with availability and costs, suggesting that the nature of the problem may also have distinct regional overtones. While only eight per cent of the single-family homes completed in the nation over the past five years utilized fuel oil for heat, in the Northeast, the proportion was closer to one-third. Similarly, natural gas is used to heat nearly 80 per cent of the newly started homes in the Midwest and the West, significantly above the national average. In the South, on the other hand, nearly half the homes built in recent years are being heated electrically.

The Northeast's reliance on oil is shown even more dramatically by the fact that nearly half of the region's electrical utilities use oil to generate electrical energy. In New England, the proportion is closer to three-fourths, an es-

timated 80 per cent of which is imported.

In the Midwest and Southeast coal is still the dominant form of fuel burned by utilities, accounting for nearly two-thirds of the total requirements. One dramatic exception to this pattern in the South is in the four states of Texas, Oklahoma, Arkansas, and Louisiana, where roughly 90 per cent of the fuel burned by utilities is natural gas.

Hydro-electric power, a relatively minor source of electrical generation nationally (some 15 per cent of the national total) is the source of roughly half of the West's electricity. (Despite the crash programs of recent years, nuclear generating capacity still supplies only about five per cent of the nation's electricity.)

From this, it's pretty clear that any shortfall of heating oil will have the greatest impact on the Northeast. It's in recognition of this fact that many of the region's utilities are actively attempting to convert back to coal. Similarly, a pinch in natural gas supplies would hit the West, Midwest, and South Central states the hardest.

The worst possible situation for proposed construction projects, of course, would be the widespread imposition of utility hookup bans, along the lines of sewer tap bans that are introduced from time to time in areas where rapid growth has temporarily outstripped the capacity of public facilities.

What are the prospects of this?

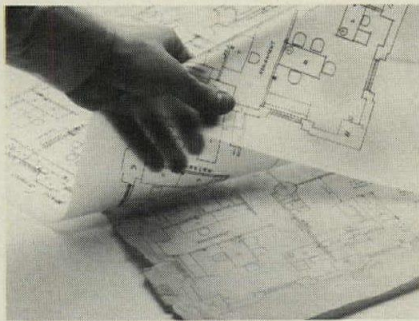
It is generally acknowledged that the toughest months for the current fuel shortage will be those immediately ahead—the winter of 1974. That's when the most fuel is needed, and that's when supplies will be lowest. But that is also when construction is at its seasonal ebb anyway. In the spring and summer months, the time when the 1974 construction season is really getting underway, 1) over-all fuel demand will be lower, and 2) users will have had more time to convert to alternative sources.

In the context of this sequence of events, perhaps the more relevant question should be: What has the general economic slowdown created by the fuel shortage done to over-all construction demand? That, it appears, will have a greater impact on the industry than the prospect of utility hookup bans. But, that leads us to consideration of the construction industry as a part of the problem, and the construction industry as a key instrument in the solution of the problem. Next month, we'll look into this.

*James E. Carlson, manager, economic research
McGraw-Hill Information Systems Company*

Don't overdraw. Use these Kodak shortcuts:

The snappy restoration shortcut.

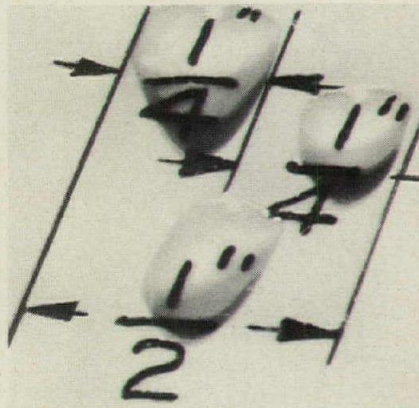


Why waste time retracing your old, battered drawings? Restore them by making sharp, clean photographic reproductions on Kodagraph film. Weak lines come back strong and clear. Stains virtually disappear. And instead of gray lines on yellow, you'll have snappy, contrasty, black-on-white prints.

The drop-of-water shortcut.

Why retrace the whole design for a few revisions? Just

order a second original on Kodagraph wash-off film. Then use a drop of water and erase unwanted details.

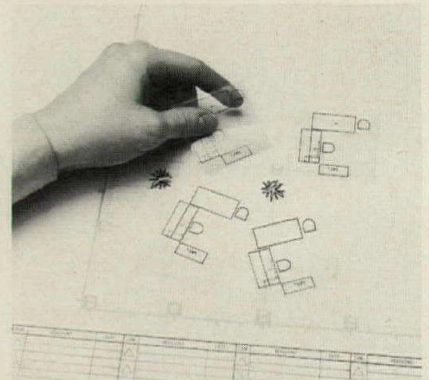


Draw your design revisions on the film and you're done.

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Why draw the same detail over and over? Kodagraph film will do the job for you. That way you draw the detail just once. Make as many photoreproductions as you need. Cut them out, paste them down, and make a

Kodagraph film print of the paste-up.



Now you have a superb second original for subsequent printmaking.

Get the facts from Kodak.

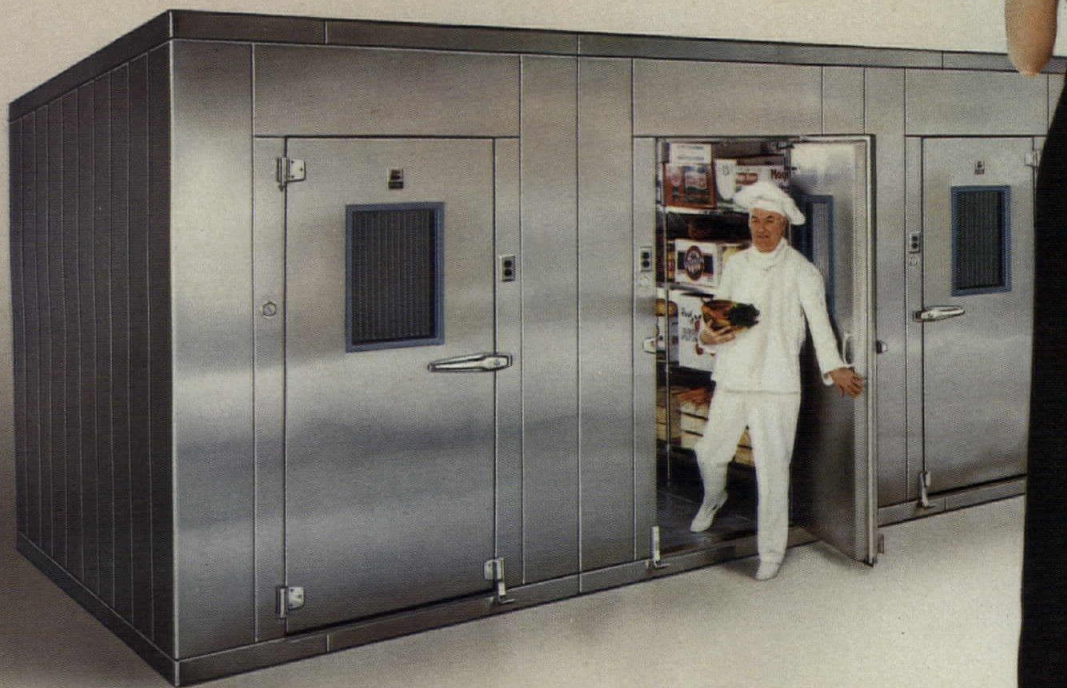
Drop us a line for more facts on how you can reduce drafting time and save money too, with Kodagraph films and papers. Eastman Kodak Company, Business Systems Markets Division, Dept. DP-532, Rochester, N.Y. 14650.

Kodak products for drawing reproduction.



For more data, circle 44 on inquiry card

Bally Walk-Ins belong where the first toast is to fine food and fashionable dining



Bally Walk-In Coolers and Freezers belong everywhere mass feeding takes place. They can be assembled in any size for indoor or outdoor use from standard panels insulated with four inches of foamed-in-place urethane, UL 25 low flame spread rated and Factory Mutual research approved. Choice of stainless steel, aluminum or galvanized. Easy to enlarge . . . easy to relocate. Refrigeration systems from 35°F. cooling to minus 40°F. freezing. Subject to fast depreciation and investment tax credit. (Ask your accountant.) Write for 28-page book and urethane wall sample. **Bally Case & Cooler, Inc., Bally, Pennsylvania 19503.**

ADDRESS ALL CORRESPONDENCE TO DEPT. AR-1



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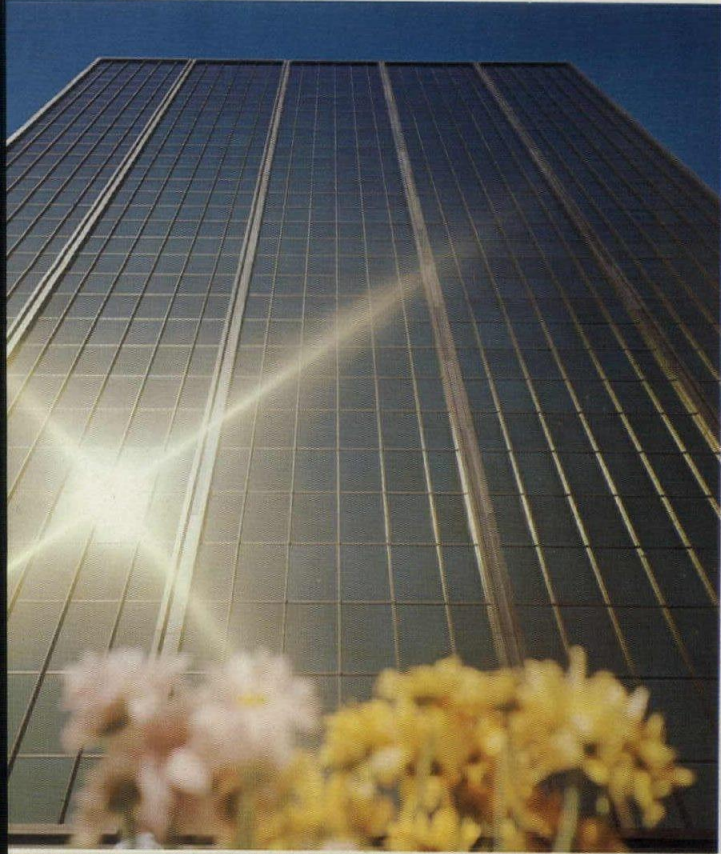
For more data, circle 45 on inquiry card

LOF VARI-TRAN[®] HELPS CLAYTON A



DEVELOPER: Centerco Development Inc., Clayton, Mo. ARTHUR LOOMSTEIN, PRESIDENT (shown right) / LEASING AND MANAGEMENT: Centerco Properties, Inc. / ARCHITECT: JACK H. TYRER, Clayton, Missouri / GENERAL CONTRACTOR: Centerco Development Inc., Clayton, Mo. / CONSTRUCTION MANAGER: H. B. Deal Construction Co., St. Louis, Mo. / GLAZING CONTRACTOR: Ruben Glass and Mirror, Houston, Texas, Div. Chromalloy Corp.; Rainbow Glass Co., Inc., St. Louis, Mo.

CHROMALLOY PLAZA GIVE GOLDEN TOUCH.



The beauty of downtown Clayton is that of a residential community making rapid gains as a prime commercial center for St. Louis County, Missouri. Clayton's golden landmark can only accentuate that.

Chromalloy Plaza fits into the locale aesthetically with a sparkling golden surface of monolithic Vari-Tran reflective glass. This reflectivity increases comfort for the tenants and reduces glare and air-conditioning costs to the owners due to its heat-reflecting properties.

As Arthur Loomstein, President of Centerco Development, sums it up, "We chose Vari-Tran 208 for appearance and comfort, and the mechanical savings certainly didn't hurt."

Specifically, Vari-Tran's efficiency saves energy with its low shading coefficient of .18.

So Clayton's new landmark has become a showplace for Chromalloy Corporation and the other tenants and the economic and aesthetic capabilities of Vari-Tran.

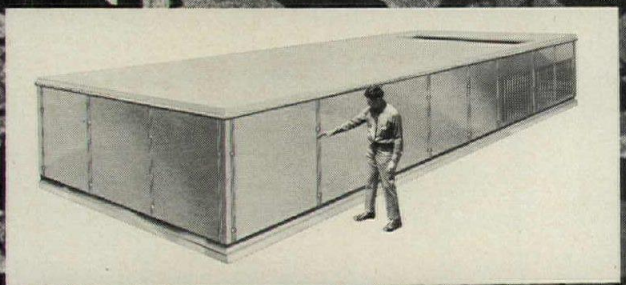
For more information on Vari-Tran write for our brochure, "Reach for a Rainbow," Dept. R-174, Libbey-Owens Ford Company, 811 Madison Avenue, Toledo, Ohio 43695.

LOF

Modine rooftop units can't be fooled by Mother Nature!

You can depend on our rooftop units for quiet, economical comfort . . . in all kinds of weather . . . in any climate.

Our HVAC line is offered in both Multizone and Singlezone units . . . up to 60 tons. Want to know more about Modine rooftop units? Contact Modine, 1500 DeKoven Ave., Racine, Wis. 53401.



MODINE

For more data, circle 47 on inquiry card



Why our five year guarantee is "longer" than any other five year guarantee.

Nylon carpet that won't wear more than a scant 10 percent in five years! And if any part of it does, we replace the whole carpet. Free, including installation. Our guarantee is so strong because ANSO nylon carpet lasts so long.

How can Allied make a guarantee like this? Because we make ANSO nylon. The second generation, soil-hiding nylon that's tough enough to carry a guarantee with teeth—Guaranteeth.

ANSO nylon is tough enough for a shopping center with 55,000 shoppers a day trudging through—the Northridge Fashion Center of Los Angeles. The carpet they chose

was Unanimous, from Walter Carpets by Ludlow. And Unanimous comes with Guaranteeth. The Allied Chemical guarantee with teeth.

So look for the label with the fierce little animal who symbolizes our Guaranteeth. And get the carpet with the toughest five year wear guarantee.

For a list of carpet mills, write: Allied Chemical Corporation, Fibers Division, Contract Department AR, One Times Square, New York, N.Y. 10036. Phone: (212) 736-7000.



Northridge Fashion Center, L.A./10,000 yds. Unanimous/Walter Carpets by Ludlow.



Guaranteeth.
The guarantee with teeth.

For more data, circle 48 on inquiry card

About 4,000 gallons worth! To seal the joints of pre-cast masonry sections and thousands of glass walls and windows in the new Transamerica Pyramid soaring 48 stories above the streets of San Francisco.

These LP polysulfide base sealants will provide lasting protection against sun, wind and rain. Assure unbroken adhesion and flexibility despite temperature extremes and structural movement. We're sure of it because they bear the famous Thiokol Seal of Security.

To merit the Seal, sealants must meet

LP[®] polysulfide base sealants used all the way up.

exact standards. And always be subject to laboratory testing to see that they maintain those standards. No approved sealant has ever failed on the job.

LP polysulfide polymers are just a few of the many products made by our Chemical Division. For aircraft, automobiles, buses, trucks and trains. For joint and window sealants, insulating glass. For gaskets, seals, printing rollers, hose and industrial tires.

Would you like more information? Write Thiokol Corporation, Chemical Division, Trenton, N.J. 08607.



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*Specialty Polymers • Off-The-Road Vehicles • Synthetic Fibers • Sprayers • Propulsion • Educational Services
Friction Materials • Ski Lifts • Pyrotechnics • Closures • Rubber and Rubber Chemicals • Medical Electronics Equipment*

For more data, circle 49 on inquiry card

Polymarble passed the school board's exam.

The requirements were very demanding. "Give us durability, light weight, attractive design, and accent color at a cost comparable to ordinary cast iron fountains."

Haws had the answer with polymarble. Offering color at no extra cost. Color that won't chalk, fade or yellow. Color that runs through the entire material thickness.

The enduring quality of polymarble helped win final approval. Today many polymarble models are excelling in practical application.



For further details on highly rated Model 1070, in a choice of five colors or white, write Haws Drinking Faucet Co., 1441 Fourth St., Berkeley, California 94710.



DRINKING FOUNTAINS

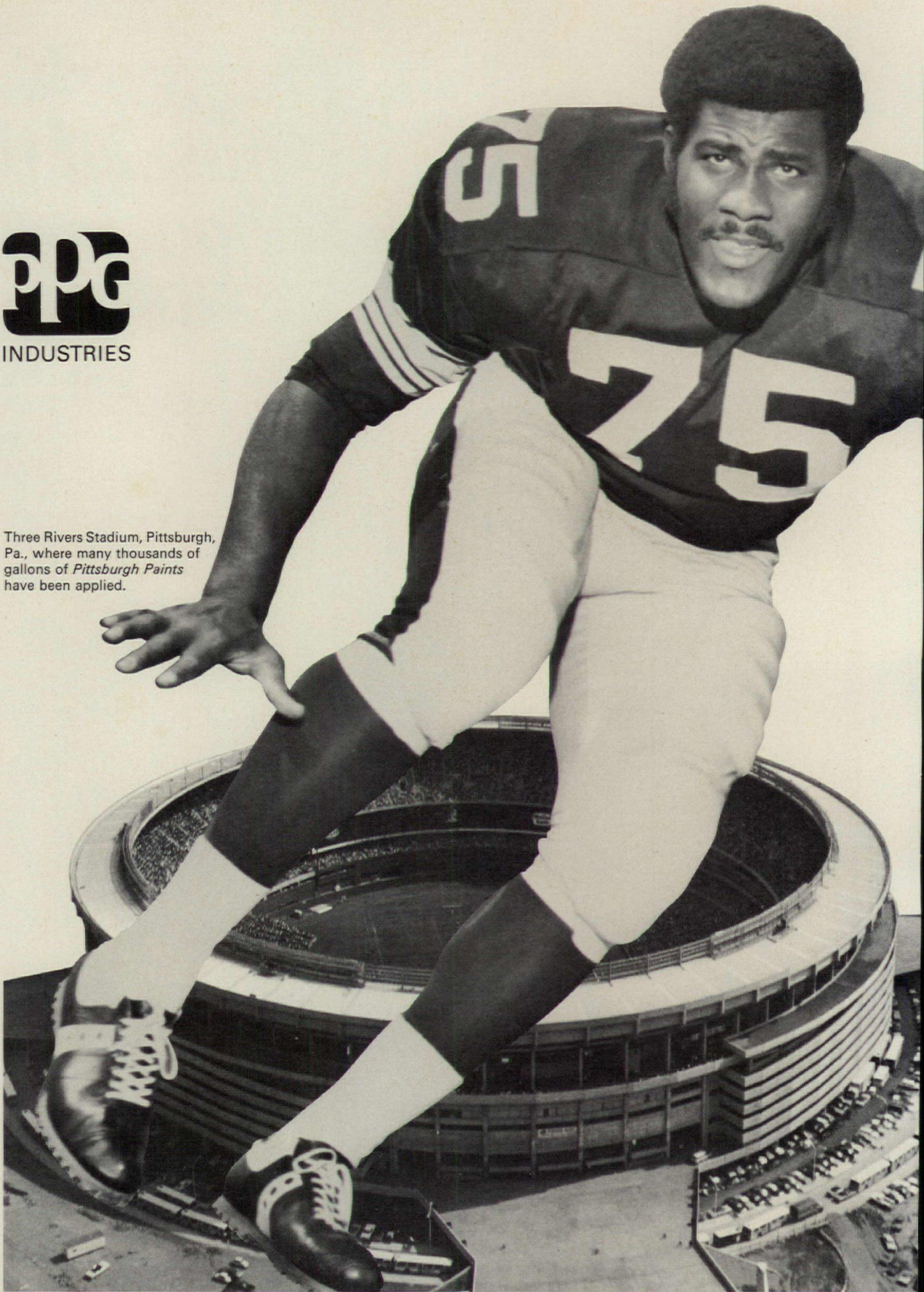
Haws offers the world's best drink.

For more data, circle 50 on inquiry card



INDUSTRIES

Three Rivers Stadium, Pittsburgh, Pa., where many thousands of gallons of *Pittsburgh Paints* have been applied.



Even the likes of "Mean Joe" Greene can't blitz our *Aquapon*[®] and *Pitt-Glaze*[®] Coatings

Just think of the punishment professional football giants like "Mean Joe" Greene, the Pittsburgh Steelers' All-Pro Defensive Lineman, give a team locker room. The tromping of cleats, the mud and cinders, steaming hot water from the showers—day in, day out—all season long.

Pittsburgh Paints has a durable duo that can meet this kind of punishment head-on, not only in locker rooms but in all hard-use areas—such as corridors, kitchens, machine shops, laboratories, and the like. For the concrete block walls, there's *Pitt-Glaze*, the Polyester-epoxy coating that looks and feels like tile.

And for heavy-duty use on concrete floors, there's *Aquapon*, the Polyamide-epoxy heavy-duty enamel floor coating.

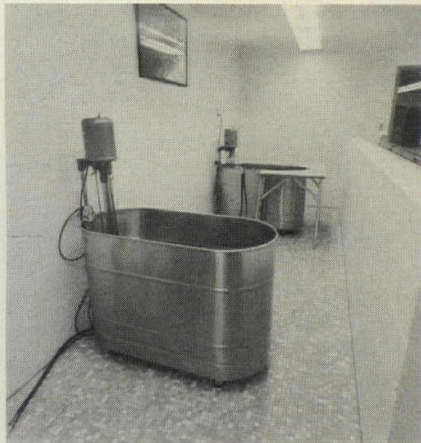
Both can take the kind of treatment the "Mean Joe" Greenses can throw at them—and more. They're both resistant to salt water, many oils and chemicals—both can meet the toughest requirements of schools, hospitals, motels, hotels, dairies, breweries, industrial plants, to name a few.

Put this durable duo to work for you. Give your maintenance costs the one-two punch with *Pitt-Glaze* Polyester-epoxy for your walls and *Aquapon* Polyamide-epoxy for your floors.

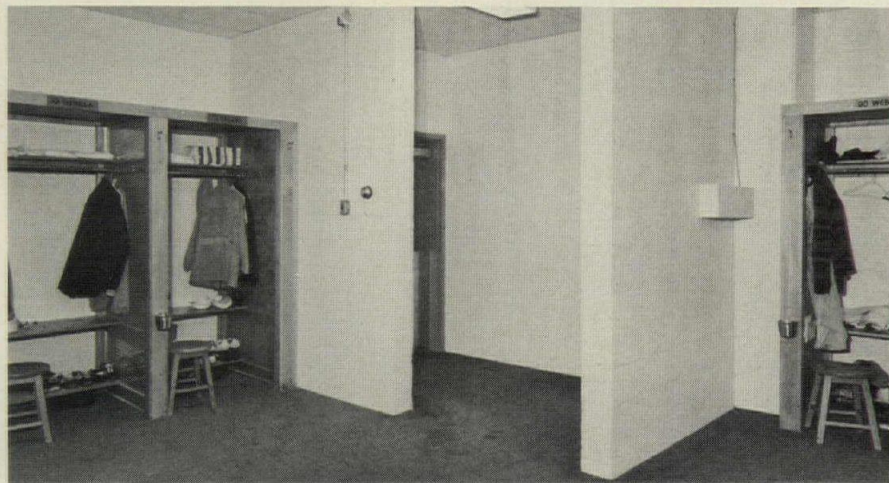
Write for complete literature. PPG Industries, One Gateway Center, Pittsburgh, Pa. 15222.

PPG: a Concern for the Future

PITTSBURGH[®] PAINTS



Whirlpool baths in physical therapy rooms.



Locker Room

For more data, circle 52 on inquiry card



The Brick* that has everything

- Rustic antique beauty
- Wide choice of permanent colors
- Strength that exceeds all requirements, by actual test
- Variety of sizes: oversize standard, modular standard, large utility and 8" thru-the-wall
- Competitively priced with ordinary clay brick
- Available NOW in many areas

Rus-tique Brik* is truly antique and rustic... and it's available for immediate delivery in many areas of the country.

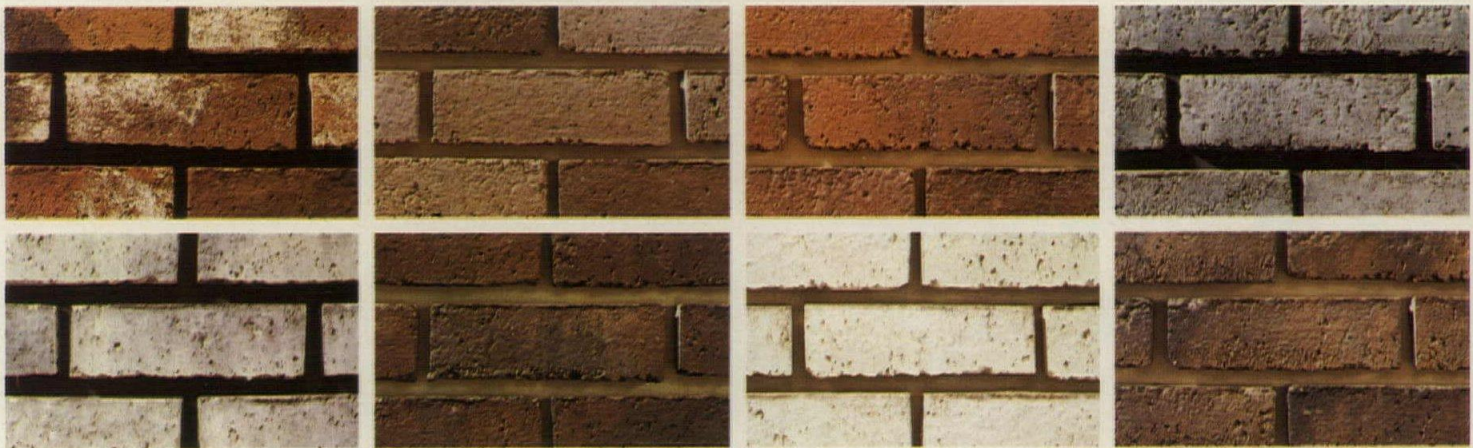
Rus-tique Brik* is a dense aggregate concrete... practically impossible to distinguish from a clay brick... and has all the strength and lasting qualities you expect from a concrete product.

And it's colorful! The coded formulas for color batching are perpetually consistent and permanent.

Like more information and our architectural file folder? Write or call:

TOLL FREE (800) 331-3288

Rus-tique Brik Speedy Info Line



Shown here are only a few of the wide range of permanent colors available from your nearest Rus-tique Brik plant. Final color selection should be made from actual samples.*

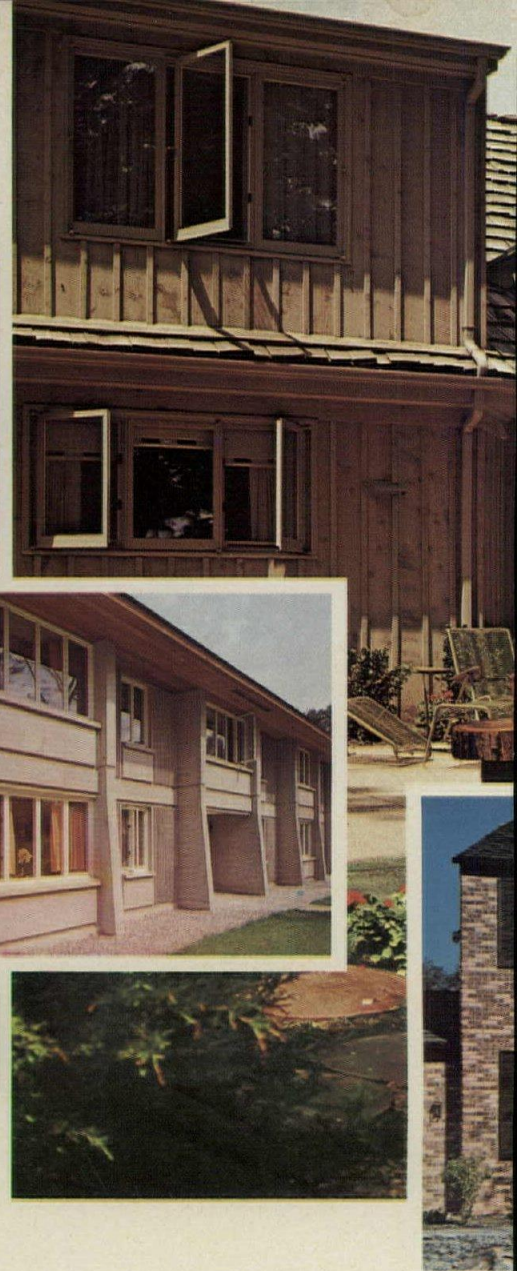
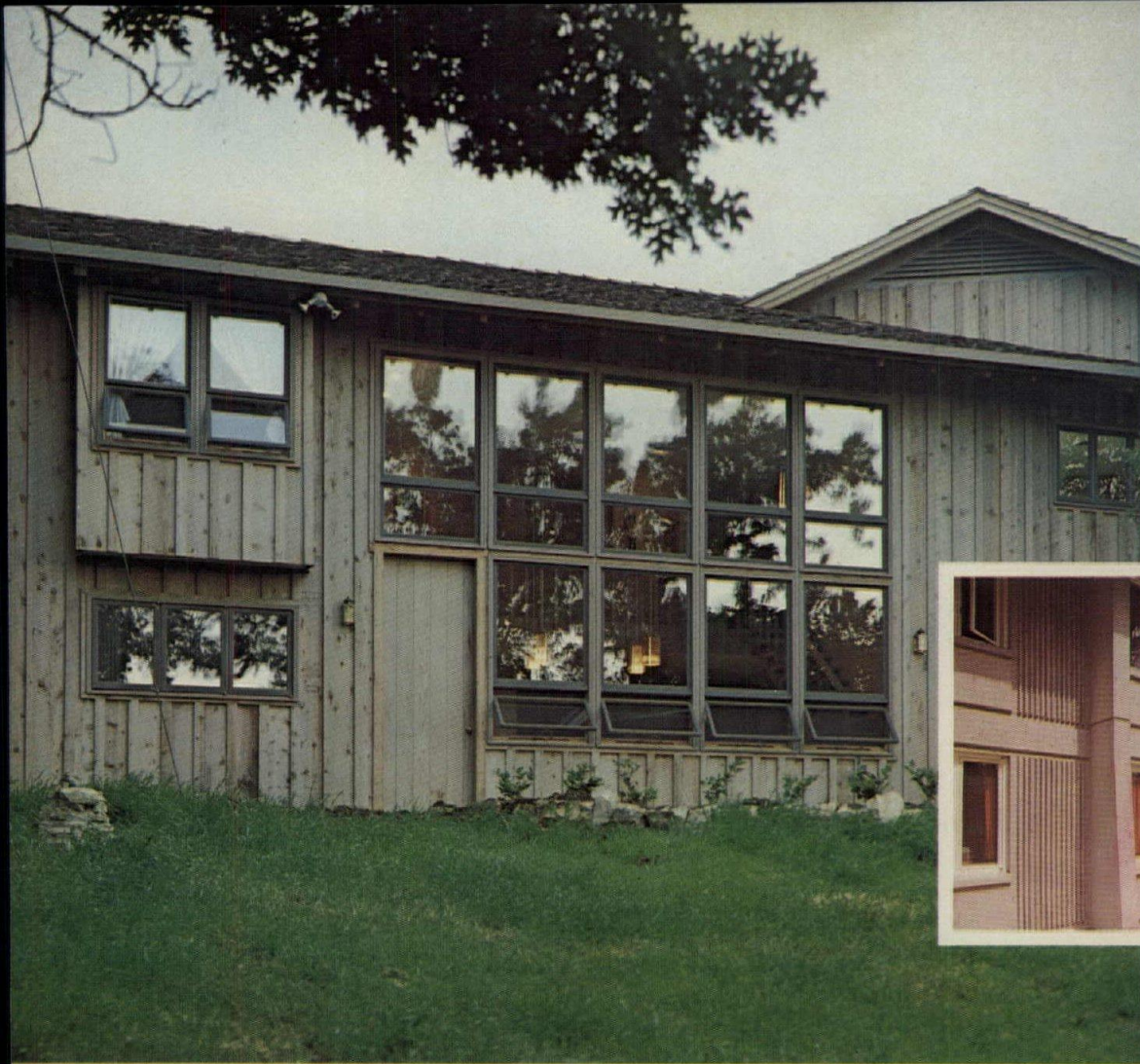
Rus-tique Brik

INTERNATIONAL

Post Office Box 7603, 2202 East 49th Street, Tulsa, Oklahoma 74105, (918) 742-7321

*Rus-tique Brik is a dense aggregate concrete—no clay used.

For more data, circle 53 on inquiry card



Wood windows: a beautiful way to conserve energy.

The energy crisis has finally hit home. Every home in the country. So the homebuyer of the 70's is giving higher priority than ever to housing that does the best job of conserving energy. And because windows often occupy 30-70% of an outer wall, homebuyers are looking carefully at the insulation they provide.

A window should insulate.

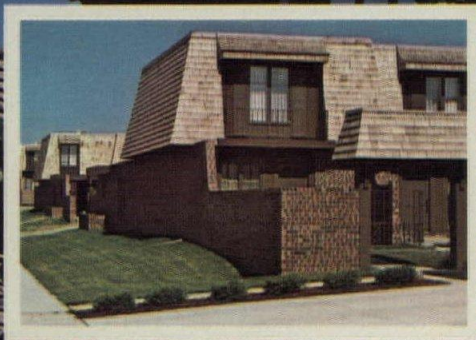
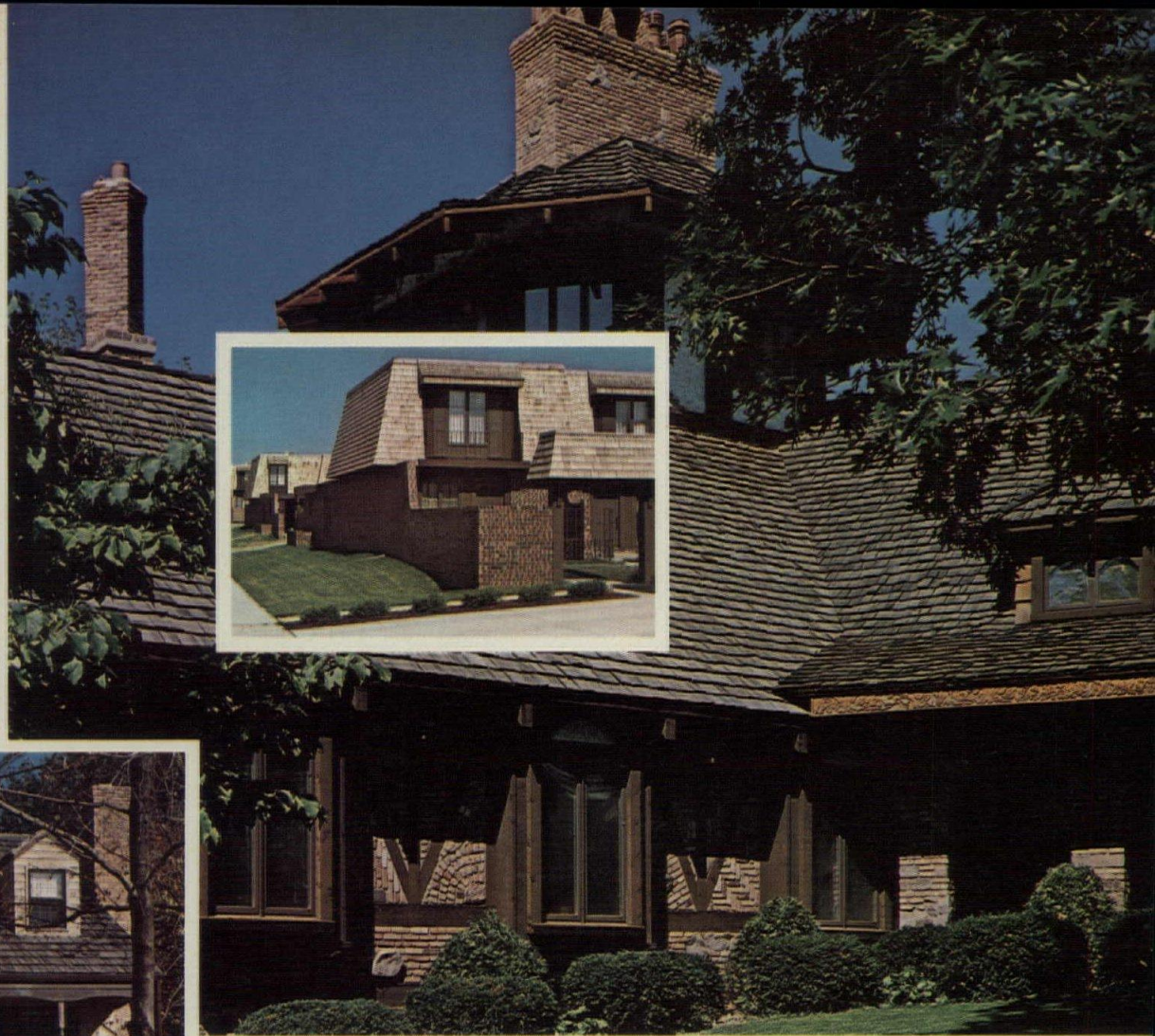
That's the most important thing consumers look for in a window. It was true before anybody was talking about the energy crisis. And it's truer still today. We've spent five years and \$40,000 studying consumers' homebuying plans and preferences. And every time, our research showed that they give the highest priority to a window's insulation capability (and the lowest priority to its initial cost).

Factors Most Important in Window Selection

	1968	1970	1972
Most Important	Insulation	Insulation	Insulation
Next Most Important	Durability	Durability	Durability
Least Important	Initial cost	Initial cost	Initial cost

Wood windows keep the warm in. And that translates into savings.

After a house is fully insulated, you can cut the remaining heat loss by 30%— just by choosing wood windows with insulating glass. That translates into important heating bill savings. And regardless of fuel prices, the savings add up year after year.



In a 16-window Chicago test home, the savings ranged from \$88.40 to \$124.25 last winter, depending on the type of fuel.

Home Heating Cost Comparison

Type of Window	Gas	Oil	Electric
Single glass in aluminum sash*	\$289.50	\$348.68	\$406.91
Single glass in wood sash	260.59	313.85	366.29
Insulating glass in aluminum sash*	225.59	271.70	317.08
Insulating glass in wood sash	201.10	242.21	282.66
Annual savings with insulating glass in wood over single glass in aluminum	88.40	106.47	124.25

*Without a specific thermal barrier
 Figures based on insulation manual developed by National Association of Home Builders Research Foundation. 1,400 sq. ft. home, fully insulated, 6600 degree days.

Wood windows are rated best for insulation quality.

Just ask a consumer how he rates wood versus metal windows. We did. And our research showed that 54% rate wood windows as excellent insulators, while only 44% say the same about metal windows.

%Rating Insulation Quality Very Good	1968	1970	1972
Wood Windows	47%	50%	54%
Metal Windows	45	41	44

You can help beat the energy crisis.

Don't wait for your clients to ask for wood windows. Specify them. And then use that savings in energy consumption as an important example of the long-term value of the homes you design.

Our new brochure tells how wood windows reduce home heating costs. It includes a step-by-step explanation of how window insulation works, and a detailed report of actual test results from homes all over the country. Write for your own free copy today. We'll also send you a copy of the latest findings from our consumer research.



Mail to:

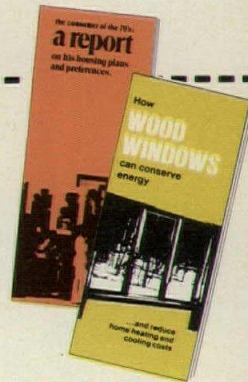
Ponderosa Pine Woodwork

Dept. A-1

1500 Yeon Building, Portland, Oregon 97204.

A member of the American Wood Council.

Send me my copy of your research report.



NAME _____

POSITION _____

ORGANIZATION _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

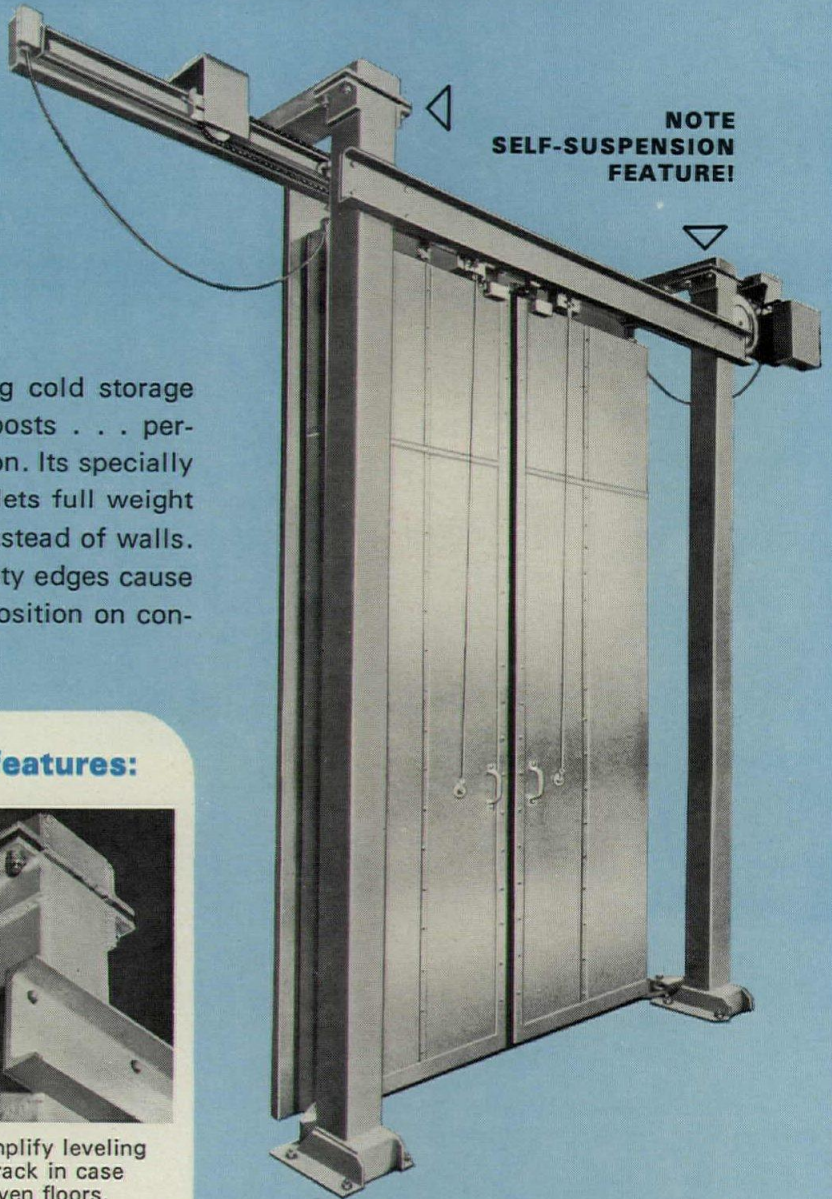
NEW JamiSStand™

cooler and freezer doors

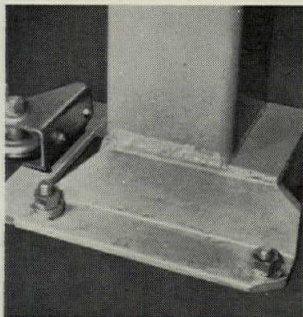
Look! No wall support or bucks are needed to install Jamison Two-Post Self-Suspension Doors!

This new power operated bi-parting cold storage door is equipped with two steel posts . . . permitting quick, economical installation. Its specially engineered rail-suspension system lets full weight of sliding doors be borne by floor instead of walls. Exclusive full height, full travel safety edges cause bi-parting doors to return to open position on contact with person or object.

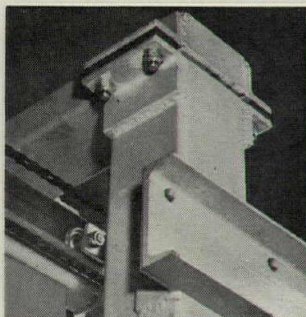
**NOTE
SELF-SUSPENSION
FEATURE!**



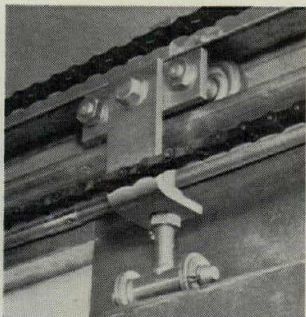
Other new JamiSStand features:



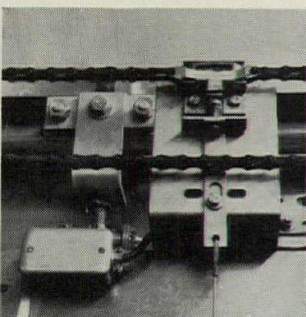
6" x 6" steel support posts are quickly anchored to floor.



Shims simplify leveling of the track in case of uneven floors.



Adjustable hanger assembly features antiderailing device.

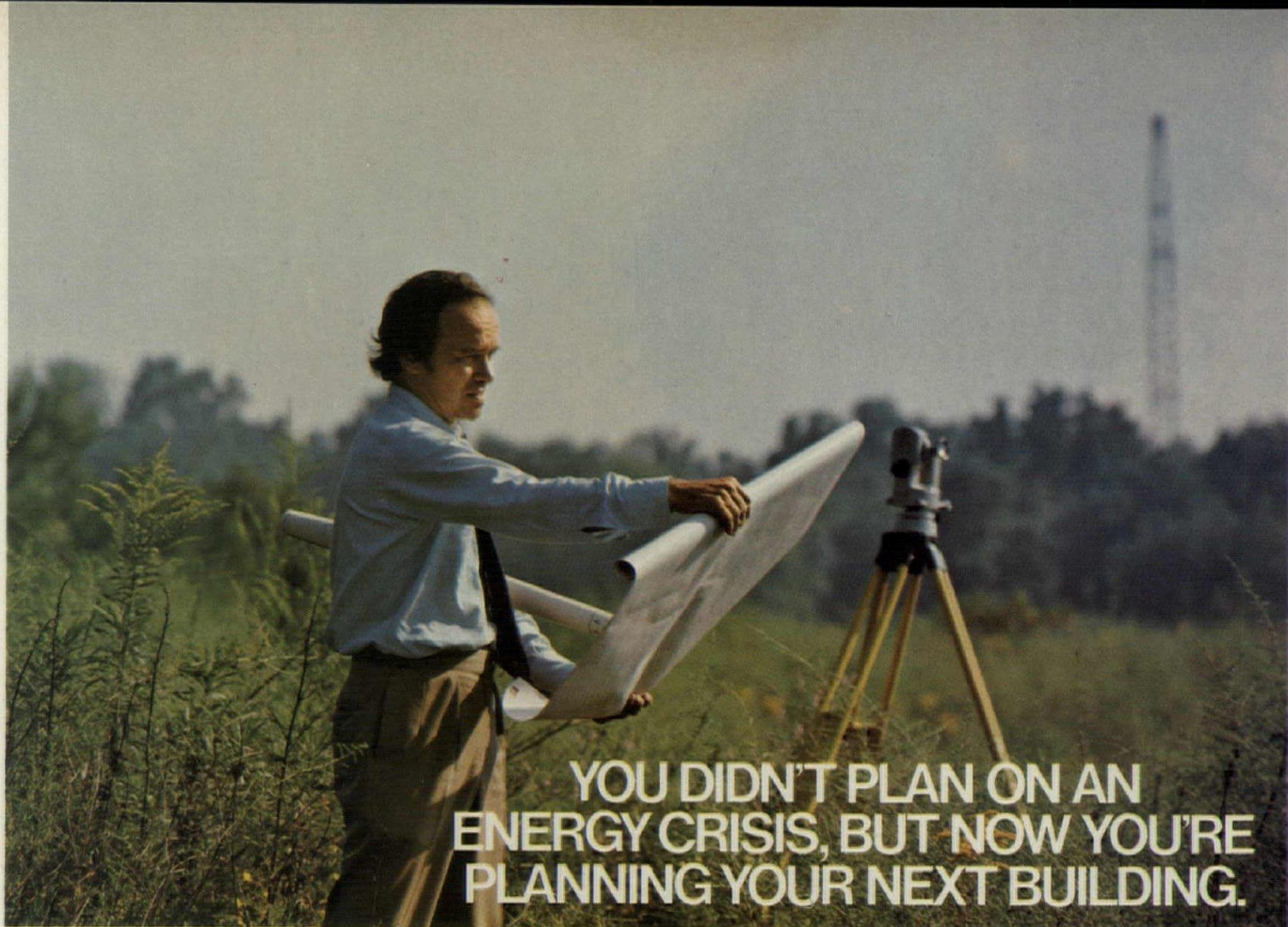


Instant change from power to manual operation from front or back.

Now get traditional Jamison quality, performance and service in *more* cooler and freezer door styles . . . designed and built by Jamison to meet every price range! Write or call for details.

COLD STORAGE DOORS BY
JAMISON
JAMISON DOOR CO • HAGERSTOWN, MD 21740

For more data, circle 55 on inquiry card



YOU DIDN'T PLAN ON AN ENERGY CRISIS, BUT NOW YOU'RE PLANNING YOUR NEXT BUILDING.

Which building material will you use?

You've got energy shortages to think about. Air-conditioning costs. Heat gain through the long, hot summers. Heat loss in the winter months. Heating equipment costs. The whole set of energy-use factors suddenly has become critically important. The building material you use affects all of them.

Compare the energy conserving capability of masonry, for instance, with double-plate glass walls.

At 4:00 P.M. on a hot August day in Washington, D.C., the heat gain through a square foot of west-facing insulated brick and concrete block wall will be 2.2 Btus an hour.

The heat gain through a double-plate glass wall in the same location will be 173 Btus a square foot in an hour. A big difference.

Project this differential over 10,000 square feet of wall. You come up with a heat gain through masonry of 22,000 Btuh, while the heat gain through double-plate glass is 1,730,000 Btuh.

In the case of the masonry wall, cooling equipment with a two-ton capacity can handle the heat gain. But with the double-plate glass wall, about 143 tons of cooling capacity will be needed.

An analysis of a typical 10-story building shows that over its useful life, the air-conditioning cost for a square foot of our masonry wall will be about 23 cents. For the double-plate glass wall, it will be \$7.60.

It takes a lot of money to buy, install and create space for all the extra air-conditioning equipment

required by the double-plate glass wall. A lot of money and a lot of energy to run that equipment.

Compare the heat loss in winter. It has a dramatic effect on energy consumption and building operation costs.

Our masonry wall, for example, has a "U-value" of .12. The double-plate glass wall has a "U-value" of .55. (U-values are used to determine heat loss through one square foot of wall area in Btuh per degree Fahrenheit differential across the wall.)

This means that the masonry wall is about 450% more efficient, on the average, than the glass wall in reducing heat loss.

Over the useful life of the building, the heating cost per square foot of wall area for masonry will be about 30 cents. For double-plate glass, about \$1.38.

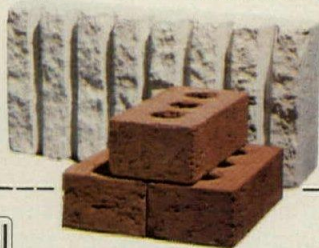
In a time of one energy crisis after another, masonry makes eminently good sense as a good citizen.

The masonry industry believes that the thermal insulating qualities of masonry are an important economic consideration to building designers, owners and investors, and all citizens.

Masonry walls save on air-conditioning and heating costs. And just as important, they are less expensive to build. The masonry wall we've described would have a 38% lower initial cost than the double-plate glass wall.

If you'd like to find out more, write to us and we'll send you a booklet comparing the thermal

insulating qualities of masonry walls with double-plate glass walls, metal panel walls and pre-cast concrete walls.



International Masonry Institute

823 15th Street, N.W., Washington, D.C. 20005 / (202) 783-3908

Please send the booklet comparing insulating qualities of masonry with other building materials.

Name _____

Title _____

Company _____

City _____ State _____ Zip _____

Nature of Business _____ AR

For more data, circle 56 on inquiry card

MAKE SURE YOUR CLIENT'S LOADING DOCK MEETS THE TEST



CALL IN KELLEY'S DOCK DESIGN SPECIALISTS

Before a modern loading dock can be placed in operation there are hundreds of vital decisions to be made including choosing the correct equipment from thousands of products.

Size, height, traffic flow, lighting, sealing, waiting areas, gates, service roads, aprons, equipment, and now OSHA requirements, all demand correct decisions.

You can save yourself time, by leaving the job to Kelley specialists. They design, lay-out and equip docks every day. We have 350 of these specialists

in the field. They'll work with you and your client . . . and stand behind the results. They'll save you valuable time and headaches plus assure your client that he'll have the safe efficient dock operation he needs. Get the complete story from the responsible dockboard people:



Kelley Company, Incorporated
6768 North Teutonia Avenue
Milwaukee, Wisconsin 53209
Telephone: (414) 352-1000
Telex: 26-661

55-568AR

For more data, circle 57 on inquiry card

Knoll International

745 Fifth Avenue, New York 10022

Andrew Ivar Morrison and Bruce R. Hannah design for Knoll

Their new series of office chairs not only combines an original supporting armrest with soft, replaceable upholstery but also swivels, tilts, glides and brings comfort to the working environment.

Knoll International designs for the way you work.



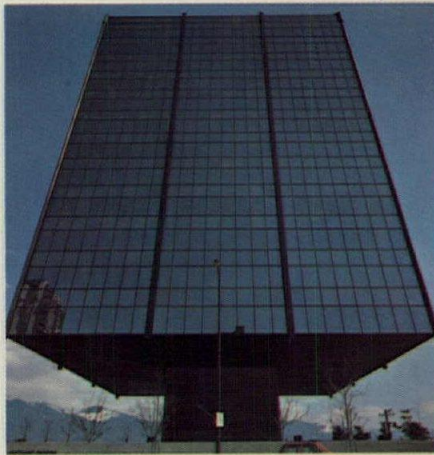
Standard yet flexible

1600 Curtain Wall

for thermal control in the energy decade

Today, and in the years to come, thermal considerations will greatly affect architectural design. Building materials have become an integral part of interior climate systems. Our present energy resources are at stake. □ For complete thermal integrity the designer must look beyond the conventional solutions of thermal and reflective glazing. The aluminum glass holding members themselves can make a vital contribution to thermal efficiency.

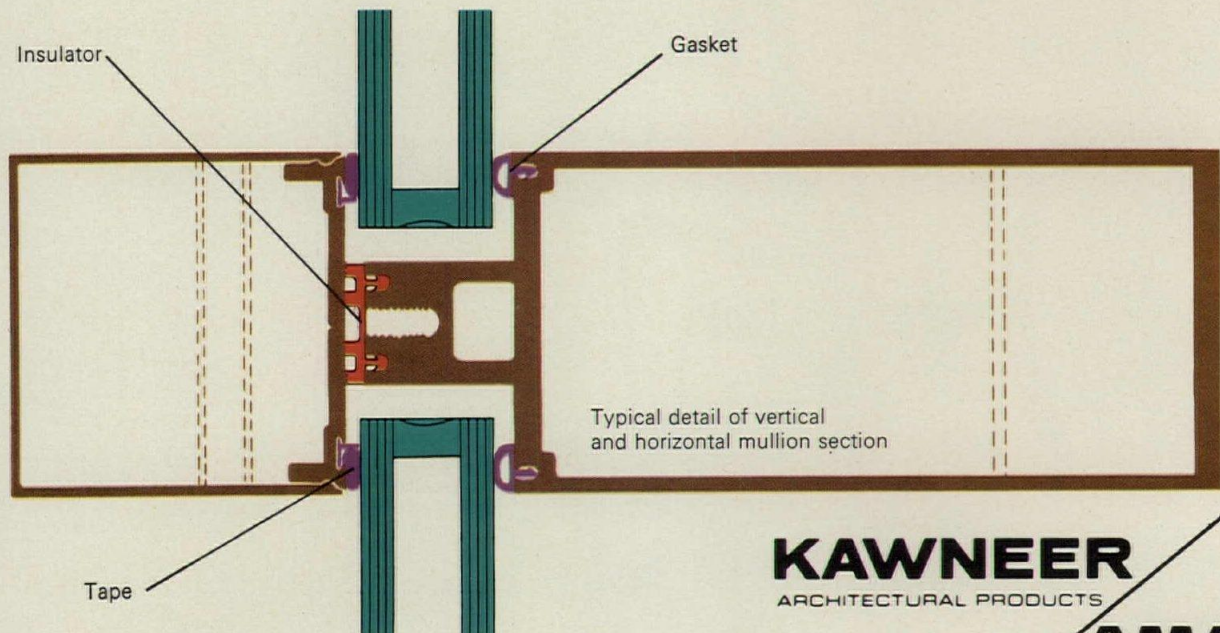
□ Kawneer pioneered the positive thermal break concept in wall systems. This engineering innovation eliminates contact between inside and outside metal surfaces, completing the thermal barrier of the curtain wall. Heat transfer to the outside in the cold months and into the building in hot months is minimized. Result: expenditures for heating and air conditioning are reduced and energy conserved.



From the design standpoint, 1600 offers the architect a standard thermal system with custom flexibility. A simple modification by Kawneer's design engineering department easily adapted the standard 1600 Curtain Wall System to an application where floors are anchored in place from the top down . . . with the bottom storey 30 feet off the ground. Result for Vancouver's new Westcoast Transmission Building: a "custom" application

within standard budget requirements. □ Snap on covers in a variety of durable Permanodic™ finishes allow the architect to create strong verticals . . . shadow box effects . . . or flush facings. □ In 1600 Curtain Wall . . . as in our complete line . . . you can depend on Kawneer engineering. □ Designing for thermal efficiency with attention to detail is Kawneer's pledge for the energy decade.

Architects: Rhone & Iredale, Vancouver, British Columbia



KAWNEER
ARCHITECTURAL PRODUCTS

AMAX
ALUMINUM

For full information, see your Kawneer representative or contact
Kawneer Product Information, 1105 N. Front St., Niles, Michigan 49120.

For more data, circle 59 on inquiry card



More and more builders are siding with prepainted galvanized steel.



Whether you remodel or start from scratch, you want to be on the winning side. Today it's prepainted galvanized steel.

Zinc-coated steel survives a beating wood and other materials can't. It's immune to cracking from sun, storms, corrosion and the freeze and thaw cycle. It's twice as strong as other metal sidings, less subject to thermal expansion and denting. The paint is baked on for keeps, and washes clean like new.

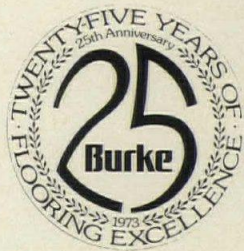
To the home owner this brings pleasure without maintenance. To the builder it means a longer building season, and housing developments that look inviting even when they've been occupied for years.

Asarco, a major producer of galvanizing grade zinc, will be happy to send you a list of companies who make prepainted galvanized steel siding. Just drop us a line at 120 Broadway, New York, N.Y. 10005.

ASARCO

AMERICAN SMELTING AND REFINING COMPANY

For more data, circle 60 on inquiry card



Burke Carpet Enhancers

**Burke cove base—
toeless or topset—53 colors**

Burke molded rubber cove base is the perfect finishing touch for a beautifully carpeted floor.

The no-shrink, thermoset molded rubber cove base installs faster. And, it wraps easily around corners and curved areas.

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RECORD INTERIORS OF 1974

The new office for Harper & Row (photo right) by architects Smotrich & Platt is one of ten winners in this year's Record Interiors Award Program. The other nine, on the pages that follow, include another office, two residential interiors, two banks, a tennis club, a perfume factory, a restaurant and a telegraphic message center. Each seemed, to RECORD's editors, to be an especially successful solution to a rather full range of interior design problems. Other excellent submissions, deserving publication, could not find space in this issue. Several will be published in regular issues later in the year.

The editors hope that interest in this program will continue to grow and submissions for next year's program will be welcome throughout the year.

Barclay F. Gordon

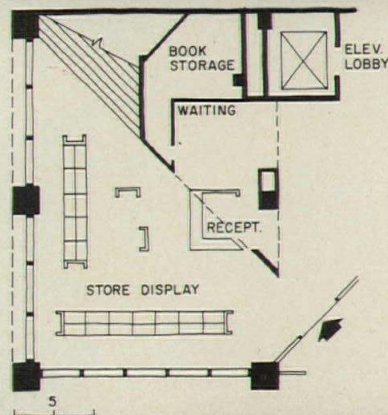
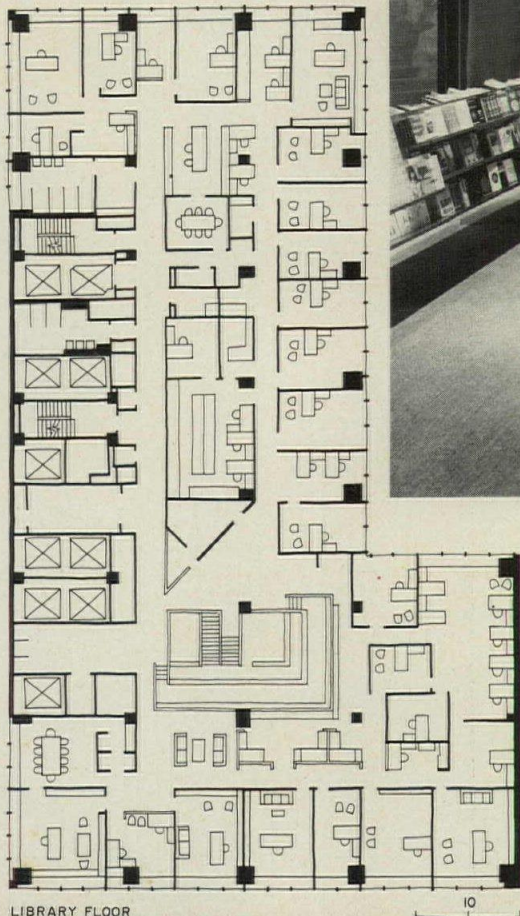


Interesting sections and a well-ordered plan give this headquarters for a New York publisher a creative identity and image

When Harper & Row decided to consolidate their publishing divisions, they took 13 floors of a new mid-Manhattan office building and hired architects Smotrich & Platt to design interiors for them within the rather regularized plan imposed by the building. As the photographs indicate, the completed interiors are anything but regular. The floors are opened to each other to an unusual degree for buildings of this type and, by this device, the architects have generated strong sections and a good deal of spatial interest. Private offices and semi-“landscaped” work stations function well together providing many places for random encounter among editors and staff who have long been accustomed to informal working relationships.

The architects departed from building standard to introduce quarry tile, mirrored columns and special cabinet work, but they did so selectively. As a result, the job was completed for \$22 p.s.f. not including carpeting.

OFFICES OF HARPER & ROW, New York City. Architects: *Smotrich & Platt*; associated architects: *William & Geoffrey Platt*. Graphics: *Chermayeff & Geismar*. Contractor: *Uris Building Corporation*.



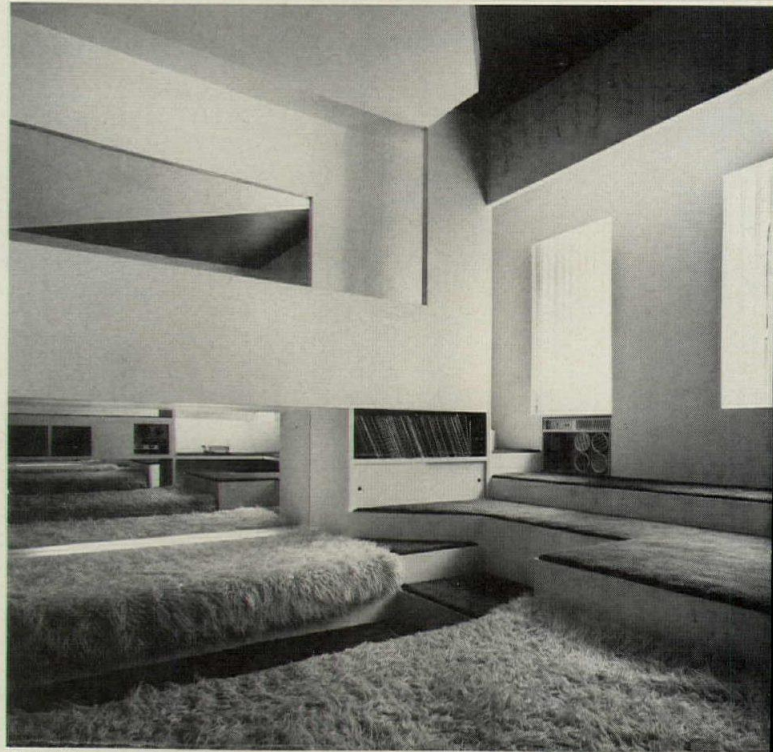
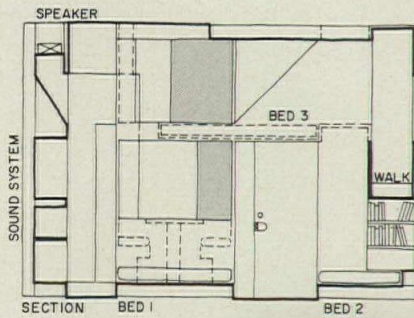
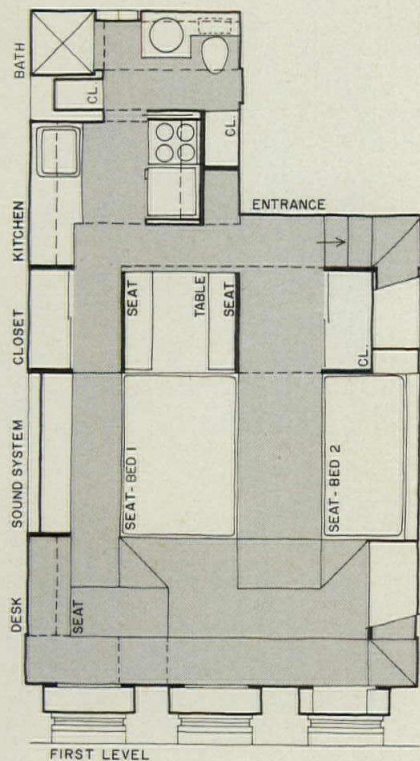
Norman McGrath photos



Mirrors, sculptural forms and a disciplined palette of colors and materials give this Manhattan apartment an emphatically abstract vigor

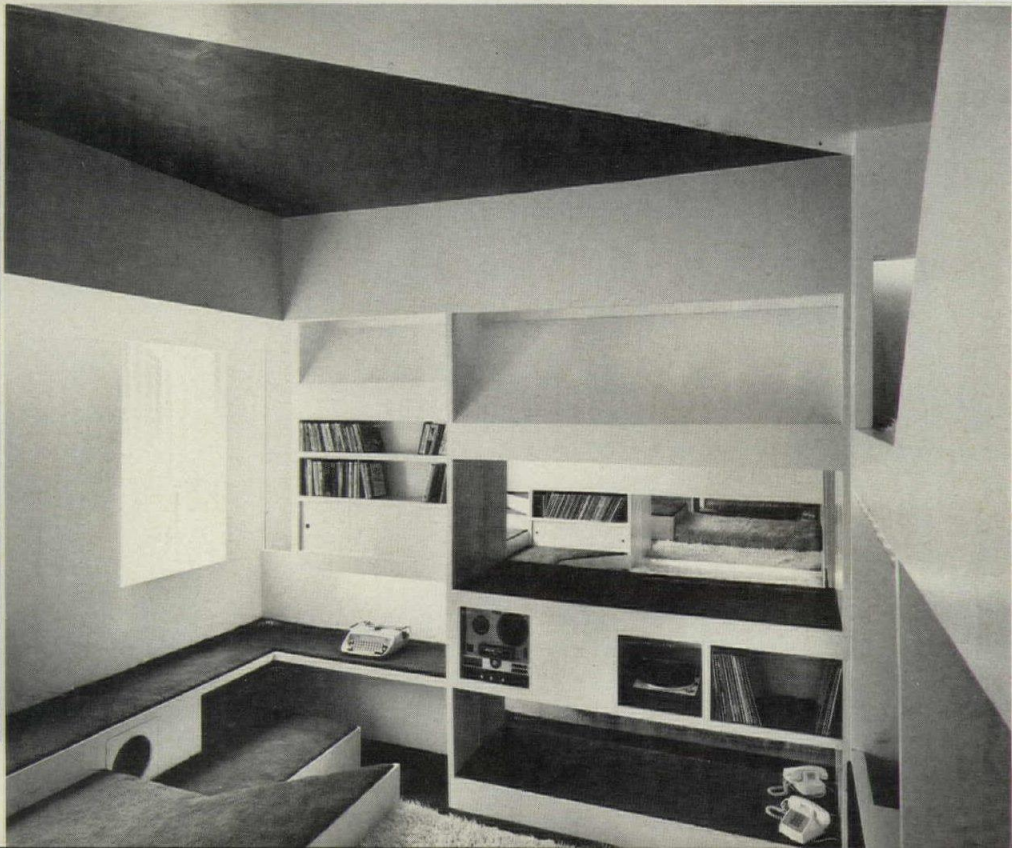
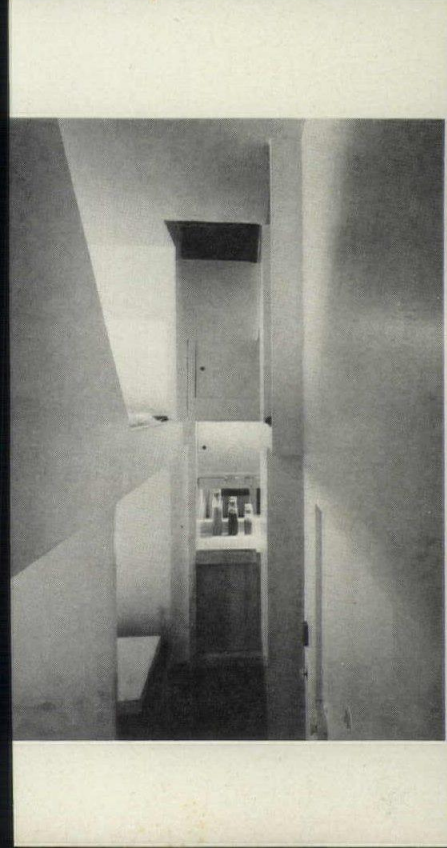
This Manhattan apartment by Egyptian-born architect Gamal El Zoghby is designed with such concern for living space and its sculptural manipulation that a host of drawings would be required to adequately illustrate its every complexity. Basically, it is half a floor of a New York brownstone with one exposure and party walls at each side. The interior design has been so intense that the original skeleton is barely visible and the environment that emerges is consistently abstract. The architect has introduced platforms to vary the floor levels, mirrors to expand the small space, and built-in furniture to give the design its sculptural esthetic. The owner uses the loft bed for sleeping, the paired beds below mostly for seating. A small kitchen, just off the entry, serves a built-in dining area behind the seating. The wall areas are mostly storage for books, hi-fi, clothes and personal belongings. Most surfaces are painted white but a powerful dose of color is injected into the design by blue carpeting on floor and platforms.

Invention and craftsmanship were required to assemble this extraordinary apartment. With the architect as contractor, and as carpenter, it got both.



George Cserna photos



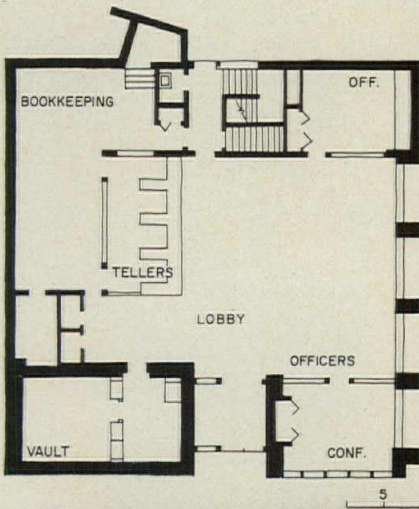


Natural materials, handsomely detailed, give this Montana bank a surprising but welcome warmth and intimacy

Blaine Bank of Montana, by architects Davidson and Kuhr, is located on a visually prominent downtown corner of Chinook, Montana, a farming and cattle ranching community south of Butte. The banking floor is laid out conventionally but overlooked by a mezzanine that is used, after hours, by the community as a meeting room and is reached by a separate entrance and stair.

The interiors achieve a businesslike but pleasantly informal feeling. The use of natural materials, detailed with simplicity, give the bank a warmth that is altogether in character with its use. And the architects have gone from surface to surface with a strong visual consistency and sense of scale.

BLAINE BANK OF MONTANA, Chinook, Montana. Owner: Bancorporation of Montana. Architects: Davidson and Kuhr. Engineers: Drapes Engineering. Contractor: Swank Enterprises, Inc.

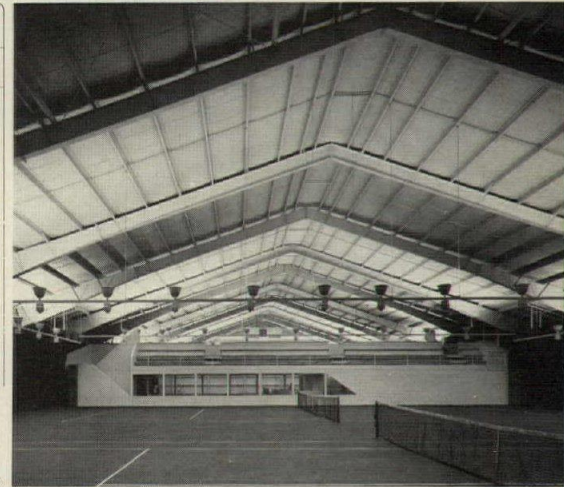
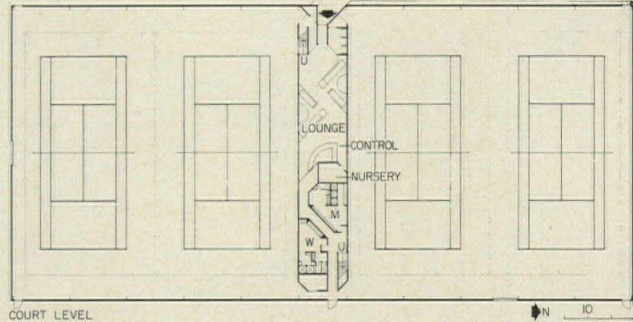
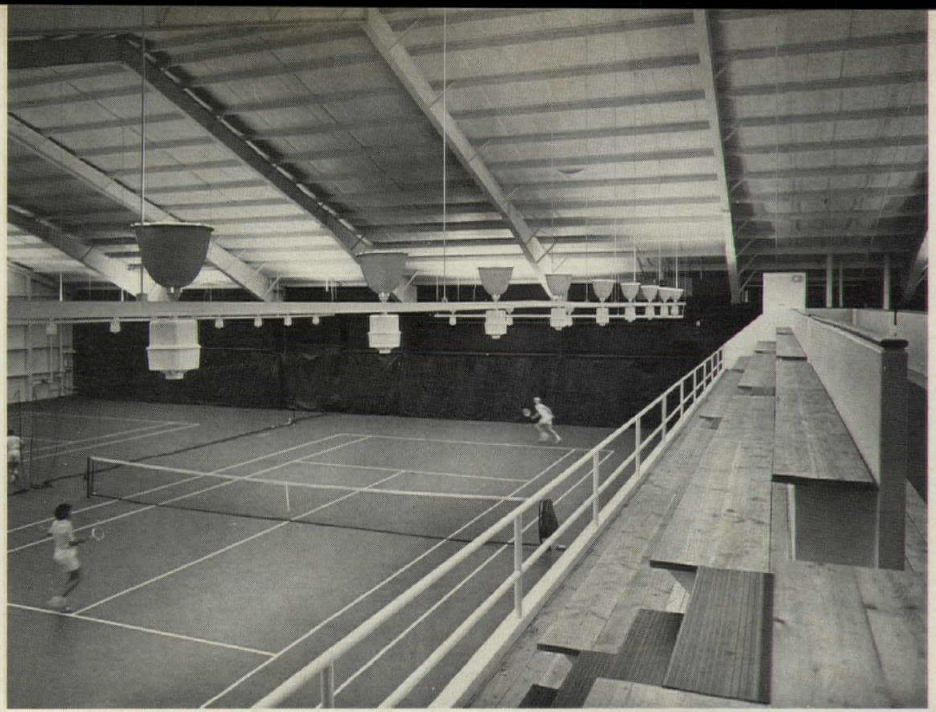


James Lemkin photos

**For Yale University:
a structure within a structure
provides comfortable conditions
for spectators and players
at \$14 per square foot**

Yale University's Cullman Courts furnish a welcome example of good planning and design in a building type that too often gets little of either. The project is really two structures, one inside the other. The outer structure is an inexpensive metal shell with a playing surface of polyurethane. The inner structure is a low, linear volume that houses dressing rooms and other support facilities. From inside the smaller structure, viewers can watch games in progress on either side. Pairing courts, and spacing them apart, architect Herbert Newman minimized the distractions and interferences that interrupt concentration and slow up play. Indirect lighting furnishes about 125 foot candles of general illumination.

CULLMAN COURTS, New Haven, Connecticut. Owner: *Yale University*. Architects: *Herbert S. Newman Associates*. Structural consultant: *Spiegel & Zamecnik, Inc.* (mechanical/electrical). Engineers: *Giunta & Helenski*. Contractor: *J. H. Hogan, Inc.*



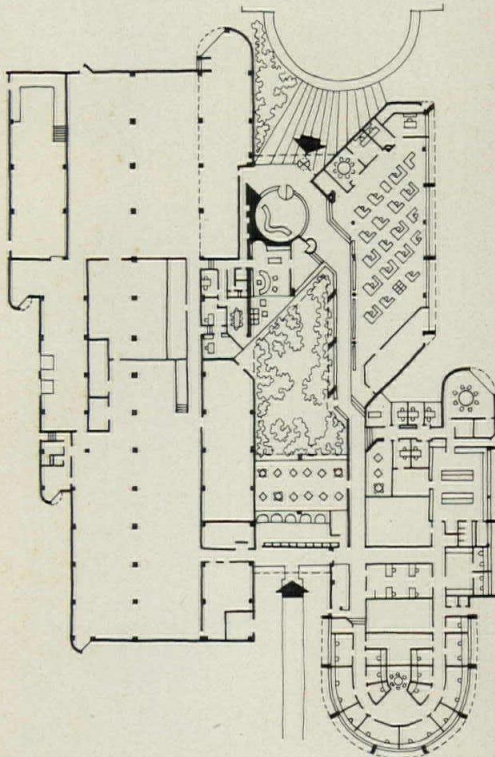
Norman McGrath photos



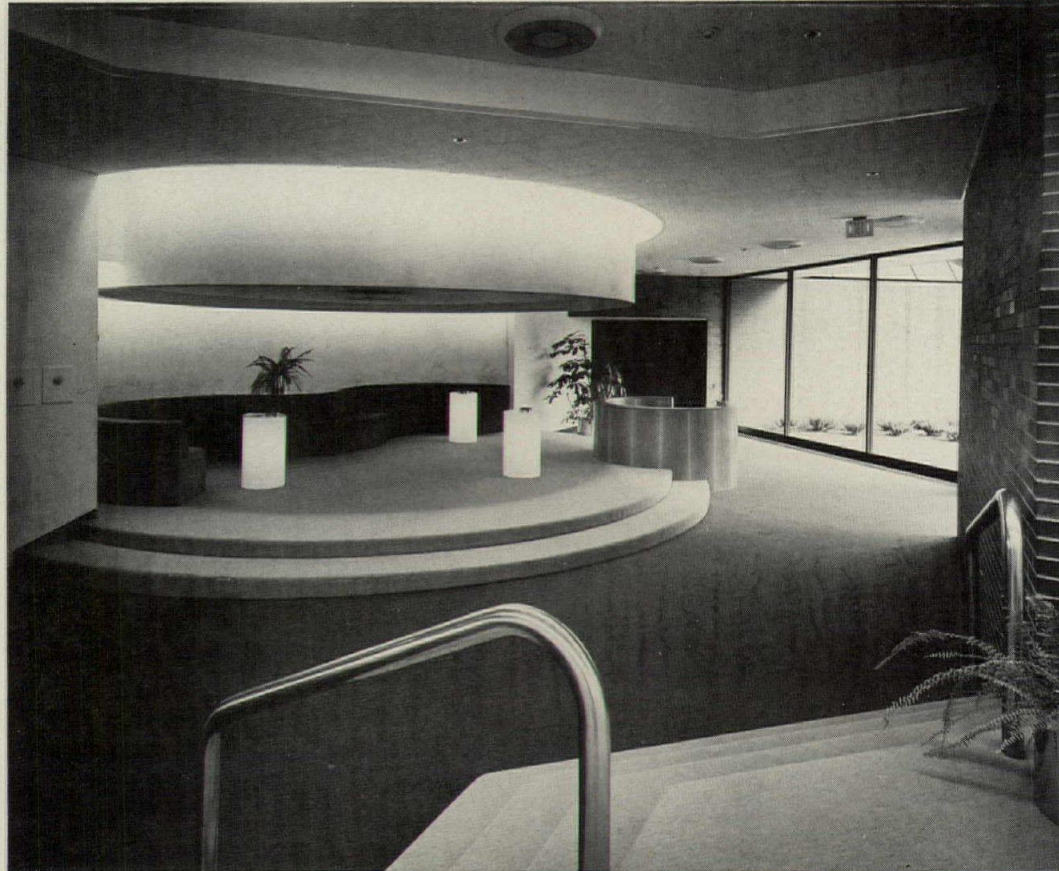
**A perfumer's need
for an elegant environment
provided the impetus
and the design goals
for this unusual factory**

Roure Bertrand DuPont is a French-owned company engaged in creating and compounding fragrances for distribution to large cosmetic companies. Their headquarters in New Jersey is, therefore, a laboratory and factory as well as offices but architects Kahn and Jacobs kept the level of design concern consistently high throughout. Part of the main reception area (color photo right) is on a raised platform and the brightly upholstered seating anticipates forms that turn out to be part of the building's basic geometry. The offices and work stations—many facing a central court—are carefully designed to be relaxed, comfortable and visually stimulating. The corridors are luminous avenues. Where two intersect, X-shaped baffles are dropped to seven feet and act as diffusers for daylight from the skylights above.

OFFICES FOR ROURE BERTRAND DUPONT, INC., Teaneck, New Jersey. Architects: *Kahn and Jacobs—Der Scutt, project designer, Eunice Chan, interior designer, Thomas Burrow, assistant designer.* Engineers: *Sigmund Roos (structural); M. P. Zacharius & Associates (mechanical/electrical).* Contractor: *Wigton-Abbott.*



Norman McGrath photos





The loft-like superstructure of this Connecticut barn offered design opportunities that the architects did not pass up

Gwathmey-Siegel were architects for the renovation of this Greenwich, Connecticut barn. The existing wood frame sits on a masonry base and is sited so that entrances occur at both ends but at different levels. As replanned by the architects, the lower level, which opens to the rear of the property, is given over to childrens' bedrooms, guest bedroom, storage and recreation. The upper levels, containing living and dining spaces, kitchen, balconied master bedroom and studio, are oriented toward the front. The wooden superstructure offered opportunities for loft-like planning—opportunities the architects exploited vigorously as the photographs indicate. To tie the levels together and provide a single but powerful

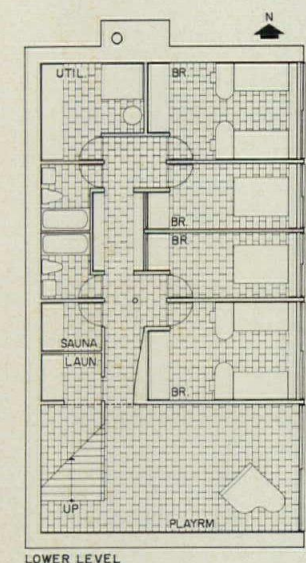
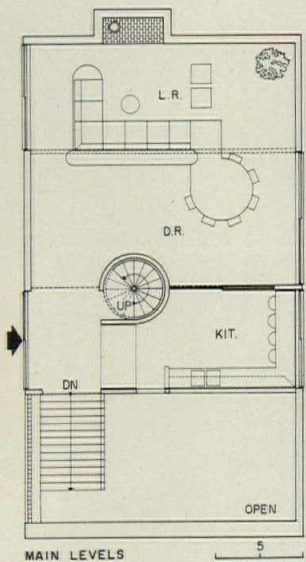
point of reference, the architects employed a huge photomural (photos, opposite page) with an old railroading subject.

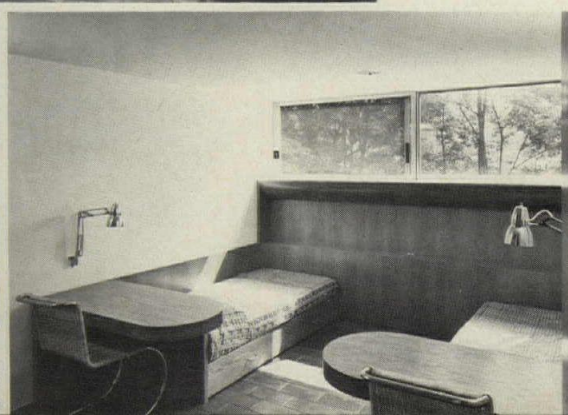
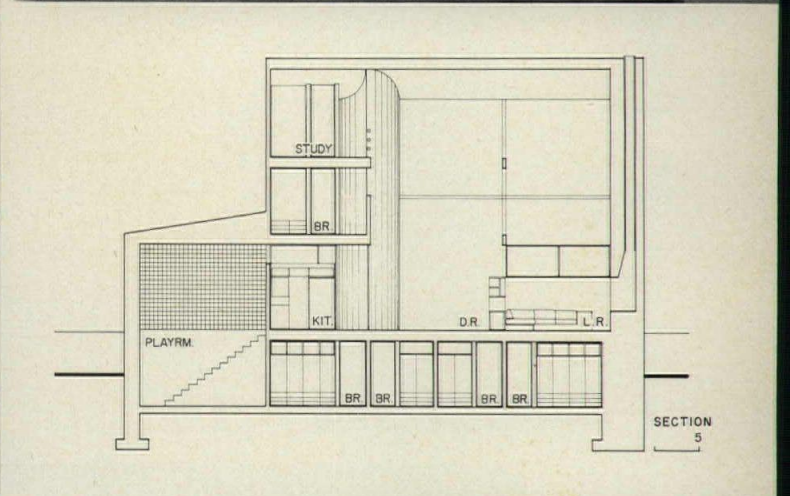
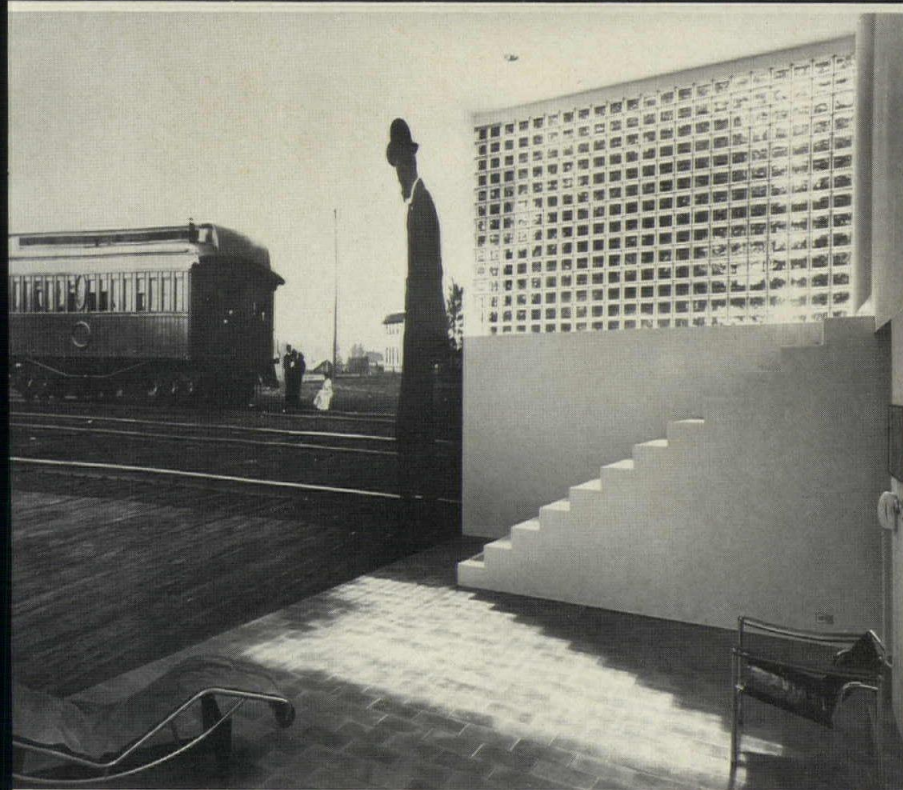
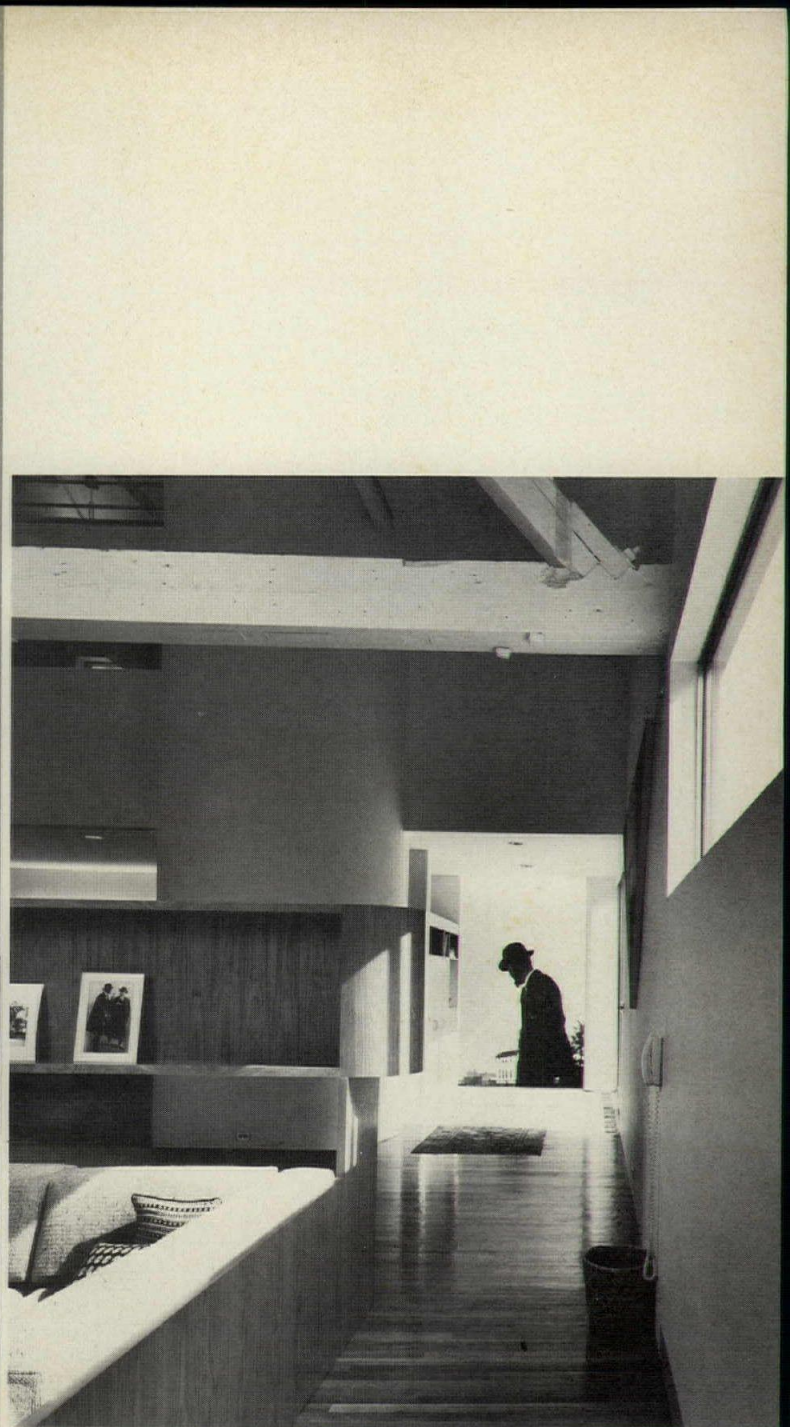
While much of the original structure and some of the barn-like spatial volumes remain, no real attempt has been made to continue the rustic theme with the new work. The additions have been made in the materials, design vocabulary and level of finish that the architects have used extensively in new residential work in Eastern Long Island and elsewhere. The detailing and the craftsmanship are also up to the architect's usual high standard.

BARN RENOVATION, Greenwich, Connecticut. Architects: Gwathmey-Siegel. Contractor: A. LoVito, Inc.



David Franzen photos



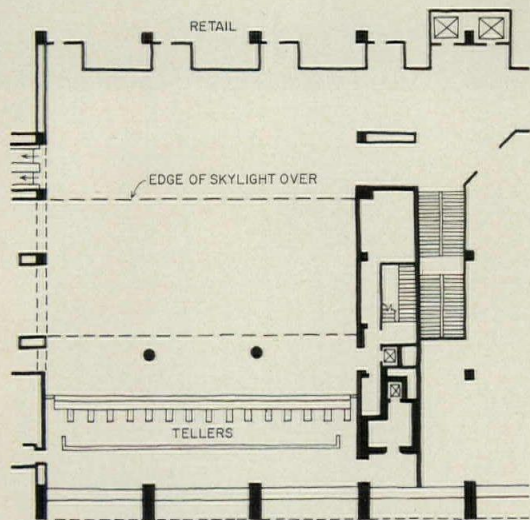


Centering on a superspace, the Southern Bank of Ohio adds a vital new component to Cincinnati's redeveloping urban core

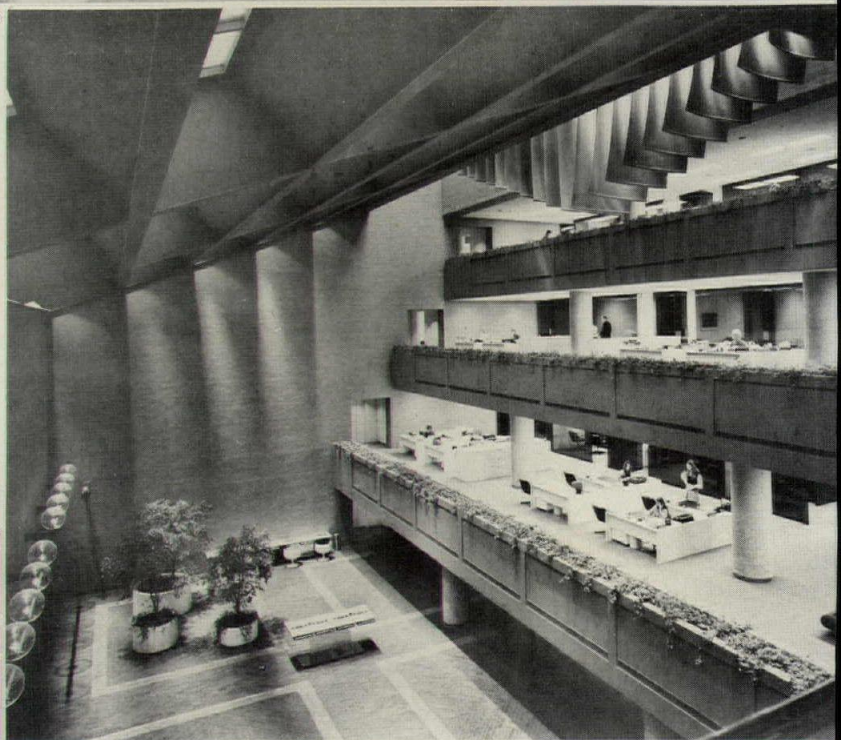
Among the new work in Cincinnati's downtown core is the "580 Project," designed by RTKL Associates, Inc., that includes a new headquarters for the Southern Ohio Bank. The main volume is a superspace, monumental in feeling but flooded with daylight from a canted skylight above. Dramatically thrust into this space is a series of receding mezzanines, tufted with greenery, and housing a variety of non-public banking functions. Under the lowest mezzanine, along the north wall, are the teller's counters.

But for all its expansiveness, the tall space is carefully scaled. The architects retained good control throughout and knew exactly when enough was enough.

SOUTHERN BANK OF OHIO, Cincinnati, Ohio. Architects: RTKL Associates, Inc.—Mario L. Shack—principal-in-charge; Edward P. Haladay, project architect. Associated architects: Harry Hake & Partners, Inc. Engineers: Miller, Tallarico, McNinch & Hoeffel (structural); O. W. Motz & W. B. Motz (mechanical). Contractor: Turner Construction Company.



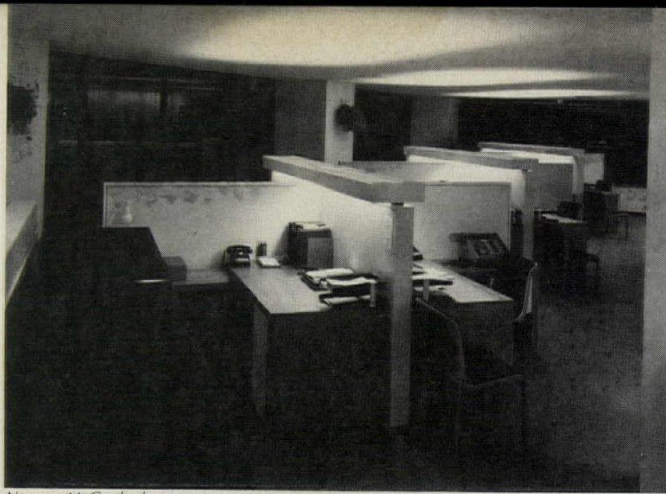
Joseph Molitor photos



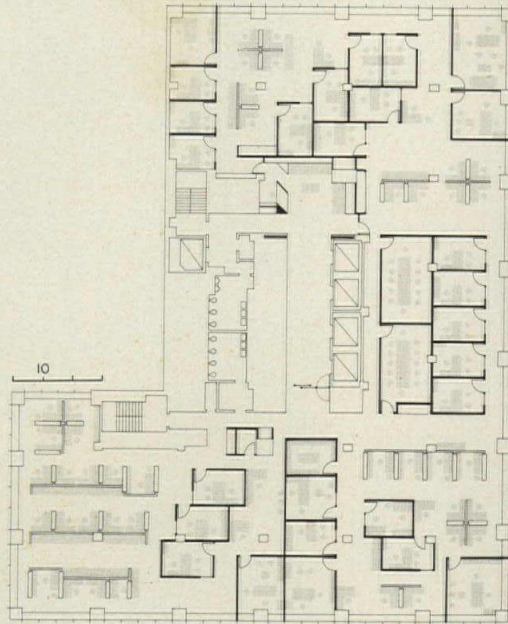
New offices for a nationally known distiller are unusually inventive and carry on a long tradition of design excellence

The new offices for Joseph E. Seagram and Sons, Inc., designed by Giovanni Pasanella Associates, consolidate divisions of the company long-scattered in buildings around New York City, including its famous headquarters building on Park Avenue. Pasanella's design modified the conventional ring of perimeter offices and provided instead a carefully designed arrangement of efficient work stations that share the exterior wall locations. These stations are separated by privacy walls and fitted with fluorescent uplighting which eliminated the need for inflexible ceiling fixtures in many office areas. Each station also has an integral downlight to illuminate the work surface. The reception areas are beautifully detailed and enriched by handsome graphics by the architect.

JOSEPH E. SEAGRAM OFFICES, New York City. Architects: *Giovanni Pasanella Associates—B. Laurence Rachlin, job captain.* Contractor: *Diesel Construction Company.*



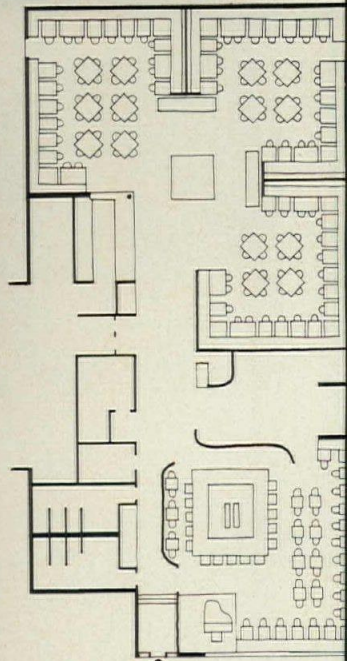
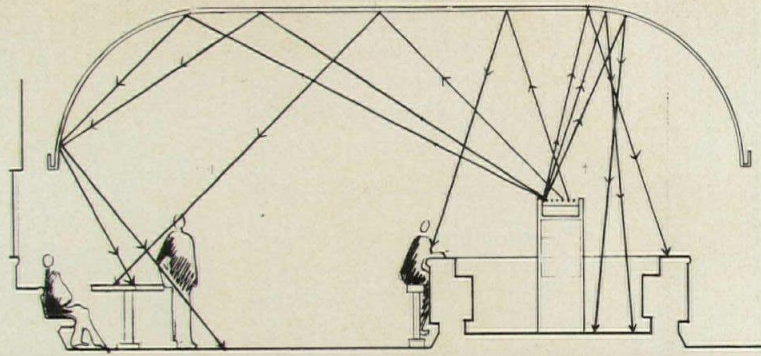
Norman McGrath photos



This New Haven restaurant, built on a strict budget, turns throwaway space into an exciting environment for dining and drinking.

The principal determinants in architect John Fowler's design for Harold's Restaurant grew directly from its location in an unpromising and awkwardly proportioned space in the basement of a New Haven parking garage. To kill the 19-foot-high void, Fowler dropped the ceiling to 11 feet in order to create an intimate dining space but centered a 15-foot-high dome over the lounge area (photo opposite page). The dome is finished in sheets of specular aluminum that reflect blurred and wildly animated images of the action below. The architect made generous use of wall mirrors in the dining area for much the same purpose. Tables and service bars are covered in plastic laminate and floors are carpeted. To the credit of all concerned, the whole job was completed in just four months at a cost of approximately \$45,000.

HAROLD'S RESTAURANT, New Haven, Connecticut. Owners: *Crown Properties, Inc.* Architects: *John Fowler—Michael Curtis, associate.* Structural engineers: *Spiegel and Zamecnik.* Graphic design: *Mary Ann Rumney.* Lighting: *Sylvan R. Shemitz and Associates.* Contractor: *G. B. H. Macomber Company.*



Norman McGrath photos

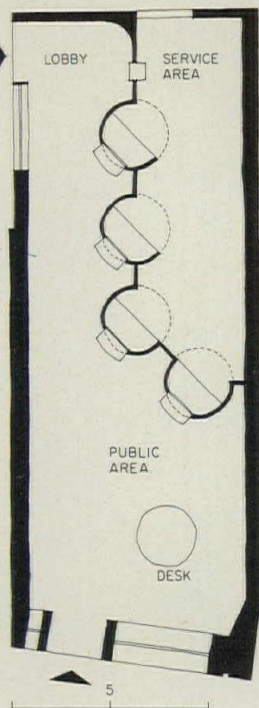


**Security and visual uplift:
Western Union gets both
in this colorful design
for a new message center
in Lower Manhattan**

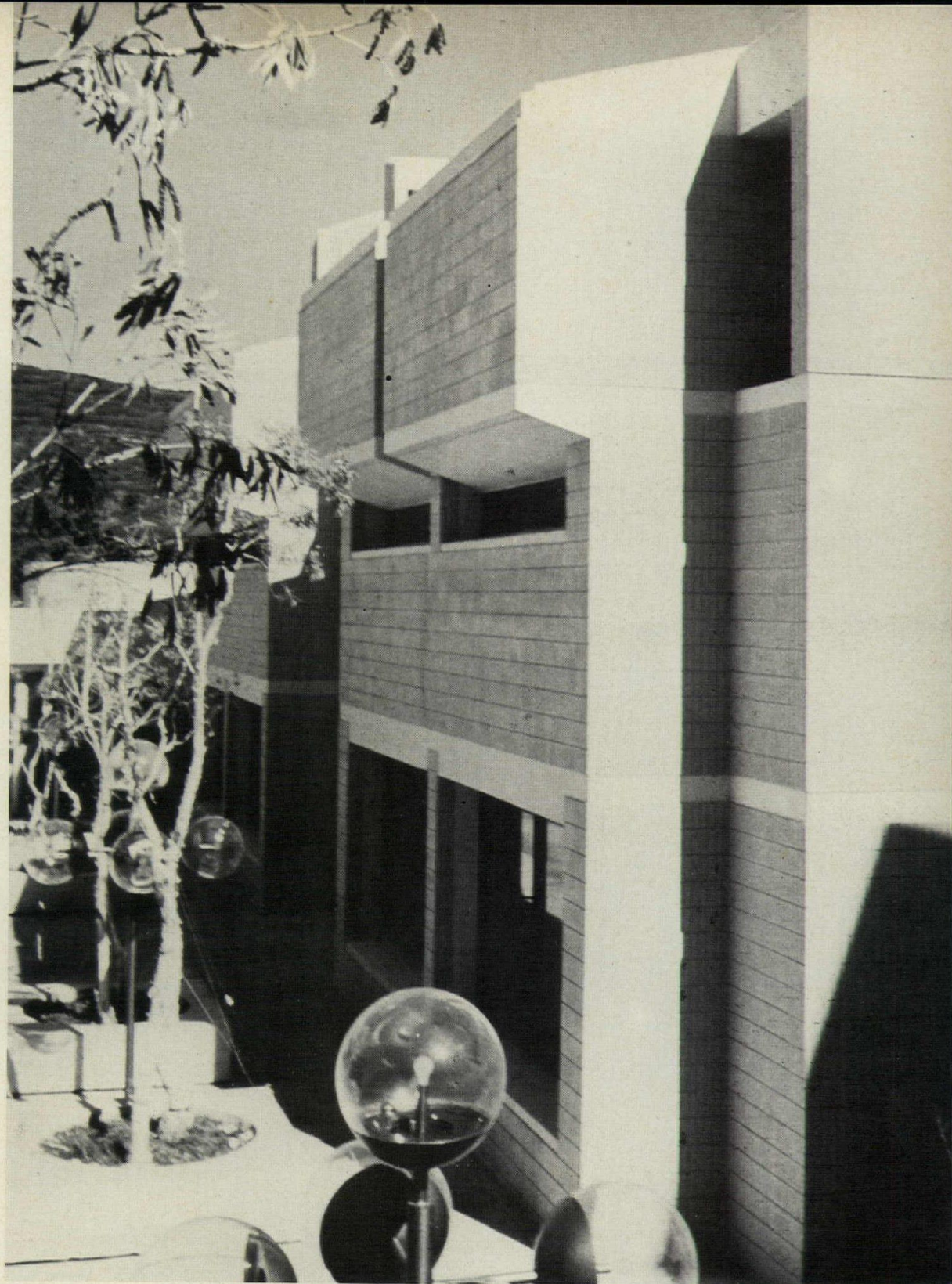
Updating their image was only one of Western Union's concerns in commissioning architect R. Scott Bromley to design this new message center in downtown New York City. An even greater challenge came in designing against armed robbery—an increasingly troublesome feature of Western Union's recent experience in over-the-counter operations. The four circular drums each house a message teller, shielded by bulletproof glass, whose cash transactions with customers are made through a counter level, pass-through tray. Heightened security usually shows—and often to a project's visual detriment. Here, however, it has been treated architecturally rather than electronically or mechanically and treated in a way that enhances the visual character of the space.

The circular forms of the drums are reflected in the shape of the built-in writing tables and in the small plastic cylinders that hang through the egg-crate ceiling fixture. The design is further enriched by supergraphic stripes that bend in an ordered pattern around the drums, then dip, along the far wall, to mark the entrance. The wall surface is vinyl and the floor is covered with carpet.

WESTERN UNION MESSAGE CENTER, New York City. Architect: R. Scott Bromley. Contractor: Relide Realty Corporation.



Jack Horner photos



Wayne Thom photos

Visual complexity and spatial variety in a college building

The intricate interplay of forms in the new buildings for the College of Business Administration at the University of Hawaii's Manoa campus in Honolulu makes this complex a dramatic visual and spatial experience on a campus until recently woefully lacking in strong architectural statements. The design is based on a single multi-faced module whose virtuosity was fully exploited by architect Leo Wou of Honolulu and San Francisco.



The University of Hawaii's campus in Honolulu is on a large tract of land in the Manoa Valley, away from the business center of the city and the Waikiki tourist area, in a populous but relatively open part of the city. The recently completed College of Business Administration occupies a triangular site on the north side of this tract, bordered on two sides by streets (one a thoroughfare) and on the other by the campus. The site slopes from the junction of the two streets—the apex of the triangle—into the campus, a circumstance adroitly turned to advantage by the architects in the design of the new College. Designing with the slope, they have provided on-grade entrance to each of the principal levels of the College,

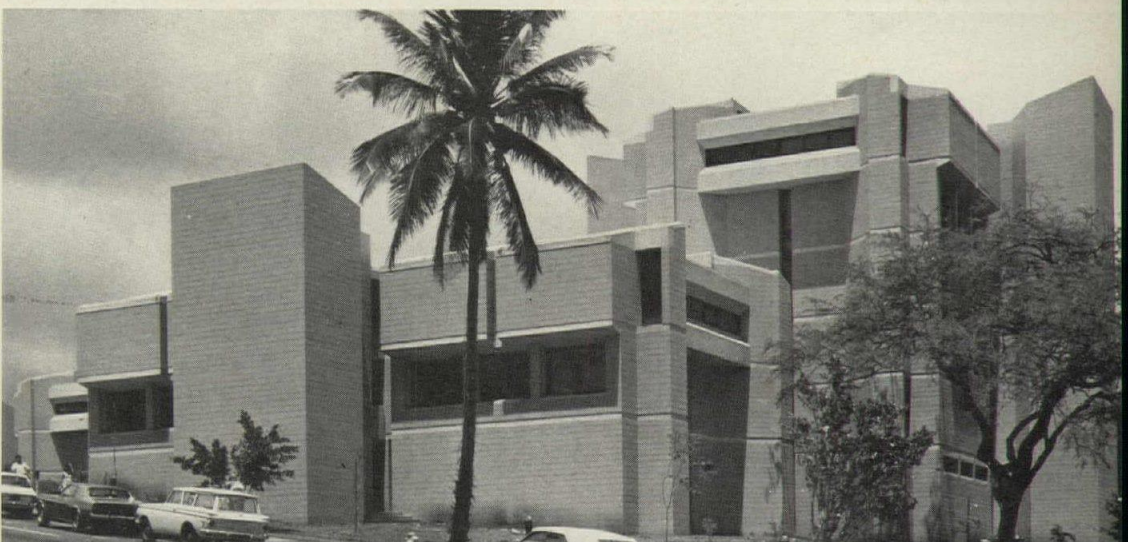
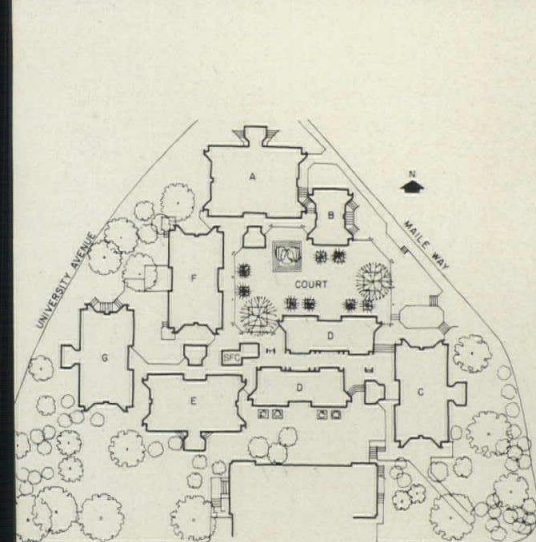
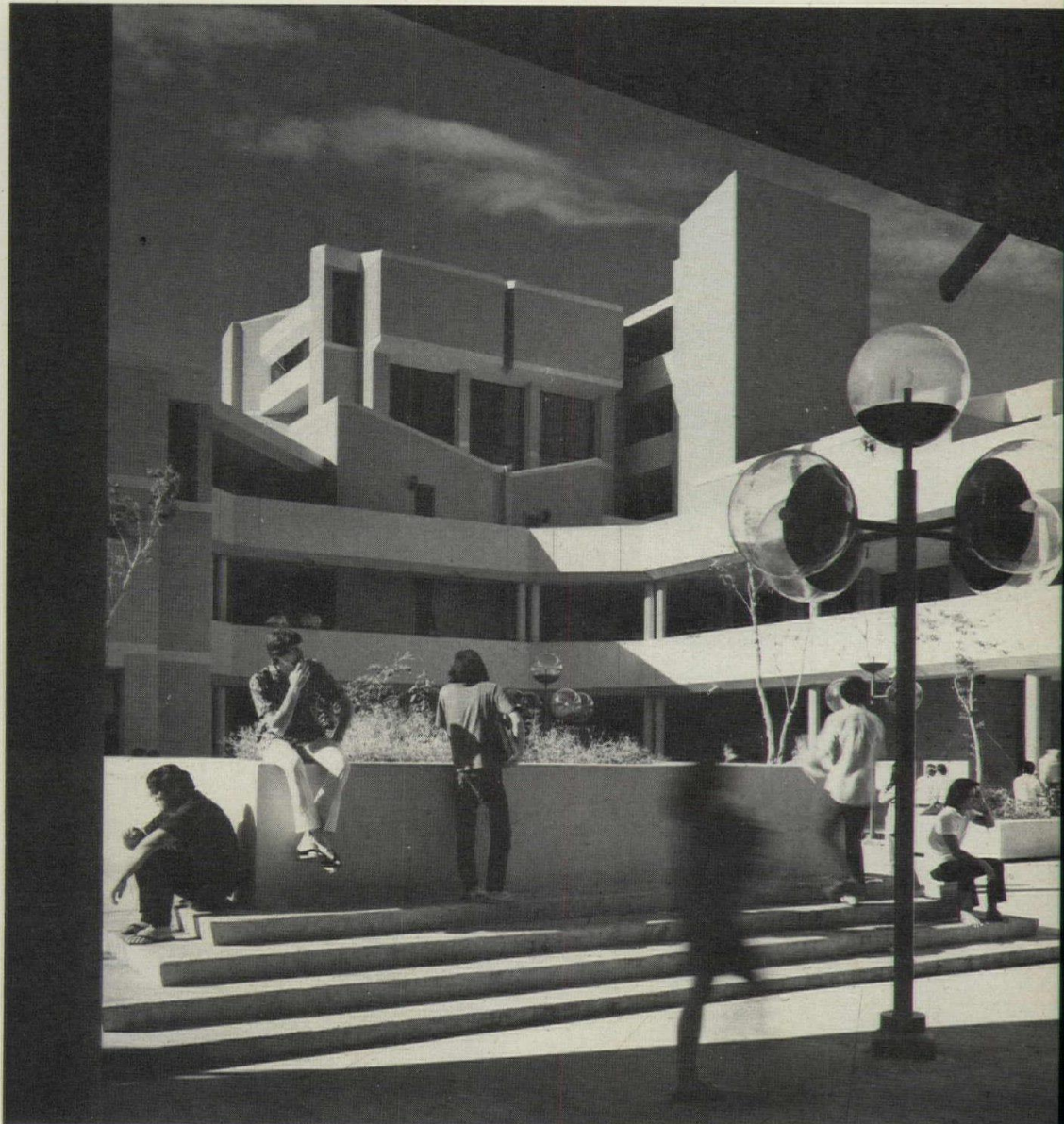
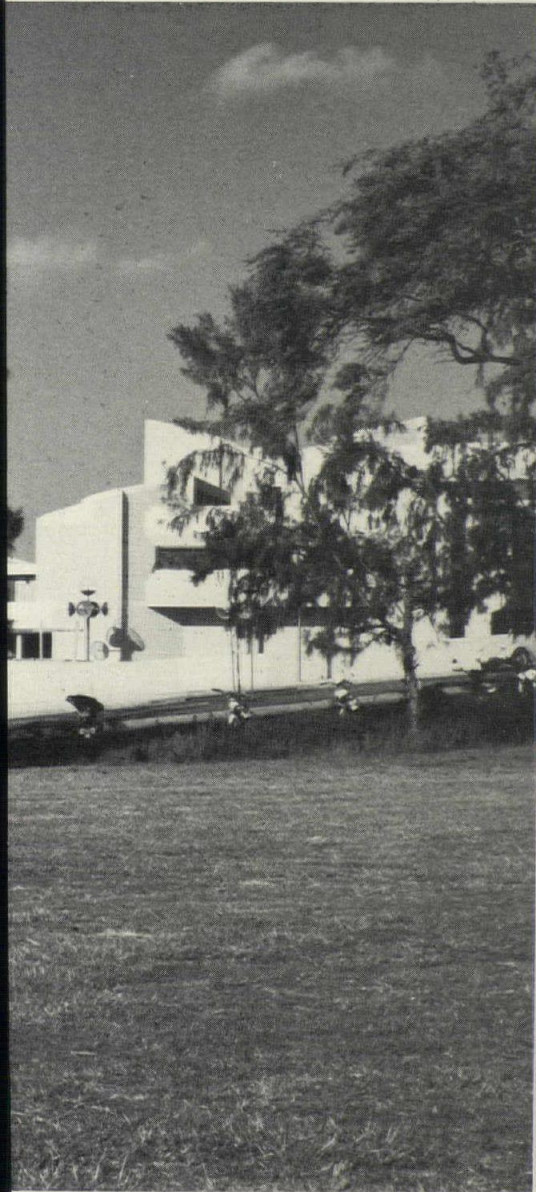
a barrier-free feature of which they and the College are justifiably proud, and have utilized the slope to simplify planning for the required large lecture halls, building these into the slope.

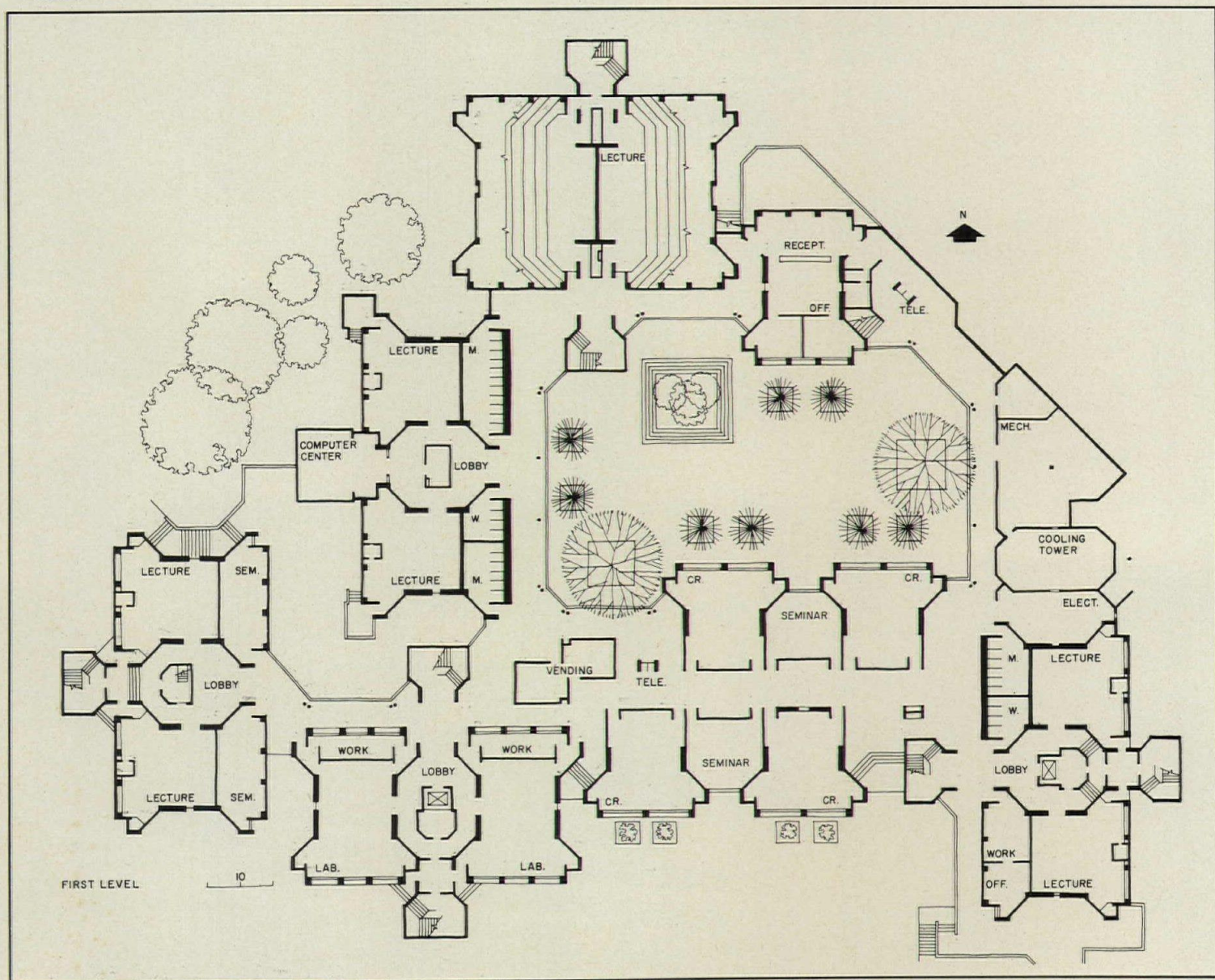
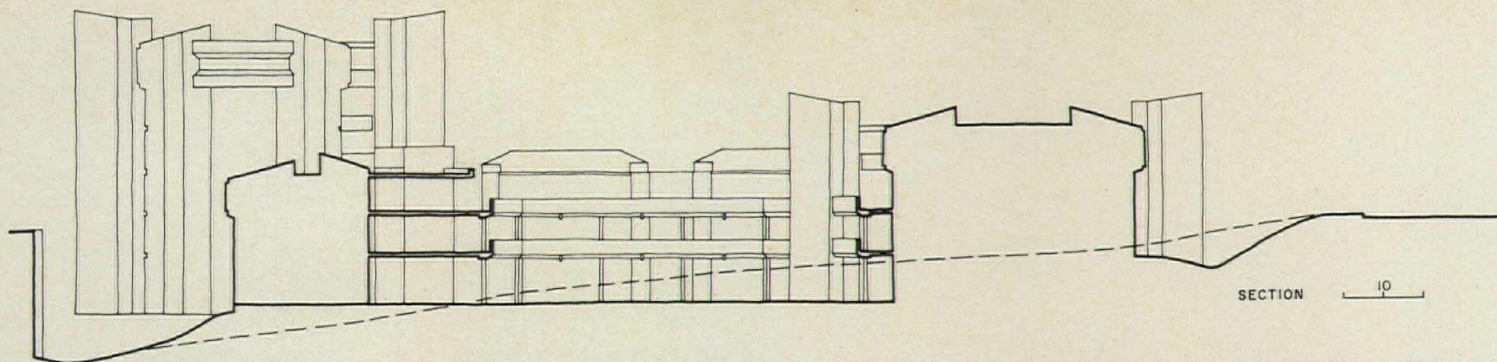
The College is really not a single structure as its name implies, but a complex of buildings connected by covered walks, bridges and balcony corridors. The result is both visual and spatial variety, heightened for those who use the complex by the experience of moving through its places and spaces, and expressed vividly in the apparent complexity of forms which the College presents from a distance. But because the profile of the College could be kept low, thanks to the sloping site, this com-

plexity is more like a rich fabric than a visually busy silhouette, working itself into the city instead of intruding upon it. With tall elements on the lower portions of the site, and low elements on the higher ground along the bordering streets, all parts of the complex appear to be of the same height, but this is not the case.

For all the richness of this spatial yet formal variety, the basic element which produces it is a simple one. The dumbbell-shaped element of which the complex buildings are composed is repeated again and again, in different heights, turned this way and that, increased in floor area at upper levels, punctured by windows of different types. It is an element which lends itself neatly to the need for many kinds

Underlying the concept of the design for the College complex is the intention of the architect to provide a variety of spatial experiences. Thus the rich interplay of forms, the articulation of units, the use of strong horizontal bands as connecting links between units, and the relationship of levels vertically as well. The central court is the focus for the College, used by all, all the time.





of spaces and especially to the mass-produced material—concrete block—which the island's economy and industry made necessary.

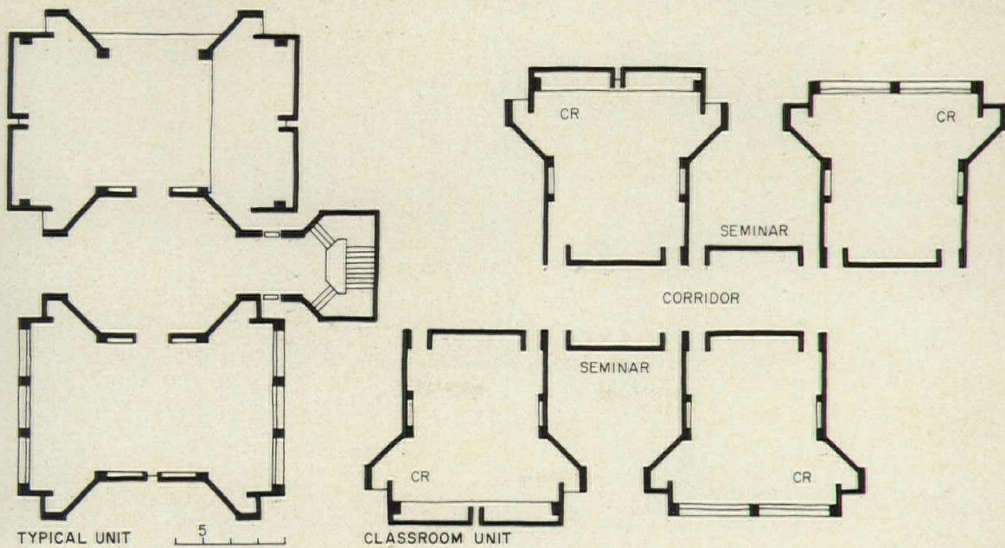
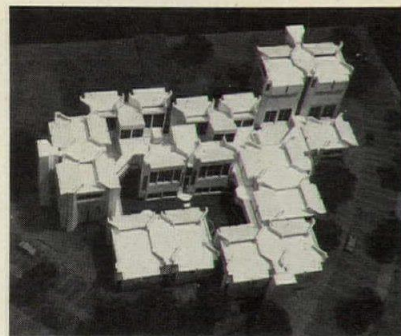
The dumbbell-shaped module, consistently used throughout the complex, is not a symmetrical, four-sided unit but by its nature is varied in form and capable of providing the variations which the architect wanted without violating its own integrity. "The program dictated the outcome far more than Leo Wou did," says the architect. "There is no set pattern in using the modules, because what we did was to create a set of options and not an absolute."

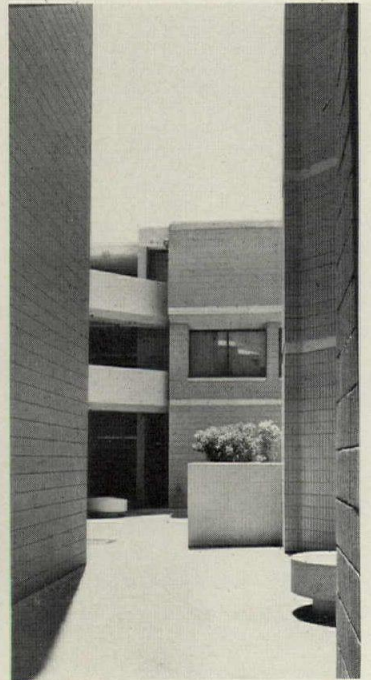
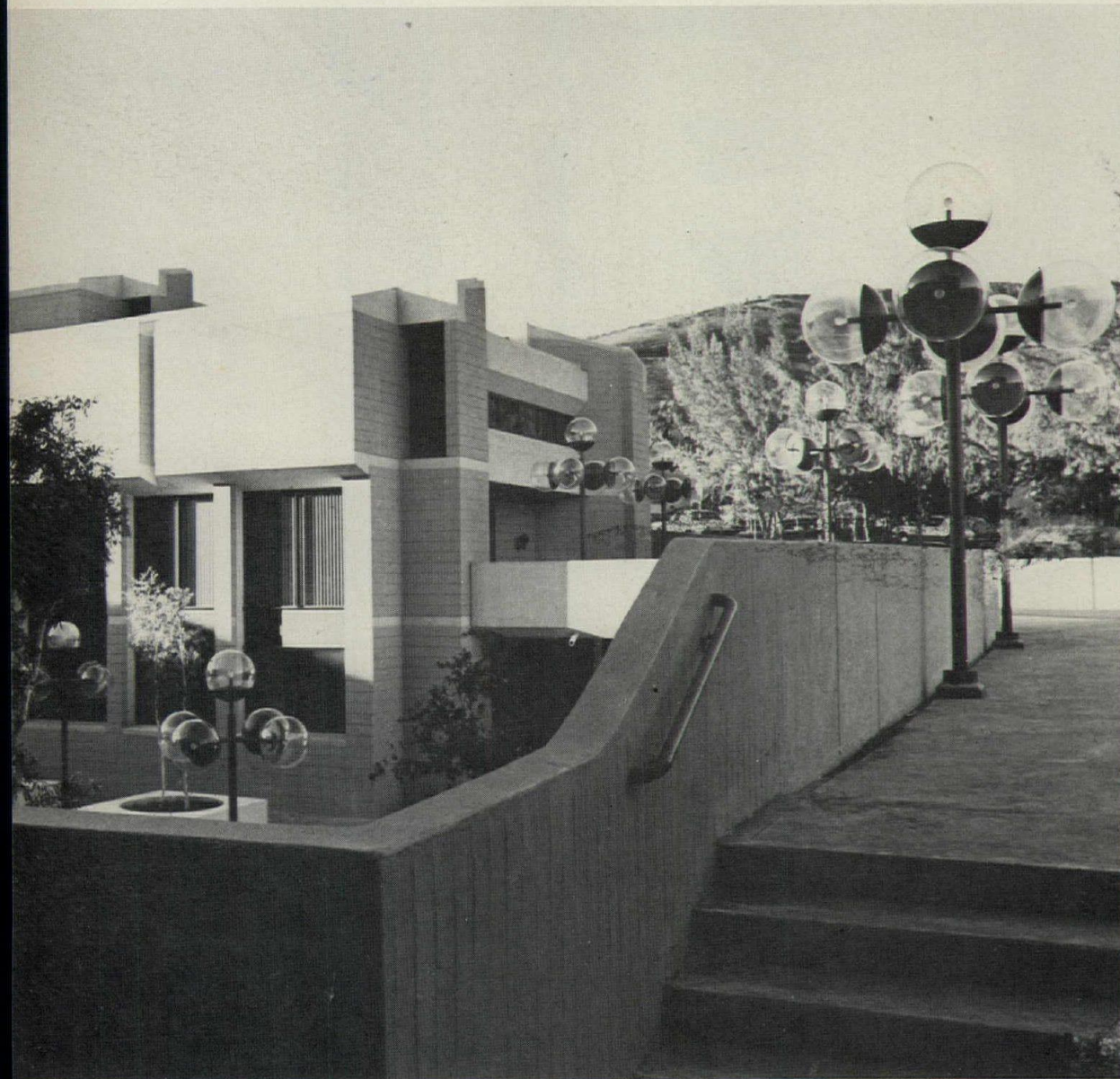
The buildings contain an unusual mix of classrooms, faculty offices, and student study

and lounge areas. Administration offices—contrary to the usual practice of concentrating these in one building—are spread throughout the complex as a means of reducing congestion, especially at registration time. Classroom and lecture halls are located on the lower floors of all units where they are easily accessible. Some classrooms are large, some are small enough for discussion groups and for workrooms. All are shaped to put the greatest number of students close to the professor—a particularly desirable feature in lecture halls. Student study rooms are located in a number of places for between-class use, providing a more informal environment than that of a library reading room. A student lounge is lo-

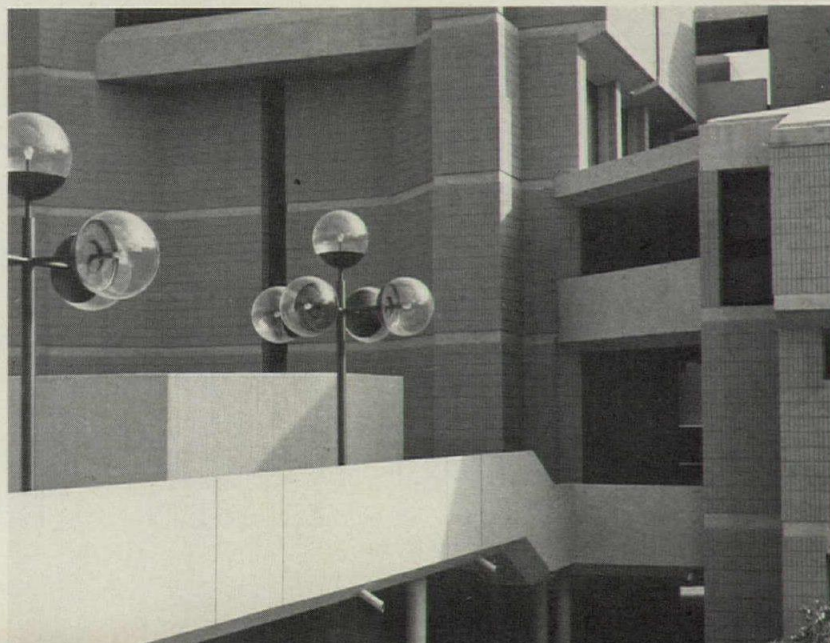
cated on the fourth level between two buildings, and its space is augmented by student use of the covered circulation balcony adjacent to it, and by the landscaped central court with its fountain—the crossroads for all who use the College buildings.

COLLEGE OF BUSINESS ADMINISTRATION, University of Hawaii, Manoa Campus, Honolulu, Hawaii. Architects: Leo S. Wou & Associates—Leo S. Wou, principal-in-charge; David Paoli, David Fagerstrom, Jonathan Quint, project architects. Engineers: T.Y. Lin, Kukla, Yang & Associates (structural), Dames & Moore (soils), Ferris & Hamig (mechanical), Ho & Okita (electrical). General contractor: Reed & Martin.





Entering and leaving the College, as well as walking through it, provide surprising variations in circulation, both vertical and horizontal. There are steps, bridges, open corridors, stairways, elevator; many of these means are in open air, since Hawaii's climate is tropical. For the handicapped, there is access to each principal level at grade, and vertical transportation by elevator in some units.



The RECORD is pleased to be able to present a chapter from Jonathan Barnett's new book, *Urban Design as Public Policy*, which will be published by Architectural Record Books (208 pages, \$15). This book describes the experiences of Mr. Barnett and his colleagues as urban designers for the New York City government during the administration of Mayor John V. Lindsay. It is illustrated by examples of what they accomplished, and draws some conclusions about the ways in which others might emulate what went right—and avoid what went wrong. We naturally hope you will want to read the whole book.

Helping downtown compete with the suburbs

by Jonathan Barnett

We are used to thinking of the city and the suburb as separate entities, an urban center of tall buildings and a surrounding ring of leafy communities, many of whose residents depend on the city for their living. The cessation of building during the economic depression of the thirties and during the Second World War gave the impression that this pattern of city and suburb was a lasting one, when actually it was the product of the technology of 50 years ago, and its apparent stability was an historical accident.

The widespread use of automobiles, buses and trucks has produced a new pattern: cities have spread out over the landscape and have begun to grow together, factories are leaving the old urban areas, and new shopping and office centers are growing up in formerly residential suburbs. While jobs dispersed, large numbers of rural farm workers have been moving to the old city centers in search of work, their migration the result of the mechanization of farming and, to some extent, the Federal government's policy of paying farmers not to plant crops. Welfare rolls have grown enormously and most big cities are having great difficulty in coping with the influx of unskilled workers.

The urban area has, in effect, been in the process of turning itself inside out, with people from the rural fringe moving to the center, and residents and businesses moving from the center to what used to be the suburbs.

The political boundaries of city and suburb have not changed to take account of this new distribution of population and jobs. In the early part of this century the boundaries of New York City encompassed its entire metropolitan area, including some districts that were still completely rural. Today, New York's metropolitan area covers parts of three states, and the City's population of less than 8-million is well below half of the metropolitan area population, which exceeds 20-million. On a smaller scale, this pattern is repeated in most of the nation's major urban concentrations, creating a paradoxical situation: while the metropolitan areas are growing and are economically successful, the central areas within the official city boundaries are slowing down and tax revenues are not keeping pace with the tremendous burdens created by growing welfare rolls.

The old city centers are put in the position of having to compete with their own suburbs for continued economic health. Obviously, in a well-ordered world, city centers and the outer reaches would be under a regional government, or, at least, a regional planning authority; the economy and tax rolls would be balanced; and each part of the metropolitan region would play a complementary role to the others.

Unfortunately such a state of grace does not exist, and cities must look out for themselves. New York City, with its tri-state metropolitan area, will

In the absence of regional planning cities must look out for themselves

have a particularly long wait before it begins to participate in the benefits of regional planning.

City centers do continue to have some competitive advantages. They remain the best place for offices that require a large number of clerical employees, because of their very centrality to a large labor market. The proof of downtown's continued viability for office use is the growth of an impressive skyline in cities like Atlanta and Houston which did not have high-intensity downtown areas until very recently.

Other traditional components of downtown are less obviously viable.

Large department stores have had to follow their patrons to the suburbs, or to the new suburban shopping centers. At some point the department stores have to ask themselves whether it is worth keeping their downtown stores open. If the department stores downtown decide to close, then the smaller shops will be in trouble, just as the promoter of a suburban shopping center will be in trouble if he is unable to lure at least one department store into signing a lease.

Starting with cities like Hartford, which established the precedent for using Federal urban renewal funds to make improvements downtown, cities have been taking steps to insure that downtown remains economically healthy, by encouraging new office buildings and apartments, by improving access, and by increasing the number of parking spaces. Boston, New Haven, Baltimore and Philadelphia are examples of cities with well-known, and successful, downtown renewal programs.

The growth of the office center in midtown and lower Manhattan has been so massive, because of the great size of the New York Metropolitan area, that these centers have not suffered the problems of downtowns in smaller cities. On the contrary, many of the problems have been in controlling growth, and preserving valuable features of the city that would otherwise be cleared to make way for new office buildings.

The growth of these central areas, however, caused policy makers to overlook the problems of New York City's regional centers, which are small by New York standards but represent the equivalent of many major city downtowns.

Downtown Brooklyn in 1967 resembled the downtown of a medium-sized city like Cincinnati or Minneapolis, but downtown Brooklyn had never received the attention that had created major renewal programs in other centers, overshadowed as it is by Manhattan, and by the tradition that makes studio audiences laugh when Brooklyn is mentioned.

In 1967 there were certain clear warning signals concerning the future health of Downtown Brooklyn. While the main shopping street, Fulton Street, had never been busier, there were many vacant stores in the surrounding blocks. Also, the ethnic mix of shoppers was changing, with more residents of predominantly black Bedford Stuyvesant, and fewer whites from the outer reaches of Brooklyn, who had traditionally shopped on Fulton Street. This kind of change is not necessarily bad for business, but it does make the merchants wonder what will happen next. A major shopping center, King's Plaza, was under construction in outer Brooklyn, threatening to accentuate the process of change. A more subtle signal was the absence of a large office concentration; the major source of continued strength in other centers was missing in downtown Brooklyn.

On the positive side of the ledger from the merchant's point of view was downtown Brooklyn's status as the nation's sixth largest retail center in

terms of sales, its excellent rapid transit, a concentration of four major educational institutions, and neighborhoods inhabited by middle-income families that were located to the west and south.

These middle-income communities, Brooklyn Heights, Cobble Hill, Boerum Hill, Park Slope and Fort Greene, have been becoming stronger in recent years, as houses were purchased by newcomers to these areas and restored. This "brownstone revival" means that the trading area for the shops in downtown Brooklyn is potentially much more affluent than in the average older city, although the "brownstoners" had a tendency to take their buying power to Manhattan.

Dennis Durden, the vice president for urban affairs of Federated Department Stores (parent organization of Abraham and Straus, downtown Brooklyn's leading store) suggested that it was time for the Brooklyn business community to set up a development organization, hire a full-time executive director, and give him an appropriate budget and staff.

Abraham and Straus and several other Brooklyn department stores, and other major Brooklyn institutions like the Dime Savings Bank and the Brooklyn Union Gas Company banded together to found the Downtown Brooklyn Development Committee, with Walter Rothschild, then the chairman of A. & S., as its first chairman.

I had known Dennis Durden since he was the director of a similar citizens' group in Cincinnati and I had written an article about the Cincinnati planning process.* Dennis had followed the formation of the Urban Design Group with interest, and as soon as the Brooklyn organization was established, he brought their new director, Donald Moore, over to see me.

They stated that they would far rather have the Urban Design Group study downtown Brooklyn than an outside consultant, although the Brooklyn Development Committee would be willing to pay for consulting studies that we thought would be useful.

I replied that the problems of downtown Brooklyn were of the kind for which the City ought to have an answer, but that our staff was still in the process of formation, and the only person who could work on the project full time was a young architect named Richard Rosan, who planned to go back to the University of Cambridge at the end of the summer to finish his doctoral degree.

Ric Rosan proved to be a good choice. He never did manage to finish his degree, and is now the director of the City's Office of Downtown Brooklyn Development.

Our first reaction was that what downtown Brooklyn needed was a pedestrian mall on Fulton Street, and we were rather surprised when we held working meetings with the Downtown Brooklyn Development Committee and the merchants turned out to be against restricting traffic on Fulton Street in any way.

Malls are a principal attraction of suburban shopping centers, and it seems logical that providing something equivalent to them downtown would enhance downtown's competitive position.

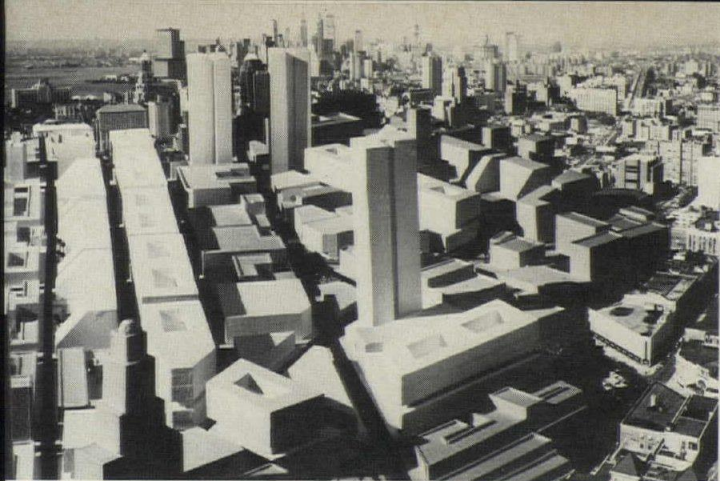
Making the main shopping street a pedestrian mall is a concept much advocated by the architect-planner, Victor Gruen, who had drawn plans of malls for many cities. As we learned more, it became evident why malls tend to be implemented more readily in smaller cities. In a complex urban renewal situation, the mall may sometimes be the last thing you do, not the first.

As we began to understand the problem better,

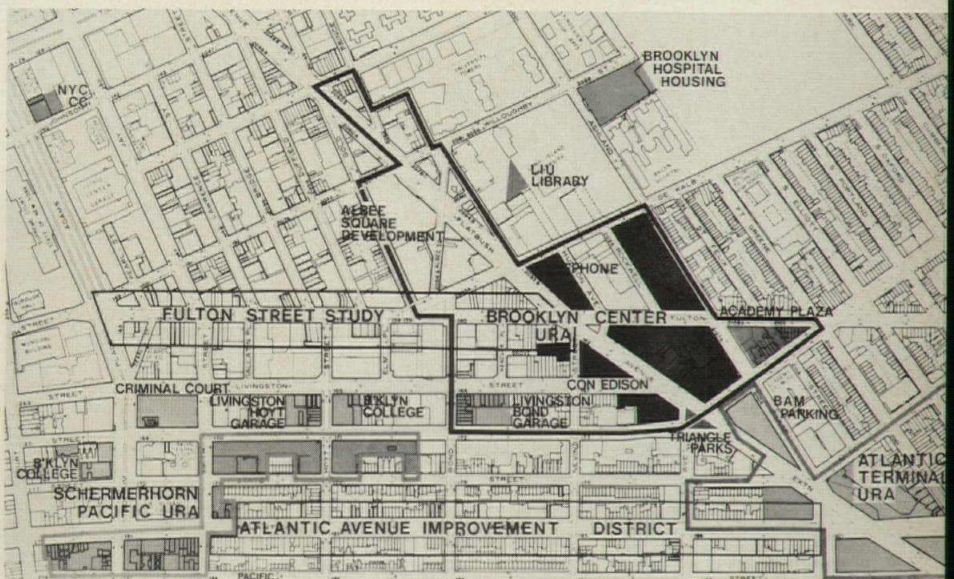
*"A New Planning Process with Built-in Political Support," RECORD, May 1966, pages 141-146

The real problem was lack of design

The Downtown Brooklyn Plan: improving a neglected urban center



The Downtown Brooklyn Plan was presented to the public in 1969 as a three-stage development starting with the 1975 phase, above, and reaching final completion in 1985, below. The Plan is ahead of schedule. The photo (above right) shows the first completed office building that is part of the plan: the architects are Skidmore, Owings, and Merrill. The plan requires the actions shown on this map.



we realized that the land uses and the circulation pattern were badly tangled up. Property ownership was fragmentary and land values were too high for land to be assembled by private developers, given the present state of downtown Brooklyn's expectations. Urban renewal powers of the City would be needed to condemn land and unscramble the land uses, and it was important to get the deliveries to the department stores off the streets, because they were the cause of much of the congestion and confusion in the area.

One of our consultants, Vincent Ponte, called our attention to the potential value of the existing subway concourse and mezzanine system in creating a secondary circulation network for the whole downtown Brooklyn shopping district.

A study by James Felt and Company suggested that there would be a market for new office buildings, and the department stores reminded us of the importance of apartments, asserting that one resident family was worth ten office workers as far as they were concerned.

The plan was announced during the Mayor's reelection campaign in 1969, giving rise to justifiable suspicions that it was just an election-year gimmick and nothing much would be heard of it again. The fact is that the plan is being implemented very much as it was described and is actually running ahead of schedule.

The 1969 presentation showed three stages. In the first, labeled 1975, two new office buildings would be built at the east end of Fulton Street, after land had been put together through urban renewal. It was pointed out that there would be no "write-down"; what was needed was the City's power of assemblage, not a development subsidy. There would also be off-street truck docks in a new City parking garage to be built just off Fulton Street, and another off-street loading facility just behind Abraham and Straus. All of these elements of the plan have been implemented.

The implementation process proved to be far more difficult than the planning process, however, and we spent the best part of a year casting about for ways to make the plan a reality.

New York City had no pre-existing agency whose job was to do commercial urban renewal. The City's Housing and Development Administration was primarily an agency to build housing, while the City's Economic Development Administration had concentrated on industrial problems, either plant expansion or new industrial parks. This situation was the natural result of the fact that midtown and lower Manhattan did not need government-sponsored renewal programs, and the City had never made commercial renewal plans for its regional centers up to this time.

Because no agency had complete jurisdiction, there was quite a lot of inter-agency squabbling, and

Finding a way to implement the plan was time-consuming

deciding who was to do what required the exercise of considerable tact. Ultimately, Donald Elliott devised a solution in which a special Office of Downtown Brooklyn Development was created, in the Mayor's Office, with staff seconded from the City's two development agencies and from the City Planning Department. The first director of the office was from the Economic Development Administration, reflecting the fact that E.D.A. was managing the city-sponsored urban renewal project at the eastern end of Fulton Street. Richard Rosan went over to this office as head of planning and design, and ultimately became the director.

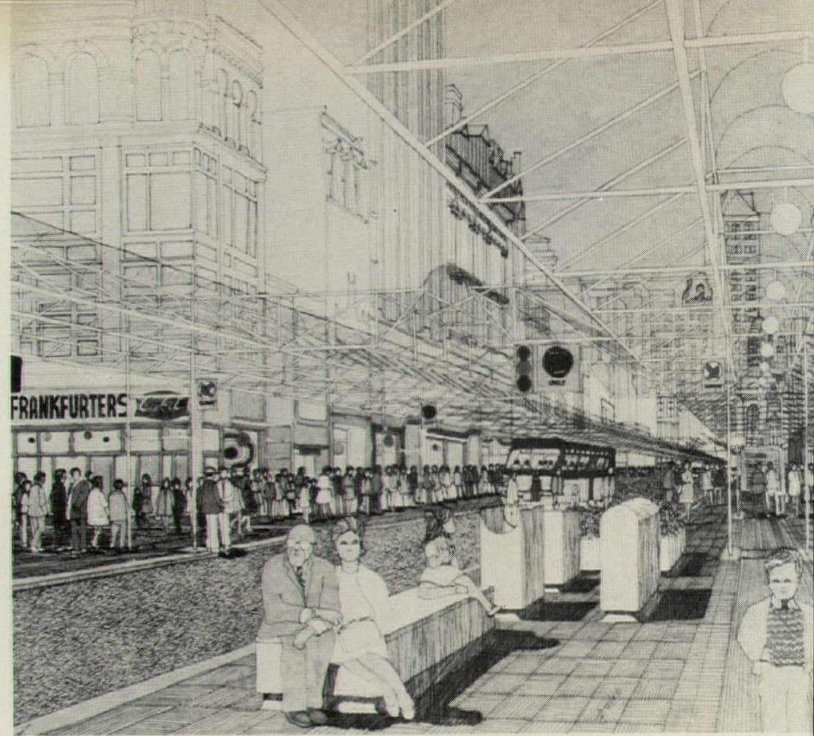
Having a special office whose basic responsibility was solely for downtown Brooklyn proved to be a better solution than handing the plan over to a single City agency. The reason was that the plan required the co-ordination of many agencies. For example, the concept of placing truck docks in a city-sponsored parking garage, providing off-street service to several stores on Fulton Street, was easy enough to draw on a map but very complex in reality. The garage was a project of the Department of Traffic, with the plans being drawn under the supervision of the Department of Public Works. Alterations in the plans required the agreement of the City's Budget Bureau, and then the approval of a Capital Budget amendment by the Planning Commission and the Board of Estimate. In the end, to simplify things slightly, the garage was done as a "turn-key" project for a lump sum by a private developer. Then there were all the legal questions involved in connecting the garage to the stores, agreeing on appropriate charges and so forth. As the garage was not part of the renewal area, only a special office could have seen the garage through to a satisfactory resolution. It took at least one man-day a week for the best part of two years.

The Office of Downtown Brooklyn Development also has to do much urban design work, essentially to determine the shape and form of the connections between individual projects.

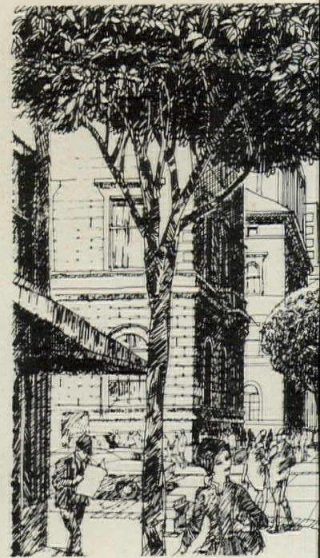
The office buildings in the urban renewal district have been designed by Skidmore Owings and Merrill, but the design of certain connections to the subway, the dimensions of arcades, the character of pedestrian bridges have all been determined in advance by urban designers in the downtown Brooklyn office, and incorporated in a special zoning district similar in many respects to the Greenwich Street Special Zoning District. Many of these matters were also covered in the urban renewal controls embodied in a long-term lease, but the zoning district covers a larger area, and also provides insurance if the development should change hands before completion.

Several other parts of the Downtown Brooklyn Plan, which had not been scheduled until 1980, have also been implemented, including 1750 units of middle-, moderate- and low-income housing on a five-block site on Schermerhorn Street, south of the main shopping area. This housing, designed by Benjamin Thompson & Associates, adjoins a major subway mezzanine at the Hoyt-Schermerhorn Station. The City's Office of Downtown Brooklyn Development has prepared a plan for connecting this housing through the mezzanine to the basement level of the Fulton Street stores, and ultimately to the concourse systems of other subway stations in the area. This plan represents a considerable development and refinement of the concept first presented in 1969.

Again, the design of the buildings is by a private architect, with the urban design plan giving only the most general and preliminary guidelines. However,



The rendering of the proposed Fulton Street transitway (above) shows widened sidewalks and traffic restricted to buses. At right, a drawing of the proposed Madison Avenue Mall as it would have looked facing south at about Fiftieth Street. St. Patrick's Cathedral is at right.



the connections between these buildings and the rest of downtown Brooklyn are the primary responsibility of the City's urban designers, who have studied them in great detail.

Now that the Downtown Brooklyn plan is so far advanced, with new buildings constructed and tangible circulation improvements under way, the merchants are ready to consider the benefits of a Fulton Street Mall, with Fulton Street reserved for pedestrians and buses. The mall thus becomes part of the culmination of the redesign of Downtown Brooklyn, rather than the first step.

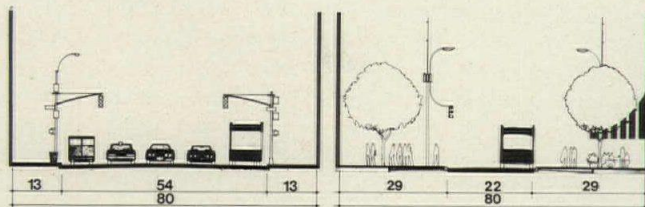
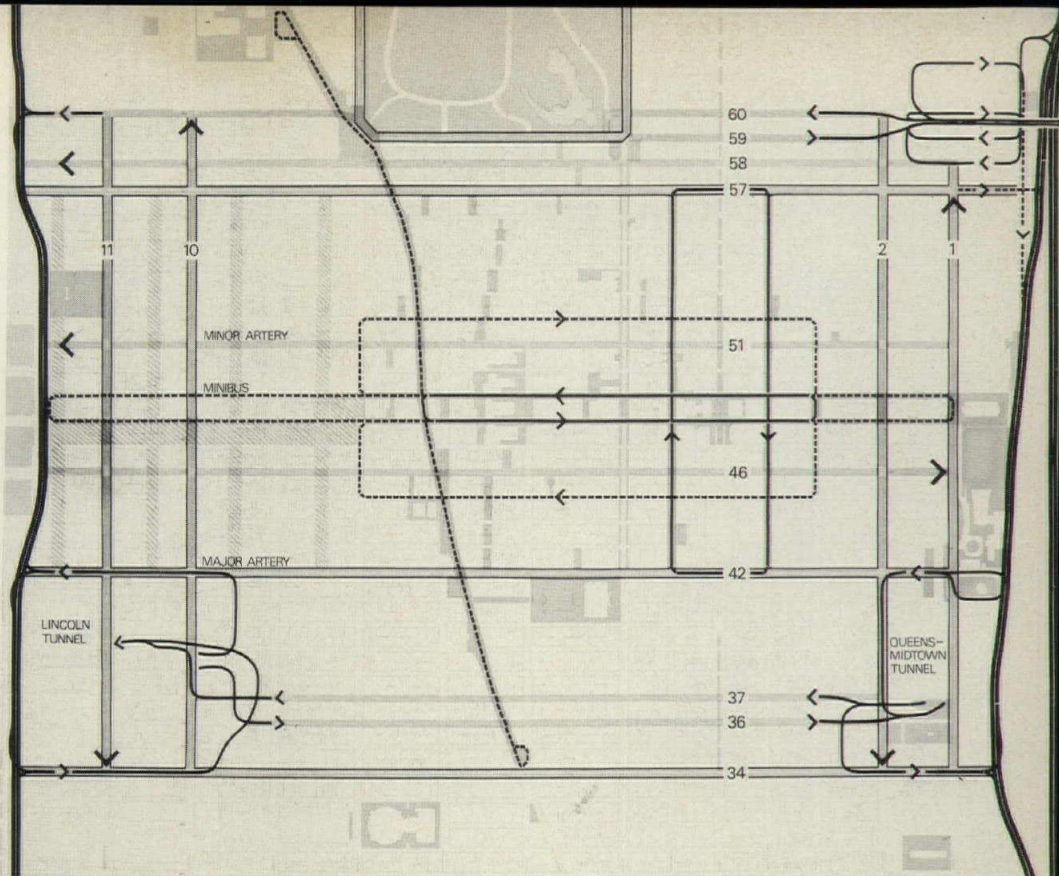
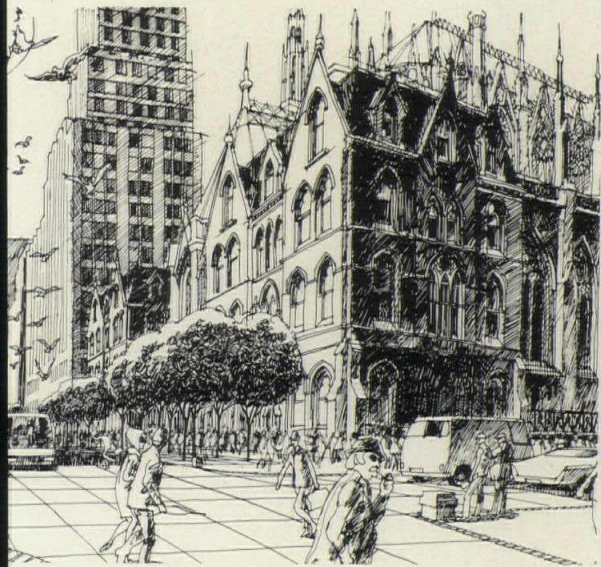
An analogous approach to redevelopment planning has been taking place in other New York City regional centers, notably Jamaica Center, in Queens, and Fordham Road in the Bronx. Plans are being advanced for similar efforts in St. George, the principal center of Staten Island, and Main Street, Flushing, another major downtown area in Queens.

The tremendous surge of office building construction in midtown Manhattan makes this area's problems different from most other centers, but it still requires a comprehensive planning approach, not unlike that used in downtown Brooklyn, but adapted to the far greater complexities of the largest central business district in the country.

Some of the individual aspects of the strategic plans developed for midtown have been described in



The Madison Mall was to be the first stage in a comprehensive re-planning of pedestrian and vehicular movement in midtown Manhattan, with through traffic programmed to by-pass the central area, and transitways created from Madison and Lexington Avenues, Broadway, 48th and 49th Streets. The planning studies were done by Van Ginkel Associates. As shown in the sections, the Madison Mall would have had one lane of traffic in each direction, eventually restricted to special minibuses, or maxitaxis, designed by the planners, and inevitably dubbed "Ginkelvans."



other chapters; the Fifth Avenue Special Zoning District to help conserve the main shopping street is described in chapter two, the special Theater District in chapter one, the west midtown development and convention center plan in chapter six.

A major problem common to all these areas, indeed to central business districts in every city, is increasing traffic congestion. In 1969 Mayor Lindsay asked the Office of Midtown Planning Development to undertake a study that would sort out the traffic patterns in midtown and show how to reduce congestion to more manageable proportions. Van Ginkel Associates of Montreal were retained as the prime consultants, and, after over a year of intensive work, published an exhaustive study entitled "Movement in Midtown."

The most significant conclusions were that the entire circulation system in midtown, for people, vehicles, and goods, needed to be redesigned to reflect the actual density of development and the kind of trips being made. Arterial traffic should be separated from local traffic and channeled along specific peripheral and cross-town corridors, while private automobiles and taxis should be kept out of the areas where the number of pedestrians is greatest. Additional pedestrian space would be created in these "restricted traffic zones" by widening the sidewalks (which everywhere in midtown are narrower than the

original sidewalks laid out over 100 years ago for a community of four-story row houses). Trees would be planted along these new pedestrian streets and provisions made for bus lanes, offering to the harried shopper an attractive and easy alternative to the inefficient and polluting taxicab. Delivery hours would be limited, and an attempt made to consolidate delivery service, and enforce the use of smaller trucks.

In areas of highest pedestrian density at the center of the island, pedestrians and buses would have precedence, with cars and taxis shunted around the central core to the periphery of the island. Similar strategies are being implemented with increasing success in major cities around the world, and, in theory, should work well in midtown, where over 90 per cent of the people already arrive by mass transit and over 70 per cent of the "person miles" are traveled on foot.

Madison and Lexington Avenues, which are the narrowest north-south streets, Broadway, and 48th and 49th Streets were selected as the traffic corridors to be given over to pedestrians and buses, 48th and 49th Streets form a major development spine connecting the U.N., the north end of Grand Central Terminal, Rockefeller Center, Times Square, and the new Convention Center and passenger ship Terminal on the Hudson River waterfront.

Madison Avenue Mall, the first stage of a traffic plan for midtown Manhattan

"Movement in Midtown" offered an incremental solution to the problems of traffic reduction, goods movement, air pollution, and the need for increased open space. It was designed to be implemented in stages in conjunction with the introduction of new peripheral highways and parking garages along both the East and Hudson rivers; but it was not dependent on fancy new technologies, or the disruption of existing business districts and residential neighborhoods. It made use of existing urban space in a new way.

For a variety of reasons—and after a year of inter-agency squabbling—the Mayor decided to concentrate on implementing, as a first stage of an overall plan, a pedestrian transitway, or mall, on Madison Avenue. This decision left the Madison Avenue Mall, originally designed as part of a comprehensive system, open to criticism as a political gimmick; a one-shot affair similar in kind and intent to the temporary "street closings" the Administration had been experimenting with for several years. In retrospect, the decision to do the Mall independently was a strategic error. At the time, however, it seemed that the actual construction of a major amenity would help win acceptance of the entire plan. Closing Madison Avenue to traffic at lunchtime during "Earth Week" of 1971 had been a great popular success, and a permanent mall would make the City a much more pleasant place. New Yorkers are convinced that their city is getting worse day by day, and a conspicuous improvement would make a nice change.*

The interim plan called for narrowing the Avenue to two lanes of traffic which would be used only by buses, and eventually only by minibuses—or maxitaxis—designed especially for the Mall by Van Ginkel Associates and inevitably dubbed Ginkelvans. Deliveries would be restricted to off hours. The additional sidewalk space created would be planted with trees and the whole avenue, street and sidewalks, attractively repaved with kiosks, benches, and bus shelters installed.

Unfortunately, the Madison Mall is not to be, at least not yet. Knowing that the Fifth Avenue Association objected to the plan, the Mayor proposed a three-month test, of the kind successfully attempted on Oxford Street in London, to see if the dire predictions of traffic congestion, reaching as far as Redding, Connecticut, would actually come true. The Fifth Avenue Association went to court, however, to prevent the City from tampering with Madison Avenue without the consent of the Board of Estimate. The Association won, and, in the subsequent Board of Estimate vote, the Mall lost, despite the strenuous efforts of the Mayor and the support of *The New York Times* and numerous civic groups. The decisive factor in the negative note seems to have been the taxicab industry rather than the merchant.

If the Mall had been solely the work of outside consultants, the plan would certainly be dead. The existence of the Office of Midtown Planning and Development raises at least the possibility that the Madison Mall can be revived in the future. If the Federal Environmental Protection Agency's 1975 standards are enforced, far more extensive traffic restrictions will be required throughout midtown than were proposed for Madison Avenue. If the Midtown Office is still in operation, the City will have the necessary professional staff to revive the Mall concept when it is required by the Federal Government.

Our experience in New York City has led us to believe that the most effective method of helping a large city's downtown areas improve their competi-

tive position is to create a special development office, clothed with the Mayor's authority.

The heads of these offices then have the authority to co-ordinate the activities of the city's special purpose agencies as they affect his district, both in terms of day-to-day operations and new construction and special projects. These offices are the nearest thing yet operating to the system of Little City Halls we had helped propose in 1965, which is described in the previous chapter.

The first of these offices was set up in lower Manhattan, essentially at the request of the Downtown Lower Manhattan Association. Its initial structure was devised by Donald Elliott, working with Richard Buford, its first director. When Jaquelin Robertson became the first director of the Office of Midtown Planning and Development, he added additional responsibilities and capabilities to the development office concept, with much more emphasis on urban design. Richard Weinstein later enlarged the role of the lower Manhattan office in a similar way. The downtown Brooklyn office was devised from the same pattern and other offices followed for Jamaica Center, and so on.

Alvin Toffler refers in his book *Future Shock* to what he calls the "ad-hocracy," the modern system of setting up ad-hoc organizations to achieve a specific set of goals, rather than relying on established institutions. The proliferation of these development offices is rather on an ad hoc basis, but they perform a function which would not otherwise be done.

Planners are fond of saying that planning is a continuous process, and certainly, if a project goes forward, there is no one point at which it can be said that planning has stopped and implementation has begun.

If the downtown Brooklyn planning effort had ended in 1969, very little would have taken place. Plans need to be developed further, adjusted, changed and improved in response to events. The Downtown Brooklyn Office was able to oversee the planning of the parking garage, without being caught up in the special interests of the Department of Traffic, the Department of Public Works, the Economic Development Administration, or the department stores. It was also able to co-ordinate the planning of the office buildings in the urban renewal district, which are being done through the City's Economic Development Administration, and the housing on Schermerhorn Street, which is being done by the State's Urban Development Corporation.

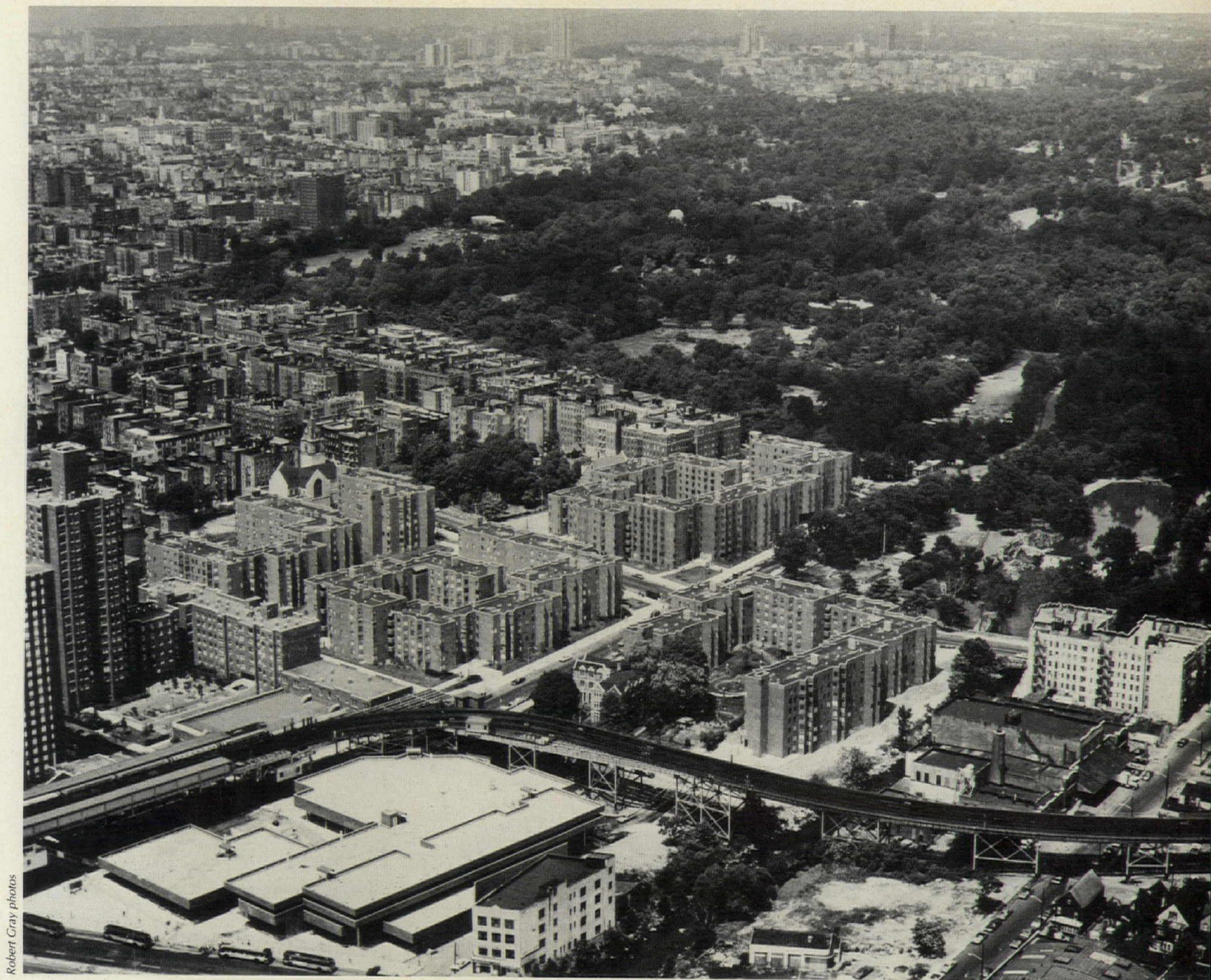
This co-ordination has to be done by a City official. Donald Moore's Downtown Brooklyn Development Association is an exceptionally effective private organization, but its function is that of a civic group and a chamber of commerce, and it can't do the work of government.

No planner or urban designer can expect that every concept he devises can be carried through to a successful completion, but the special development offices created in New York provide a combined planning and implementation mechanism that makes success far more likely.

These offices also provide an organization whose primary purpose is urban design: that is, the design of the City's co-ordinative elements and public spaces, the places at ground level and the levels just above and below which are the primary matters of public concern in the design of cities. Such a change in the city's administrative structure can make a substantial difference to the quality of urban life.

*Nassau Street in lower Manhattan has been closed to traffic from noon to 2:00 p.m. on weekdays for several years. The street closing has been very successful, and a more permanent mall may soon be built.

Special downtown offices are a good way to see that downtown plans are carried out



Robert Gray photos

LAMBERT HOUSES

URBAN RENEWAL WITH A CONSCIENCE

The photograph above shows an outwardly placid scene, but behind the calm veneer there is the tug of forces affecting many troubled sections of cities across the country today. The immediate area is the south Bronx, New York City. In the last seven years, this neighborhood has seen an almost complete population change—to an ethnic-minority composition of blacks and Puerto Ricans, with greatly lowered personal incomes. Within this transition period, the area has been among the City's worst in felonies, infant mortality, welfare-support requirements, school attendance, gang warfare and landlord abandonment. Until recently, a lack of social programs and a quick deterioration of once-sound housing produced few signs of hope that there would ever again be a healthy community here.

The South Bronx should be a desirable place to live. Its large park rivals Manhattan's Central Park in size (the closest portion contains the Bronx Zoological Garden). There is quick public transportation to all parts of the city. Past residents liked the area and one of the last turn-of-the-century generation of large houses still remains next to the ele-

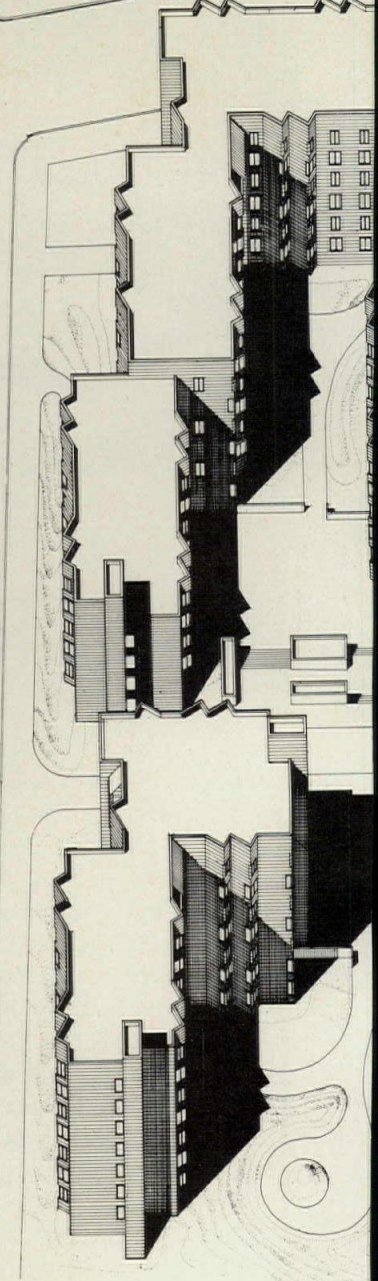
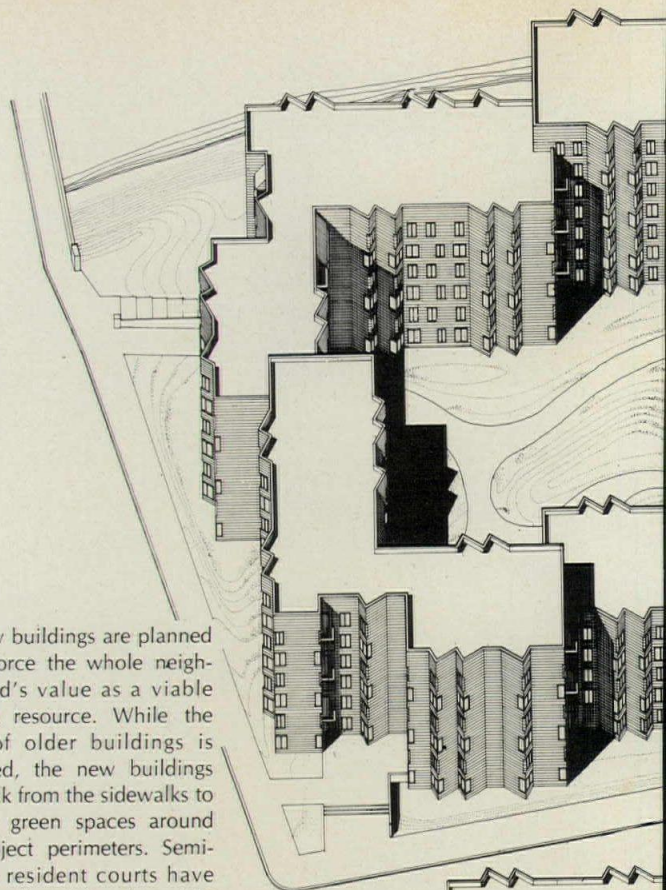
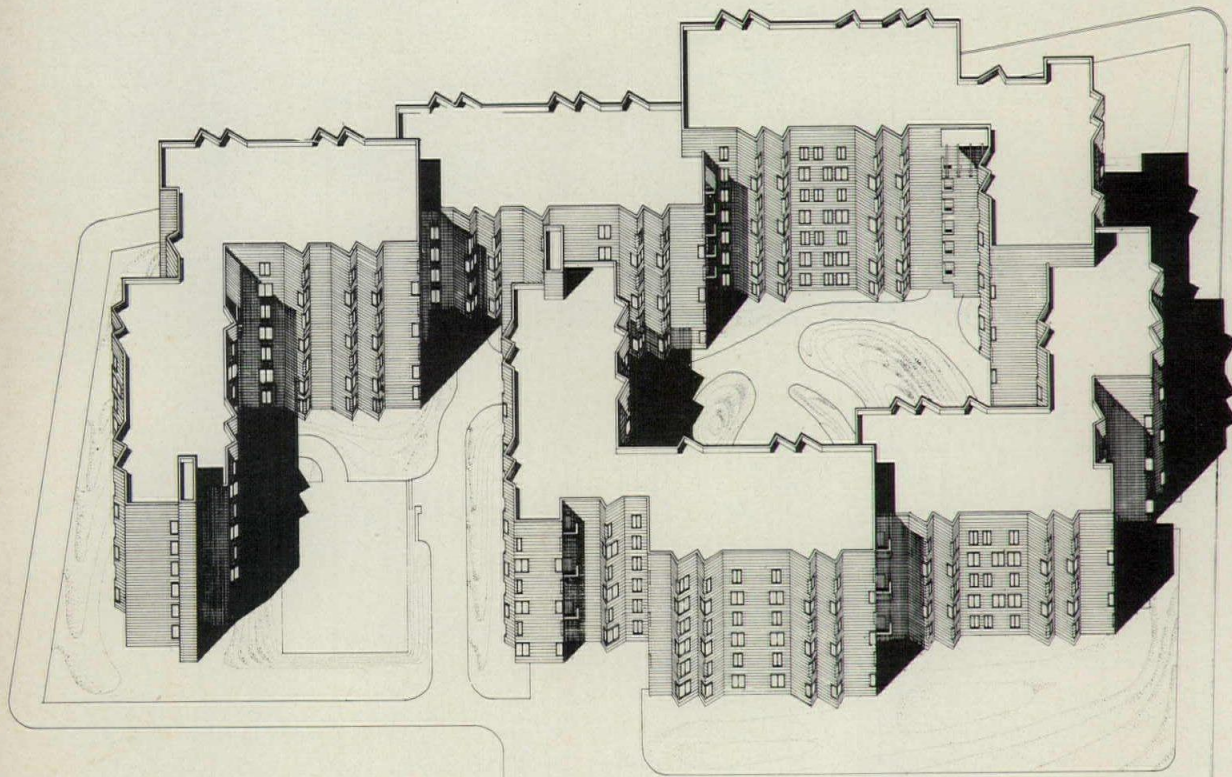
vated railroad (center of photo above). Single-family structures gave way to six-story semi-fireproof apartment buildings (upper left) which presently characterize this and many urban neighborhoods. The tenants were middle-income families and there is a comfortable scale to these older buildings which—even with current neglect—hold the possibility of good places to live.

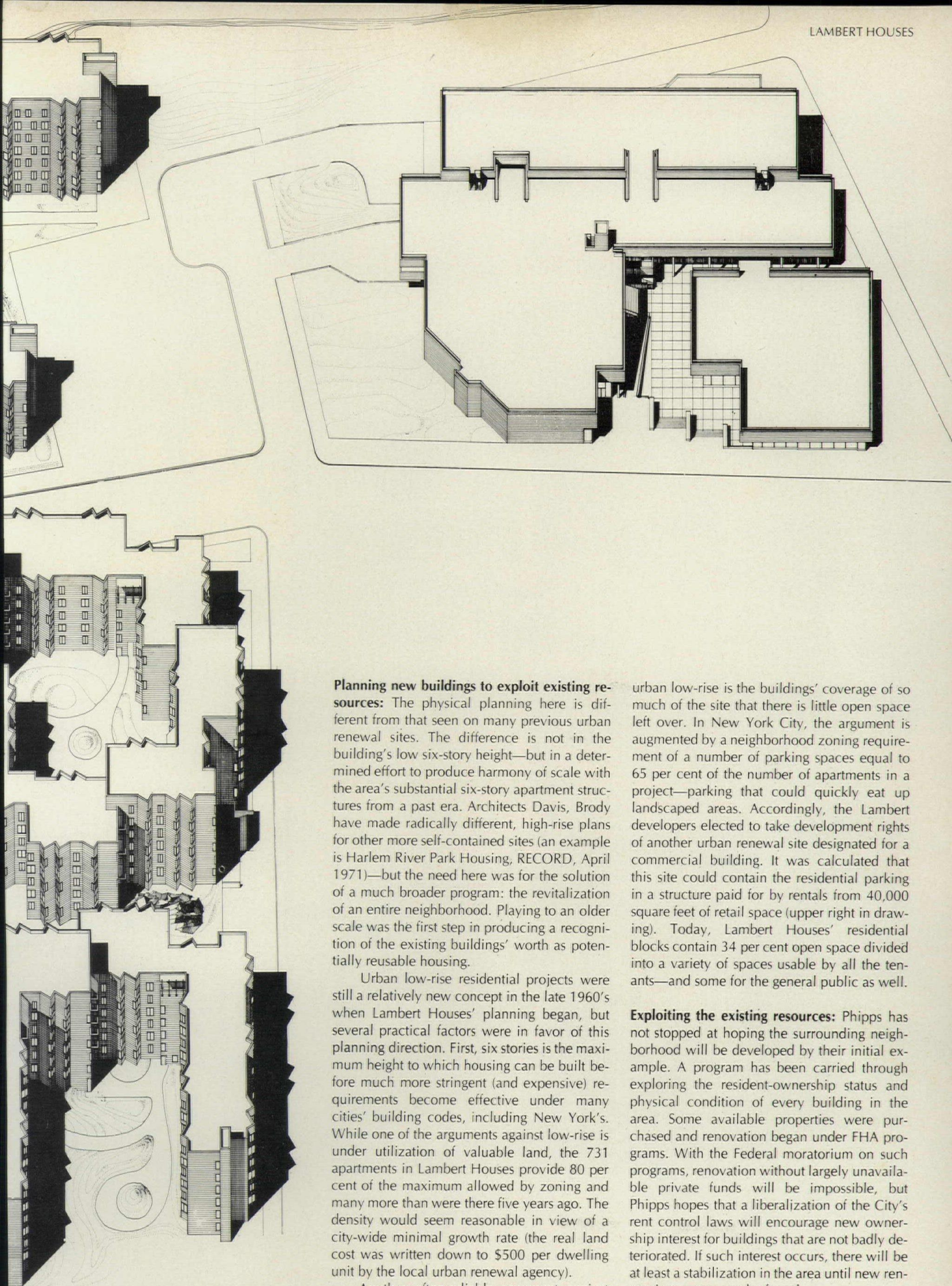
The new Lambert Houses are the low-rise apartment buildings occupying the five-block area in the center of photograph. A white roofed ancillary commercial building occupies the block in the foreground (the buildings on the left are a public housing project). The houses are a strong physical evidence of a belief that the whole area can be a good place to live again, but architects Davis, Brody & Associates and sponsor Phipps Houses emphasize that it will take more than new structures to make a viable community in which their project can function—and they are doing something about that. Their successful combination of social thinking and physical planning has gone a long way toward rescuing a neighborhood that once had little future.

—Charles Hoyt



The new buildings are planned to reinforce the whole neighborhood's value as a viable housing resource. While the scale of older buildings is respected, the new buildings pull back from the sidewalks to provide green spaces around the project perimeters. Semi-private resident courts have been developed, but the public is welcomed through the pedestrian way (lower right).





Planning new buildings to exploit existing resources: The physical planning here is different from that seen on many previous urban renewal sites. The difference is not in the building's low six-story height—but in a determined effort to produce harmony of scale with the area's substantial six-story apartment structures from a past era. Architects Davis, Brody have made radically different, high-rise plans for other more self-contained sites (an example is Harlem River Park Housing, *RECORD*, April 1971)—but the need here was for the solution of a much broader program: the revitalization of an entire neighborhood. Playing to an older scale was the first step in producing a recognition of the existing buildings' worth as potentially reusable housing.

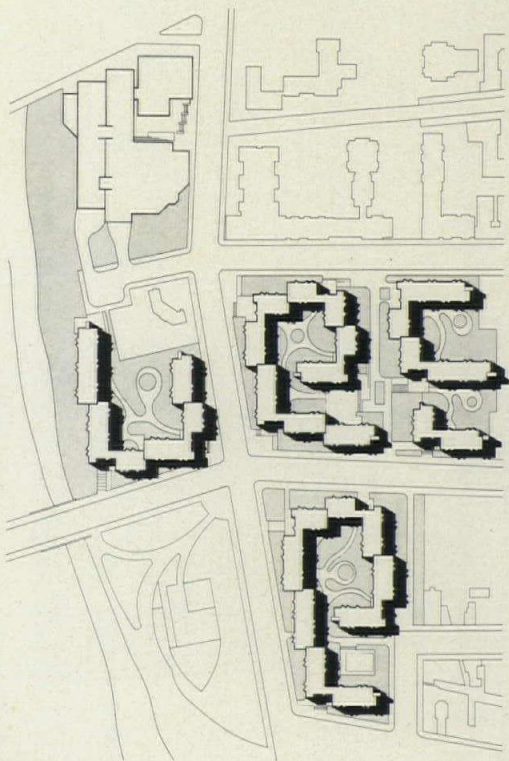
Urban low-rise residential projects were still a relatively new concept in the late 1960's when Lambert Houses' planning began, but several practical factors were in favor of this planning direction. First, six stories is the maximum height to which housing can be built before much more stringent (and expensive) requirements become effective under many cities' building codes, including New York's. While one of the arguments against low-rise is under utilization of valuable land, the 731 apartments in Lambert Houses provide 80 per cent of the maximum allowed by zoning and many more than were there five years ago. The density would seem reasonable in view of a city-wide minimal growth rate (the real land cost was written down to \$500 per dwelling unit by the local urban renewal agency).

Another often-reliable argument against

urban low-rise is the buildings' coverage of so much of the site that there is little open space left over. In New York City, the argument is augmented by a neighborhood zoning requirement of a number of parking spaces equal to 65 per cent of the number of apartments in a project—parking that could quickly eat up landscaped areas. Accordingly, the Lambert developers elected to take development rights of another urban renewal site designated for a commercial building. It was calculated that this site could contain the residential parking in a structure paid for by rentals from 40,000 square feet of retail space (upper right in drawing). Today, Lambert Houses' residential blocks contain 34 per cent open space divided into a variety of spaces usable by all the tenants—and some for the general public as well.

Exploiting the existing resources: Phipps has not stopped at hoping the surrounding neighborhood will be developed by their initial example. A program has been carried through exploring the resident-ownership status and physical condition of every building in the area. Some available properties were purchased and renovation began under FHA programs. With the Federal moratorium on such programs, renovation without largely unavailable private funds will be impossible, but Phipps hopes that a liberalization of the City's rent control laws will encourage new ownership interest for buildings that are not badly deteriorated. If such interest occurs, there will be at least a stabilization in the area until new renovation means can be found.





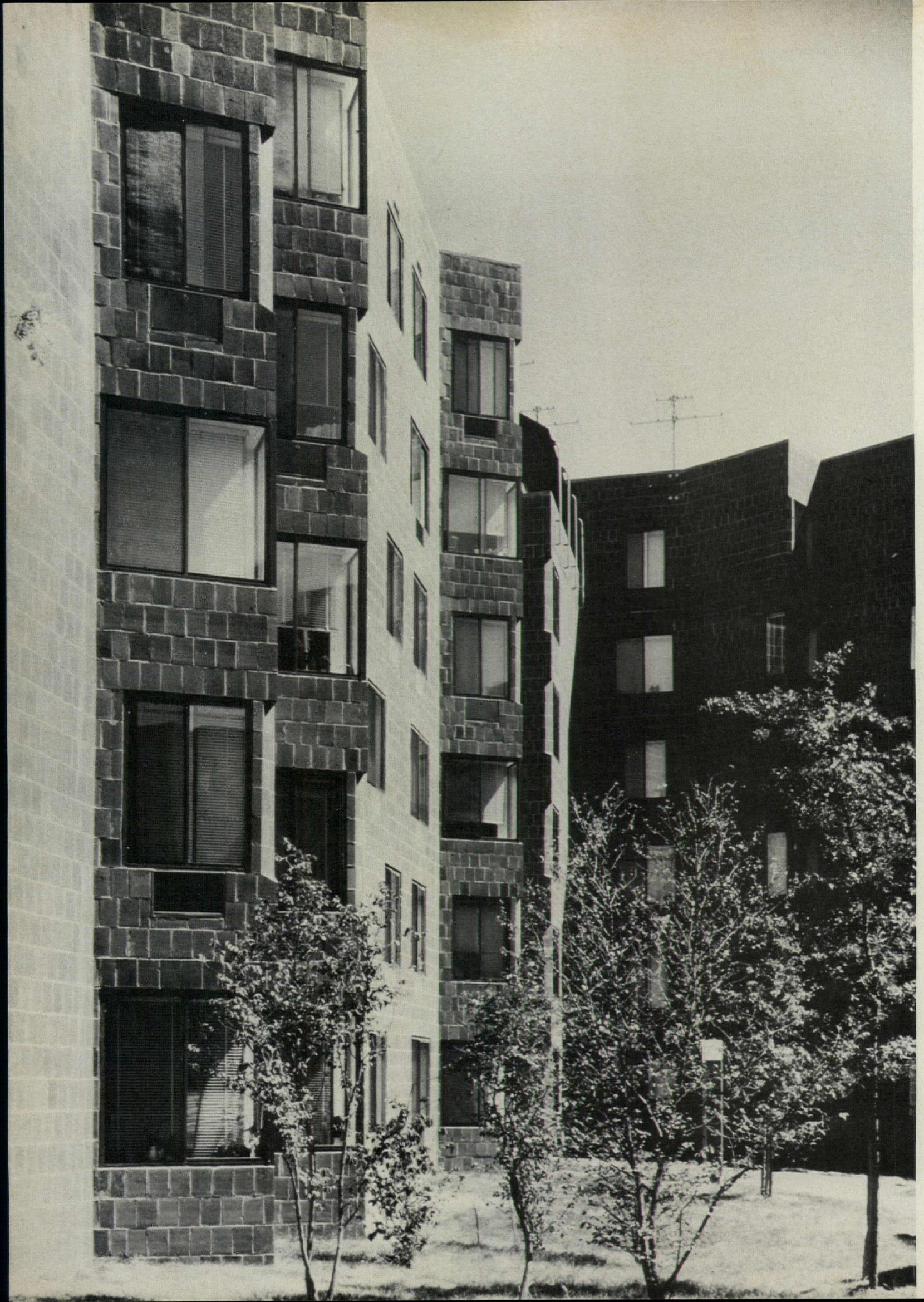
Open-space—a solidifier of neighborhood feeling:

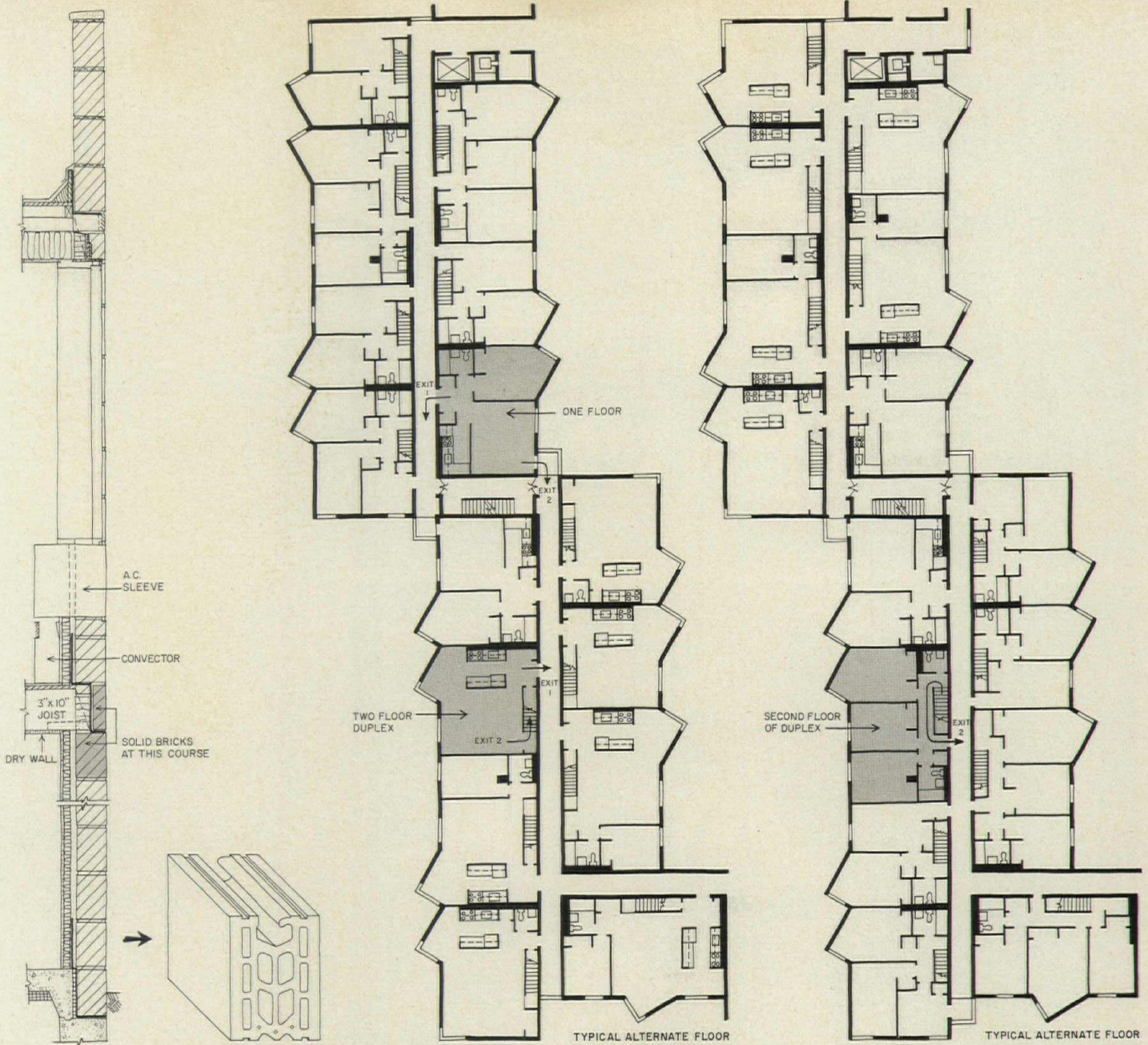
Lambert Houses are generally arranged to enclose semi-private spaces used and visually supervised by the residents. But in order for the project to fulfill a role of neighborhood stimulation, the surrounding public could not feel excluded. Accordingly, the currently popular urban concept of placing a hard line of buildings at the property line was not observed—although street containment is defined intermittently by buildings brought closer to the sidewalk. The closing of a former street provided the opportunity of a public pedestrian way through the larger block. Phipps' director of planning Lynda Simmons says that the large amount of money spent for early landscaping—in resident and public open space—was the single most important physical thing the sponsor did. Here was tangible evidence of Phipps' sincerity, and—while resident pride grew—initial public animosity quieted. Today, the landscaping looks as fresh as the day it was installed. Both residents and the local public are making every effort to see that it stays that way—an attitude that was carried over into the regard of the new buildings. Local self-help programs have produced the

renovation of a vandalized Civil War cemetery adjacent to the northern block. Collaboration with the City has resulted in the demolition of unused buildings off the site and the provision of new athletic facilities for the whole neighborhood. One open space disappointment—to date—has been the City's failure to renovate the banks of the river adjacent to the eastern block, but it can be suspected that this improvement will be implemented by one means or another.

A happy borrowing from the old produces internal new planning ahead of its time:

There are other aspects of the new physical planning in common with the older buildings besides height. Each new building is divided into segments (or houses) of approximately 45 apartments each. About eight units share an elevator corridor on any given floor, and there is a division of the project's residents into the sort of living ambience found in the smaller existing buildings nearby. This house concept has been recently recognized as the most probable method of creating mutually interested groups and stemming resident disassociation often allowing crime and vandalism.





Using traditional construction methods to achieve new goals: Like the surrounding housing, the new project is built under the semi-fireproof provisions of the City construction code. The provisions allow a maximum six-story building height (Lambert varies from five to six stories plus basement partially above ground) whereby a floor construction of wood joists framed into masonry bearing walls are acceptable. In this case the joists span from concrete, fire-rated corridor walls to 8-inch single-width masonry exterior walls of 8- by 10¾-inch brick—extruded with horizontal cavities (for light-weight) and a handle (for ease of laying). A solid brick course was required for joist bearing. The architects estimate a half million dollar saving from their masonry innovation.

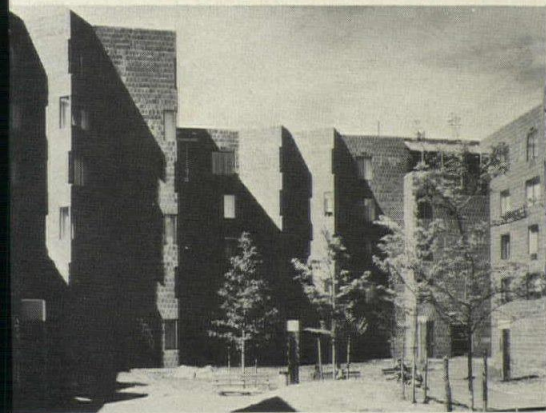
When Lambert's planning began, the City building code had just been revised to disallow fire escapes as each apartment's required second route to different fire exits. A subsequent reading will allow balconies between apartments, but—at that time—the architects saw a practical motive for producing that most private-house-like apartment type: the duplex. Egress to different exit enclosures could be achieved on two floors, and only those units connecting two houses (and exit enclosures)

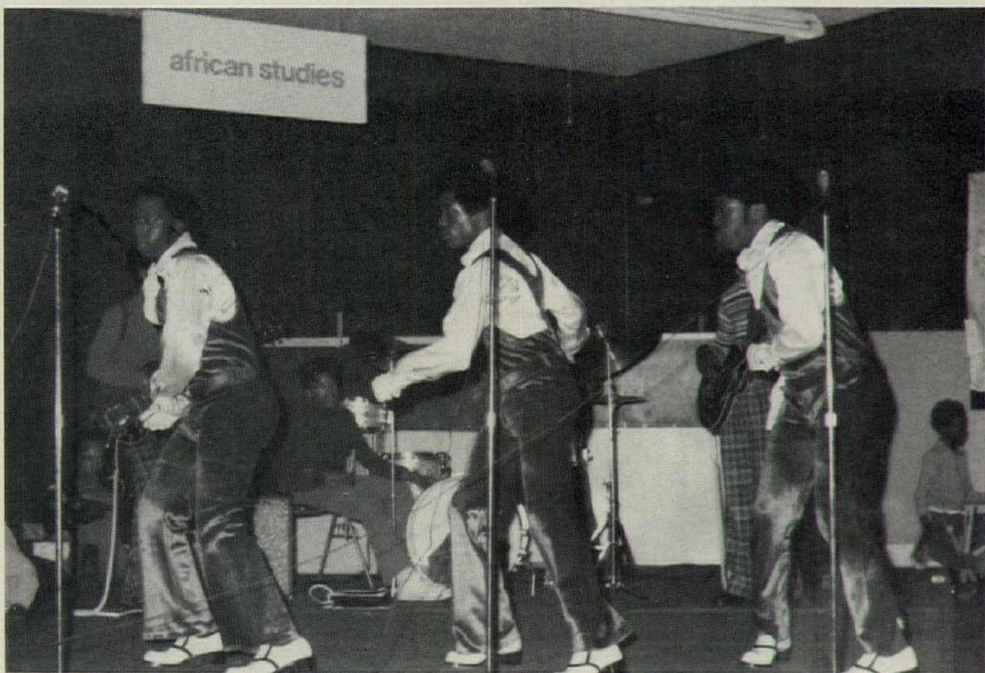
were planned on one floor. The exterior balconies seen to the right in the upper left photo, page 136, are the second means of egress from the simplexes.

The strong angled projections of the exterior walls were introduced to provide vertical relief in long horizontal walls, and they allow planning advantages as well as providing varied and private views from within. Thereby, bedroom levels gain the required extra space for master bedrooms, and living levels gain dining areas while allowing kitchens to be near the exterior walls.

There is an unusually high number (43 per cent) of apartments which have three bedrooms, and there are several reasons for the distribution. First, the community desired accommodation for families. But a practical reason was feasibility: The FHA mortgage allowances were the highest for the anticipated cost of construction.

It should be noted that the high level of finishes, large floor areas, and unusual general amenities could not be financed under then current FHA allowances—no matter how hard the planning efforts made. Additional monies had to be added by Phipps from various private sources, but construction costs were still low for New York: about \$25,000 per unit.





More than physical means: Phipps Houses became Lambert's sponsor in 1967 when a Bronx community group sought financial and management help. The group, headed by Barnett Lambert, had been successful in having the area designated for urban renewal by the City. The effort was to maintain the community's middle-class population. But during the time of Phipps' involvement, the unsettling of the formerly stable neighborhood occurred, and it quickly became apparent that new construction alone would not make a viable neighborhood.

Accordingly, a neighborhood-wide Tremont Improvement Program was formed by Phipps to carry through socially-involved aims—as well as the land and building rehabilitation programs previously discussed. The staff consists of local residents and the organization is privately financed through individuals and foundations. In less than one year, results included the involvement of neighborhood youngsters in athletic teams, performing arts groups, block associations and summer job

programs. It is estimated that a total of 1,000 residents have been involved to date, and the incidence of local crime and vandalism has dropped markedly. Continued membership in the groups includes such considerations as scholastic performance and the rewards are opportunities to let out pent up energies and build morale. A bilingual newspaper reports on all programs. Unfortunately, funding is an on-going problem and TIP's programs are constantly in jeopardy.

LAMBERT HOUSES, Bronx Park Urban Renewal Area, Bronx, New York. Owner: *Lambert Houses Redevelopment Company* comprised of *Phipps Houses* (general partner), *Bronx Park South Cooperative Development Committee* (minority directors) and private limited partners. Architects: *Davis, Brody and Associates*—associate-in-charge: *Brian Smith*. Engineers: *Goldreich, Page and Thropp*, (structural); *Arthur L. Zigas*, (mechanical/electrical). Lighting consultant: *David Mintz*. Landscape architect: *A. E. Bye Associates*. General contractor: *HRH Construction Corporation*. Construction costs: \$19,500,000 (residential); \$4,000,000 (commercial).

Land use planning and design for

SKI RESORTS

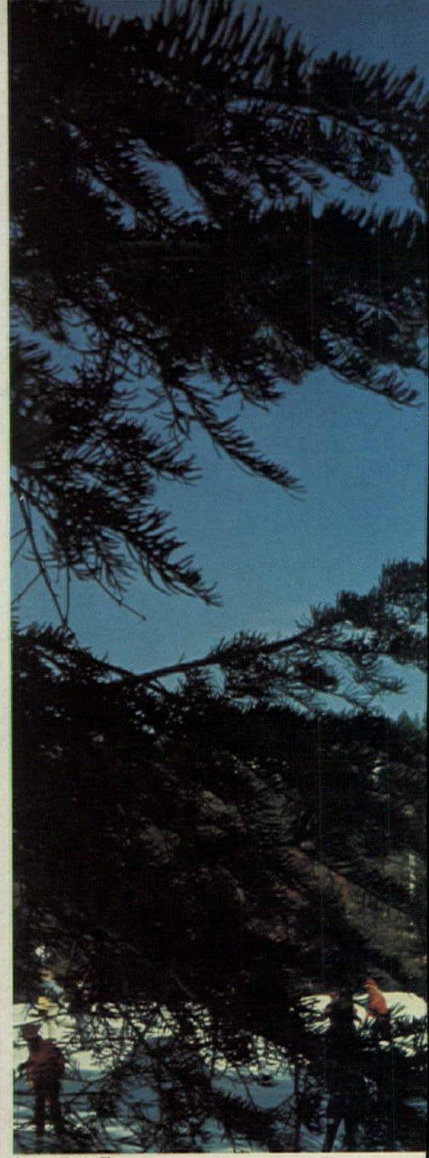
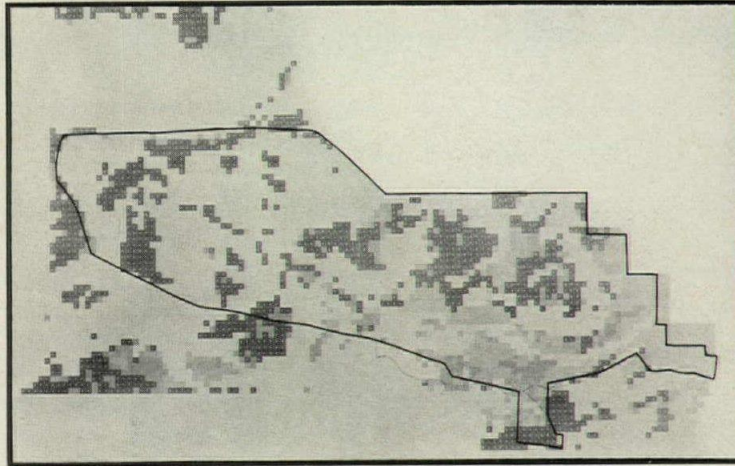
Ski resorts serve skiers and skiers need lifts and trails and places to stay in, and all these structures require spaces cleared of vegetation. Ski resorts are in the mountains, and mountain scenery has a tendency to be beautiful and fragile. What happens when skiers discover good snow and good places to ski? All too often, skiers' needs are served without interest in or concern for either the beauty or the ecology of the countryside. But the conjunction of ski resorts and mountain landscape need not be disastrous to either. Northstar-at-Tahoe, Kirkwood Meadows Base Lodge and Elkhorn at Sun Valley—shown on the following pages—handsomely show how masterplanning for maintenance of environmental and ecological and economic values, and creative architectural design, can bring the man-made and the natural into a harmony of beauty and use.—E.K.T.

Henrik Bull

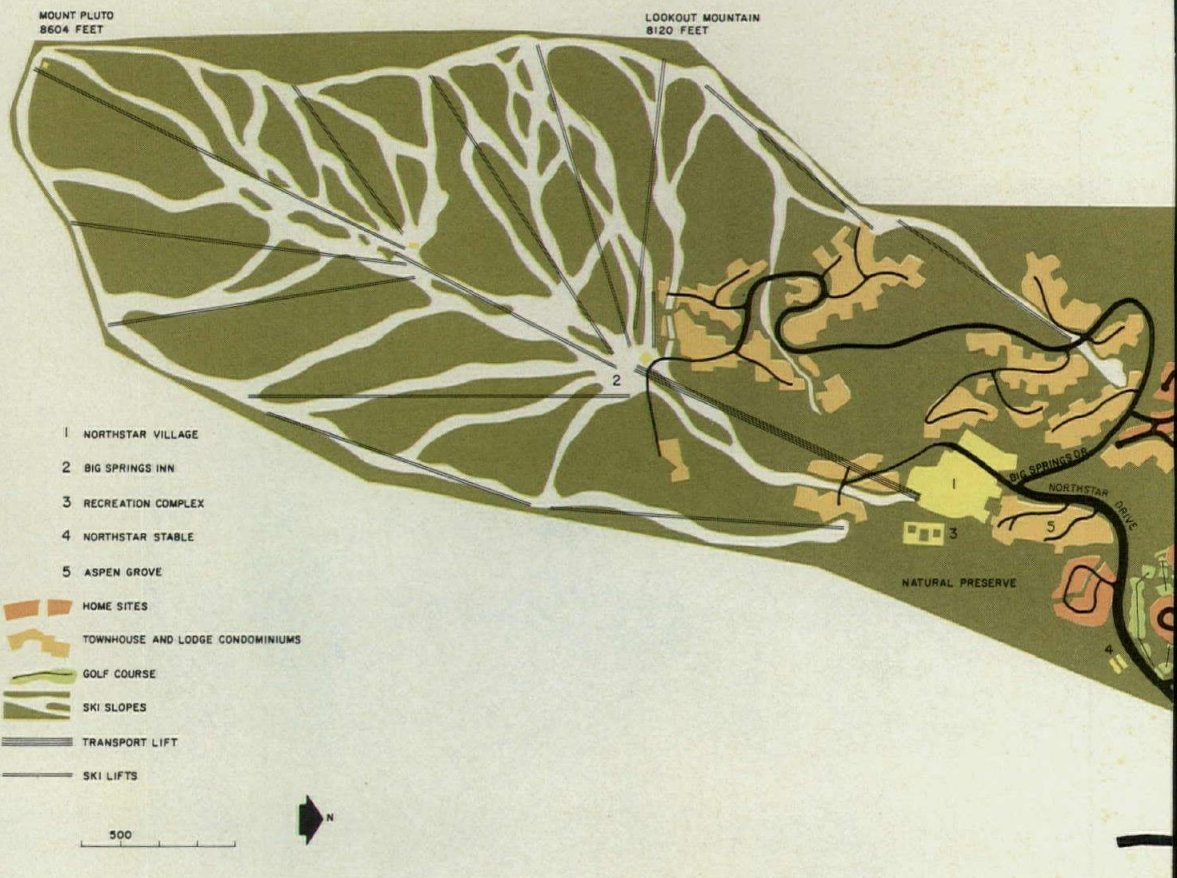


Northstar-at-Tahoe is a mountain resort community in California's Sierra Nevada, six miles north of Lake Tahoe, on the heavily forested slopes of 8600-foot Mount Pluto and 8100-foot Lookout Mountain. This is ski country—at least 20 other ski areas are within the immediate vicinity—but it is also summer vacation country, and it was inevitable that some kind of development would eventually take place on this land. Fortunately, the developing company—Trimont Land Company, a subsidiary of Fibreboard Corporation—recognized the property's natural beauty as its major asset. It set out, with a zeal and a thoroughness rare for land development projects, to devise a land use plan which would maintain the environmental and ecological—and the economic—values of their land. The forests that cover the mountainsides are not virgin preserves; they had, in fact, been logged for many years, but without devastation. Since 1946, when Fibreboard bought the property, logging had been carefully planned to maintain the landscape, minimize erosion and foster forest regeneration. Detailed studies made during this period of the ecology of sample forest plots—including tallies of trees by size and specie; extent of regeneration of vegetation; hazards like wind, lightning and fire; insect attacks, diseases and parasites; water and drainage—provided rich background data when development of 2500 of the company's acres was decided upon in 1966. From the beginning, Trimont set high goals and geared both thinking and processes to implementing them, with continuing scrutiny of plans to assure that the project would not veer from the original intentions. From site feasibility studies and land use proposals, it was clear that the best development potential was in outdoor recreation, and the best economic potential was in maintenance of a favorable environment for recreation. The company—and its outside consultants (Paul Zinke, forest environment; Eckbo, Dean, Austin & Williams, land planners; Bull Field Volkmann Stockwell, architects and town planners; Wilsey & Ham, engineers)—studied the effect on the environment of each kind of land use in the determination that Northstar should have a minimum ecological impact on the area. Site analysis by computer—of slope angles, exposure to sun and

NORTHSTAR

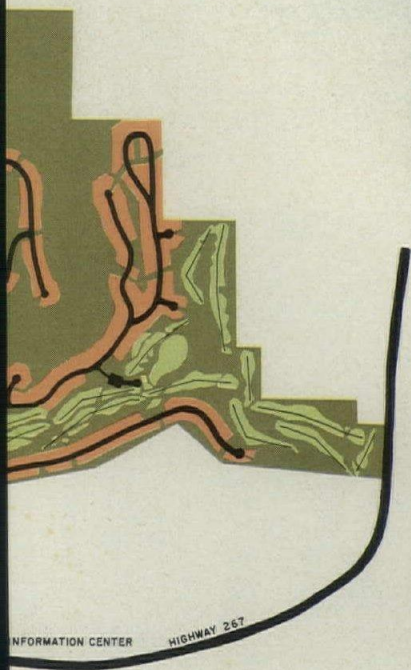


James K.M. Cheng





The most striking feature of the Big Springs Day Lodge, part way up Mount Pluto, is its blue-enameled aluminum roof, designed to take care of snow problems through its forms. On one side it is so steep that snow can not build up on it; this is the "front," where people gather. On the other side the pitch allows snow to slide off to an area never used by people. Before ski trails were selected, studies of sun intensity for every month were made (computer printout, left).



shadow (especially important on ski runs and trails), snow depths, tree species, plant variety, indigenous animals; in sum, of all possible aspects of the ecology—were developed into criteria for physical planning. Visual impact studies proved that buildings could be fitted into the environment without altering it and, indeed, so that they would be invisible from anywhere outside the property. Ski trails and runs can be seen only from the air. Even within the property, no more than three buildings can be seen at a time, and nowhere is an over-all view obtainable. The sense of seclusion belies the density of development (11 units per acre in the condominium area, 48.4 units per acre in the Village). "It is not quite true that no trees were cut down," points out architect Henrik Bull, "but it looks that way." Even eight-inch trees growing beside a doorway's location were saved.

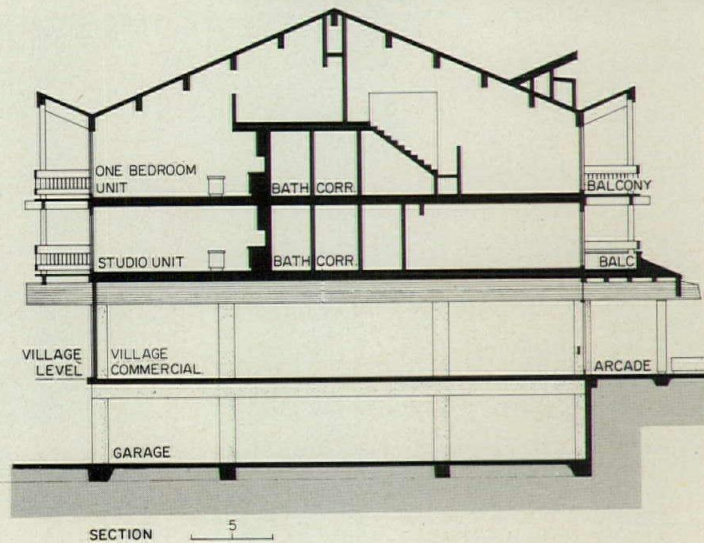
One of the primary design goals was to create a completely pedestrian place and, with remarkable success, the architects have done this. Cars are parked away from the village and condominiums, and everyone walks (or takes one of the two minibuses which run through the area and also meet planes and Amtrak at Truckee, six miles away). Six hundred cars can be parked in a large lot just outside the village, laid out to follow the contours of the site, and well planted with trees that will eventually hide it.

Some 400 condominium units have been built, but the master plan provides for an eventual 3100 units and 585 houses by 1980, and a population of 13,000. Even then—if the original standards of design and planning are maintained—with only 359 of Northstar's 2,560 acres in development and well over 86 per cent of its land in open space, the character of the place is expected to be much as it is today. Since skiing is (and will be) limited to the capacity of lifts, slopes will never be crowded. Condominium owners (or their tenants) have priority over the public in use of the ski slopes, so the present 600-car parking lot outside the village will not be expanded, and parking for the future condominiums will be at their sites. Summer recreation facilities—for swimming and tennis—are under the trees outside the village center. An 18-hole golf course, part of the resort's open space, is in the individual house section.

Tom Lippert

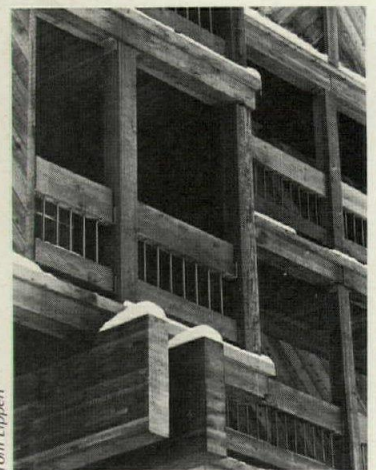


James K.M. Cheng photos



Summer or winter, the Village is the center of activity for Northstar, the community's "downtown." Shops and restaurants are on the ground floor of the village buildings (one of these is completed and in use), with an arcade to shelter access to them. Above, European-style, are two floors of condominium units which double as hotel accommodations—studios on the second floor, studios with loft on the third. The grove of trees in the center of the village set the height limit for buildings in this area. Only foot traffic can enter the village; all cars must be parked outside. A ski lift and several trails start at the village. It is designed as a lively, intense place, defined by the buildings and semi-enclosed.

Tom Lippert





Tom Lippert



Designing for snow country

by Henrik Bull, FAIA
Bull Field Volkmann Stockwell,
Architects

It takes more than extra insulation and a larger furnace to design a good, tight building for snow country. The average architect, however, does just that, and even the sophisticated architect makes as grievous errors—using architectural cliches whose relevance to mountain climates is zero, and evidently expecting the weather to adapt to his design, instead of the other way around.

It is surprising how little common sense goes into design for snow country. Everyone knows that melting snow will slide on an inclined surface. But few people give any thought to where that snow will end up, and often it ends up over a doorway, a deck, or a path.

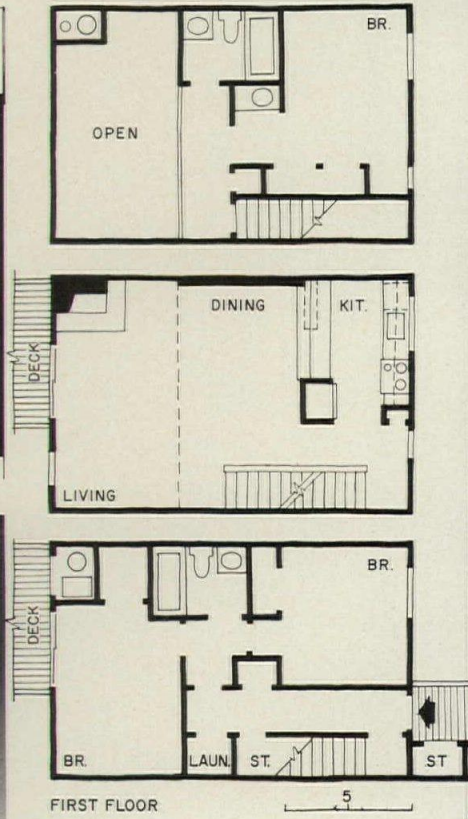
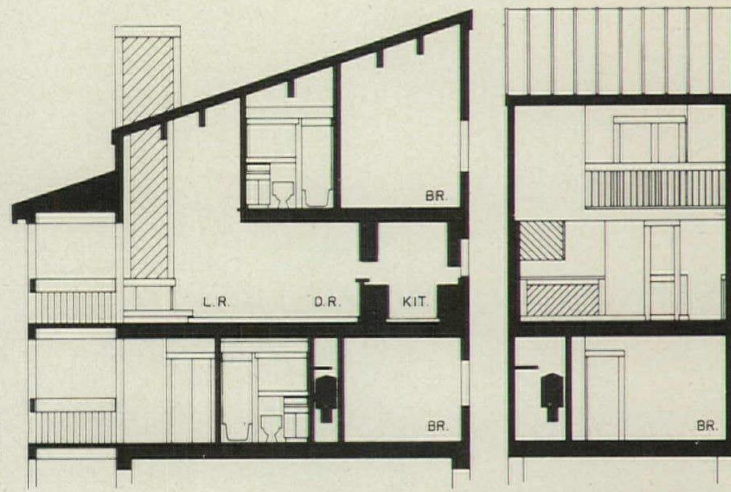
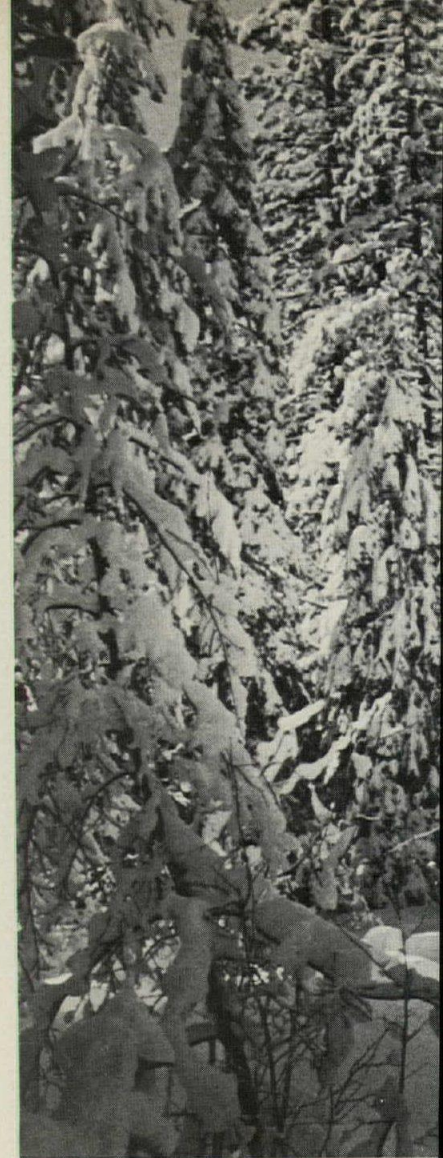
A good first rule for mountain areas is to pitch roofs away from where people are expected to be.

Ice dams, formed at eaves when heat from inside melts snow and sends it coursing down to the cold eave, where it freezes, eventually cause leaks inside or damage to the roof outside.

A good second rule in the mountains, therefore, is to design so ice dams can't form. This is accomplished either by using the European "cold roof"—two separate layers between which outside air flows, preventing heat transfer—or by introducing warm air into the eaves.

A good third rule in snow country is to design for a respectable snow load: at Northstar we used 240 pounds per square foot—far more than previous standards required. Flat roofs—as at Kirkwood (page 148)—can be effective, and sometimes may even be preferable from an engineering standpoint.

NORTHSTAR-AT-TAHOE, California. Site feasibility, land planning: *Eckbo, Dean, Austin & Williams*. Architects: *Bull Field Volkmann Stockwell—Henrik Bull, partner-in-charge; Steven Y. Kodama, project architect; Robert D. Kendorí, construction administration*. Engineers: *Gilbert Forsberg Diekmann & Schmidt* (structural), *Dames & Moore* (soils), *Marion-Cerbatos & Tomasi* (mechanical/electrical). Consultants: *Mountain Marketing Services* (graphics), *The Len Koch Company* (cost), *Fred Schmidt & Associates* (kitchen). Contractor: *Murchison Construction Co.*





James K.M. Cheng photos

Northstar's almost completely wooded site presented the architects with a unique opportunity to relate buildings and environment. Condominium buildings, set among tall pines and firs, are all but hidden, and no building is seen in its entirety. Many are only glimpsed through stands of aspen and willow, specially designated for preservation as groves. For minimum disturbance to the terrain, buildings consisting of a varying number and type of units, depending on site conditions, are concentrated in clusters. Modular design of units makes adaptation to the site relatively simple. "We used four plans to create 20 different buildings," says Henrik Bull. "Units can be stacked vertically or linked horizontally as needed. The roofs don't belong to one unit only; we put three-story and two-story units right next to each other and the same roof slope serves both. It is complex in design but simple in construction." Roofs are designed to take a 240-pound snow load, a higher strength than formerly thought necessary, but required to take the very heavy snows of the Sierra. Entrances are located at right angles to pitch of roofs to preclude sliding snow and melting icicles from hitting people. Natural-finish, diagonally-cut cedar boards are used on exterior walls; heavy wood trim is stained brown. Roofs are blue aluminum.



Designing the ski resort base lodge

by Sherwood Stockwell
Bull Field Volkmann Stockwell,
architects

Kirkwood Meadows Lodge at Lake Kirkwood, California, initial building in an entirely new ski area, is a good example of what it takes to get a mountain destination resort into operation. At the moment, Kirkwood has only 60 units of housing, not enough to attract the volume of skiers (it would like 2500) to optimize the potential of the uphill ski facilities. There is always a chicken-and-egg dilemma in a resort of this kind: building housing first and hope it will sell and thus support the ski area, or build the ski area in the hope that this will encourage others to build the housing. Kirkwood's developers favored the latter, and the two-story day lodge became Phase I of the new resort.

The lodge was designed and built in less than six months, and in operation, while construction of other new resorts was closed down for the winter.

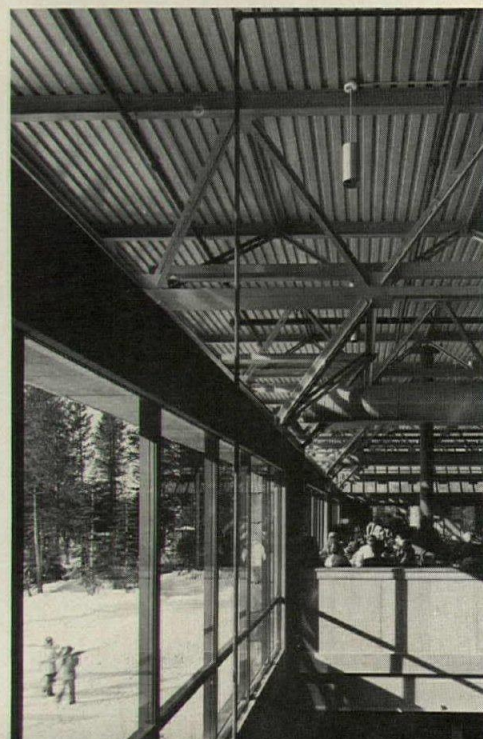
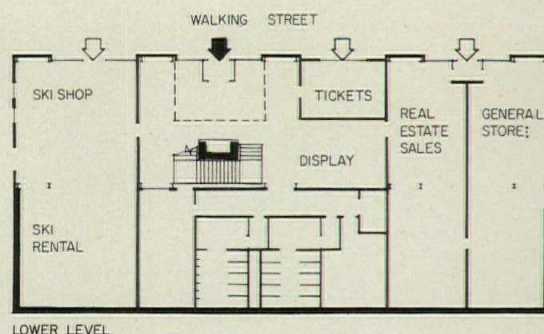
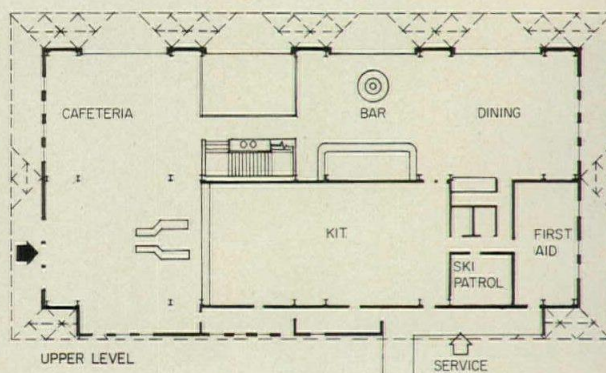
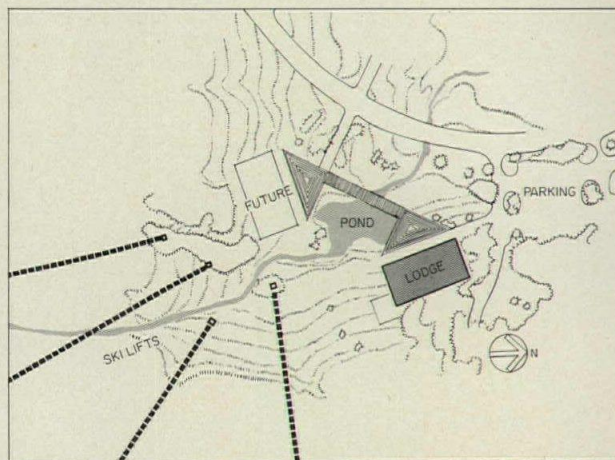
It is a steel frame, single-roof structure supported by three-dimensional trusses tied to steel columns. The truss angles out from the building walls to the edge of the roof, and this sloping plane is glazed to provide a glareless, splendid view of the mountains. The roof is flat, designed for a snow load of 250 pounds per square foot. Melting snow drains off through pipes in warm interior walls so snow cannot slide onto people.

Restroom facilities (with twice as many fixtures for women as for men) are on the lower level.

Because the kitchen must serve a large number of people in a very brief period, we designed it for high efficiency and ample storage space, and located it on the upper level where it could serve both cafeteria and restaurant-bar. We used readily available materials and equipment, because in an out-of-the-way place, replacement can be a big problem. Equally important is the capability to change as the resort expands its operation.

KIRKWOOD MEADOWS LODGE, Lake Kirkwood, California. Architects: Bull Field Volkmann Stockwell—Sherwood Stockwell, partner-in-charge; H.C. Bruce Jr., project architect. Engineers: Hirsch and Gray (structural), Marion-Cerbatos & Tomasi (mechanical/electrical). Contractor: Brunzell Construction Company.

KIRKWOOD MEADOWS





James K.M. Cheng photos



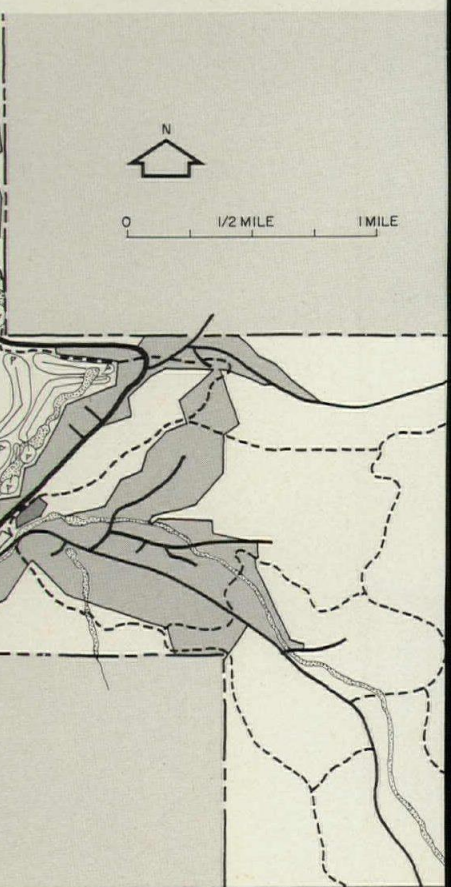
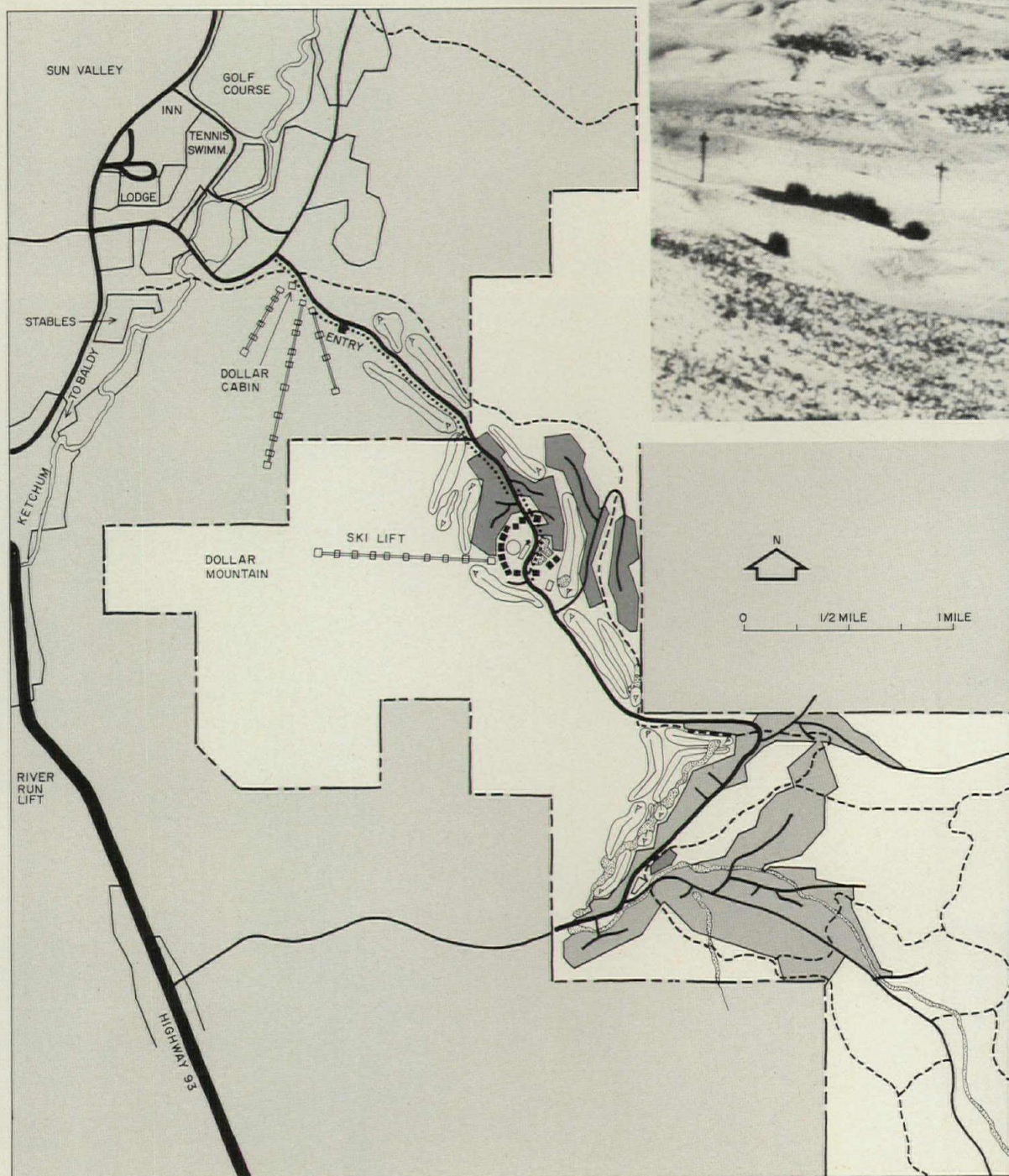
ELKHORN

Elkhorn Valley, a mile and a half south of Sun Valley and just over the saddle of Dollar Mountain, is a sunny, almost windless, completely treeless and —until 1972—untouched place in Idaho, known mostly to skiers and hikers. In 1972, Bill Janss, owner of the Sun Valley Corporation, joined with Johns-Manville Corporation in a plan to develop 2,950 acres of Elkhorn Valley as a new ski resort area to complement the resort at Sun Valley.

Fortunately, Janss and his co-developers were aware of the need to handle such an area with great care. Development at Sun Valley had extended that resort town to its furthest limits as a walking village, and further development would encroach on the character of the place, which, along with its splendid powder snow, had made it an internationally attractive area since 1936 when the Union Pacific Railroad began its development.

Site planners Sasaki, Walker & Associates were called in to master plan the new resort for phased development over a 10-year period. They studied every aspect of the valley's environment—climate, soil structure, geology and soil relationships, topography, vegetation—in order to know how to develop the land and at the same time maintain its natural relationships. A slope inventory was also made and—since the visual quality of the place was of great importance to its success—a visual analysis was made of the views and vistas of the site, from the site, and within the site. From this data, a physical and visual summary was made as the first step toward a conceptual plan for the valley.









To intrude upon the untouched grandeur of this open valley may have seemed a sacrilege, but its openness made it vulnerable and a sure target for development at some time. The decision to make of Elkhorn a human-scaled village within the vast scale of the valley and mountains at once brought it into the context of similar situations in the Alps. Indeed, there is a feeling of a Swiss mountain village in the location of Elkhorn in a valley below a lofty mountain. The man-made village seems tiny, drawn into itself, alone—especially in the snow. What makes it uniquely American and particularly Western American is its containment within, its circumscription by, a space vastly larger than itself and destined to remain so.





Steve Marks

Elkhorn's master plan was developed by the land planners as part of the over-all long-range plan for the city of Sun Valley (left) of which it is a part, so that the same standards—though not the same architectural style—will control development in each. The total development plan for Elkhorn (right) shows density of future condominium development around village center.

-  CONDOMINIUMS
-  HOMESITES
-  PONDS & CREEKS
-  GOLF COURSE
-  EQUESTRIAN & HIKING
-  BIKE PATH
-  OPEN SPACE & RANCHES
-  VILLAGE CENTER



At Elkhorn, the view is up to the mountains, rather than, as more frequently happens in this country, from the mountain to a panorama of the valley.

Of the 2,950 acres of Elkhorn's site, only 300 will be covered by buildings. Approximately 400 will be paved and landscaped, and the remainder—75 per cent of the site—will be preserved as natural open space.

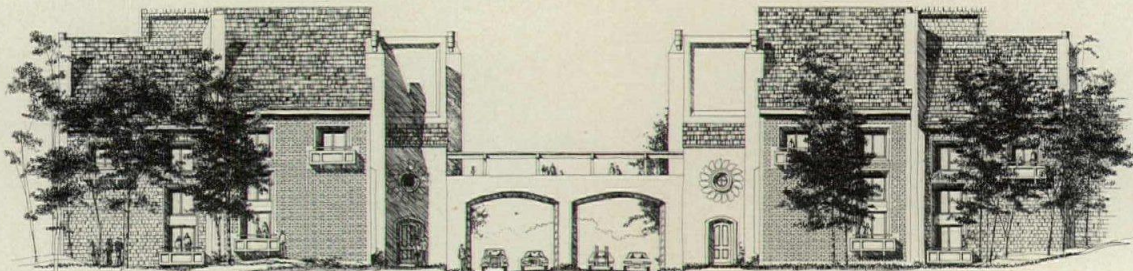
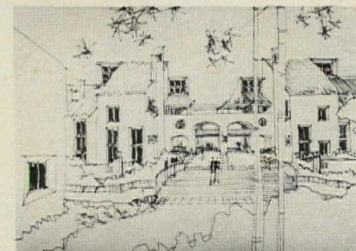
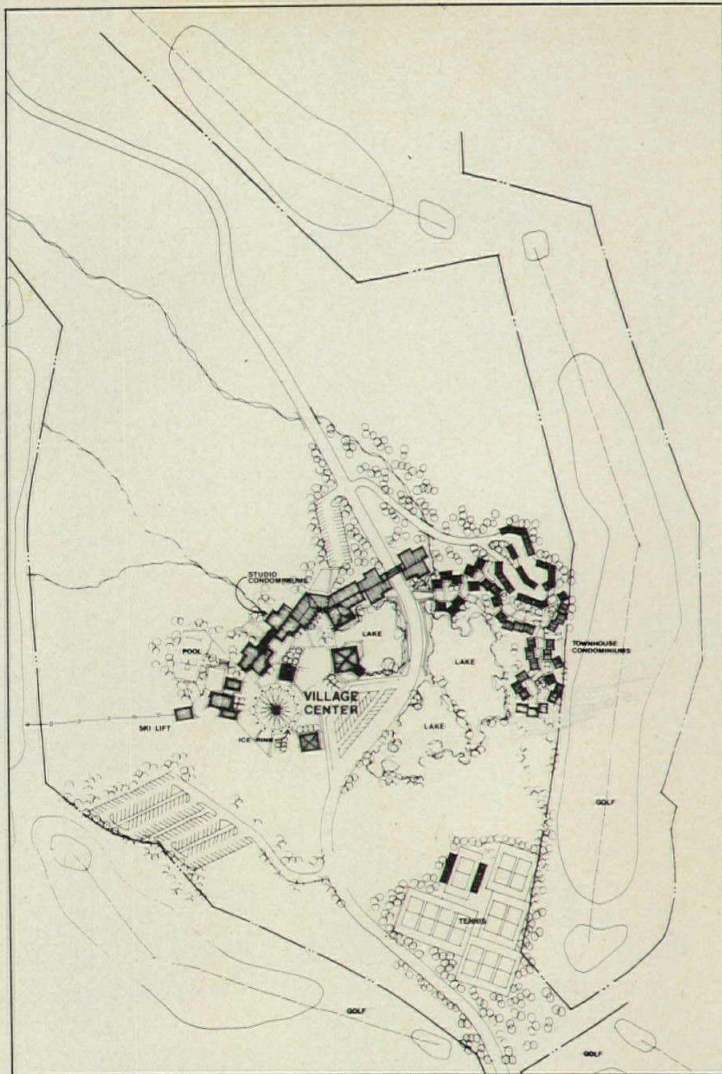
In the village center are community and commercial facilities, less extensive than a self sufficient village might require since Sun Valley's older and more extensive commercial development and its two large hotels are easily accessible by car or free bus service.

In developing an architectural expression for this new resort, Killingsworth, Brady & Associates, architects for both condominiums and commercial areas, studied mountain villages in various parts of Europe—not to borrow their forms but to analyze the characteristics which were common to all, and, using these basics, to devise a contemporary and individual style which would be distinct to Elkhorn. The pitched roofs, deep set windows and balconies, and stenciled patterns (in blue) catch the whimsical and the practical aspects of alpine buildings but look little like them.

"Old villages," says Edward Killingsworth, "aren't precise and well-ordered; they just sort of happen." The analysis by Killingsworth and his associates netted good results: Elkhorn is no self-conscious putting-together of forms for a studied variation, but has a feeling of natural difference which comes from the siting of the groups of condominiums and from disciplined use of materials.

The valley's landmark is the village bell tower, a distinctive form which is the focal point of the village center, marking the location of the community hall. Nearby, and complementing the tower with its strong circular form, is the ice rink, used year-round. Ranged in a semi-circle about the rink is a terrace on which are located shops with condominiums above, and a hip-roofed restaurant building (bottom, right).

When it is completed in 1982, Elkhorn will look only slightly larger than it does now. More condominiums will be built around the village, but private residences and ranches (lots up to two and a half acres) will be located in the "finger valleys" off the big valley, preserving the unity of the village.



Lars Speyer

The village center concentrates community activity in a small area of shops, restaurants and recreational facilities, like the ice rink (top, across page). Although cars are not permitted in the center, ample parking is provided for visitors and skiers (the Dollar Mountain ski lift is just outside the center) on the periphery. The first phase development (plan, above, left) included the commercial area and village condominiums, Bonne Vie condominiums, the ice rink and some tennis courts. Actual buildings in the village show some changes from the early studies of architectural character, particularly in more formal proposals for Village entrance (above, center sketch), and in use of stencilling on the village buildings. The Bell Tower's strong form dominates the village center and is visible from all parts of the valley.



All photos by Lars Speyer except as noted.



Designing a modern village with Alpine charm

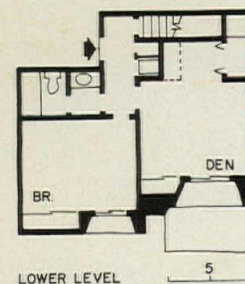
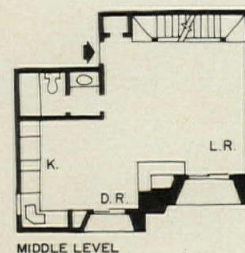
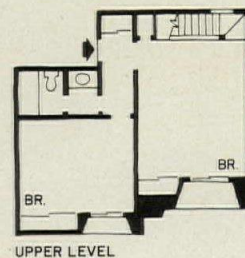
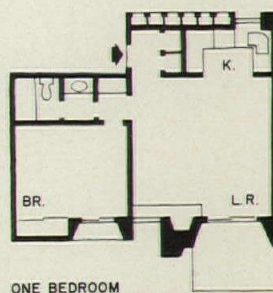
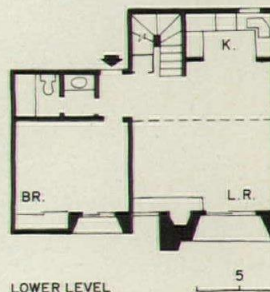
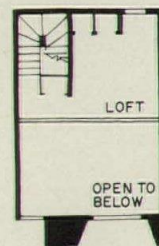
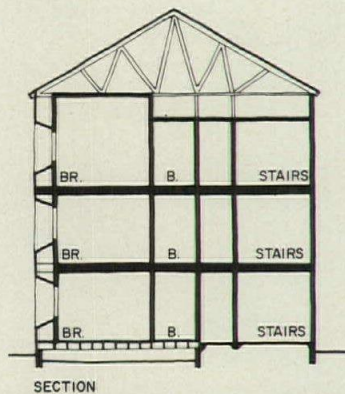
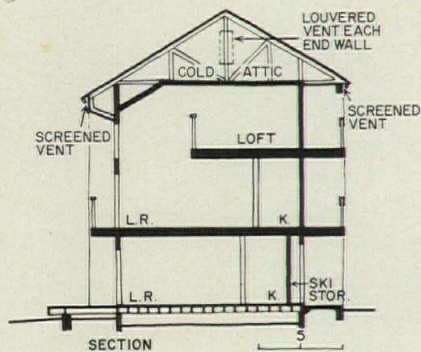
By Edward A. Killingsworth, FAIA
Killingsworth, Brady & Associates

A new resort town, however small, deserves its own architectural character as much—perhaps more, because it is small and more easily seen—as any larger development. Sun Valley, in the next valley, had chosen years ago to use an eclectic, unspecific European approach for its buildings, but we determined that Elkhorn should be completely modern. We knew, however, that we wanted it to have as much charm as an Alpine Village, so we studied European mountain villages and towns, establishing those basic elements that are so universally appealing to people.

Reduced to their basics, many villages—Swiss, Bavarian, Austrian, Italian: it makes little difference—are essentially identical. The towns have many common denominators, all of which contribute to an impression of inviting variety, carefully balanced by great discipline in the use of materials and details: A play of spaces; narrow curving streets, enticing the pedestrian, that spill out into squares; narrow slits between buildings through which shafts of light penetrate; a feeling of containment derived from tall buildings and restricted vistas. All contribute to a comfortable pedestrian scale and to the delight which spells success in any destination resort.

We determined to base our design for Elkhorn on these principles, but to develop only the subtlest resemblance to buildings of earlier periods so that a unique identity could develop for Elkhorn. We adopted and adapted the Tyrol's exterior surface stenciling using our own designs in a bolder contemporary way. (Stenciling proved economical and is easily maintained.) Deep wall recesses and double doors suggest but do not imitate old world details. Steep-pitched roofs became the strongest element in the village, marking it against the stark valley landscape as a place of unique and individual character.

In its initial development, Elkhorn is small, perhaps too small to have the scale needed to make an impact in the beautiful openness that surrounds it and is there forever. As it develops to its full size—1400 condominium units, 700 single-family houses and ranches—that scale will change.



Elkhorn's master plan premises a total of 1400 condominium units (and an over-all total of 2100 housing units, including ranches and single-family houses). There are three groups of condominiums: the Village Group (bottom, across page) is European-style, above shops and restaurants. The Bonne Vie (top, across page) is northeast of the Village, across the road from Sun Valley. Another group, Indian Springs (not shown) is northwest of the village. Bonne Vie units have garages as well as open parking; Indian Springs has open parking. Village units have parking on the periphery, near enough but well outside the actual village where no cars are permitted. Warm air is circulated under the pitched roof of condominium buildings and to the eaves so that snow rarely builds up on them. Icicles do form, however, at roof edges and are removed with long poles (bottom left). Wood shingles, boards and plaster are used on condominium building exteriors.



Lars Speyer photos





Lars Speyer

Master planning land use in an unspoiled mountain valley

By Peter Walker
Sasaki, Walker Associates, Inc.
Planners and Landscape architects

The master plan for Elkhorn's development is based on the principle of open space and recreation as primary considerations. The same principle underlies the master plan, also prepared by us, for the city of Sun Valley, of which Elkhorn is a part. The two resorts, just a mile apart although in separate valleys, cannot be considered alone. The impact of one on its environment will inevitably affect the valley location of the other. Sun Valley, the older resort, is much more developed than Elkhorn, which, being newer, is the more fragile of the two. Over 75 per cent of Elkhorn Valley will be permanent open space; the other 25 per cent is in residential and resort use. The golf course which surrounds Elkhorn defines it and links it with the open valley and with the mountains that ring it.

In making the master plan for the city, we made a comprehensive study of future land uses, considering the economic and community goals of Elkhorn and Sun Valley as well as the environment itself. Now we have recom-

mended continuing planning procedures for implementation by the city. As growth continues, transportation—whether by public bus or by car—will be increasingly evident and needs study as to appropriate controls so as to preserve the character of the area. Zoning, subdivision and architectural review and environmental controls are needed for each category of land use. Community facilities—for city hall, library, police, fire and public works services, schools, hospital, cultural activities—will be demanded in time. However much a resort may be a place apart at its beginning, it eventually takes on all the requirements of any other type of community. They will have to be pro-

vided, but they can be assets, in location and in architecture, if they are expected and planned for in advance of their need.

In planning for the future of these valleys, a sensitive stewardship of the land as a basic resource was, as it must be elsewhere too, our most important premise.

ELKHORN AT SUN VALLEY, Sun Valley, Idaho. Master planners: Sasaki, Walker & Associates. Architects: Killingsworth, Brady & Associates. Engineers: Cornell, Howland, Hayes & Merryfield (structural, Phase I and Village; soils, foundation, mechanical, electrical); John Jacoby (structural, Phase II). Consultants: Barbara Elliot Interiors (interiors), William F. Mullen (cost). Contractors: Sato Construction Company; Wick Construction Co.



Steve Marks

Floodlights in an open-plan school yield low-energy illumination

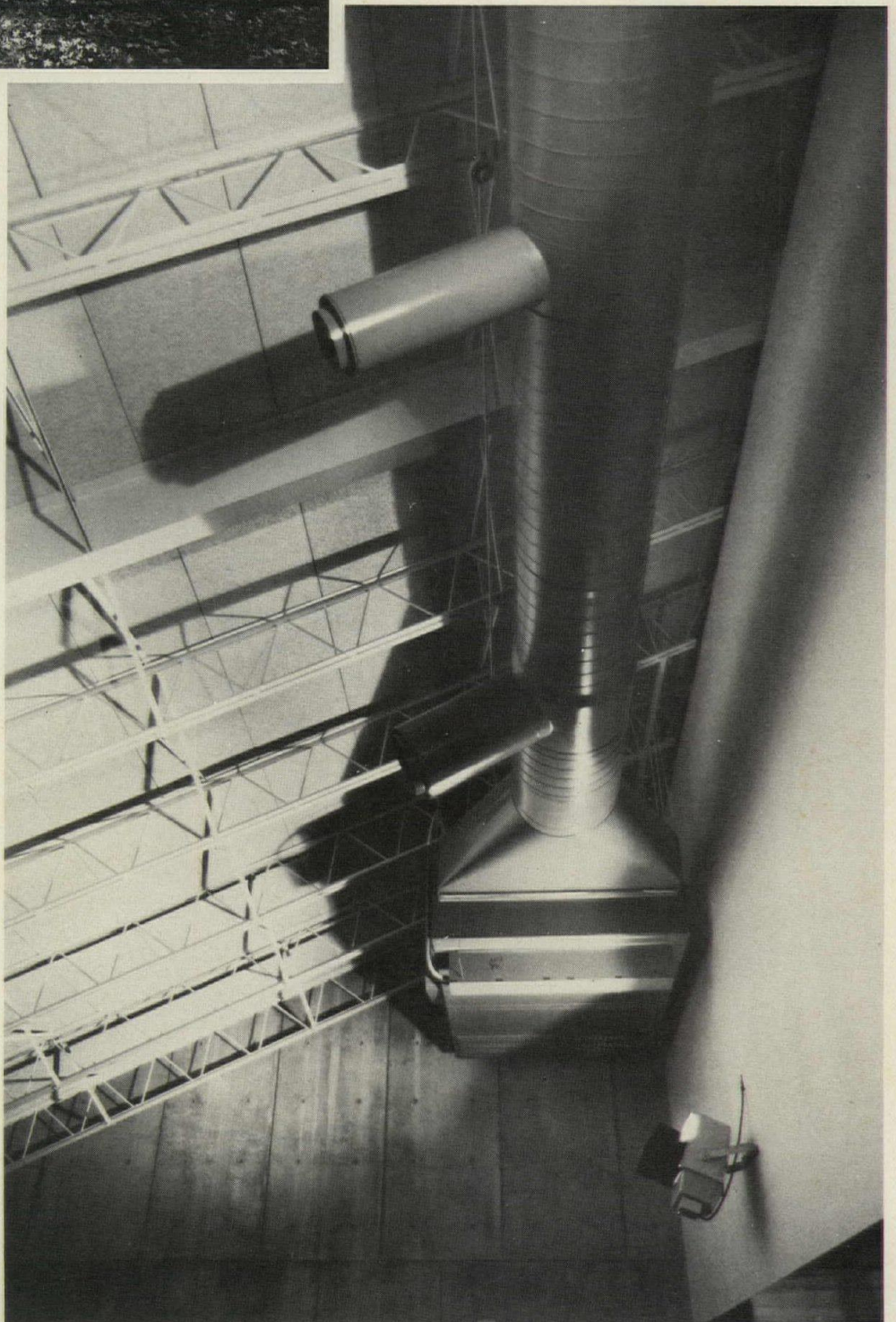


After several previous middle-school designs had exceeded the client's budget, the Hollis, New Hampshire school board hired architect Michael B. Ingram and asked him to try a new approach, within a budget limit of \$20 a square foot. Ingram switched the site from an appendage to the existing elementary school to a sloping site nearby—the reason for the stepped profile of the building. The new site avoided a septic tank field of the previous one, and proved more economical over-all.

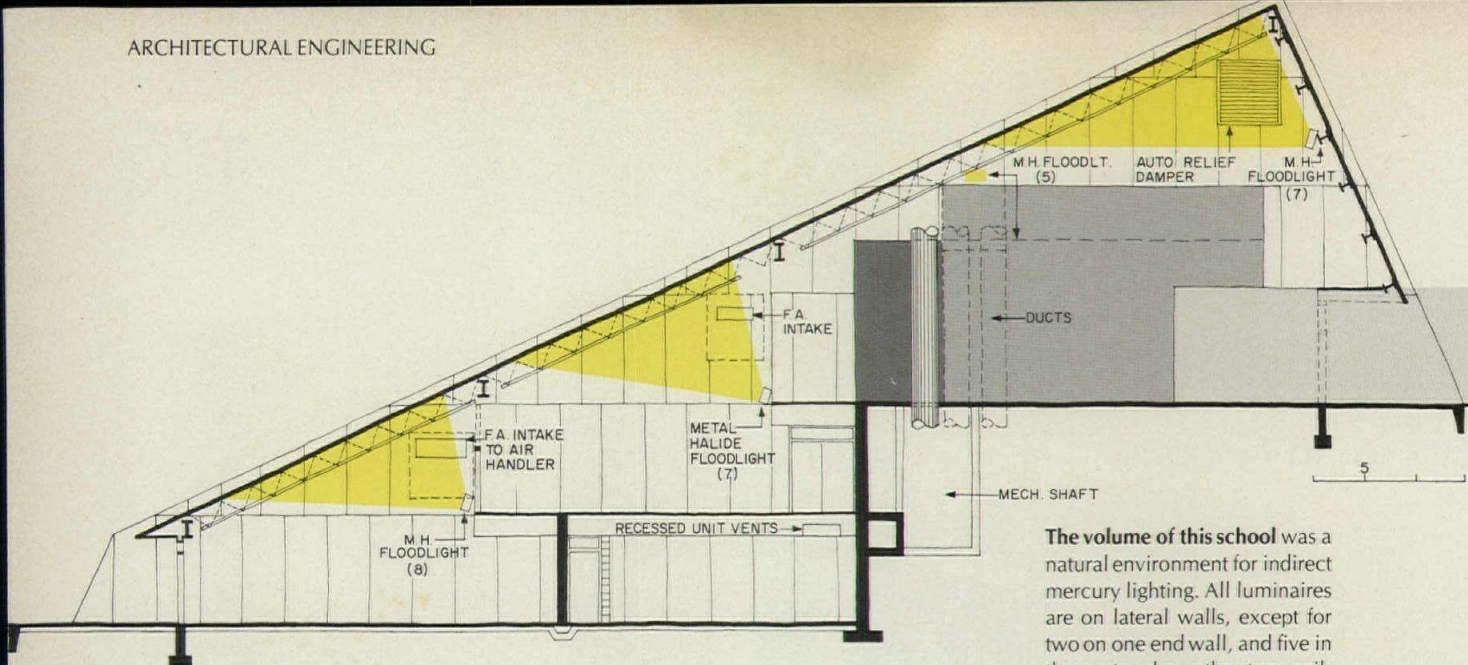
The raked ceiling did not lend itself to traditional forms of lighting, however. At first, Ingram considered attaching bare fluorescent strips to the bottom flanges of the open-web joists. But electrical engineer Robert Fairbanks, of Kaufmann Associates in Boston, suggested outdoor-type mercury floodlights for indirect illumination. This approach appealed to Ingram because it took the fixtures away from the ceiling plane—avoiding the image of bare-lamp supermarket-type lighting. The indirect approach helped him realize his concept of a large space all under one lid.

The indirect lighting system, using phosphor-coated, 1000-watt metal-halide lamps, provides an illumination level of 50 foot-candles at desk height for an energy expenditure of only 1.5 watts per square foot.

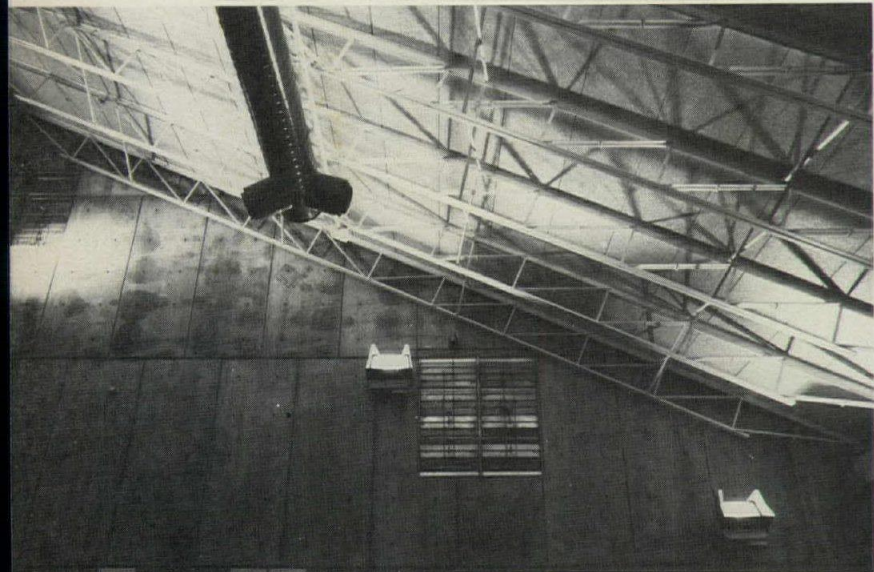
In the classroom areas, one luminaire is used for every 26- by 28-ft classroom unit. Lamps of 400-, 750-, and 1000-watt sizes, operating at 277 volts, were considered. The 400-watt size would have required twice as many luminaires; the 1000-watt size meant heavier mountings at the wall, but yielded obvious savings over-all. Theoretically in favor of



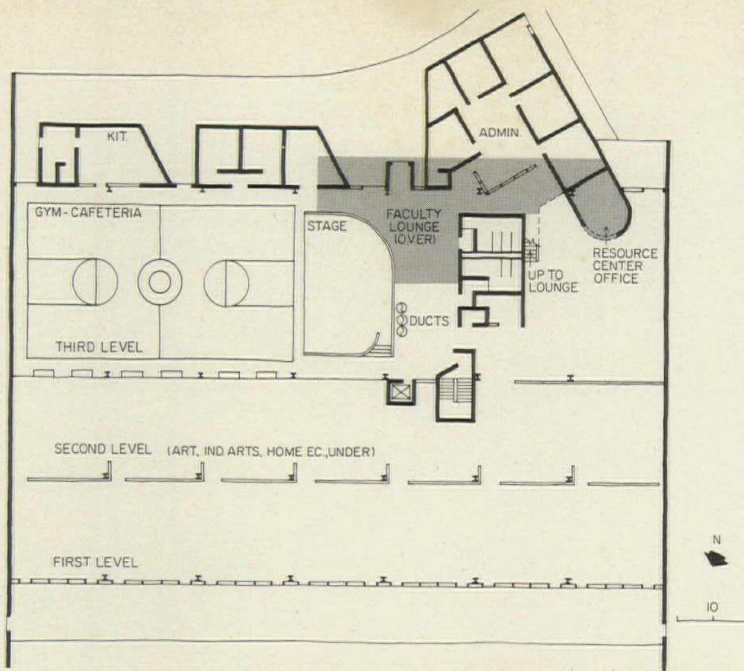
Robert E. Fischer photos



The volume of this school was a natural environment for indirect mercury lighting. All luminaires are on lateral walls, except for two on one end wall, and five in the center above the stage ceiling and the core toilets to even out the illumination.



The lighting situations at the upper level, lower level, and the west side wall are shown above and across page. The concrete block structure at left is the resource center office, and over it is part of the faculty lounge area. Notice that luminaire shields in the classroom areas are only partial on the sides. The lighting level is 50 footcandles at only 1.5 watts per sq. ft.



the larger number of luminaires was the possibility of a more even band of brightness on the ceiling. With the 1000-watt lamps, the luminaires needed to be located as far down the balcony faces as possible to even out the brightness.

Scoop-type shields around luminaires shut out the glare of the 1000-watt lamps from side angles, but the bright lamps can be seen when luminaires are viewed from across the room.

The school is heated and ventilated by means of air-handling units using electric heating.

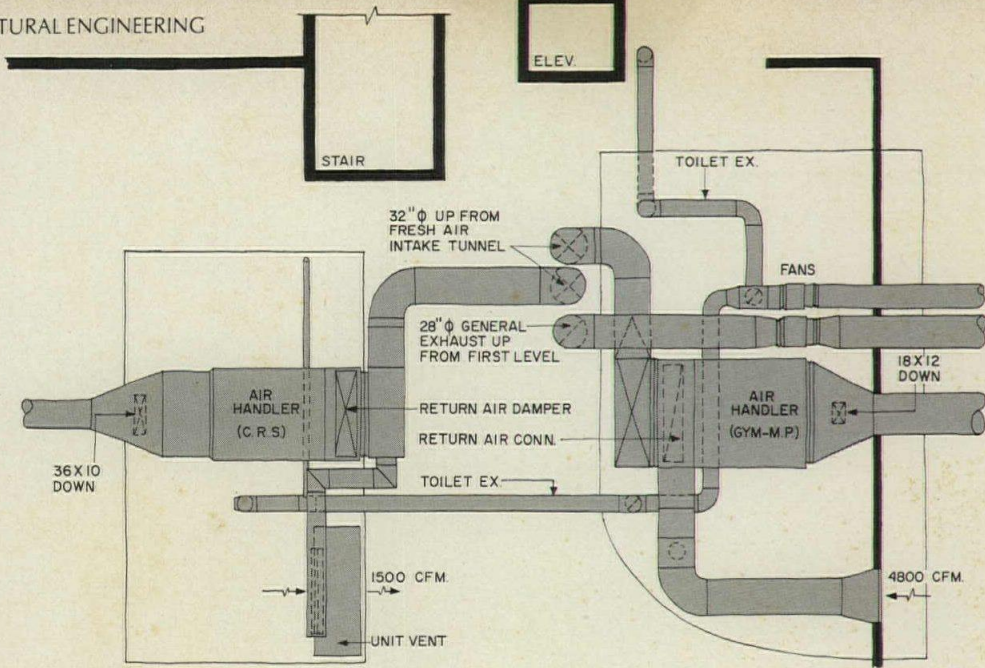
In the main classroom areas on first and second levels, one air handler on each side of the building, connected to a fresh-air intake in the outside wall, serves half the area. Interior classrooms on the first level have ceiling-recessed unit ventilators. The third level and the teachers' lounge are served by air handlers above the stage area and above the core toilet rooms. Fresh air for all interior rooms comes from a tunnel under the middle of the building. The administrative offices have packaged terminal air conditioners.

The building has a minimum area of glass in front and back, and the roof uses urethane-insulated cement-fiber plank having a 0.08 U-factor.

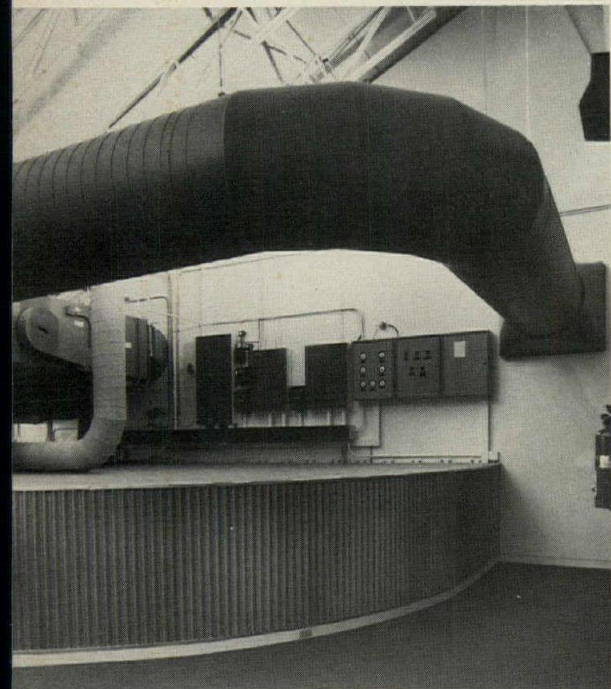
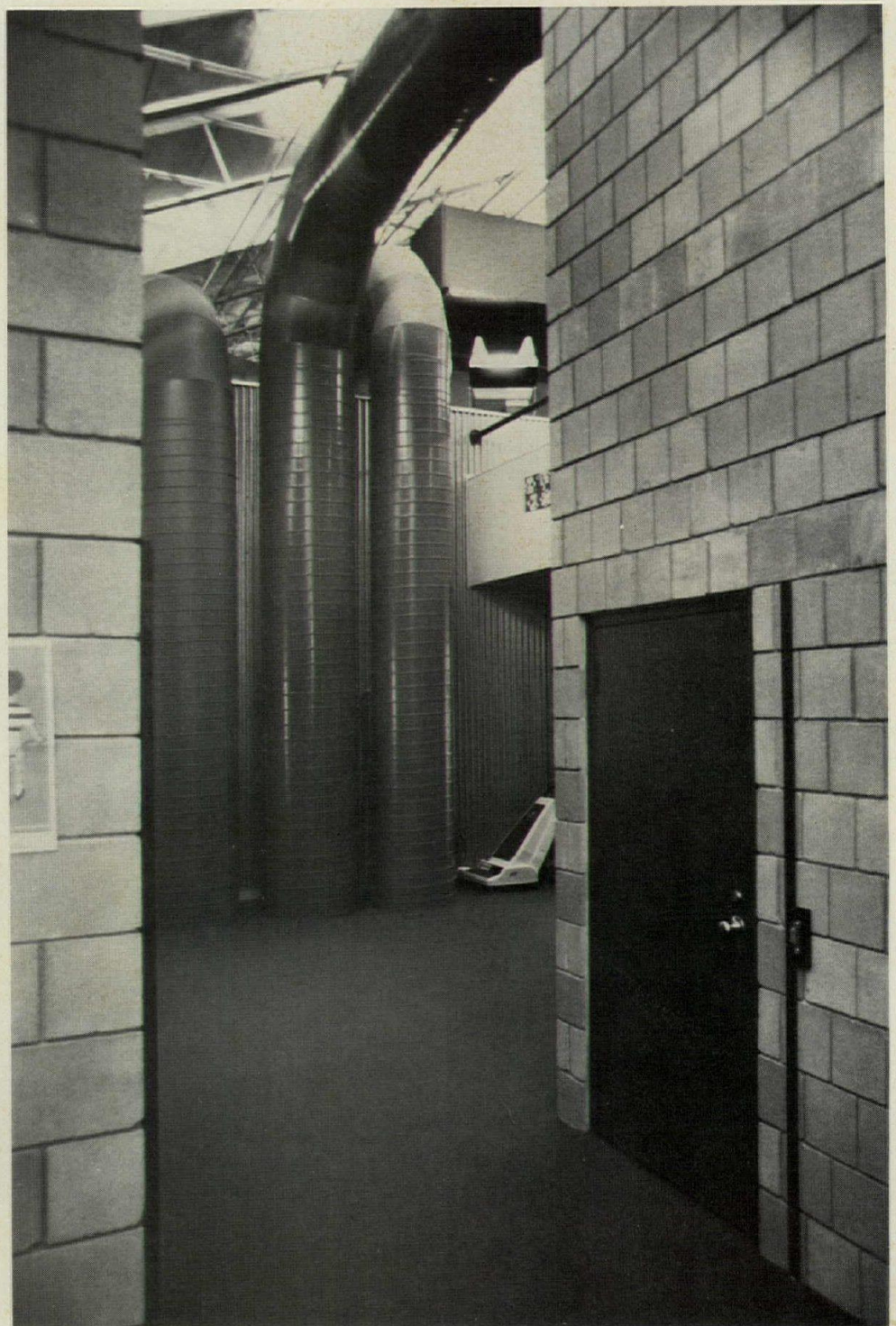
The steel-framed building cost \$730,000 or about \$22 for 34,000 sq. ft. The school was designed for 415 pupils. The hvac contract was \$80,000, and the electrical contract, \$75,000.

HOLLIS MIDDLE SCHOOL. Owner: Hollis School District. Architect: Michael B. Ingram. Engineers: Albert Goldberg Associates (structural); Kaufmann Associates (mechanical/electrical). Contractors: Norsa Corporation; Seppala & Aho.





Air-handling units for heating and ventilating the upper level of the school and the gymnasium are shown in the plan. Fresh-air risers for these air handlers and an exhaust riser for the interior classrooms emerge at the third level, and are made a colorful feature. The faculty lounge area is conditioned by a 1500-cfm unit ventilator. The pneumatic controls can be seen in the photo bottom, left. All ductwork is left exposed, except where there is none in the interior classroom spaces at the first level. These have positive exhaust by means of in-duct exhausters. Main classroom areas, on the other hand, have automatically-controlled relief dampers set high in the end walls to allow vitiated air out.



For more information, circle item numbers on Readers Service Inquiry Card, pages 229-230.



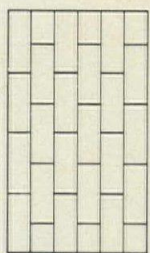
Interior, Kent State University School of Art

Translucent panels for building enclosure

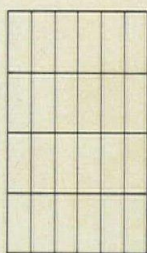
An 11-inch "sandwich" panel is the basis of this system for enclosing buildings either wholly or in part. Shown here is an installation at the Kent State University School of Art, Kent, Ohio by Ross, Yamane, Mangrum. The composition of the product is fiberglass-reinforced polyester facing, with fiberglass insulation over and in-between aluminum reinforcing I-beams. (Section photo bottom right.) The panel has a U-factor of 0.06 and features light transmission of 8 per cent, with weather-resistant, low-maintenance surfaces. The company claims the surface, when bonded to the grid core, has remarkable structural strength and high insulation value. Unsupported clear spans of up to 15 feet are claimed, depending upon wind load. These rigid modular units are said to replace the heavy mullions and floating panels of other curtain wall systems, and normal loads are dispersed throughout the panels, rather than converging on the mullions. The standard grid designs are shown. ■ Kal-wall Corp., Manchester, N.H.

Circle 300 on inquiry card

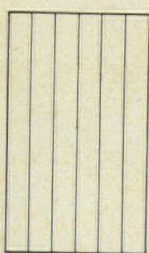
More products on page 169



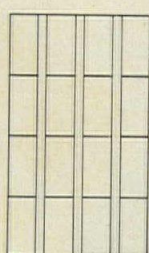
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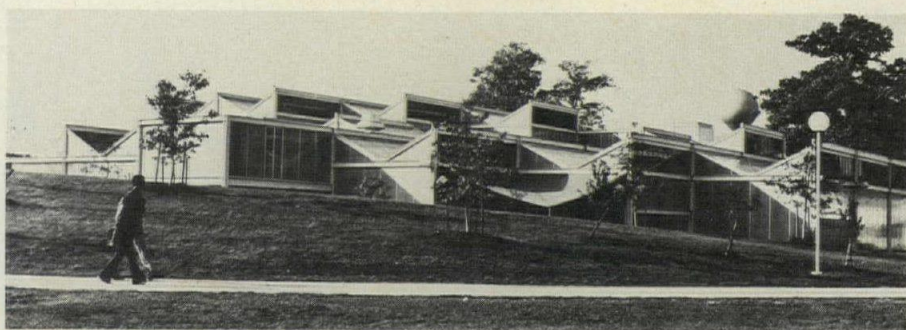
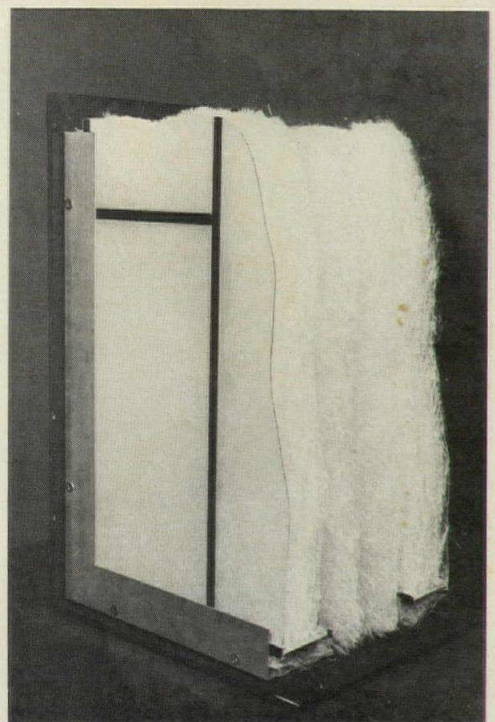
SHOJI



VERTI-KAL



MERRIMACK

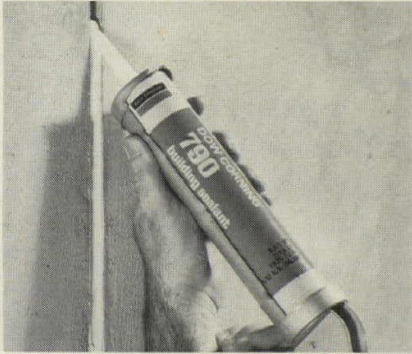


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For more data, circle 63 on inquiry card

PORCELAIN ENAMEL WEATHERABILITY / Documented results from 30 years of porcelain enamel weathering tests are being offered by the company in conjunction with the Porcelain Enamel Institute. Titled "The Weatherability of Porcelain Enamel," the report provides architects, engineers, building contractors and glass dealers with answers to such questions as 1) How will the material look and function after 30 years' constant exposure to the elements? 2) How will it withstand the corrosive attacks of atmospheric pollution? 3) Will it undergo significant changes in color or surface texture? 4) Will cleaning and maintenance become a costly consideration in years to come? ■ AllianceWall Corp., Wyncote, Pa.

Circle 400 on inquiry card

RUG CUSHIONS / The kit contains complete specifications and samples of four rug cushions designed to meet medium and heavy traffic in commercial areas and are more than competitive in quality and cost with other similar underlays according to the company. ■ Allen Contract Div., Dayco Corp., Dayton, Ohio.

Circle 401 on inquiry card

TEXTILE KIT / A textile kit said to feature durable domestic and imported fabrics for upholstery and drapery. Each fabric—in different patterns and in basic colors—is indexed according to style in a convenient 9 3/8 in. wide by 13 in. high by 3 3/8 in. deep carrier. Sample swatches and tab cards indicate fabric content, finish, origin, and available widths. ■ Stow/Davis Textiles, Grand Rapids, Mich.

Circle 402 on inquiry card

RADIANT HEAT LAYOUT / Kit for the layout and design of radiant heat ceilings is said to enable one to calculate heat losses, determine wattage requirements and to lay out a radiant heating system on working blueprints. Included in the kit is an eight-page construction guide of technical information on planning and installation. ■ Gold Bond Building Products Div., National Gypsum Co., Buffalo, N.Y.

Circle 403 on inquiry card

TILT-UP CONSTRUCTION / This illustrated 32-page booklet is a listing of the 60-plus company products used in tilt-up work. The five major phases or steps in tilt-up construction are also discussed; products used in each phase are grouped within that section both to illustrate and to describe job use. A final chapter presents engineering data. ■ Burke Concrete Accessories Inc., Burlingame, Cal.

Circle 404 on inquiry card

CIRCUIT BREAKER PANELBOARDS / An eight-page bulletin on circuit breaker panelboards for both power and lighting applications explains the procedures used to arrive at integrated equipment ratings. The *Qwik-Gard* ground fault circuit interrupter is covered, as is the complete line of column-width panelboards for mounting on structural beams. Complete data on circuit breaker interrupting capacity is also furnished. ■ Square D Co., Lexington, Ky.

Circle 405 on inquiry card

FOOD SERVICE EQUIPMENT / The company's 28-page brochure features illustrations of major models and key product features. Products include char broilers with self-cleaning grids, rack-conveyor dishwashers with spray chamber and fry kettles with front-operated remote control. ■ General Electric Co., Chicago Heights, Ill.

Circle 406 on inquiry card

FRAMING ANCHOR / A product design and specification sheet on the firm's framing anchor presents descriptive and technical material including recommended safe working values. Manufactured from 18 gauge zinc coated sheet steel, framing anchors are available in a single style with both right- and left-hand types. The product is designed primarily for use in roof, wall, ceiling and floor framing applications where light loads and short spans are involved. ■ TECO, Washington, D.C.

Circle 407 on inquiry card

CARBON MONOXIDE MONITOR / Instruments and systems to monitor, warn and prevent potentially dangerous concentrations of carbon monoxide in parking garages and tunnels are described in a six-page illustrated brochure. ■ Mine Safety Appliances Co., Pittsburgh, Pa.

Circle 408 on inquiry card

WOOD FRAMING / "A New Look at Wood Framing" is the title of a 12-page, full-color booklet which includes experiences of five builders in adopting new techniques, particularly 24-in. spacing in walls, floors and roofs. ■ Western Wood Products Assn., Portland, Ore.

Circle 409 on inquiry card

LIGHTING CATALOG / Literature describing a vandal-impact resistant lighting line of indoor and outdoor fluorescent, incandescent HID surfaced and recessed lighting fixtures is said to include contemporary designs. ■ Art Metal/Wakefield Lighting, ITT Lighting Fixture Div., Vermilion, Ohio.

Circle 410 on inquiry card

DRAFTING EQUIPMENT / The catalog is said to show that the company's drafting equipment is designed and built to output-increasing human comfort principles established by authoritative university research. The company's line of output-increasing radius tension drafting tables and chairs are designed for architects, engineers, draftsmen, artists and schools; 34 table models are listed. ■ The Huey Co., Franklin Park, Ill.

Circle 411 on inquiry card

STEEL DECK / The company's 16-page steel deck catalog covers decks and permanent form decks. The totally revised and updated brochure contains profiles, dimensions, specifications, and comprehensive technical data. ■ Epic Metals Corp., Rankin, Pa.

Circle 412 on inquiry card

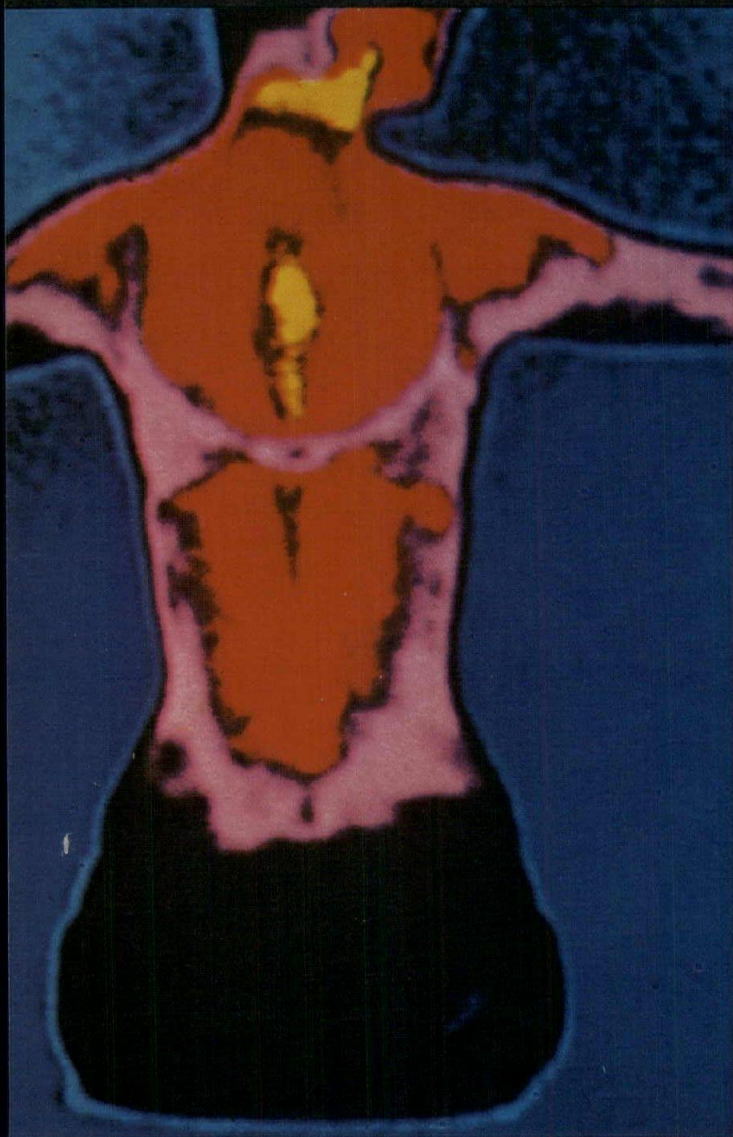
INTERIOR PANELS / A 22-page color brochure describes and illustrates the various architectural and interior design applications of an acoustical textured interior surfacing in offices, churches, schools, apartments, home and retail/commercial structures. Design data chart and sound performance tables are included. ■ Gold Bond Building Products Div., National Gypsum Co., Buffalo, N.Y.

Circle 413 on inquiry card

INDUSTRIAL FLOORS / This brochure tells how to solve flooring problems in food processing and industrial plants. It illustrates typical in-plant installations including a tire manufacturer, a plating plant, a food processor and a dye house. It describes *Stone-clad*, a formulation of high-performance polymer resins, hardeners and specially blended aggregates said to be highly resistant to heavy industrial plant traffic and most chemicals, acids and solvents. ■ Stonehard Inc., Maple Shade, N.J.

Circle 414 on inquiry card

**A basic form
inspires
a timeless design. The Body Chair.**



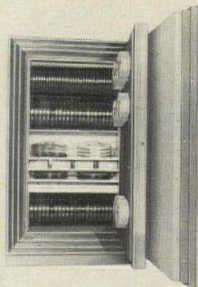
We started with the human body. Comfort first—a unique seat recess, dual-density foam cushioning, and soft, resilient arms. Then solidity and durability from unitized, dual-shell construction. Beauty takes care of itself, in clean, functional lines that won't date when architectural styles change. The Body Chair: an integrated collection of executive, guest, clerical, and secretarial chairs. All in colors and upholsteries to fit any decor. Ask your GF branch or dealer for our new 16-page catalog. Or write to us. GF Business Equipment, Inc., Youngstown, Ohio 44501.



For more data, circle 64 on inquiry card

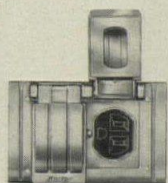
continued from page 165

SINGLE DOOR DATA SAFE / A one-hour data safe has been added to the company's line to meet the demand for a smaller, relatively inexpensive unit. It can be arranged to house disk packs, tapes, microfilm, and other data processing media. The model is designed to protect hyper-sensitive computer media from fire, heat, smoke and magnetism. In UL tests, the *Data-Safe* protected its contents though external temperatures reached 1700 F. ■ Diebold, Inc., Canton, Ohio.



Circle 301 on inquiry card

OUTDOOR COVER / This cover has rigid reinforced construction with weather-resistant seal and gasket, according to the company. It is designed with a four-screw mounting for the company's weather protected boxes or the standard "FS" type box. Three position flip lid can be opened 180 degrees. ■ Slater Electric Inc., Glen Cove, N.Y.



Circle 302 on inquiry card

PERSONNEL LOCKERS / A line of pre-assembled lockers for personnel includes units with either diamond perforated doors for visual inspection or louvered ones where privacy is preferred. All-welded steel, these lockers require no separate bases. Built-in key-lock, combination lock or padlock mechanisms can be specified, and sizes include box lockers to full wardrobe types. ■ List Industries, Inc., Harvey, Ill.



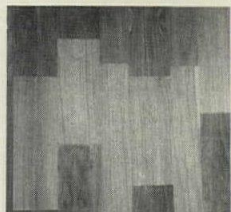
Circle 303 on inquiry card

CARPET STATIC CONTROL / An *Antron III* nylon yarn with built-in static control has been developed by the company who claims that carpets properly constructed with the product will limit static electricity to less than 3.0 kilovolts, as measured by AATCC test procedures. Soil hiding properties and abrasion resistance are characteristics of the product which will allow the full range of dye capabilities. ■ Du Pont Co., New York City.

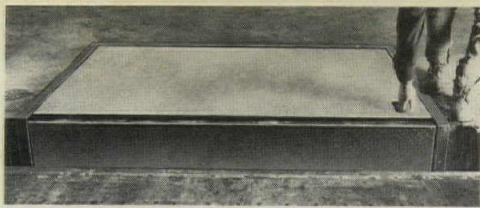


Circle 304 on inquiry card

HARDWOOD PANELING / This collection, in a variety of woods from the Amazon rain forests, includes panels with continuous grain patterns, or mosaics made from random woods. Panels are ¼-in. thick, veneered on both sides and available in standard 4- by 8-ft sheets. They may be ordered in custom sizes also. ■ Peruvian Panels, San Francisco, Cal.

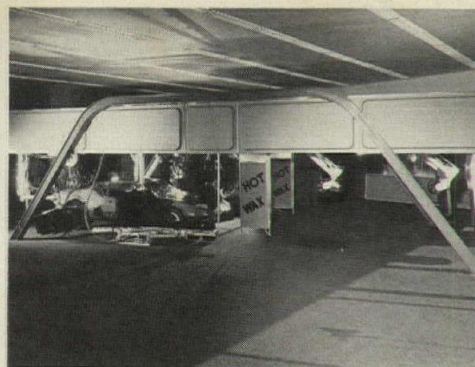


Circle 305 on inquiry card



HINGED LIP RAMP / The company claims that because the product has so few moving parts, it is virtually maintenance free. Continuous welding of the lip hinge tubes is said to assure perfect alignment and prevent hinge binding. The lip extends and locks automatically when the ramp is raised and floats freely with any movement of the truck. It can tilt up to 6 in. from side to side. When the truck pulls away, the ramp lowers by itself and the lip drops behind the protective bumpers. ■ Serco Engineering, Niagara Falls, N.Y.

Circle 306 on inquiry card



CANOPY CAR WASH / The arch is designed to support equipment modules, while retaining a more esthetic, open appearance. ■ Hanna Industries, Portland, Ore.

Circle 307 on inquiry card
more products on page 171

Has a moneyman ever given your project the psffft?

You've designed some outstanding projects which now stand as confirmation of your abilities.

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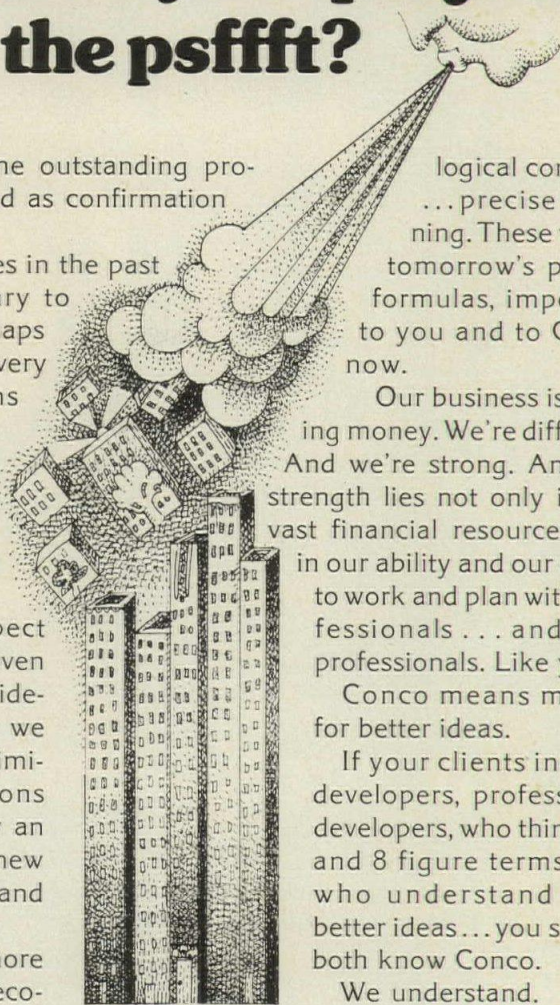
logical concerns... precise planning. These will be tomorrow's proven formulas, important to you and to Conco now.

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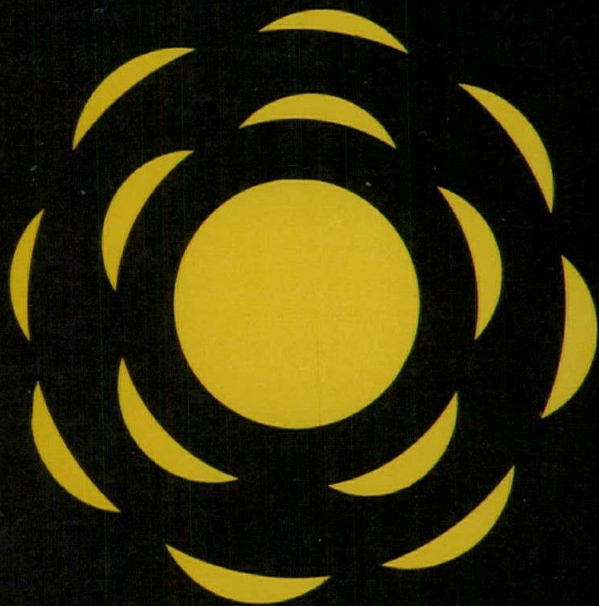
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SOLAR CONTROL
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- Best thermal insulation ("U") of any other light transmitting material to make buildings easier to heat and cool!

"U" factors from .40 all the way down to 0.06 available!!!

- Wider range of natural light transmission to suit the design and the interior function — ideally!

From 3% to 65% transmission available!!!

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San Francisco-Atlanta	\$31.50
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New York-Tampa	\$26.25

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For more data, circle 67 on inquiry card

PRODUCT REPORTS

continued from page 169

SPRAYED CONCRETE / The equipment, according to the company, transports and applies at high production rates, quality, ready-mixed structural concrete to one-sided vertical and overhead forms. The machine can handle 1-in. slump concrete and eliminates the need for two-sided forms. The company uses standard ready-mix plants. A broad array of color and surface treatments is claimed for this economical method. ■ Conspray, Santa Ana, Cal.



Circle 308 on inquiry card

EXECUTIVE SEATING / Generously proportioned chairs are available in two sizes, in leather gathered at the seams to allow the material to conform under pressure without stretching. Both chairs are adjustable for seat height and include a swivel-tilt mechanism. The base



comes in chrome, bronze or laminated oak, and fabrics are offered in addition to leather. ■ Harter Corp., Sturgis, Mich.

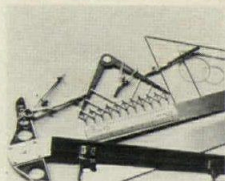
Circle 309 on inquiry card

GIANT PLASTIC GRATING / Measuring 5 by 10 ft by 1½ in. thick with a 1½ in. square mesh, this is the largest fiberglass reinforced plastic grating offered for corrosion-resistant structural assemblies, according to the company. With proper support, it spans up to 5 ft with loading up to 150 lbs per sq ft, with deflection of less than ⅜ in. The panels weigh approximately 180 lbs and are resistant to 72 kinds of corrosive salts, acids and other chemicals. ■ Fibergate Corp., Dallas, Tex.



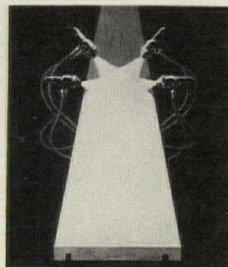
Circle 310 on inquiry card

STAINLESS STEEL DRAFTING TOOLS / T-squares, rules, scales, triangles, etc. are offered in a full line of stainless steel instruments. T-squares have heads fixed at 5 points for permanent accuracy, and triangles are made of either stainless steel or clear acrylic with opaque edges. Other instruments feature custom design. ■ Theo. Alteneder & Sons, Philadelphia, Pa.



Circle 311 on inquiry card

FACTORY-FINISHED LUMBER / A wide selection of factory-primed or stained lumber products is available from the company, including decking, trim, fascia, paneling and siding. Finish choice includes acrylic latex primer or any of 21 shades of indoor-outdoor acrylic stain. ■ Potlatch Corp., Spokane, Wash.

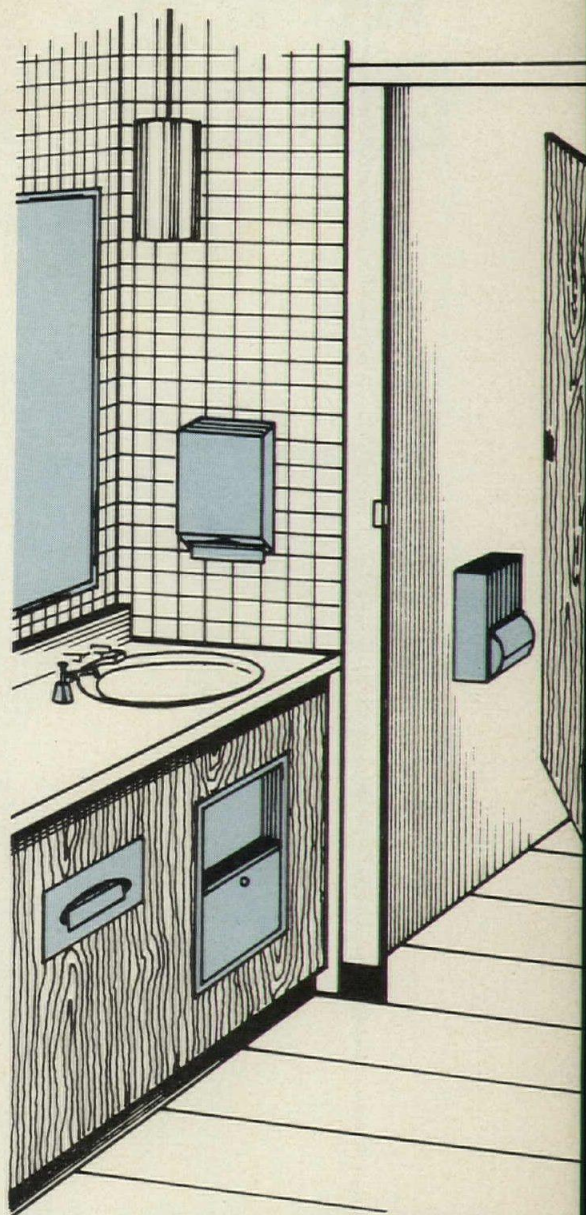


Circle 312 on inquiry card

more products on page 225

For more data, circle 68 on inquiry card

THE PARKER FAMILY...



FOR THE MODERN WASHROOM.

The convenience and beauty of the modern washroom starts with the Parker Family of fine washroom equipment and accessories. It's a large family, engineered and designed for a functional, easy to maintain washroom, lavatory or comfort station.

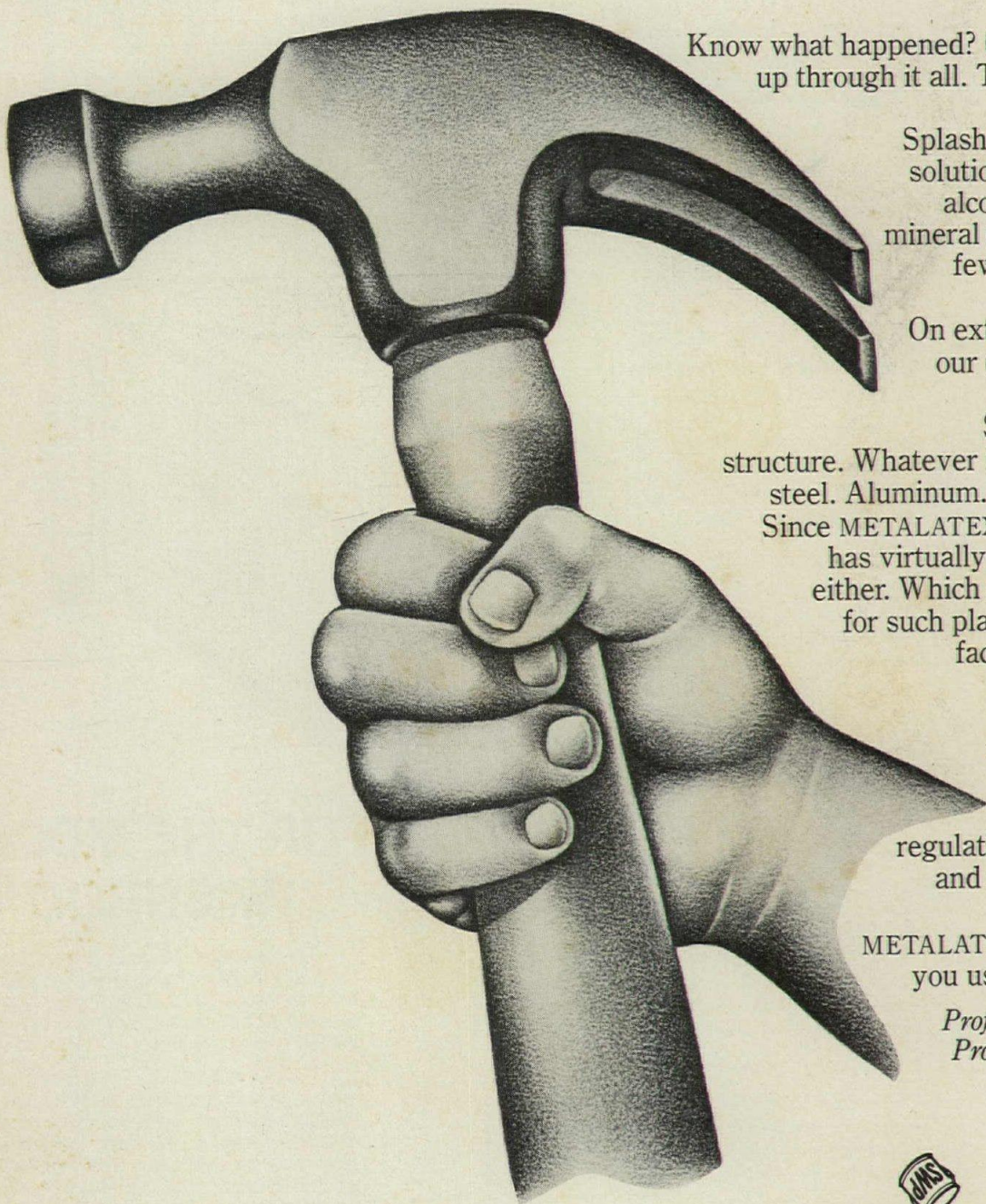
There's a member of the Parker Family to specialize in service for every requirement. As in the typical office or restaurant washroom illustrated above, there are family members to dispense paper towels, facial tissues, liquid or lather soap and toilet tissue. There are family members which store used towels and tissues to help keep your washroom sanitary. The added convenience of mirrors is provided by another Parker Family member, and you'll really appreciate the long life our family is so proud of and the way each member cleans with ease.

SEE OUR FAMILY ALBUM IN SWEET'S ARCHITECTURAL FILE 10.16/Pa.

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Semi-Gloss for your next structure. Whatever it is. Masonry. Structural steel. Aluminum. Wood. Inside or outside. Since METALATEX is a water-base paint, it has virtually no odor. No lead hazard, either. Which means it's safe to specify for such places as schools, hospitals, factories, offices and hi-rise apartments.

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METALATEX Semi-Gloss. However you use it, it'll make you shine.


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HELPS YOU DO IT ALL.**



For more data, circle 69 on inquiry card

For more data, circle 70 on inquiry card



PPG Glass reveals
the beauty of the
catenary curve.



Wool looks and feels like wool

so does Acrilan[®] only better.

acrylic

When someone says, wool is soft, bright, rich and colorful, why not go one better... Acrilan Plus. / It's softer, brighter, richer and more colorful. / Better yet, look at our Acrilan Custom Carpets and see why we can say "Acrilan Plus is better."

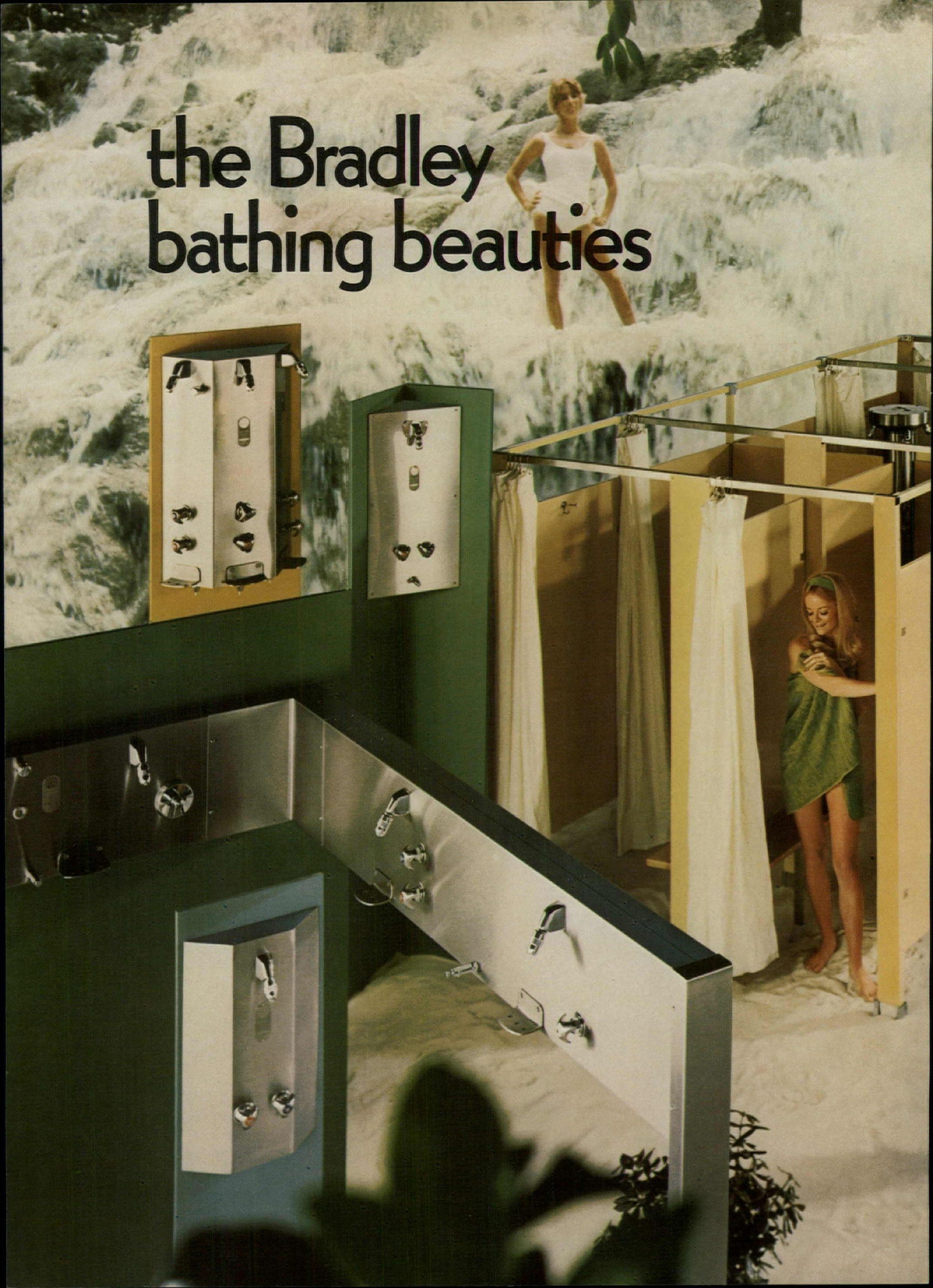
For more about "Better than wool" write, Custom Carpet Division/Monsanto/1114 Ave. of the Americas/New York, N.Y. 10036



For more data, circle 71 on inquiry card

◆ For more data, circle 70 on inquiry card

the Bradley bathing beauties





Column showers that serve up to 6 people with one set of plumbing connections. Multi-Stall units for privacy at low cost. Modesty-Module® showers with dressing rooms. Econo-Wall, Panelon® and single person wall and corner showers. Bradley offers you the widest choice of models for maximum flexibility. Bradley showers cut installation costs and time. Save space and money after installation because they serve more people in less space than ordinary showers. Vandal-proof and built for years of rough use.

Bradley showers . . . they're beauties when it comes to serving crowds of people the fast and easy way.

See your Bradley washroom systems specialist. And write for latest literature. Bradley Corporation, 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

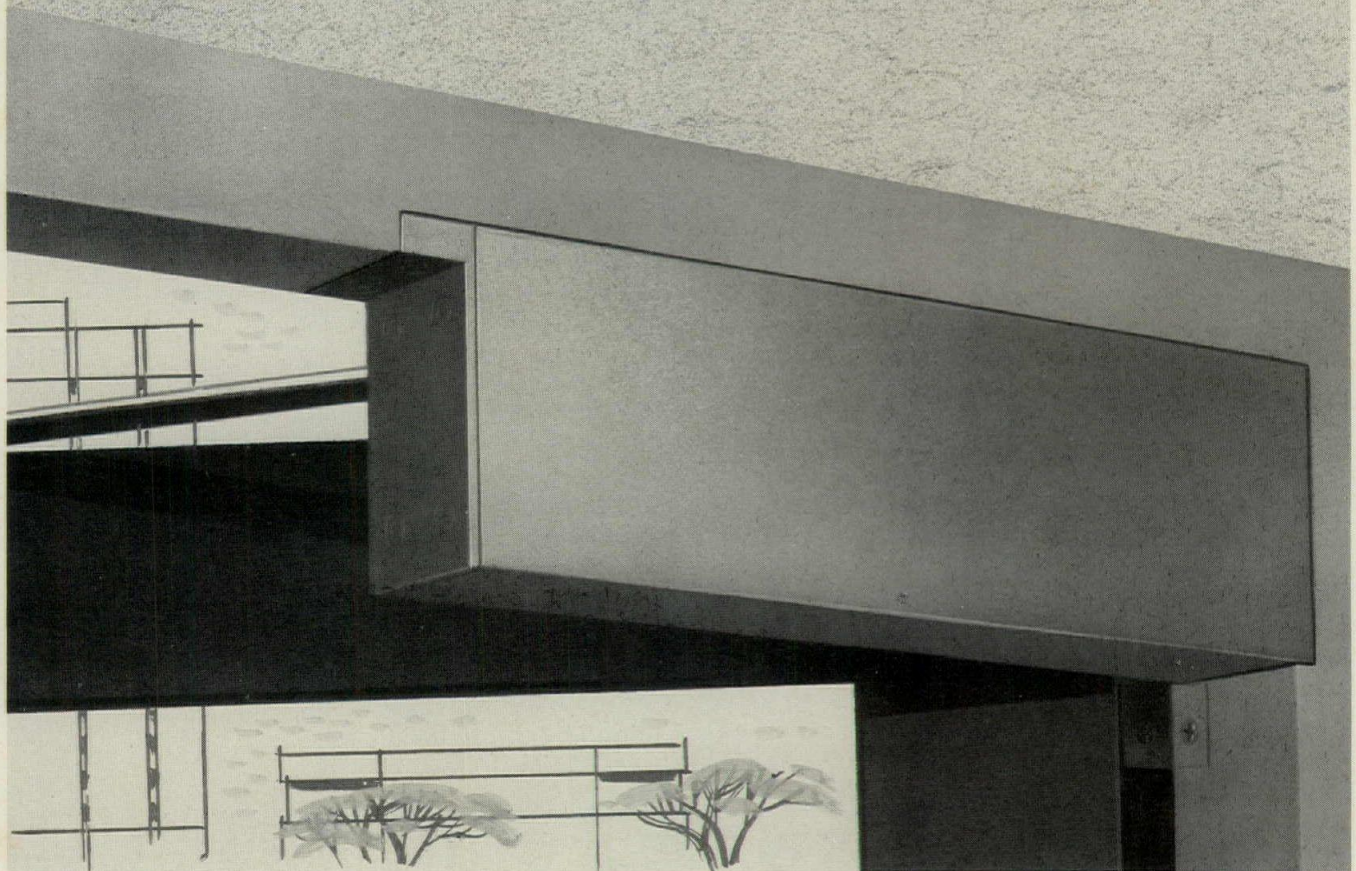
more bright
ideas from
Bradley



Leader in Washroom Fixtures and Accessories.

For more data, circle 72 on inquiry card

If you have a door-control problem
that can be solved...chances are there's
a Norton® door closer that'll solve it.



For corner applications there's the New **Norton 7750** Corner Closer!

When the door's closed, you can hardly tell it's there . . . when it's open, there's only an unobtrusive silhouette in the frame. Silhouette! Yes . . . but an attractive metal accent that can be finished to match its surroundings.

But that's only on the surface. Inside, the new Norton 7750 is a rugged, sophisticated closer. Actually, it incorporates many of the features of the 7700 closer. It has separate controls for both sweep and latch

speeds, an adjusting valve that lets you increase or decrease the amount of backcheck that starts when the door is opened to 70 degrees. And, of course, you get the reliability of an aluminum-alloy shell. You also get the rack-and-pinion mechanism to provide smooth, positive closing.

This new closer is standard with a 25" hold-open channel. You specify hand, degree of opening (110° max.) and whether butt or offset-pivot hung. Naturally, it's available in all popular finishes.

Who knows more about door control problems and their solutions than the people who build Norton closers. Our technology is focused on one single expertise . . . designing and producing door controls. The new Norton 7750 corner closer is just one of many that help you solve your problems. For complete details ask your Norton Representative. Or contact Eaton Corporation, Lock and Hardware Division, Norton Marketing Department, Box 25288, Charlotte, N. C. 28212.

1205

EAT•N Security Products
& Systems



The Mansards, Griffith, Indiana

"The whole idea of "The Mansards" is to provide gracious living accommodations in a natural setting of trees and water. The convenience of city living is combined with the graciousness of country living here. We have put top quality into "The Mansards" and that extends to our coin-operated laundry equipment. We chose Speed Queen for one simple over-riding reason—it's the best we could get."

Duane J. Hicks, Jr., General Manager

Lake Point Tower, Chicago, Illinois

"Lake Point Tower represents a new kind of urban life—a completely self-contained city at the edge of Lake Michigan. We appeal to individuals and families of middle and upper income. They expect and get the best at Lake Point Tower. That's why we chose Speed Queen equipment for our laundry facility. Speed Queen represents quality which will be on the job—not out of order. And I understand the Stainless Steel feature is a real plus when laundering durable press fabrics."

Robert E. DeCelles, Building Manager

"We chose Speed Queen laundry equipment for one simple reason—it's the best we could get."

Let SPEED QUEEN and your SPEED QUEEN COMMERCIAL ROUTE OPERATOR help you plan coin-operated laundry facilities



SPEED QUEEN®

Ripon, Wisconsin 54971



a McGraw-Edison Company Division

For more data, circle 74 on inquiry card

FORM NO. 5541C

Mr. E. W. Jess,
Manager, Commercial Department
Speed Queen, Ripon, Wisconsin 54971

AR-1

Gene, please forward your laundry room design brochure.

- Please send me name of the Speed Queen Route Operator nearest me.
- I would like a Speed Queen representative to call.

Name and title _____

Firm name _____

Address _____

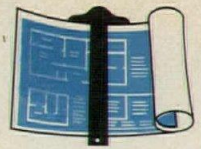
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CHATEAU II™ Walnut



Georgia-Pacific makes things happen!



aneling: Rustic. Elegant.



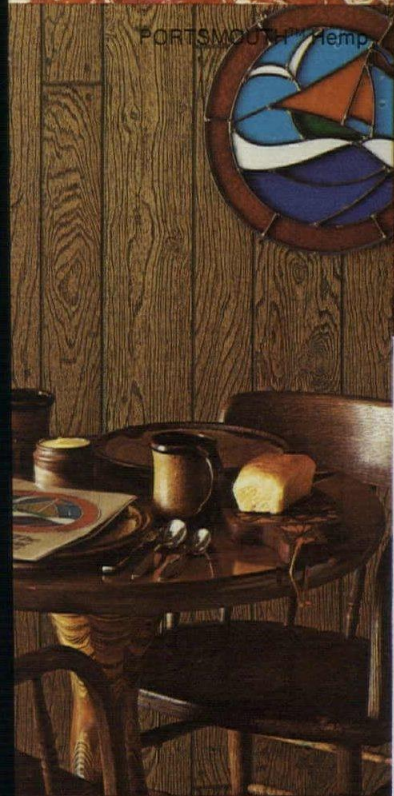
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RENAISSANCE™ Tuscany



PINEHILL™ Spring Frost



PORTSMOUTH™ Hemp

We've got the looks you need to please the toughest client.

Paneling has a warmth and charm and creates an atmosphere you can't get with any other wall covering. And G-P has a plywood paneling to suit your design needs and your client's budget. Georgia-Pacific's new Chateau II™ paneling, for example. It's real hardwood face veneer and has an extra layer of Acryglas® finish. And, more than ever, the look of solid wood planking—at a fraction of the cost. G-P's Renaissance® and Pinehill™ plywood paneling, also with real hardwood face veneer, have a look right out of the past. For a nautical feel, there's Portsmouth™ paneling with a simulated woodgrain finish. Or for a look that's bright and cheerful, G-P's new, inexpensive Piccadilly™ paneling. But this is just a sampling of the looks you can get with G-P paneling. For the complete story, look in the G-P Catalog in your Sweet's File. Or, call your G-P representative.

Georgia-Pacific



The Growth Company

Portland, Oregon 97204

For more data, circle 75 on inquiry card



JUTE'S stick-to-itiveness makes carpet glue-down work like nothing else

Compare all attached no-pad carpet backings offered for glue-down. Check their ability to absorb adhesive, for tight and lasting floor seal. Unlike synthetics, adhesive won't slide off jute and loosen the carpet. It goes deep into the open mesh and fibrous pores, providing secure bond to any subfloor or old hard surface flooring.

You know glue-down's many "bonuses." Lower initial cost, protection for seams, easy mobility for casters and wheels, and many more. To capitalize on them fully, remember jute's additional benefits, listed below.

- Jute is over twice as thick as other no-pad backings. Cracks in old flooring aren't felt underfoot or outlined in the pile. Seam edge sealing area is doubled.
- Unmatched dimensional stability, vital for floor cut-outs.
- Carpet comes up cleanly, intact for re-installation.
- When carpet is rolled out, some floor adhesive penetrates the jute mesh to the primary backing, for greater tuft bind and protection against delamination.

- Helps carpets otherwise qualified meet fire safety codes.
- Same carpet can be used for standard installation over underlayment in executive areas. Only jute among glue-down backings can be hooked safely over tackless gripper pins.

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SPECIFICATION AND CASE HISTORIES**

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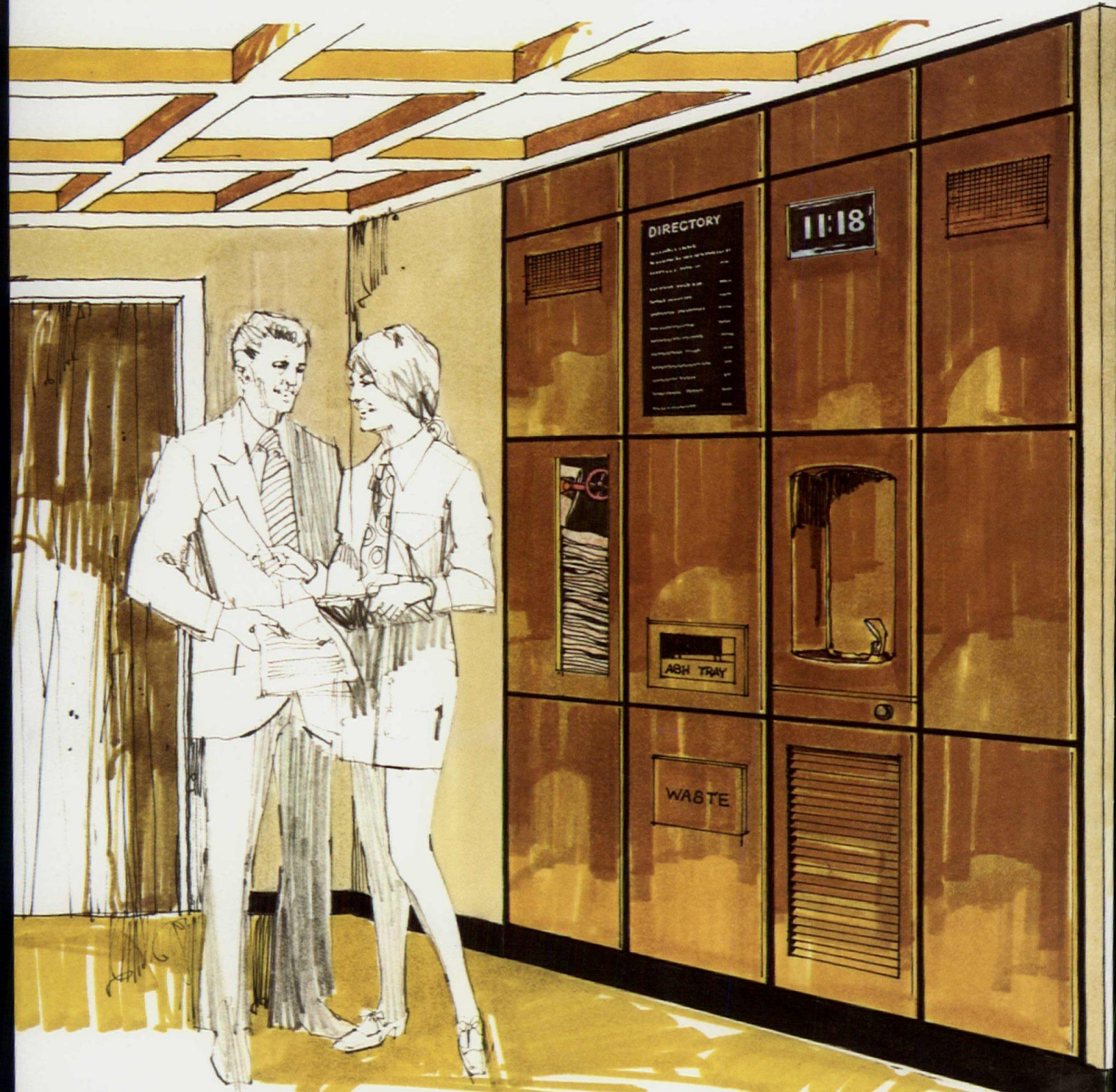
JUTE CARPET BACKING COUNCIL, INC. American Industries, Inc. • Bemis Co., Inc. • BMT Commodity Corp. • C. G. Trading Corp. • Cosmic International, Inc. • Delca International Corp. • Dennard & Pritchard Co., Ltd. • A. de Swaan, Inc. • Robert F. Fitzpatrick & Co. • Gillespie & Co. of N. Y., Inc. • Guthrie Industries, Inc. • Hanson & Orth, Inc. • O. G. Innes Corp. • Jute Industries Div., Sidlaw Industries Ltd. • Lou Meltzer Co. • William E. Peck & Co. of N. Y., Inc.

Since you'll have building service facilities on every floor...



and a blank wall...

Integrate them with the Halsey Taylor Modular Service Wall System.



Service modules available:

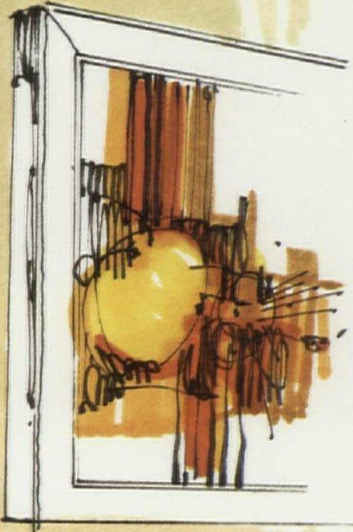
Water cooling unit and grille (Model MCP-9)
Drinking fountains (Model 8880M)
Wheelchair Fountain (Model 6800 WCM)
Digital clock (Model MPC-D)
Indicating clock (Model MPC-1)
Ash tray (Model MPAT-14)
Waste receptacle (Model MWR-18)
Building directory board (Model MDB-18)
Emergency telephone (Model MET-18)
Speaker panel (Model MPS-18)

Air return (Model MRG-18)
Cup dispenser (Model MCD-18)
Fire hose cabinet (Model MHC-18)
Fire extinguisher cabinet (Model MEC-18)
Ornamental panels (Model MP-18)

Additional suggestions:

Patrol stations
Telephone switching stations
Electrical panels

Electrical outlets
Mail chute
Fire pull
Fire alarm buzzers and gongs
First aid cabinets
Elevator call buttons
Elevator control panels



This modular wall system centralizes architectural, mechanical and electrical service facilities in symmetrical groupings at any convenient location. What's more, the new modular wall system conserves space, reduces the number of isolated wall cut-outs normally required and makes the location of critical building services (fire equipment, emergency phones, etc.) easy to remember.

Design latitude

Virtually any number of building services may be incorporated in a single station. Panel placement is at the discretion of the architect. Stations may range in height from floor to ceiling or to the height of a single module (18" x 31 1/4"). Width is limited only by the amount of wall space available.

A choice of panel materials and colors gives even broader scope to design planning. In addition to the PATINA bronze-tone stainless shown in this installation, the architect has the options of satin finish stainless steel or any of eight Polychrome enamel colors.

Each panel snaps on its own separate frame. Additionally, the frames fasten together quickly and



simply. There are no exposed fasteners in the system.

The cost of the finished modular wall system is no greater than the cost and installation of individual components in the conventional manner.

Panels—functional and decorative

Halsey Taylor manufactures the modular system framing, wall boxes, non-functional and functional panels. Functional panels include hinged doors for such services as fire control equipment, waste receptacles, building directory boards and first aid cabinets. Door cut-outs are windowed or screened where applicable. Other functional panels are designed to accept clocks, ash trays, fire pulls, loud-speaker grilles, etc.

The Halsey Taylor fountain used with this system is deep drawn from a single sheet of 18 gauge type 304 satin finished stainless steel. It can be used with an individual nine gallon per hour cooling unit or supplied by a central chilling unit.

One more thing. You can rest assured that the same meticulous care that goes into the design and construction of Halsey Taylor water coolers, also goes into our Modular Service Wall Systems.

Halsey Taylor[®]
KING-SEELEY **KS** THERMOS CO.

Modular Service Wall System

Suggested Specification

General Information

The modular service wall system should be specified in Division 10 with references to provide for work falling under the jurisdiction of other trades for completion of the installation. Each modular component should be itemized separately with reference to catalog or part numbers, function and material or items to be furnished by others.

General Specification

The modular service wall system shall be as manufactured by Halsey Taylor Division and as described in the drawings. Installation by the contractor in a true and plumb manner shall be per the instructions of the manufacturer.

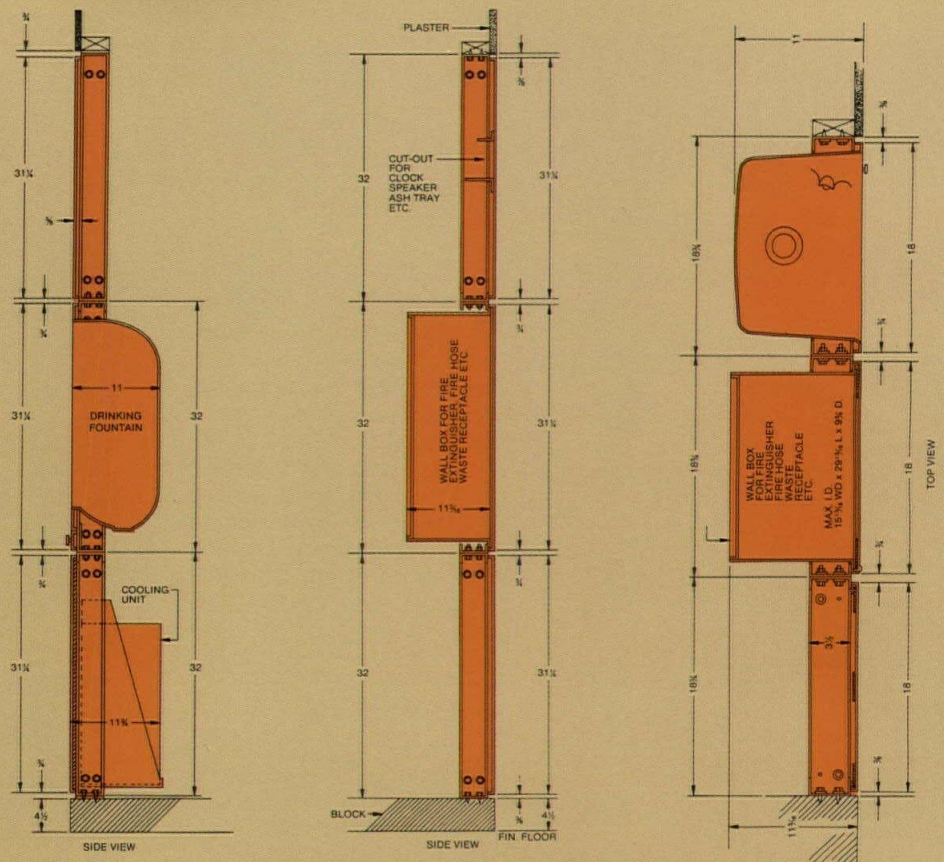
All components except as otherwise stated shall include a factory supplied, matte black, 32" L x 18 3/4" W x 3 1/2" D, 20 gauge cold rolled bonderized steel channel member frame. A 3/4" proud reveal is formed by joining two frames. (Optional: 17 mil, 1" wide matte black, self-adhesive finish strip.) Module face dimensions shall be 31 1/4" L x 18" W x 5/8" D. Panels shall attach to frames by non-visible snap fasteners. Doors shall be attached by flush ear type pin hinges and side-recessed door pulls. Where noted, component shall include a 9 3/4" deep, 20 gauge matte black cold rolled steel box secured to frame with tubular fasteners.

DRINKING FOUNTAIN shall be Halsey Taylor Model 8880 M, fully recessed, Type 304, one piece stainless steel receptor with rounded corners and edges and minimum opening of 16" wide x 24" high, removable panel for access to separate automatic stream regulator valve, push button valve through apron, two-stream mound-building projector with integral hood guard and nonremovable anti-squirt device, positive shut-off service valve, 1 1/2" o.d. tail-piece furnished.

COOLING UNIT, CRADLE & GRILLE Cooling unit assembly shall be Halsey Taylor Model MCP9, consisting of a remote package type water cooling unit capable of delivering 9 gph at standard routing conditions of 90° ambient, 80° inlet water and 50° outlet drinking water, copper storage tank with refrigerant and water coils bonded to tank and hot tin dipped, 1/4 HP motor compressor hermetically sealed, with start capacitor, built in overload protection, 115 V, 60 cycle, 1 phase. Vane type grille shall contain minimum of 20 vanes per foot.

WHEEL CHAIR FOUNTAIN shall be Halsey Taylor Model No. 6800-WC, 18 gauge, Type 304, stainless steel with integral wall hanger bracket, 3/8" radius rounded edges and corners, self-closing lever handle stop, screw adjusting automatic stream regulator valve, two-stream mound building projector with integral hood guard and nonremovable anti-squirt device, removable strainer plate, cast "P" trap with cleanout, shut-off service stop with insulated union flare connection line to projector and removable stainless steel cover plate on bottom of receptor. Fountain to be shipped fully assembled.

FIRE HOSE CABINET shall be Halsey Taylor Model MHC-18 containing a box punched and slotted to accept fire equipment as specified (to be furnished by others). Door shall be hinged and secured by a closure. Door shall contain a 6" wide, 29 3/8" high, 1/4" thick tempered plate glass window (specify clear or bronzetone glass)



or optional full glass window, or door shall be marked as specified in accordance with local codes.

Optional—Model MCH-37 double width fire hose cabinet shall have 32" L x 37 1/2" W x 3 1/2" D frame with box as above and 31 1/4" L x 36 3/4" W x 5/8" D door including glass or marked as above.

FIRE EXTINGUISHER CABINET shall be Halsey Taylor Model MEC-18 containing a box and door to be hinged (specify left or right), equipped with (specify magnetic or cylinder lock) closure and with a 6" W x 29 3/8" H x 1/4" thick tempered plate glass window (specify clear or bronzetone glass) or optional full glass window. Extinguisher to be supplied by others.

PANEL & DIGITAL CLOCK Electric digital clock shall be Halsey Taylor Model MPC-D, 10" L x 4 1/2" H semi-recessed with 2" high matte black flipper style numerals and mounted in a plain panel attached with nonvisible fasteners.

Optional—a plain panel shall have a cutout (state size) to accept (brand name and model number) digital clock supplied by others.

INDICATOR CLOCK Panel and electric indicator clock shall be Halsey Taylor Model MPC-I with a 10 1/2" x 10 1/2" square semi-recessed electric clock mounted in panel. Clock shall have matte black frame and face with white numerals and hands.

Optional—Plain panel shall have a (state size) cutout to accept (state brand name and model number) clock furnished by others.

ASH TRAY Fully recessed ash tray shall be Halsey Taylor Model MPAT-14, mounted in a panel and enclosed in a box. Ash tray shall be 9" H x 12" W x 4" D.

WASTE RECEPTACLE CABINET shall be Halsey Taylor Model MWR-18 containing 1.7 cu. ft. capacity waste container within a box. Door shall be hinged for access (specify left or right), include a (specify magnetic or cylinder lock) closure, and a spring-loaded piano hinged 8" x 12" waste door imprinted "Waste."

DIRECTORY BOARD shall be Halsey Taylor Model MDB-18, changeable letter type mounted in a 1 1/2" deep box. Door shall be hinged (specify left or right) with a (specify magnetic or cylinder lock) closure and full glass in door.

Optional—Model MDB-37 double width directory board cabinet shall have 32" L x 37 1/2" W x 3 1/2" D frame with 1 1/2" deep box.

PANELS FOR MISCELLANEOUS ACCESSORIES Blank panel shall have a (state size) cutout to accept (state brand name and model number).

This paragraph may be used to specify such items as fire alarm pulls, electrical outlets, emergency telephones, cup dispensers, patrol stations, mail chutes, first aid cabinets, elevator call buttons, thermostats, public address speakers, fire alarm gongs, bells or horns, breaker panels, etc. Please select items to be used and then contact factory or representatives as listed on back page of catalog in Section 15 for exact specifications.

SPACER OR FILLER PANELS Ornamental panels shall be Halsey Taylor Model MP-18 attached to frames and with non-visible fasteners.

MISCELLANEOUS LENGTH PANELS Miscellaneous ornamental panels 18" wide x (state height) shall be mounted by the contractor on plywood sheet (without frame) with non-visible fasteners.

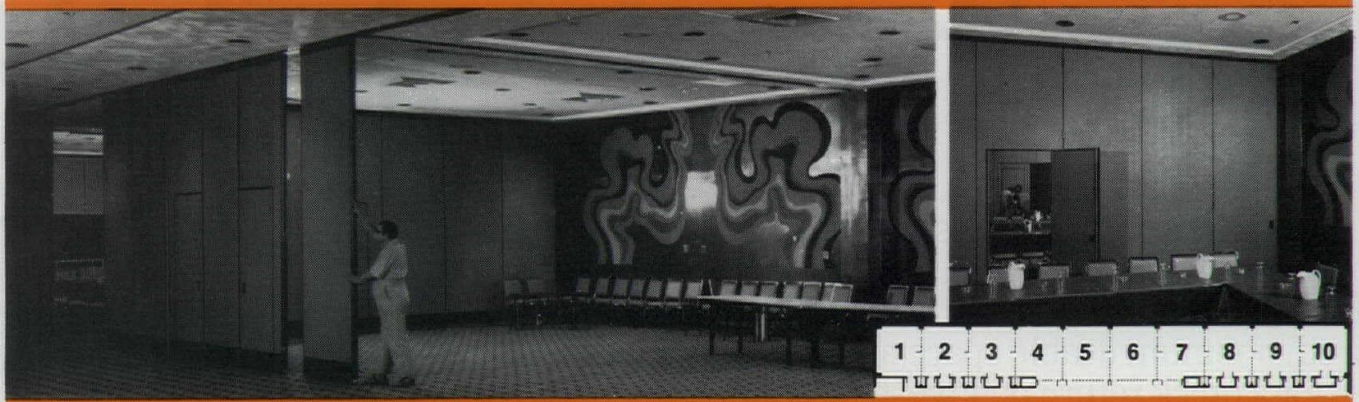
AIR RETURN GRILLE Vane type air return grille shall be Halsey Taylor Model No. MRG-18 containing a minimum of 20 vanes per foot and attached with non-visible fasteners to a frame and box (supply and connection of ducts by others).

Halsey Taylor
KING-SEELEY THERMOS CO.

NEW McCORMICK INN profits from easy room division with



OPERABLE WALLS



R-W Operable Walls divide large room into 10 meeting/banquet rooms or combination of reception area plus rooms (shown in main photo).

Chicago's newest showcase hotel, McCormick Inn, can quickly divide four large rooms into as many as 20 separate rooms with "Quiet Quality" Richards-Wilcox Operable Walls.

According to James Freeman, Convention Services Manager of the spacious hotel located adjacent to McCormick Place convention center, R-W Operable Walls were selected for

three main reasons: **1.** Extremely high quality hardware which makes one-man operation of the walls fast and easy. **2.** Ability to enhance the rich decor of the Inn. The R-W Operable Walls are covered with bright vinyls as well as thick carpeting in a variety of hues. **3.** The expert engineering assistance provided by Richards-Wilcox to assure the optimum layout for maximum profitability.

Architect: A. Epstein & Sons, Inc.

Contractor: Brighton Construction Co.



FREE BROCHURE



Richards-Wilcox

MANUFACTURING COMPANY

116 Third Street, Aurora, Illinois 60507
Phone: (312) 897-6951

One of the White Consolidated Industries



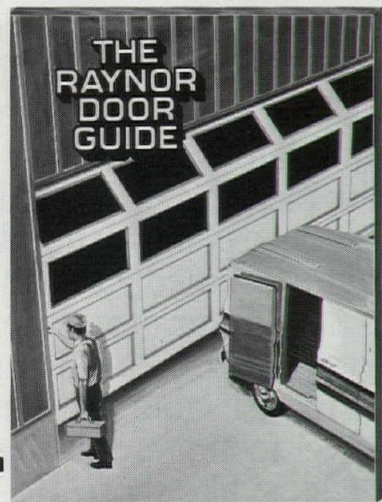
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Genoa, Illinois 60135

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All the facts you should know about garage doors can be found in this complete Raynor reference guide. Garage door styles, materials, mountings, applications, specifications (including handy door and track selection guides),... **PLUS** information on Raynor's new deep-ribbed, good-looking 'Security Line' steel doors. See why Raynor builds better doors.

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This steel-frame parking 7 months...at only \$5.97 a

The steel design for this self-park, open-deck garage in Greensburg, Pa., just had to be a contract winner. It had so much going for it: low construction cost, no fire protection required, optimum usable space and fast construction time — for a quick return on invested capital.

No wonder. The garage uses the increasingly popular exposed steel-frame, long-span design concept, with USS EX-TEN Structural Steel. The floors are steel reinforced concrete poured on metal decking.

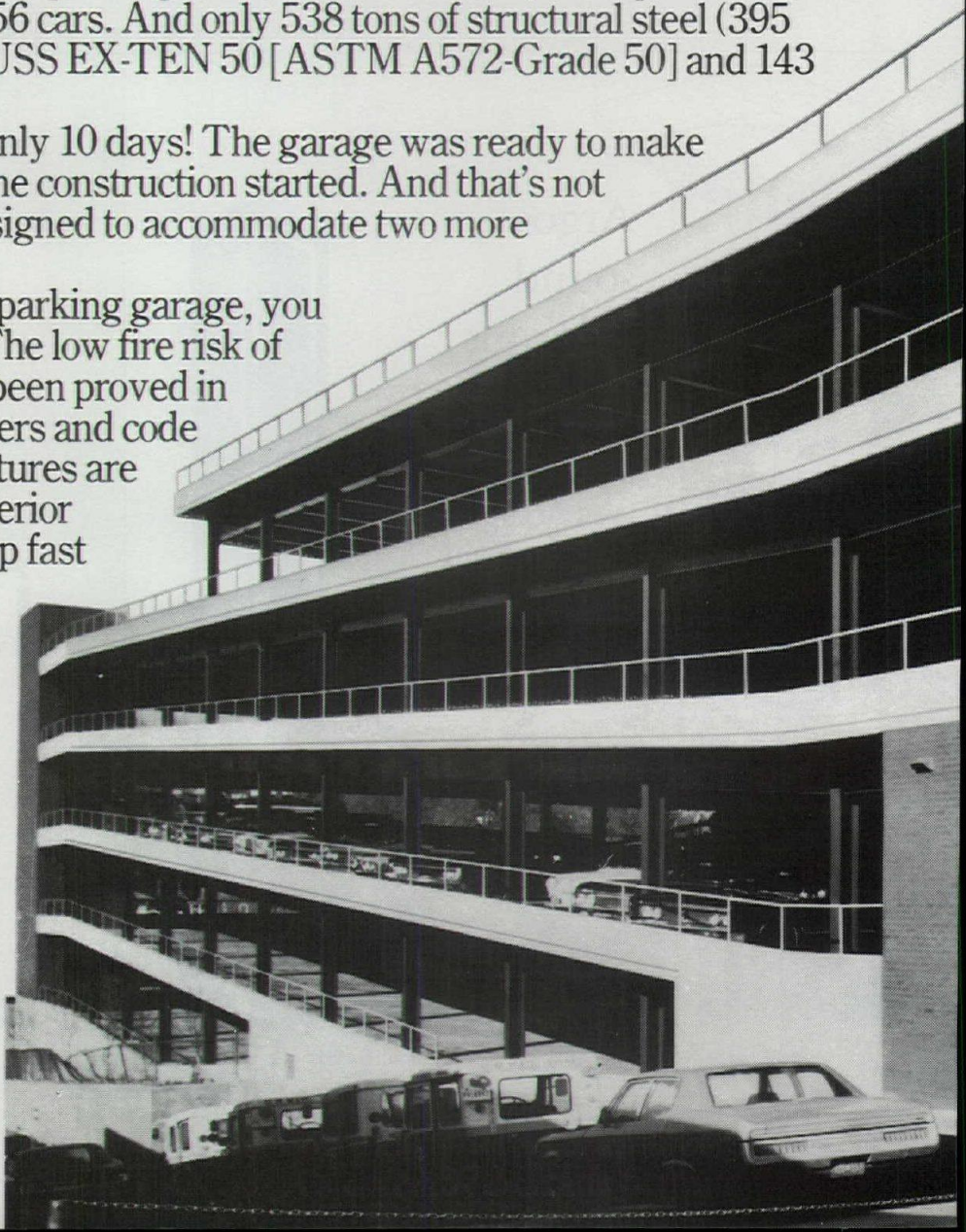
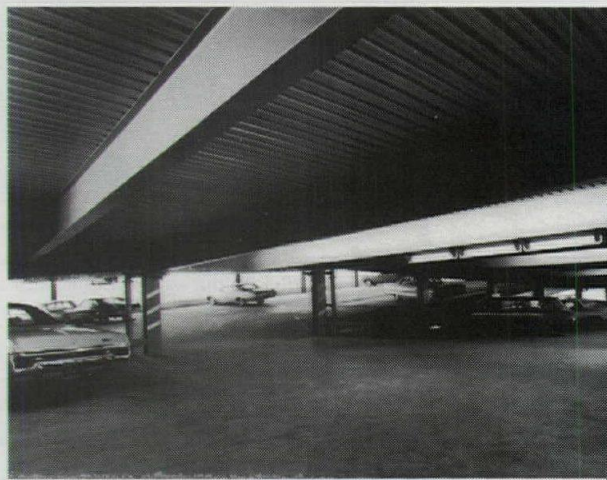
Project budget was based on low "design/construct" bid. The winning design beat five others, including four pre-cast schemes. Actual cost: only \$5.97 a square foot!

The garage was a tremendous bargain. Parking ramps are 55 feet wide, so full-size cars can be parked at 60° angles. There's a two-way access lane. Columns are few and far-between and there are *no* columns in the parking area! Gross area: 153,000 square feet, in five tiers. That adds up to space for 456 cars. And only 538 tons of structural steel (395 tons of high-strength, weight-saving USS EX-TEN 50 [ASTM A572-Grade 50] and 143 tons of ASTM A36).

Erection of structural steel took only 10 days! The garage was ready to make money just seven months from the time construction started. And that's not the end of it. The garage has been designed to accommodate two more tiers at a later date.

If you're planning or designing a parking garage, you should keep these points in mind: 1. The low fire risk of open-deck, steel-framed garages has been proved in actual tests. And insurance underwriters and code officials recognize this. 2. These structures are lighter, with more usable space, no interior columns, fewer footings. 3. They go up fast because of factors like shop fabrication, modular sub-assemblies and field bolting.

Owner: Greensburg Parking Authority, Greensburg, Pa. *Architect:* Thomas G. Donald, South Greensburg, Pa. *General Contractor:* L-D Building Company, Latrobe, Pa. *Fabricator:* Moore Metal Manufacturing Company, Greensburg, Pa. *Erector:* Penn Erection and Rigging Company, Turtle Creek, Pa.



garage went up in just square foot!

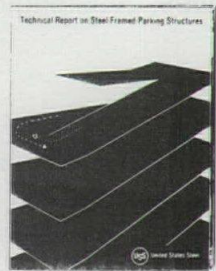
When you're ready, United States Steel is ready—to help you design a long-span, open-deck garage. And to supply the steel.

For openers, we have two free brochures. The "USS Structural Report," which contains all the details of the Greensburg garage. And our 54-page "Technical Report on Steel-Framed Parking Structures" (shown at right).

To get them, contact a USS Construction Marketing Representative through your nearest USS Sales Office.

Or write U.S. Steel, Dept. C164,
Box 86, Pittsburgh, Pa. 15230.

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United States Steel



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- Organizing for a productive, professional business development program
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- Planning for change, expansion and professional growth
- Evaluating existing and potential markets
- Using business development tools—from job histories to preparation of Standard Form 251
- Specialized intelligence gathering and investigation of leads
- Effective selling preparations—what to do before, during and after the interview
- Successful strategies for getting the job
- Political action
- Associations and joint ventures

"Up to now, the design professional traditionally has had to learn selling techniques essentially by experience, through trial and error, and with no real standards against which to measure the degree of his successes and failures."

from HOW TO MARKET PROFESSIONAL DESIGN SERVICES
a McGraw-Hill book by Gerre L. Jones

These workshops are *not* for the design professional who believes that his client acquisition activities have reached a stage of perfection—or for the firm that, for whatever reasons, is satisfied that it has more clients and contracts than it can comfortably handle over the next 3 to 6 years.

Nor are the workshops geared to firms whose principals are convinced they have achieved the ultimate in

- organization and staff participation in business development
- practice and client mix
- productive, customized, *selling* presentations
- public relations
- all of the tools of job search and acquisition

If you have never attended a professional workshop or seminar on business development, be assured that ARCHITECTURAL RECORD and Building Industry Development Services have assembled the faculty from among the most experienced, knowledgeable people in the field. Discussion leaders will include successful, sales oriented directors of business development from small-to-large firms and client representatives of both public and private sectors. For the first time, participants in ARCHITECTURAL RECORD's Professional Marketing Workshops[®] will have the opportunity to hear it like it is—from both sides of the marketing fence.

Senior coordinator for the workshops is Gerre L. Jones, executive vice president of Building Industry Development Services, and author of the authoritative McGraw-Hill book, HOW TO MARKET PROFESSIONAL DESIGN SERVICES.

Each participant will receive a set of invaluable course materials for his continuing use. The specially produced course handbook contains ideas, suggestions and sample materials available from no other source.

A unique periodic follow-up program to the workshops assures every participant of continuing interest and advice for up to six months beyond the concentrated two-day workshop session itself.

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Please send complete information on ARCHITECTURAL RECORD's Professional Marketing Workshops[®] scheduled during 1974, with program outline, costs, dates, locations and other details.

NAME _____ TITLE _____

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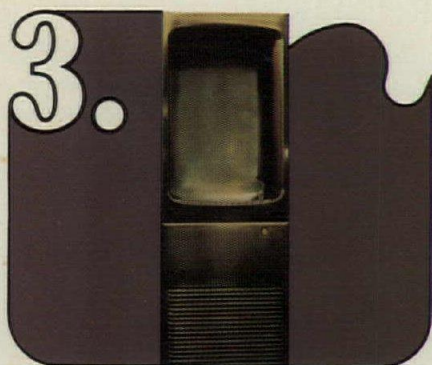
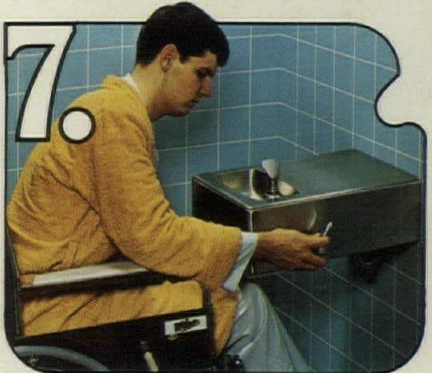
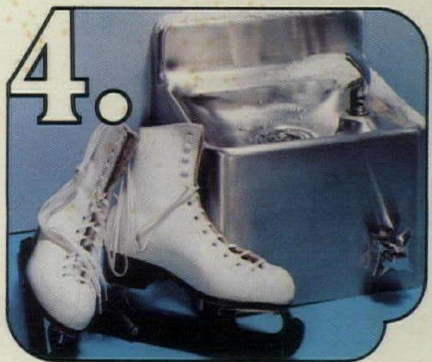
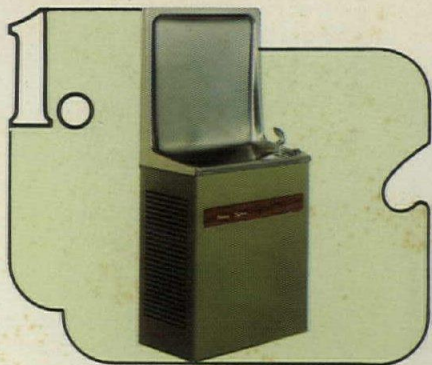
DESIGNER OTHER

1974 SCHEDULE

1974 Professional Marketing Workshops[®] are planned for the following cities:

February	21-22	Washington, D.C.
March	14-15	Atlanta, Georgia
April	17-18	Boston, Massachusetts
May	2- 3	Denver, Colorado
June	6- 7	Chicago, Illinois
September	5- 6	Newark, New Jersey
October	7- 8	Tulsa, Oklahoma
November	4- 5	Houston, Texas
December	5- 6	Phoenix, Arizona

Dates and locations of workshops in other areas for 1975-1976 will be announced.



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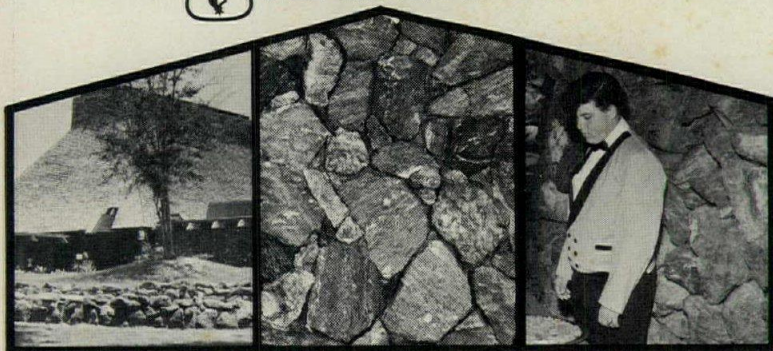
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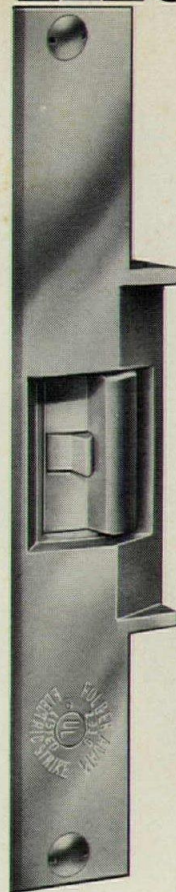
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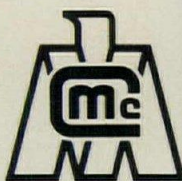


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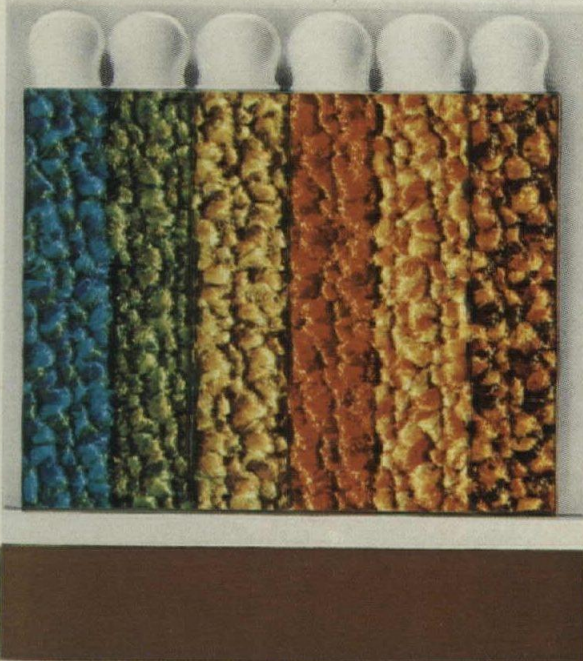
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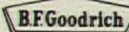


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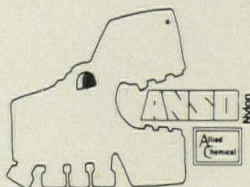


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To learn more about C-E Polarpane "20," see the C-E catalog in Sweets: 8.26/CE. For additional information, contact our local representative or write C-E Glass, 825 Hylton Road, Pennsauken, N.J. 08110, (609) 662-0400.



Architect: J. Victor Bagnardi, Ithaca, N.Y.
Glazing Contractor: Hires-Turner Glass Co., Elmira, N.Y.

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Energy Crisis?

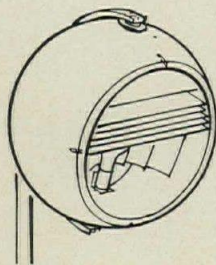
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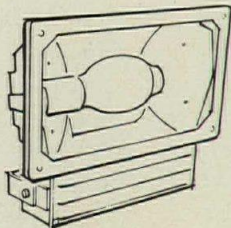
necessary illumination, people are starting to listen. They're discovering that the things we've said all along, like "Infranor provides better, more even illumination from fewer fixtures" and "Infranor floodlights cut KW requirements," are true.

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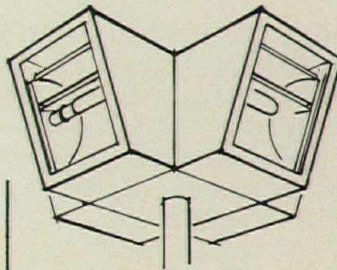
Series 75

Need a sphere to compliment architectural styling? The Series 75 with pre-wired integral ballast for 1000 watt metal halide lamp, offers the excellent floodlighting capabilities for which Infranor has become known. The Series 75's unique mounting device permits the center of the sphere to remain in a fixed position regardless of the aiming point.



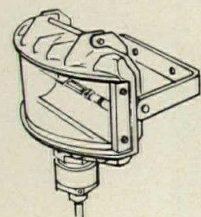
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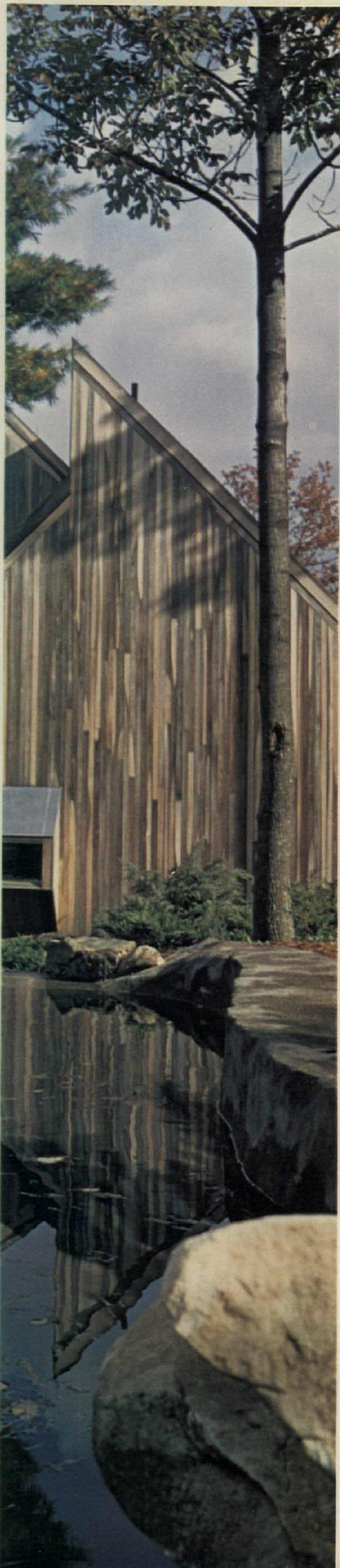
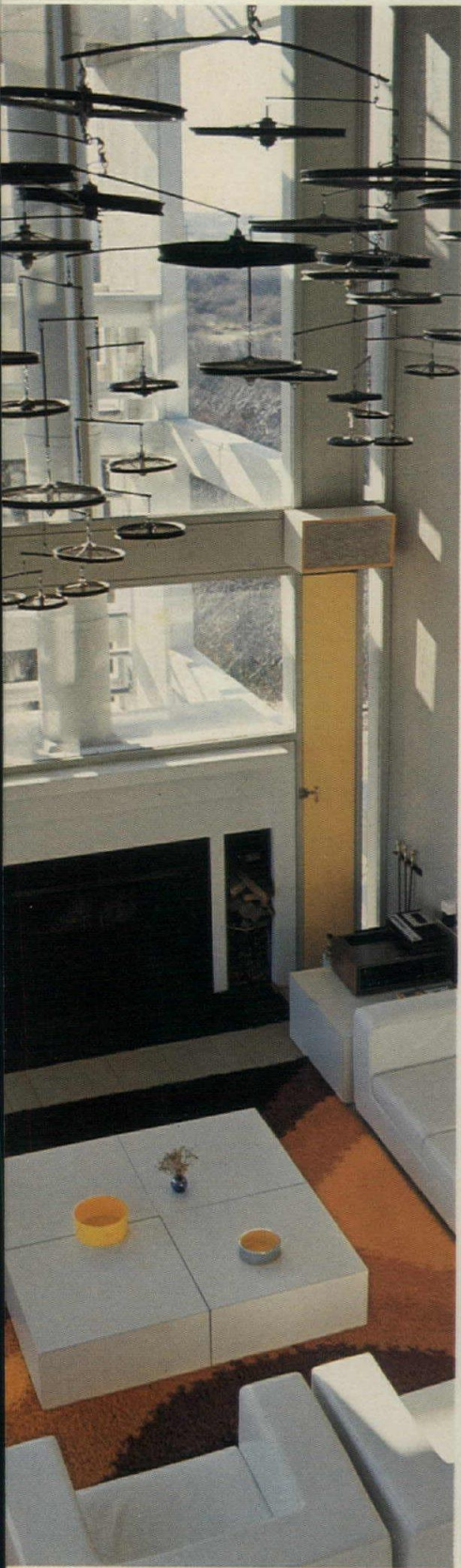
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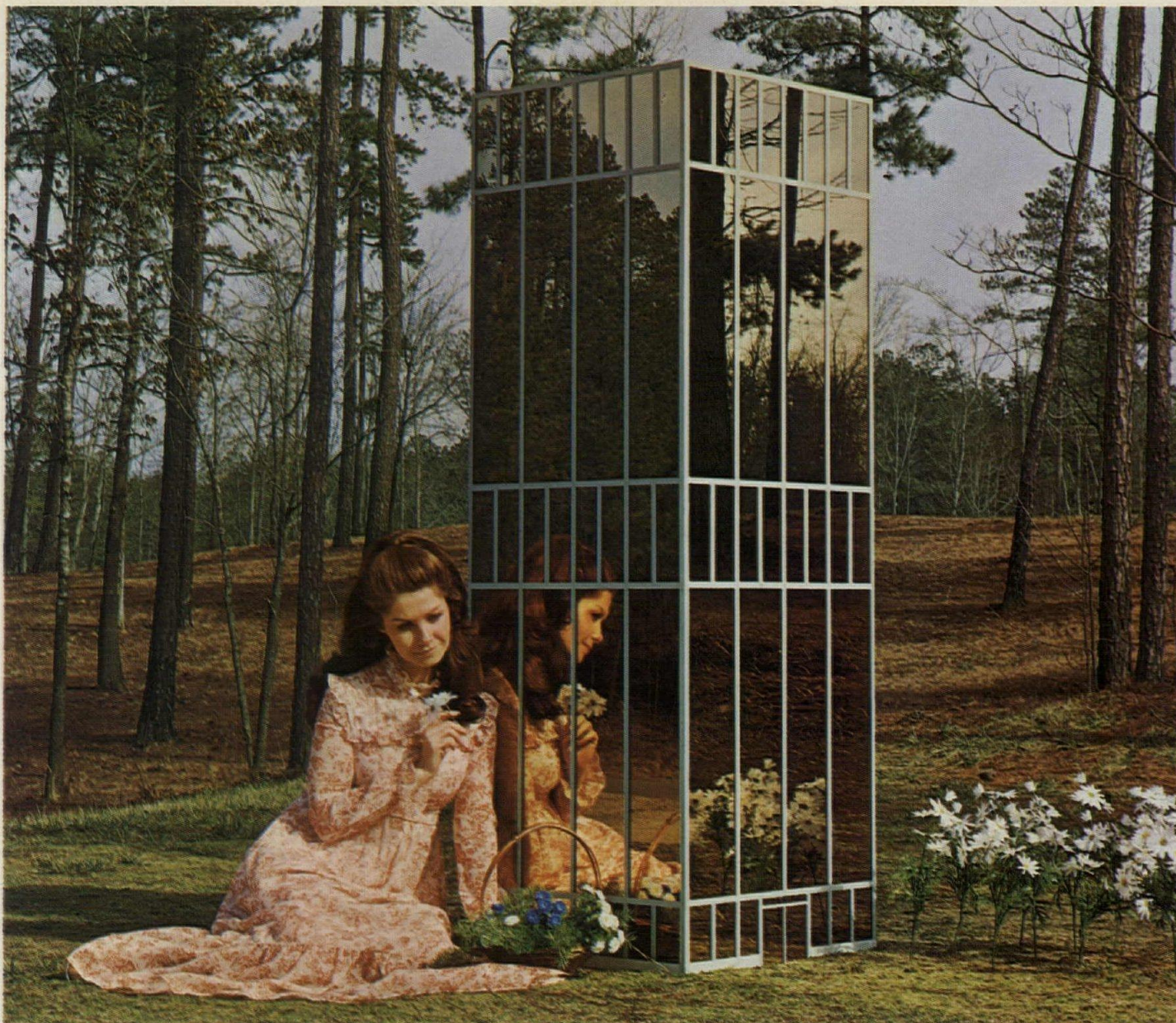
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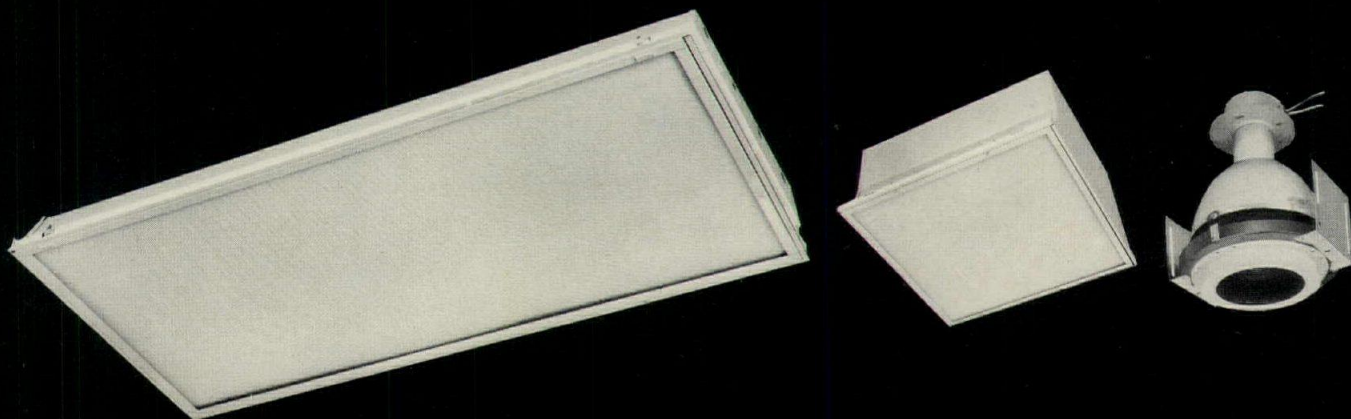
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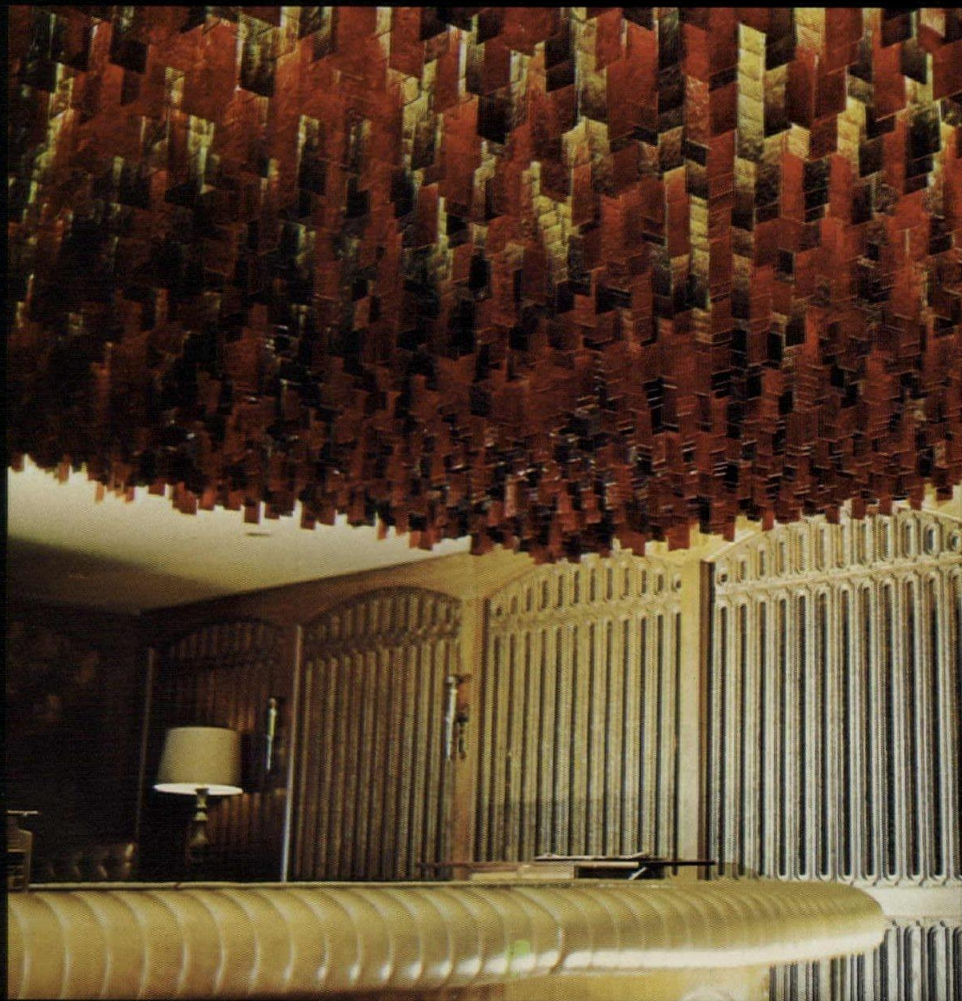
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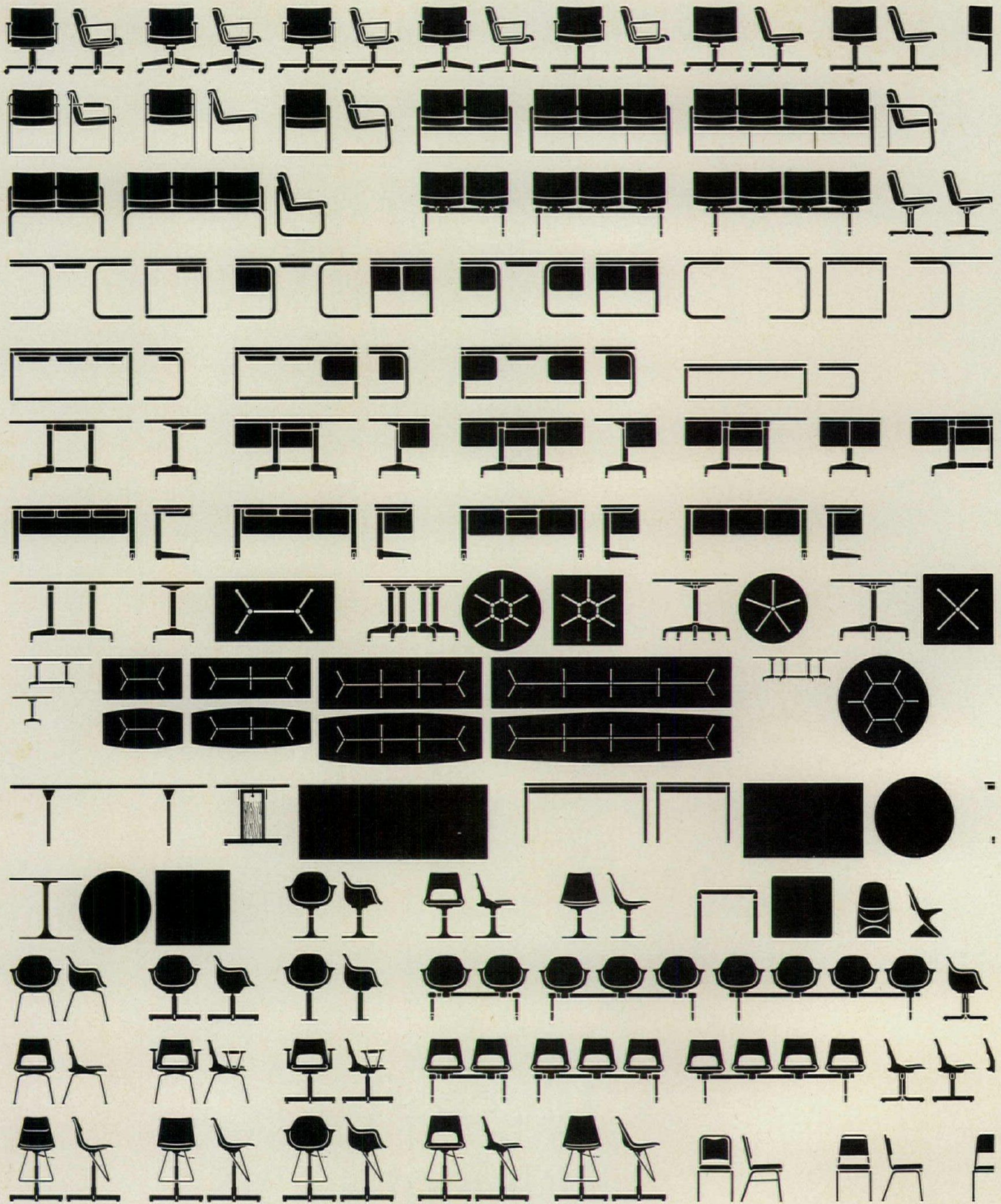
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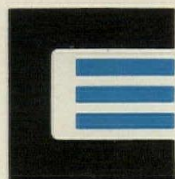
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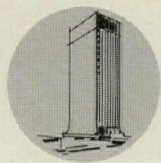


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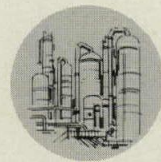
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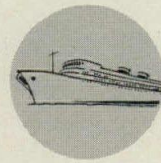
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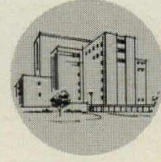
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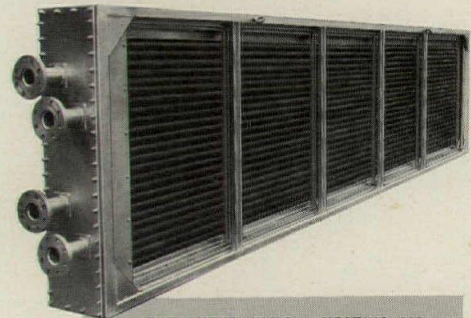
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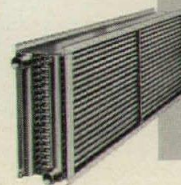
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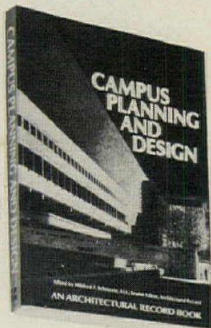
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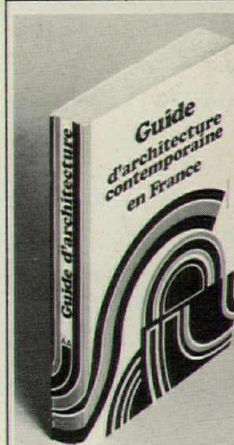
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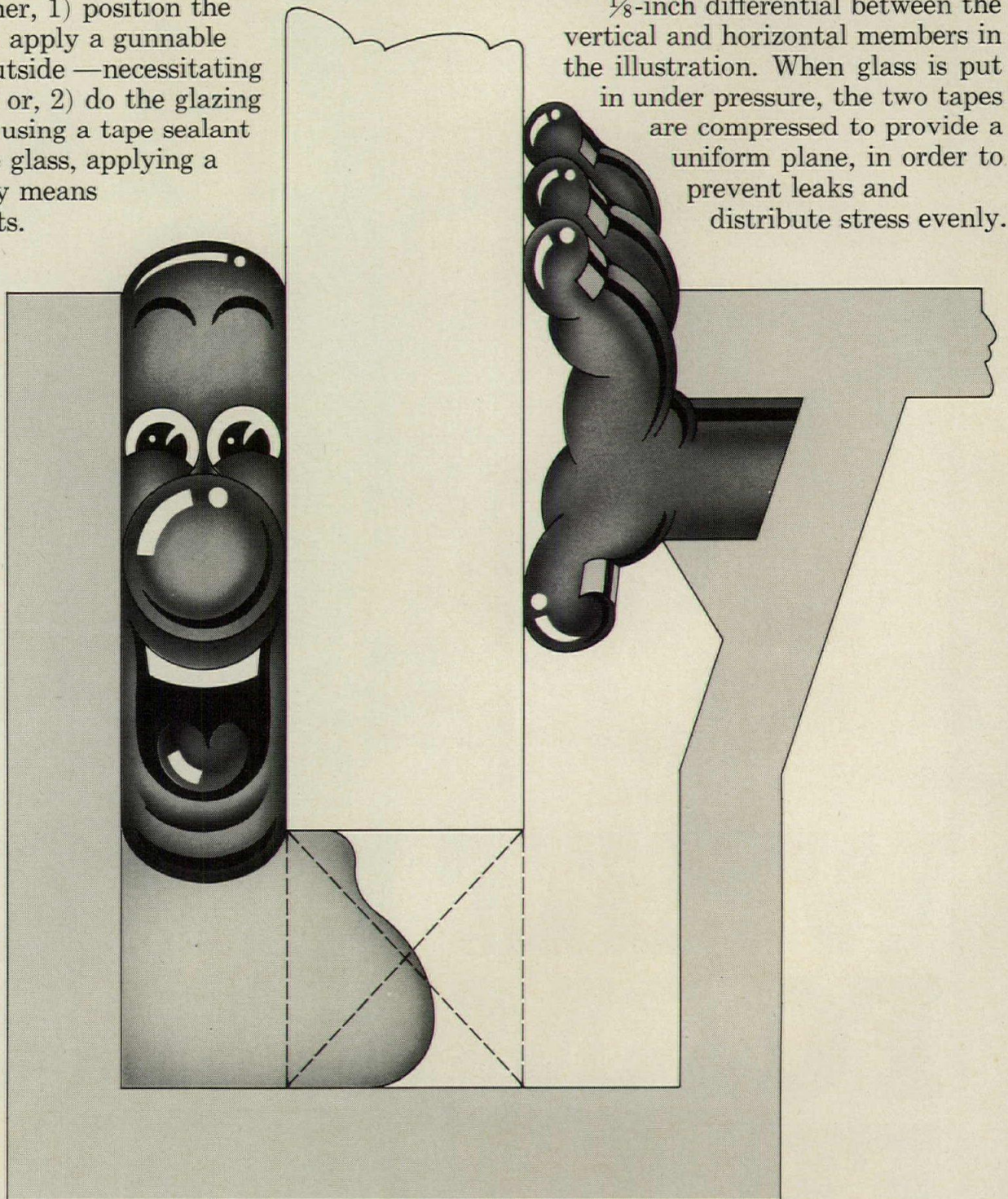
Some sash designs need to put the pressure on glazing tape.

Stick curtainwall systems and pocket-glazed windows provide structural economies in many applications. But they also present you with some formidable glazing problems.

For one thing, the pocket channel allows the glazer very limited working space. This means he must either, 1) position the glass first and then apply a gunnable sealant from the outside —necessitating costly swing stages or, 2) do the glazing from the inside by using a tape sealant and then insert the glass, applying a positive pressure by means of wedges or gaskets.

This tape sealant must be 25%-50% compressible, yet must not squeeze out of the channel despite the pressure.

Another problem — illustrated on the opposite page — is the offset condition of channels in stick system glazing. As you can see, there is a $\frac{1}{8}$ -inch differential between the vertical and horizontal members in the illustration. When glass is put in under pressure, the two tapes are compressed to provide a uniform plane, in order to prevent leaks and distribute stress evenly.



Besides the design problems just mentioned, you and your glazing contractor are faced with increasingly critical glazing conditions as buildings go higher and higher. For example, larger lights of glass, greater pressure differentials and higher windloads all put a bigger burden on glazing techniques. Omitted, misplaced or incorrectly chosen shims compound these problems and raise the possibility of leaks and glass breakage.

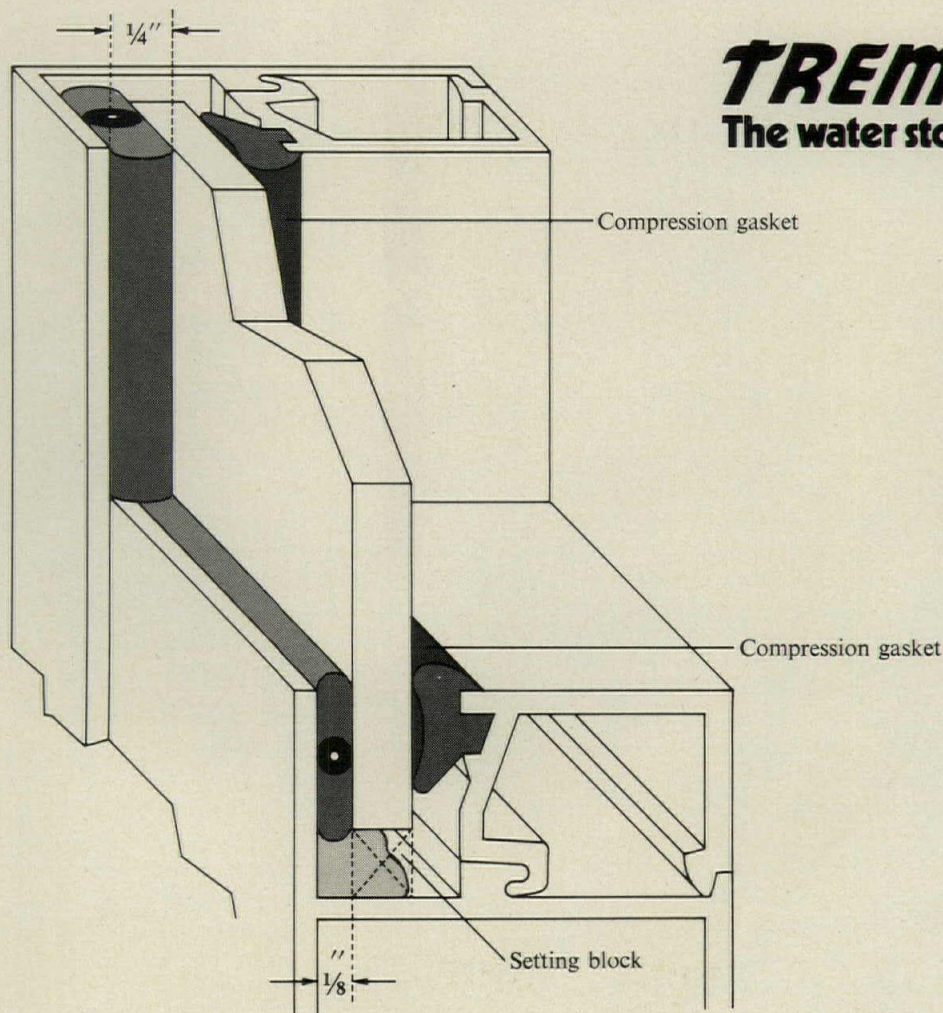
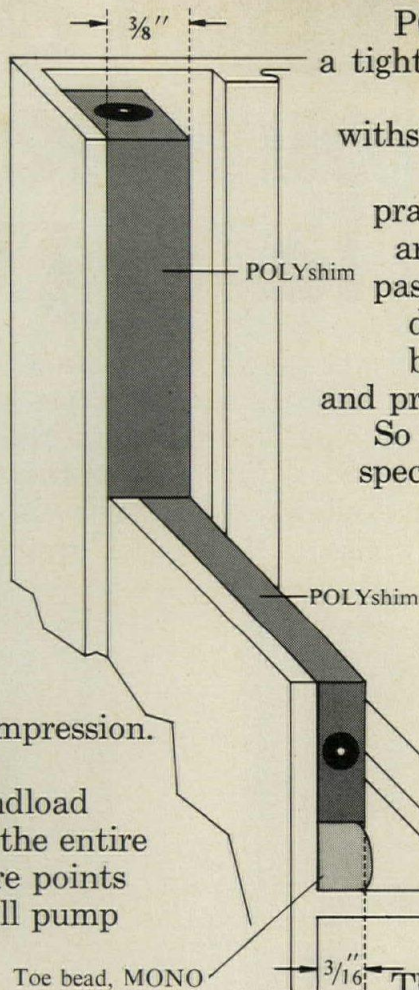
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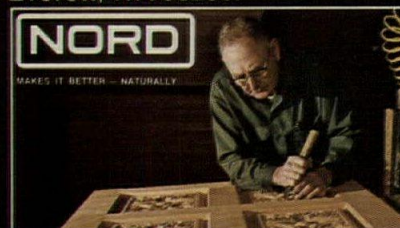
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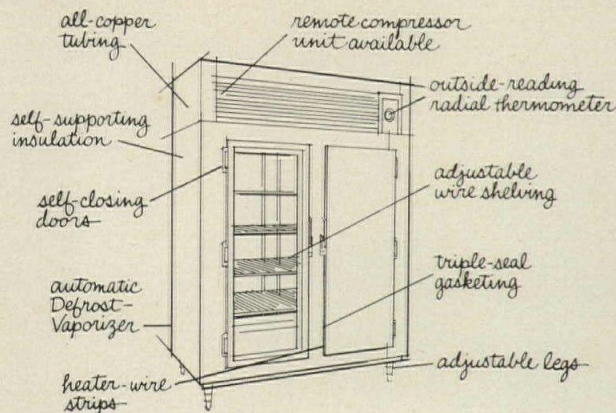
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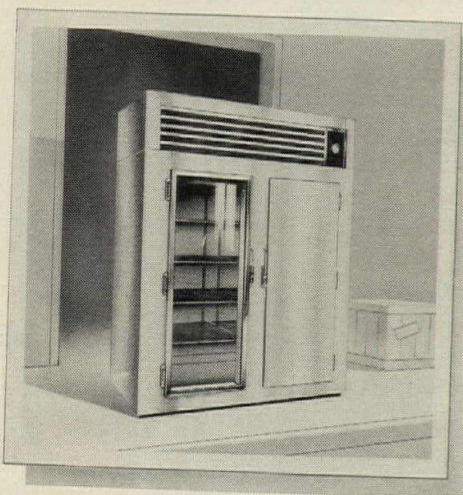
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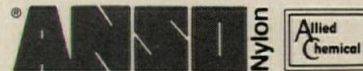
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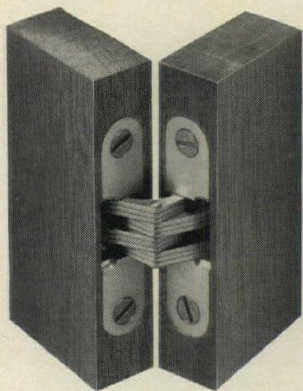
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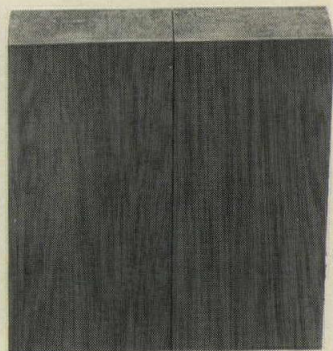
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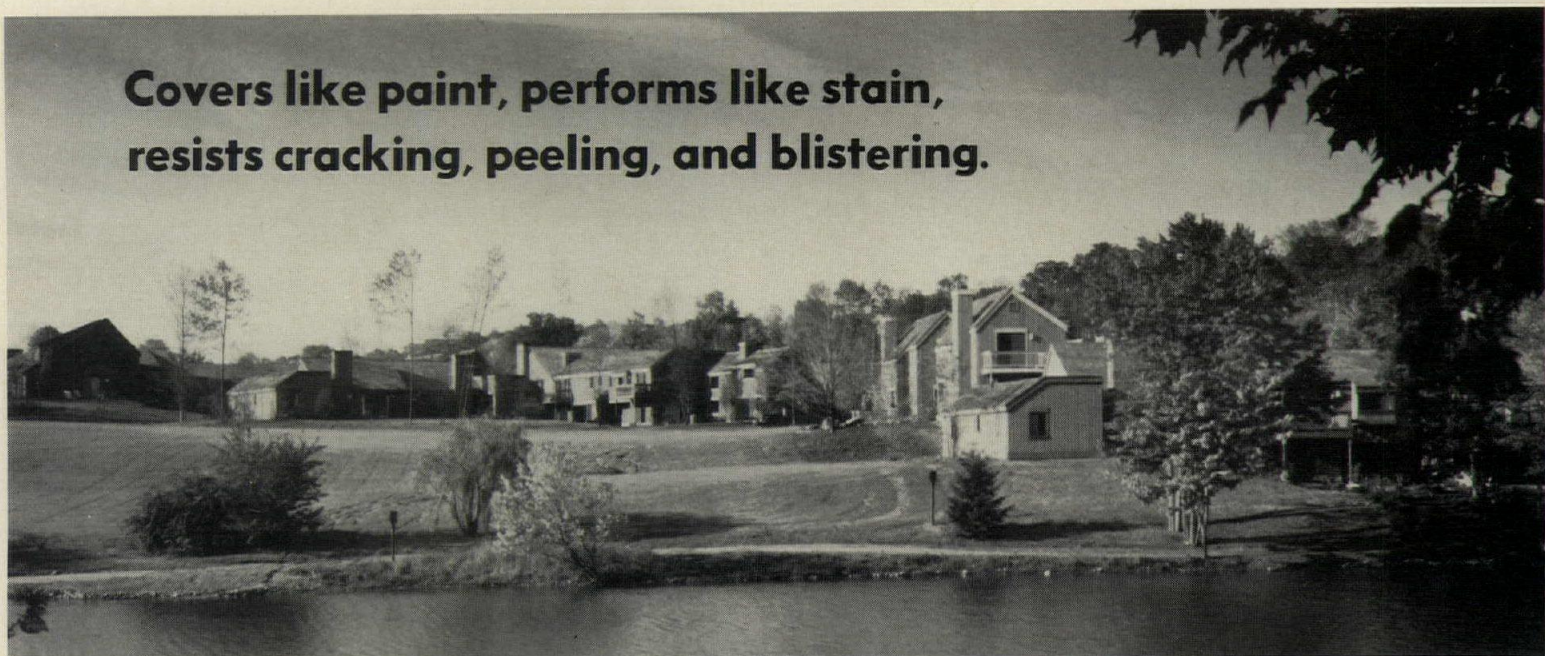
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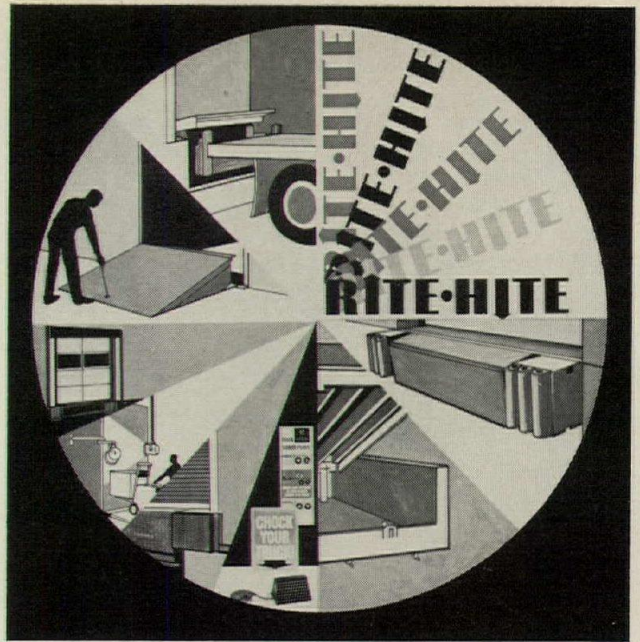


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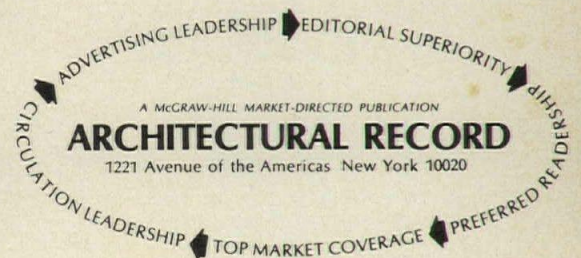
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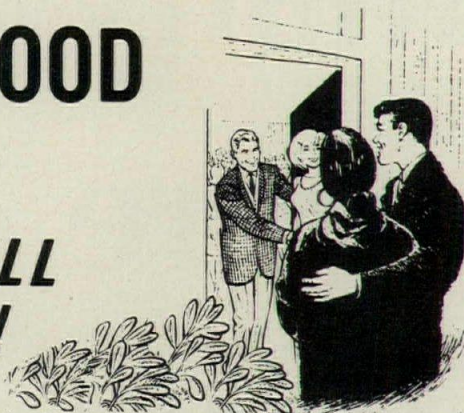
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PRODUCT REPORTS

continued from page 171

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Circle 313 on inquiry card

ACRYLIC-WOOD FLOORING / To be marketed under the name *Perma-Grain ASPEN*, this floor tile is produced from wood wafers compressed into an 11½-in. square tongue and groove tile. The textured appearance is similar to travertine; however the colors include green, blue and brick in addition to four standard natural wood colors. Recommended for high traffic areas. ■ ARCO Chemical Co., Philadelphia, Pa.



Circle 314 on inquiry card

EYE-FACE WASH / The unit incorporates a wrap-around stainless steel skirt that protects all necessary exterior piping below the level of the bowl. Twin chrome-plated brass eye-wash heads and a 360-degree face spray ring are mounted in the satin finished bowl. The unit is activated by pushing the "flag" handle attached to a ½-in. ball valve. ■ Western Drinking Fountains, Ken Riddle, Pa.



Circle 315 on inquiry card

Additional credits:

Loma Linda VA Hospital

In the September article by George Agron of Stone, Marraccini and Patterson describing application of the VA Building System to the design of Loma Linda Hospital, names of the following consultants were inadvertently omitted: Henry Degenkolb (structural design) and Ben J. Lennert (soils and foundation).

Errata

The RECORD regrets that in our August 1973 issue, page 40, we inadvertently omitted the firm of Hoberman & Wasserman as one of last year's Bard Award winners, and attributed their design, shown lower right in that story, to Richard Meier.

The mid-October 1973 issue of the RECORD, *Product Reports* 74 incorrectly lists the following companies' products under "Lathing Materials" on page 91. They should have appeared under the heading "Painting Materials" and we apologize to our readers, and Samuel Cabot Incorporated, Pratt & Lambert, Incorporated and Pabco Paint Corporation.

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Prefiled catalogs of the manufacturers listed below are available in the 1974 Sweet's Catalog File as follows.

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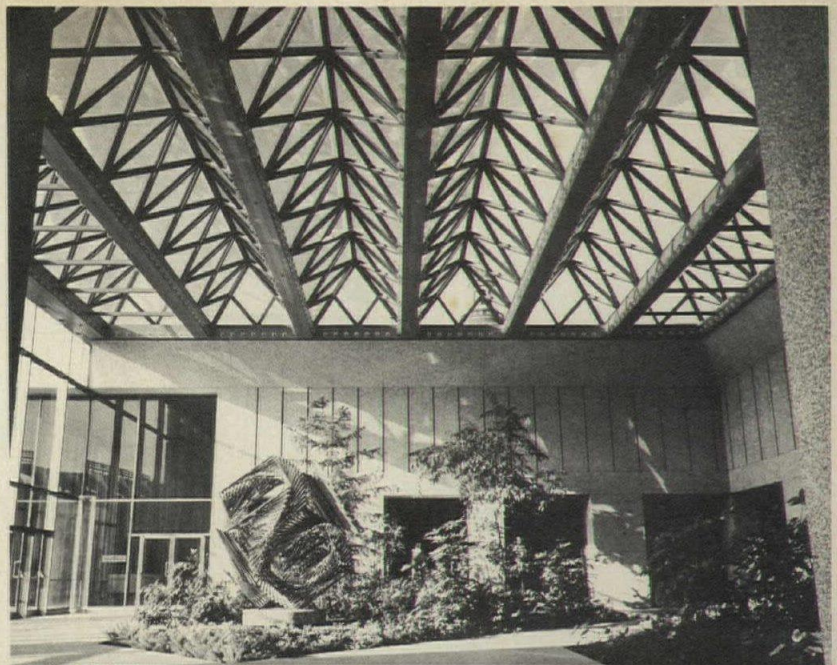
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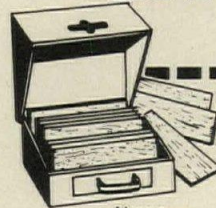
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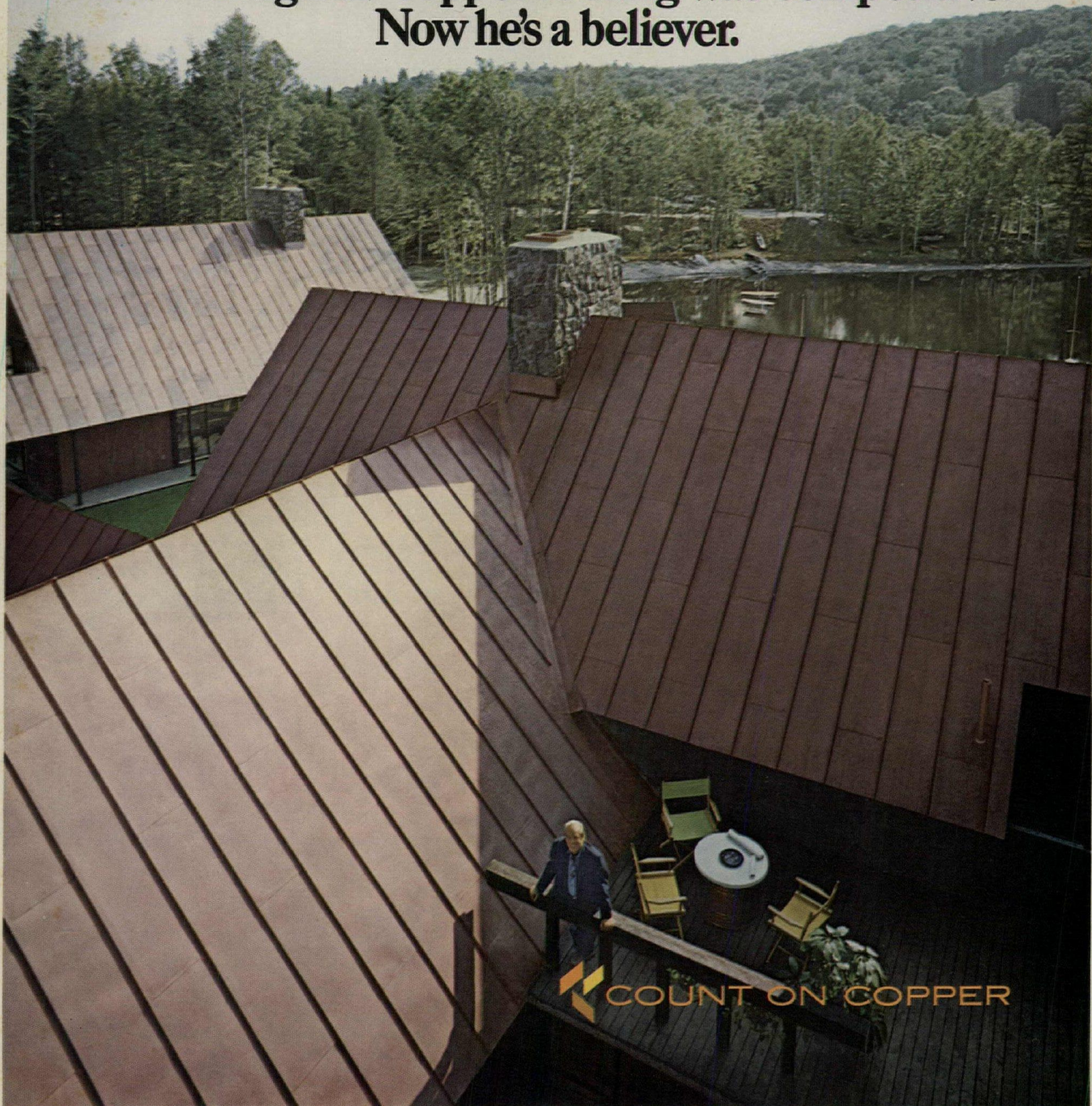
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