

Progressive Architecture

August 1978 A Penton/IPC Reinhold Publication



**The Bold Look I[™] ceiling. New from Armstrong.
The look of prestigious, heavy-textured tile.
The convenience of lay-in panels.**



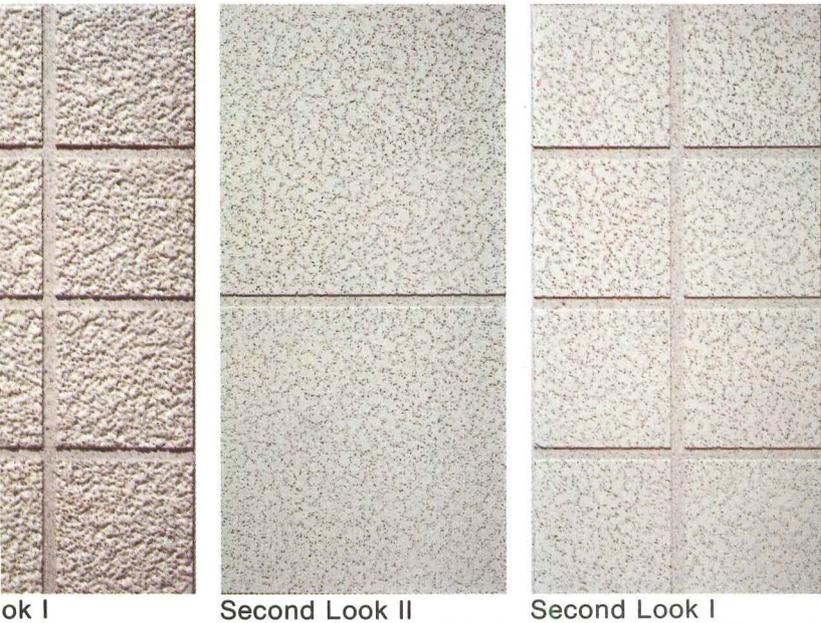
Like our Second Look® I and Second Look II ceilings—shown below at far right and center, respectively—Bold Look I brings a whole new look to the overhead world.

It's a look we've artfully designed for both beauty and economy. Because what we've done is to use standard 2' x 4' lay-in panels with an exposed grid in a way that disguises the 2' x 4' repeat. The grid is slightly recessed, blending with score marks which divide the panel into surface squares the size of ceiling tile. What results is an acoustical ceiling that gives you a rich look without a rich price tag.

In the case of Bold Look I, each

handsome rough-textured 24" x 48" panel is scored in both directions with one-inch-wide routings that divide the surface into eight tilelike sections. Second Look I, with its smoother surface, is also divided to simulate 12" x 12" tile, while Second Look II provides the broader look of a 24" x 24" tegular-edge panel.

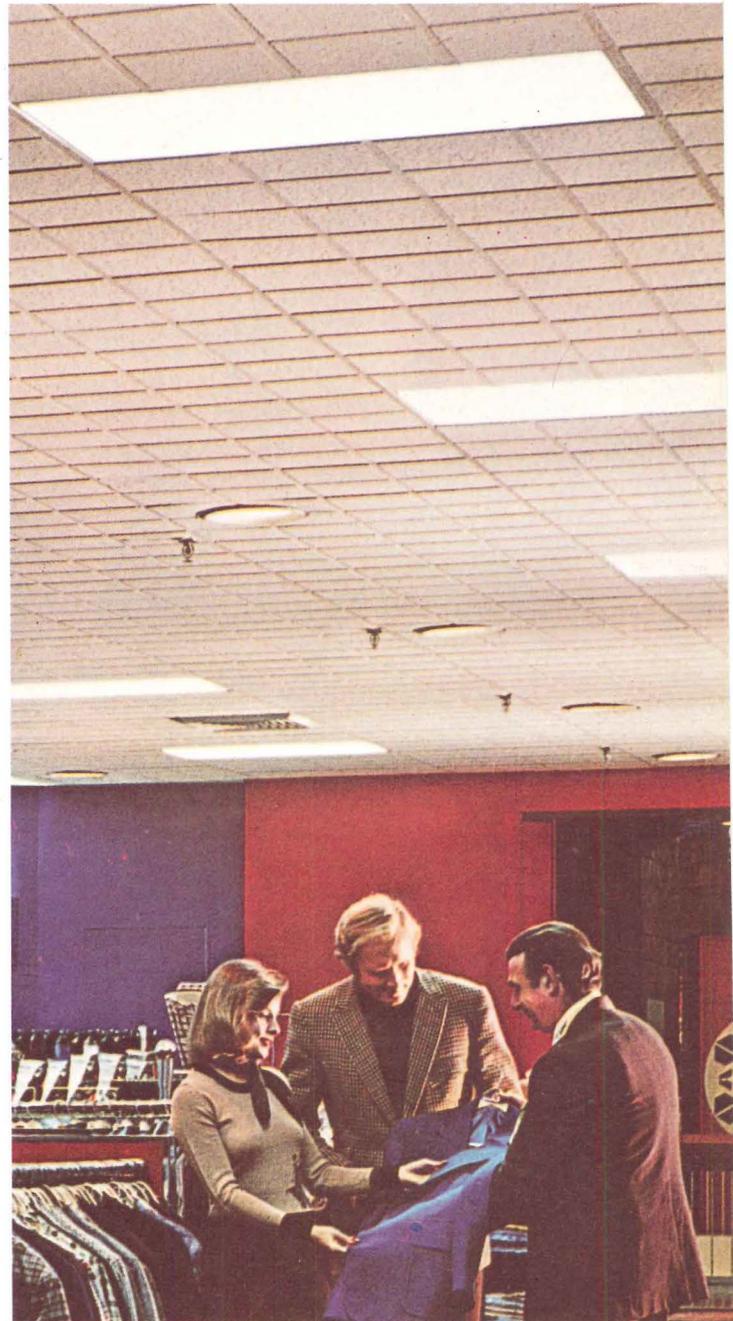
So what you end up with is a ceiling that combines the beautiful efficiency of a tilelike look with the cost efficiency of an exposed-grid system—a combination you can't beat for good looks or good sense. To learn more, write Armstrong, Dept. 88NPA, Lancaster, Pa. 17604.



Bold Look I

Second Look II

Second Look I



FROM THE  INDOOR WORLD® OF

Armstrong

The commercial sheet vinyl floor from Armstrong

At this West Virginia school, 800 students test its beauty and durability every day.

Architect: Kenneth F. Weimer, AIA, Richmond, Va.
General Contractor: W. Harley Miller, Martinsburg, W. Va.
Flooring Contractor: Standard Acoustical Products, Inc., Hagerstown, Md.



A school can be a pretty demanding place for a lot of products. Particularly for one that's used underfoot. Because active youngsters are pretty active scuffers and spillers. And that's the primary reason you'll find Brigantine® sheet vinyl flooring used throughout the Hedgesville High School in West Virginia.

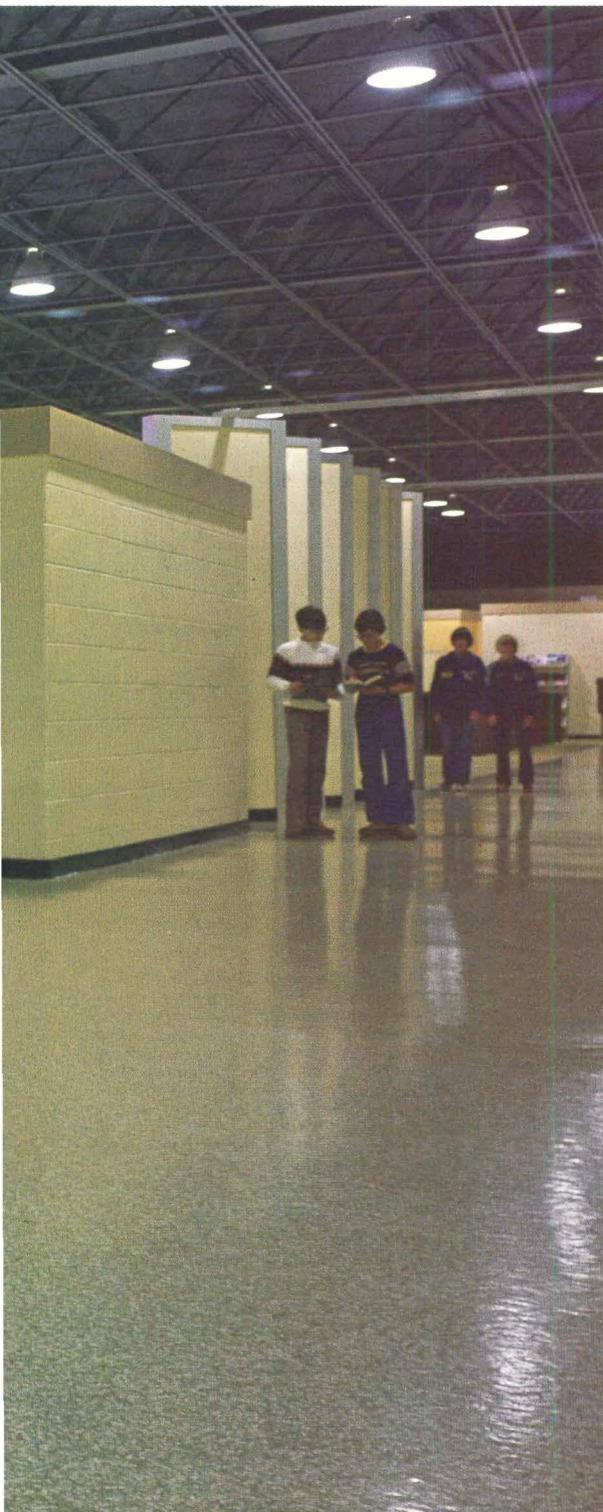
With Brigantine's ability to take a lot of punishment without showing a lot of scars, Hedgesville High School uses it all over the premises. Almost 3,500 square yards' worth. In lobbies; locker areas; chem lab; home ec, art, and drafting rooms. In all of which Brigantine comes in for praise from the maintenance staff because its smooth, dense surface is so easy to keep clean.

Because Brigantine is tough Vinyl Corlon®, it has the commercial stamina school authorities know is a must. Yet because Brigantine is available in ten colors that look anything but institutional, it has the visual appearance school authorities know is an added attraction. An appearance that can be made virtually monolithic by chemically welding the seams with the Armstrong Perimiflor® System.

So whether you're planning a school or a store, a hospital or a nursing home, Brigantine belongs in your plans. Because with its multiple talents, it's the commercial sheet vinyl that belongs on your floors. To learn more, send for a free copy of our booklet describing Brigantine and other Armstrong commercial floors. Write Armstrong, Dept. 86FPA, Lancaster, Pa. 17604.

FROM THE  INDOOR WORLD® OF
Armstrong

Circle No. 317, on Reader Service Card



Rolls 6' wide and up to 90' long keep seams to a minimum, provide an almost monolithic look.



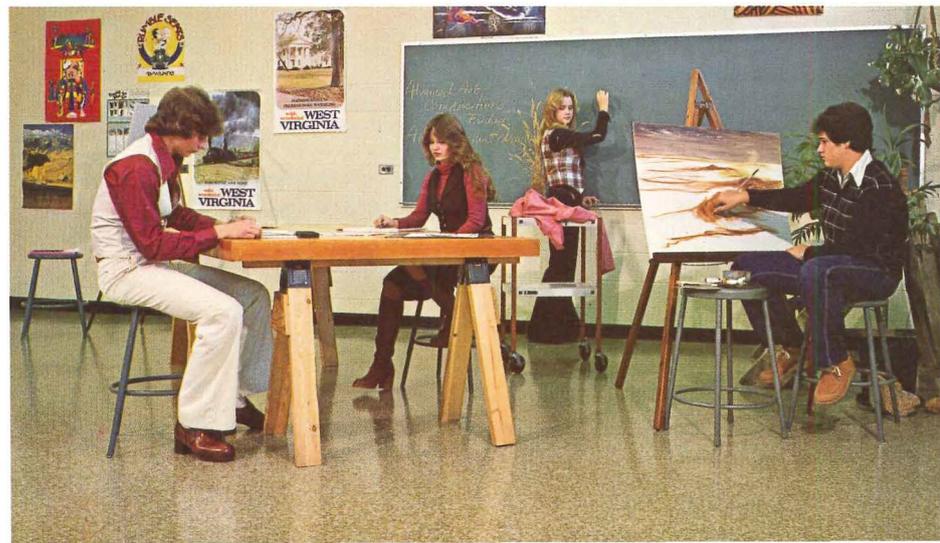
Because Brigantine is virtually nonporous, stains can't get a toehold, most spills wipe right up.



Seams are chemically welded to provide a continuous surface that resists penetration of dirt and moisture.



Brigantine can be covered where the floor meets the wall to help eliminate places where dirt can hide.



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Cover: Designed by Gruen Associates, the Winter Garden at Niagara Falls, NY, is viewed from the Rainbow Center West Mall. Photo: Norman McGrath.

In any open plan environment, what you obviously want is the quietest ceiling you can find. As measured by its Speech Privacy Isolation Class (NIC') rating of 23, the obvious choice would be the sky. But since the sky presents certain difficulties, the practical choice becomes the NIC' that's next best. Next best happens to be 20. And 20 happens to belong to Silok from Armstrong.



**Silok™
from Armstrong.**

**The only ceiling that's
quieter is the one
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In the 1½" thickness, its NIC' of 20 means that Silok approaches the super sound absorption of the sky. Yet, unlike the sky, you can use Silok along with screens and background masking to produce confidential speech privacy at normal voice levels.

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So when you're looking for the quietest open plan ceiling, look outside your window. But when you're looking for the quietest one you can use, look to Silok. To learn more, write Armstrong, Dept. 86NPA, Lancaster, Pa. 17604.



FROM THE  INDOOR WORLD® OF
Armstrong

Design and the economy

August 1978

The sound of construction is again echoing in America's streets, and behind it you can almost hear a collective sigh of relief from the entire construction industry. Building activity reached an all-time high this spring, and recovery seems to be exceeding the expectations of firms we contact. There remain factors to cloud the long-range outlook: unsteadiness in other areas of the economy; rising interest rates that could slow building activity—and architectural activity along with it. No profession is more vulnerable, we need not remind you, to the cycles of the general economy.

Meanwhile, the profession of architecture continues to pass through a cyclical change of a very different kind—a slower cycle that is largely of its own making. That is the shift away from established principles of Modern design toward a diversified search for new and revised approaches. Not every architect has yet taken Post-Modernism seriously, but word of it is reaching reasonably informed nonarchitects, and it is affecting what actually gets built.

We are, then, at critical points in two different cycles absolutely fundamental to architecture: the economic cycle and—reluctant as we are to call it that—the succession of *styles*. Are there any predictable connections between these two historical forces? Do affluent, confident periods produce mature, “high period” achievements, or just indulgent versions of familiar models? Do periods of belt-tightening and caution—like the one we are undoubtedly facing—produce austere, truly conservative architecture? Or do they spawn revolutionary design, or reactionary movements, or—as seems likely right now—some combination of these opposing impulses.

To some extent, the answer to all of the alternatives above is “yes.” Architecture is, after all, hardly a unified activity, and the connections between design and the economy are at best indirect. But even a brief, unscientific survey of recent history indicates one dependable relationship: the failure of an apparently stable economy definitely weakens confidence in the architectural expressions that represented it. The Great Depression of the 1930s discredited not only the politicians and business leaders of the preceding boom, but the lavish, eclectic architecture identified with them; the actual displacement of many of these decision-makers was a factor in itself. The

1930s turned out to be a long period of transition, combining the last serious efforts at eclecticism with scattered victories and much uneasy compromise.

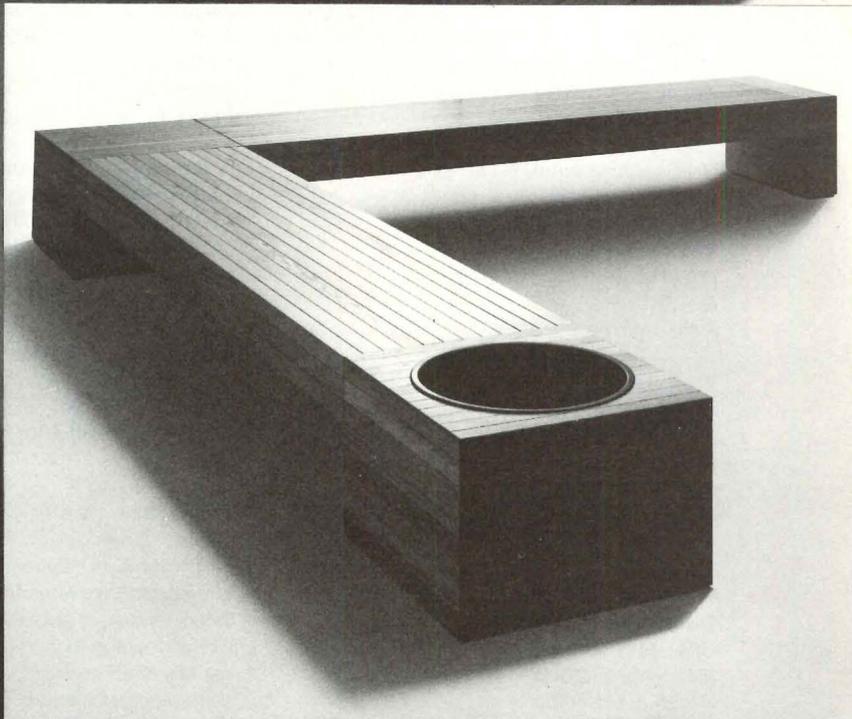
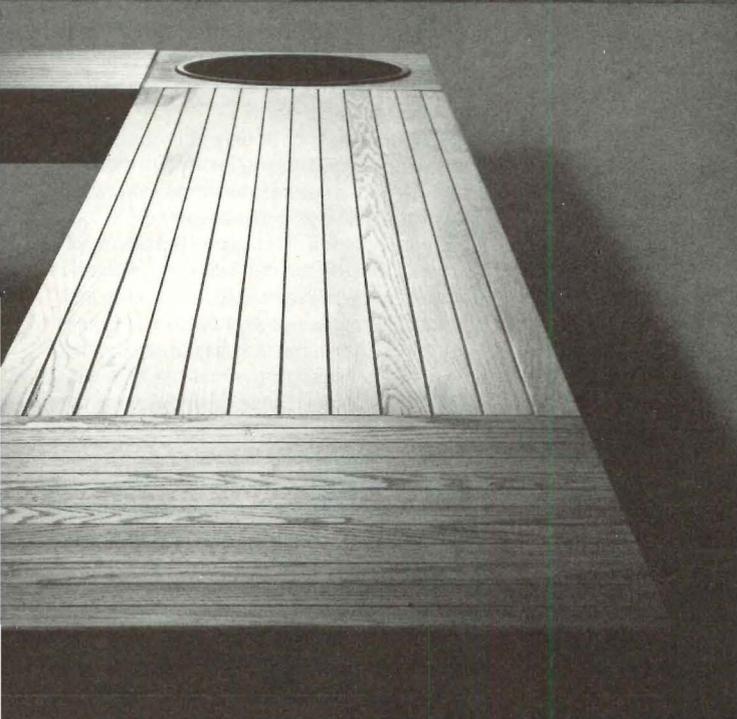
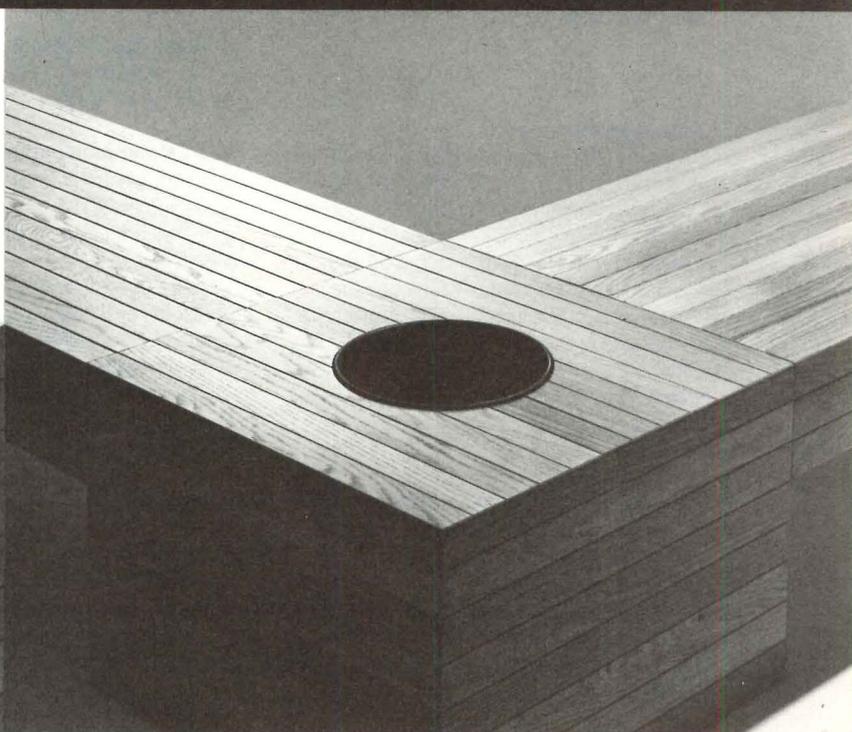
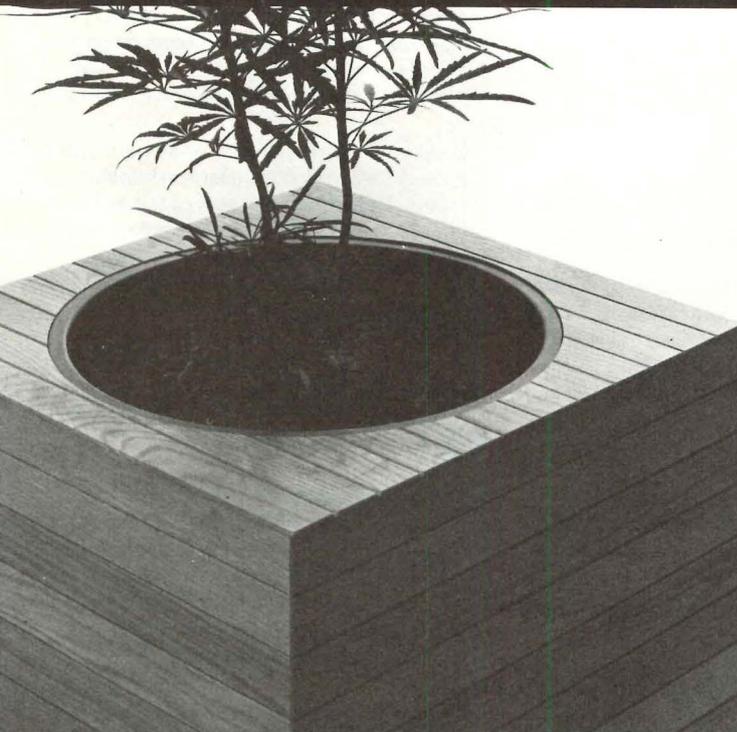
This time around, Modern Architecture had become identified with the confident establishment of the 1960s—with its beliefs in progress through technology and its disdain for the past and the primitive. But the crises of the past decade have undermined confidence in a style now associated variously with waste of resources, insensitivity of users, and high-handed disruption of the existing physical fabric. Economic recovery will induce some resurgence of earlier attitudes; a certain body of clients and architects remains convinced of the rightness of Modern Architecture, but their thinking will no longer represent leadership—in design, business, government, or arts patronage.

Just what will replace the principles of Modern Architecture we cannot, admittedly, now say. The answers will be revealed in the next ten years of P/A.

We can say with confidence that there will be less ponderous monumentality, fewer conspicuous displays of resources; interventions in existing communities will be smaller in scale and incremental; the public will show an increasing inclination to restrict development. On matters of architectural form, expression, symbolism, etc., there promises to be a split: the bulk of public and architectural opinion, reinforced by behavioral science, will seek to make architecture more responsive to psychic needs, through form and ornament with readily understood associations; the advocates of austerity and the believers in advanced technology, meanwhile, will urge us toward minimal design.

Venturi argued over a decade ago, however, that “decorated sheds” are economical, and popular culture proves eternally that visual exuberance does not depend on wealth. All that's required is for the influential public to choose complexity and symbolism over more reductive modes. And this is now likely to happen—for many reasons, not the least of which is that the economic barometer now indicates a change in design attitudes.





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FORMS + SURFACES

Views

To the readers' taste

I am thoroughly enjoying the current and long awaited issue of P/A on "Taste in America." You all did an excellent job handling a subject of such an esoteric nature—it is too bad that this issue will not be read and understood by a wider audience. I particularly enjoyed the parodies of Architectural Digest, Architectural Record, and of course P/A. You all are such sports!

Anthony M. Ames, AIA
Architect
Atlanta, Ga

I was prepared to open and peruse another one of those boring trade magazines that pass through the office with hardly more than a quick glance and a toss—until this issue. I smiled; I laughed; I enjoyed it.

I may have even learned something.
Richard G. Howard
Toledo, Oh

Do the two Suzanne Stephens (Susan L. Stevens) have some sort of semiotic dimensions? I can't figure it out. I cannot discern its meaning.
James S. Rossant, FAIA
Conklin & Rossant
New York, NY

[The meaning is only in the realm of satire. See p. 80 for explanation.—Editor]

Vain:

Is late Modern 1973 or '74?
G.A.R.
Pittsburgh, Pa

Architectural Digress:

I am in love with those oriental lamps in the Schwarting house. Are they a new Nessen number? I definitely agree—they are absolutely dynastic!
Gilberto Rossentallini
Architetto
Pittsburgh, Pa

Obsessive Architecture:

Gee—and I always thought that A.D. was the Mod Magazine of the Architectural Profession.
Gilbert A. Rosenthal
Architect
Pittsburgh, Pa

Architectural Recall:

I thought your review of the Schwarting residence was in excellent taste. You have been of great service to the profession.
Gilbert A. Rosenthal
Architect
Pittsburgh, Pa

Hearth and vegetable:

Just loved the Schwarting loft. Where can I send for the plans? (I'm refurbishing an attic in Bayside).

About those creamed flagellants—if you just add a dash of nutmeg to them after they're chilled, they really fly.
Mrs. G. A. Rosenthal
Architect's Mother

[The five letters above all arrived in one envelope, written in five different kinds of writing, on various types of paper.—Editors]

AT&T Communications

Congratulations on your excellent editorial analyzing the AT&T building design (June P/A, p. 7). Your criticisms were accurate and well presented.

I have been shocked and amazed by some architects and critics who can discuss this proposed building without concluding that it is, quite simply, bad, uninspired design.

I have renewed respect for your magazine.
Mitchell R. Friedman
Architect
Freeport, NY

About that proposed A.T.&T. tower. . . . Never have I heard so many heated reactions among fellow designers. Most of the comments are negative, the most favorable so far being, "Well, it's interesting."

Does this building indicate that Philip Johnson's architectural design process is moving backwards? Or, rather, sideways? The Gold Medal winner has certainly surprised us by changing lanes. Did you see a turn signal?
Neither did I.
Kem Hinton
Nashville, Tn

Being subjected to the humbug of Philip Johnson in his declining years is bad enough, but then to have it extolled in the Editorial of a once-respected journal is simply too much.
David P-C Chang
Architect/Planner
Cold Spring Harbor, NY

[We acknowledged that Philip Johnson is respected for good reason and that AT&T is important—like it or not—but, as other readers recognized, we did not "extol" this building.—Editors]

There are only two things wrong with Philip Johnson's new design for the AT&T building. The first is its location. It is a rare day and a rare opportunity when two adjacent blockfronts in the center city are developed together. Given the two leading technology-oriented companies, AT&T and IBM, as clients and two presumably responsible architects, Johnson and Barnes, it is hard to understand why some kind of architectural ensemble was not attempted. Regardless of the merits of the designs proposed, where we could have had a mini-Rockefeller Center at Madison and 57th, we will end up with just more urban chaos.

The second is the building itself. Rather than architecture based on some physical reality, the AT&T building is verbal architecture. As long as you listen to Johnson's explanations of the design, you imagine you are about to behold a subtle, witty commentary on modern architecture in the form of a building. It is only when you look at the rendering that you are confronted by the reality. There is nothing polemically wrong

with the AT&T project. It's just ugly as hell.
Daniel Beekman
Electronic Section Inc.
New York, NY

The photograph of the "groupies" participating in the Dallas "D-zign" debate, shown on page 23 of your June issue, illustrates a major and distressing cause of today's design misperceptions.

Coupled with the proposed AT&T tower, page 7, another New York holocaust is in hopeful prospect. The wonder is that even this world capital of merchandising and inflated egos will accept such open animus and amorality.

Senility is senility is senility, even when capacity did not exist in the first place. Cute is cute and bad is also bad. Shame on the men who said it and drew it. Their demiurge is perverted.
Charles Colbert
Architect/Planner
Metairie, La

Have we lost the direction we as a profession and as an environmental art have so intensely struggled for? Have we abandoned naturally derived form; throwing aside the organic architecture of modern America? Have the Muses sought refuge from our self-embellished light and left us to mire in the resurrected rubble of buildings past?

It would seem from your presentation of Philip Johnson's proposed AT&T tower (p. 7, P/A, 6:78) that this is indeed the case. Historic allusion has once again overtaken our art and is attempting to cloud our reason and deny the purity of modern urban form.

We as architects have only really begun to fall into our own in developing instinctive modern urban form . . . a natural form of building which reflects the attitudes and preferences of contemporary America. It is beyond belief to me that you could elevate this backslide into Renaissance Revivalism in a magazine carrying the banner of "Progressive Architecture." If this is the lighthouse beacon that is to guide the modern and post-modern movement I suggest that we organize the resistance now; lest we be overrun.

Florence has passed and we have drawn past the dark ages of architecture. Design must proceed from today and address tomorrow and not those times and styles best left to the dead.
K. Charles Romanowski
Architect
Pittsburgh, Pa

Correction

The New York architectural firm, Hardy Holzman Pfeiffer Associates, was responsible for the architectural planning of the St. Louis Art Museum addition (P/A, March 1978, p. 42) and not its design, which was done, along with contract drawings and construction supervision, by Kivett & Myers, a division of Howard Needles Tammen & Bergendoff of Kansas City, Mo.

Rendering credit

Renderings of the Armstrong Concept House designed by Booth, Nagle & Hartray (June P/A, p. 72) should have been credited to Bill Phillips, whose signature is barely discernible on renderings of the Baha'i Archives Center by Stanley Tigerman & Associates, same issue (p. 44).

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is available!
We've doubled
production.*

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Thermax Roof Insulation is the first non-composite foam insulation in

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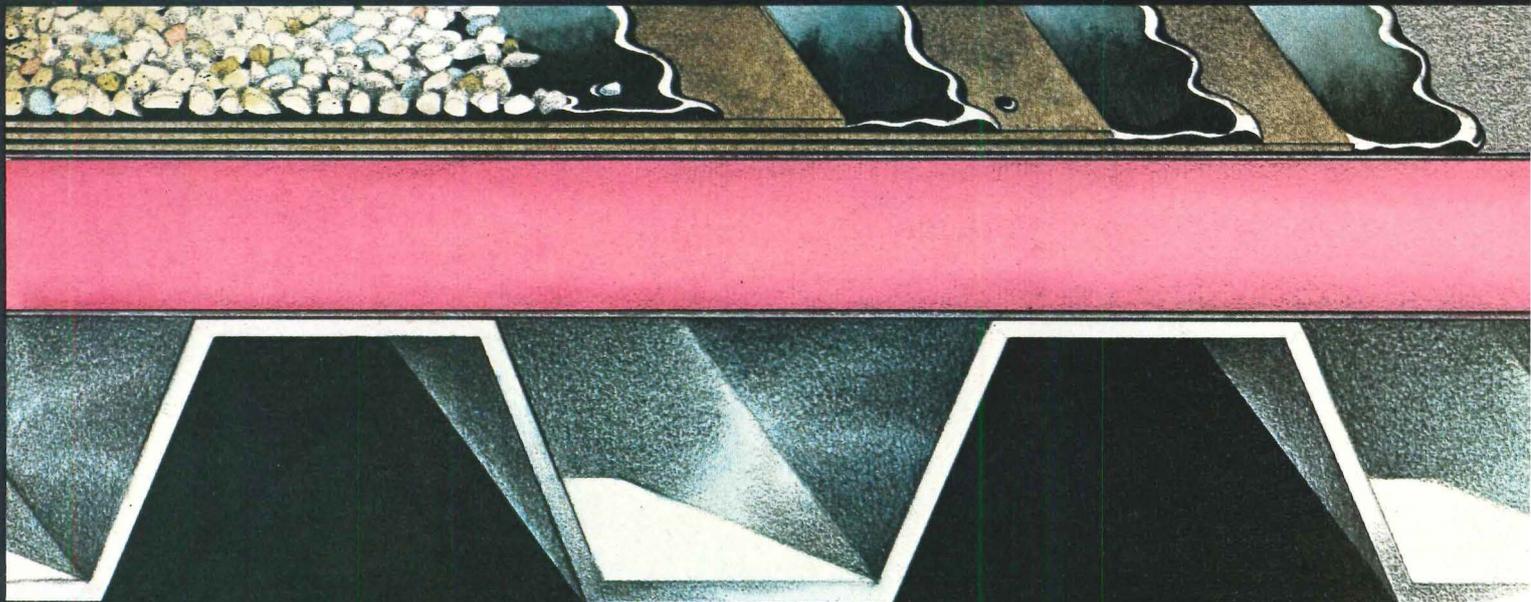
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Thermax Roof Insulation costs no more for comparable insulation values than other fire-rated materials, is easy to cut and handle, provides more footage per truckload, and uses less warehouse space, which means a better application per dollar for everyone.

*Product of Berryfast, Inc.



The **Green Stuff** is Tempchek[®] Roof Insulation. From Celotex. It's the most efficient on the market for every other application.

When you don't need fire-rated insulation, you still need Celotex for the best R factor. In Tempchek Roof Insulation.

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Tempchek is a lightweight urethane foam, reinforced with glass fibers to make it just as strong and dimensionally stable as Thermax. Check the chart again and you'll see that it has the same top-rated insulating efficiency per thickness as Thermax.

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The differences? Tempchek has organic instead of inorganic fibers, a different chemical composition, and a different color, all because it doesn't have to be fire-rated like Thermax.

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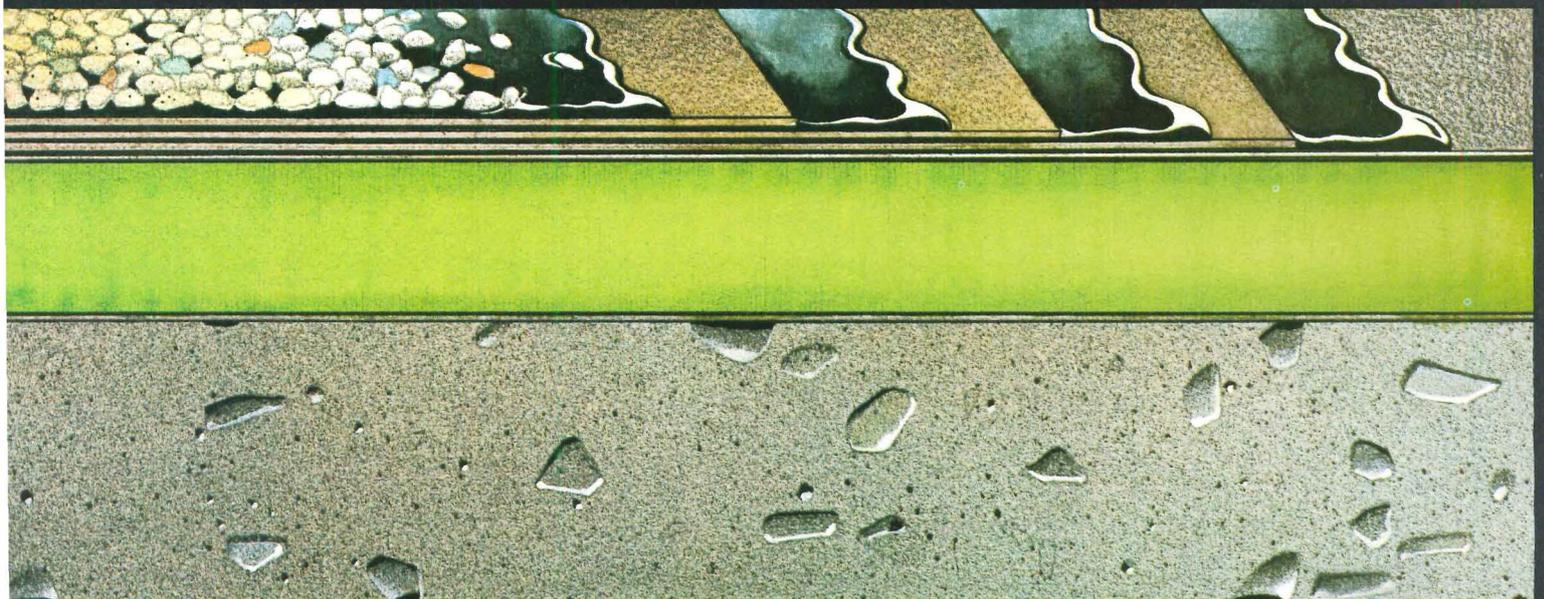
R FACTOR COMPARISON (Typical Thicknesses)

"R"	Thermax Roof Insulation†	Tempchek Roof Insulation†	Perlite & Urethane Composite Board	Fibrous Glass	Perlite & Fiberboard
8.3	1.2"	1.2"			3"*
10.0	1.4"	1.4"	1.9"	2-1/4"	4"*
11.1	1.6"	1.6"		2-7/16"	
12.5	1.8"		2.2"		
14.3	2.0"	2.0"	2.5"		
16.7	2.3"	2.3"	2.8"		
20.0		2.8"	3.2"		
25.0		3.0"			

*In two layers.

†NOTE: Under normal use, Thermax and Tempchek Roof Insulations will retain an average of 80% of their thermal resistance (R factor) values.

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3. New Tempchek Roof Insulation is what makes the Celotex Inverted Roof Assembly work so well. It provides thermal protection, dimensional stability and resistance to moisture.
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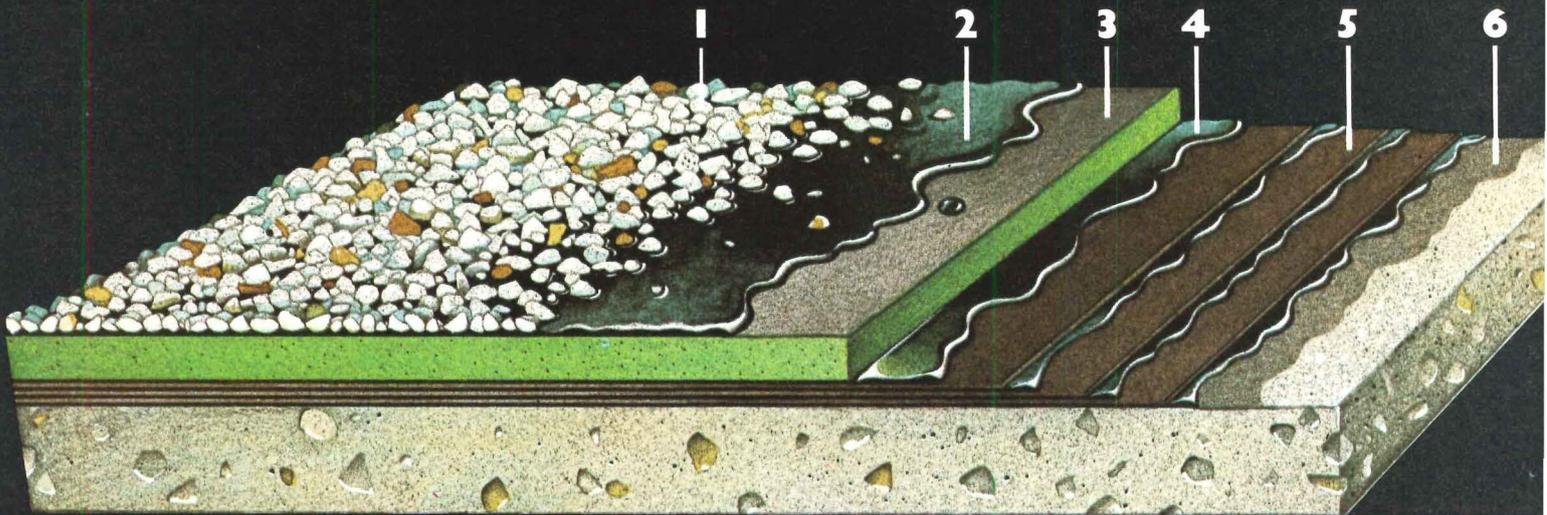
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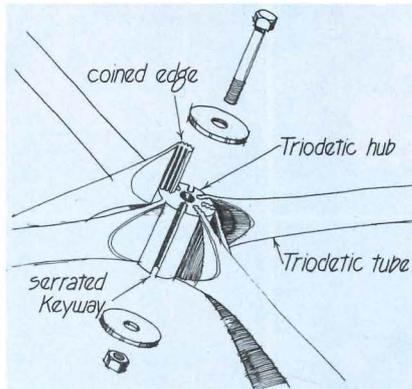


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San Bernardino County Museum,
San Bernardino, California
Architect: VTN Consolidated, Inc.,
Irvine, California

join a number of tube members. And they can be formed to radiate from it at almost any angle desired.

Ordinary tools are used to make the connections. Washers and a single bolt close the hub ends. No complex bolted connections or welding are necessary.

Designing with our system gives you a definite time advantage, too. Not only is construction simpler and, thus, faster but pre-engineered parts have predictable costs. So you can

figure in-place costs from preliminary drawings and take advantage of fast track construction.

The Triodetic system is not wishful thinking. It's here. Right now. Some of its exciting applications are shown in this ad. But what you can do with it is limited only by your imagination.

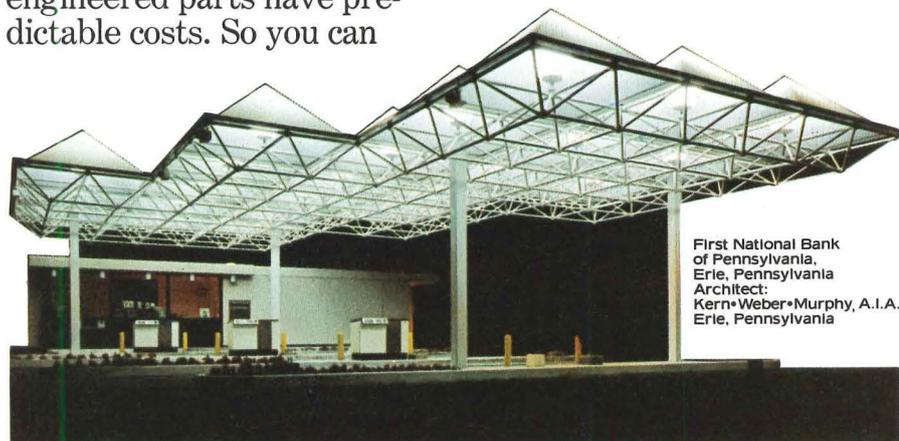
For more information about Triodetic, see Sweets Catalog, Structural Framing 5.2/Bt.

We also have some other architectural systems that should interest you. We invite you to send for our free book, "Architectural Building Systems."

Write: Butler Mfg. Co., BMA Tower, Dept. B-646, Kansas City, Mo. 64141.



Send for our free book.



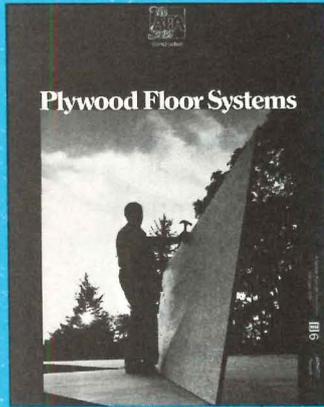
First National Bank of Pennsylvania,
Erie, Pennsylvania
Architect:
Kern•Weber•Murphy, A.I.A.,
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FREE PLYWOOD DESIGN

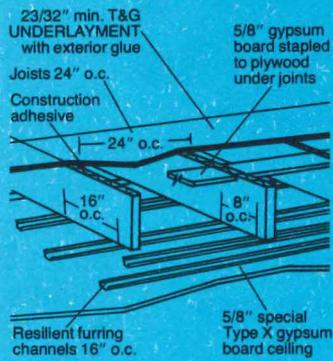
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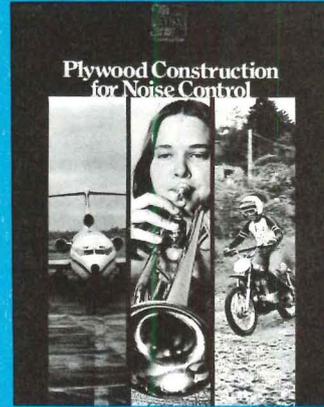
Plywood Floor Systems

1

One-hour fire rated floor assembly



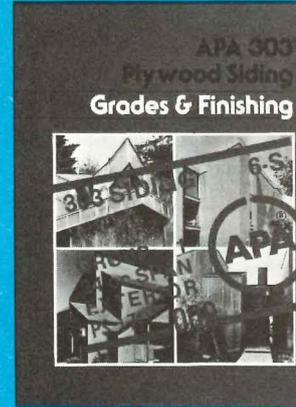
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Plywood Construction for Noise Control

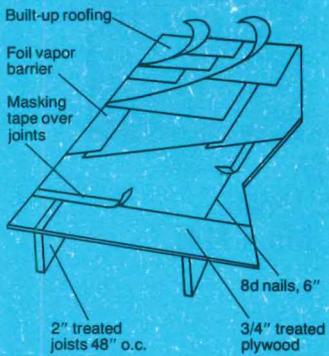
2

Circle Reader Service No. 303



APA 303 Plywood Siding Grades & Finishing

NM 501A Fire retardant treated roof construction



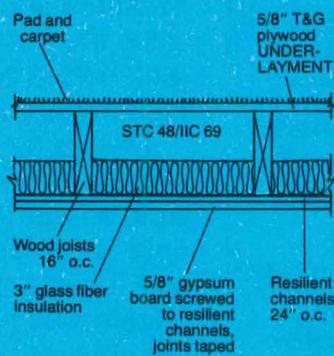
Circle Reader Service No. 306



Plywood construction for fire protection.

6

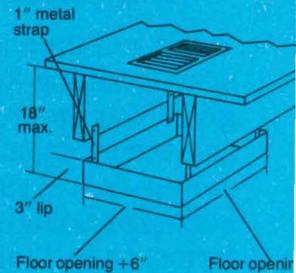
Sound control



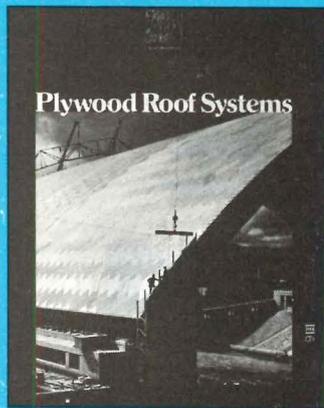
Floor register pan

(Make from 22 to 30 Ga. Galvanized Sheet Metal)

For installation from above nail to joist sides



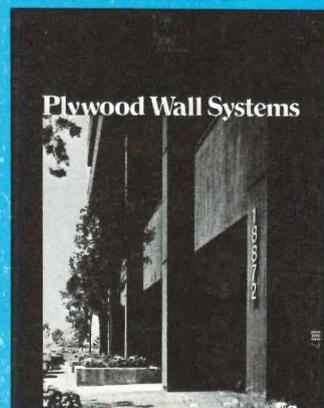
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Plywood Roof Systems

10

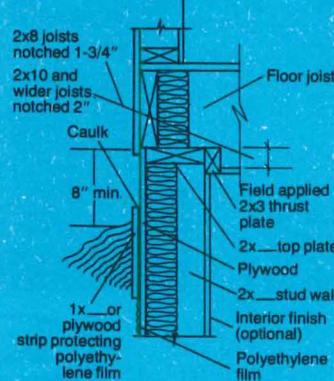
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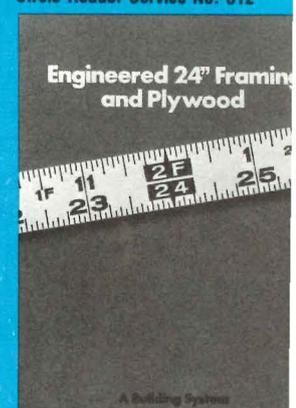
Plywood Wall Systems

11

AWWF side walls to floor



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A Building System

IDEAS. HELP YOURSELF.

Adding rustication strips to concrete form panels

Plyform
Saw cut
Pull casing nails before removing forms

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Concrete Forming & Wood Foundation Systems

4

Plywood panel siding, vertical application

Insulation as required and warm side vapor barrier.
No diagonal wall bracing required with plywood panel siding
Plywood panel siding
Leave 1/16" space at end and edge joints
6" minimum clearance, siding to grade

Circle Reader Service No. 305

Stains & Paints On Plywood

5

Reader Service No. 307

THE PLEN-WOOD SYSTEM

7

Circle Reader Service No. 308

JOINT DETAILS FOR EXTERIOR PLYWOOD WALL SYSTEMS

8

Band board in relief

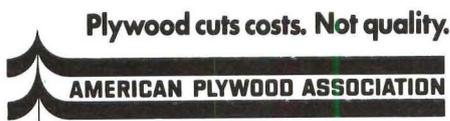
Plywood siding
Galv. spikes or bolts (countersink)
Band board trim
Galv. Z flashing
Plastic pipe spacer (2" to 6" dia.)

Circle Reader Service No. 309

All-Weather Wood Foundation System

9

We'd like to tell you everything we can about designing with APA grade-trademarked wood and plywood systems. Circle the number of each book you want and send this coupon to: American Plywood Association, Department PA-1, P.O. Box 2277, Tacoma, WA 98401.



**American Plywood Association, Dept. PA-088
P.O. Box 2277, Tacoma, WA 98401**

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- I'd like to talk about plywood design with an APA field man.

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Firm _____

Address _____

City _____ State _____ Zip _____

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The better product; often less costly than butt hinges, but far more functional, more durable, versatile and—to most people—decidedly more attractive. Nothing equals the door pivot sets of Rixson.

- Less costly than a pair and a half of heavy duty butt hinges, even when a Rixson pivot set is supplemented by a side jamb pivot.
- Half as expensive as an anchor set, because a Rixson adjustable pivot set, with side jamb pivot, needs no reinforcement.
- Assures better anchorage than butt hinges, because screws are in shear, not in tension.
- Supports doors top and bottom. Typical hinges places weight on side jamb. Properly installed, with weight primarily resting on the bottom, Rixson pivots cannot permit door drag or bind.
- Withstand shock and racking of overhead door holders and general door abuse. Will significantly outlast most ball-bearing hinges.
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For all kinds of doors, Rixson pivots work better than hinges, look better, are more economical.

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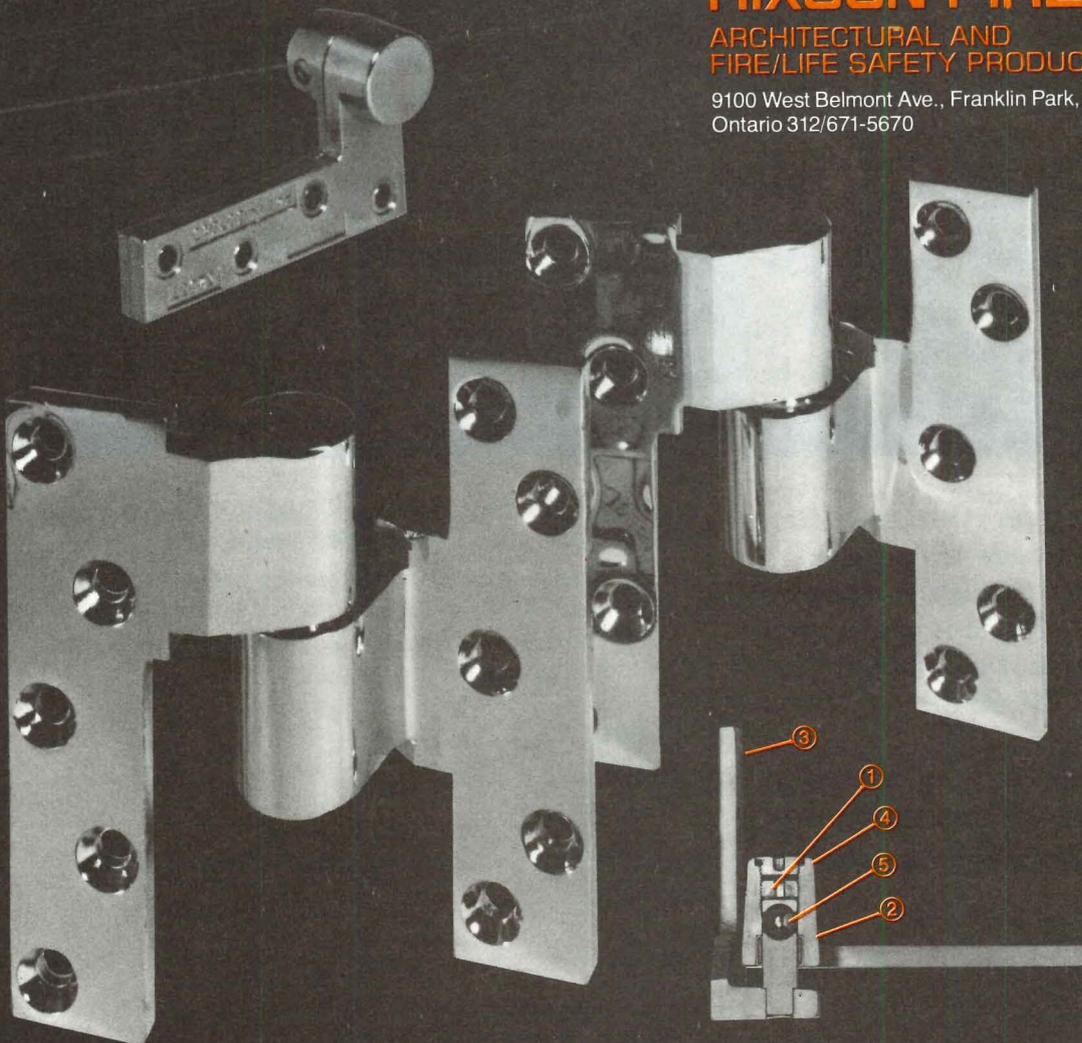
RIXSON-FIREMARK

ARCHITECTURAL AND
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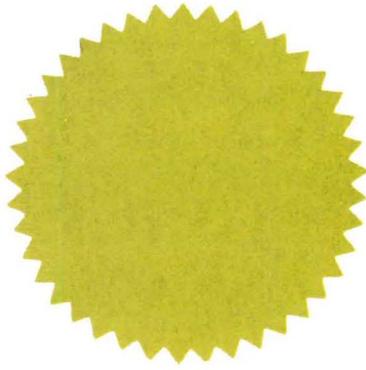
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- ② Solid brass casting
- ③ Screws in shear
- ④ Architecturally designed knuckle
- ⑤ Steel ball-bearing



Progressive Architecture announces its 26th annual P/A Awards program. The purpose of this competition is to recognize and encourage outstanding work in architecture and related environmental design fields in the design phase, before it is executed. **Submissions** are invited in the three general categories of architectural design, urban design and planning, and applied architectural research. Designations of **first award, award, and citation** may be made by the invited jury, based on overall excellence and advances in the art.

The jury for the 26th P/A Awards program: **Fred S. Dubin**, PE, MArch., president, Dubin-Bloome Associates, New York and Hartford, Ct. and partner, Fred S. Dubin Associates International, Rome, consulting engineers and energy management consultants; **Barry Elbasani**, architect, vice president, Elbasani, Logan, Severin, Freeman, Berkeley, Ca; **Jules Gregory**, FAIA; partner, UNIPLAN, Princeton, NJ; **Weiming Lu**, urban design program manager, Department of Urban Planning, City of Dallas; **Anthony Lumsden**, AIA, principal for design, Daniel, Mann, Johnson & Mendenhall, Los Angeles; **Constance Perin**, cultural anthropologist and planner, author of *Everything in its Place: Social Order and Land Use in America* (Princeton, 1977) and member, National Architectural Accrediting Board; **Werner Seligmann**, architect, Werner Seligmann & Associates, Cortland, NY, and dean, Syracuse University School of Architecture; **Bernard P. Spring**, FAIA, dean, School of Architecture and Environmental Studies, The City College of the City University of New York.

Judging will take place in Stamford, Ct. during September 1978. Winners will be notified — confidentially — before Oct. 1. **First public announcement** of the winners will be made at a presentation ceremony in New York in January 1979, and winning entries will be featured in the January 1979 P/A. Recognition will be extended to clients, as well as professionals responsible for the work. P/A will arrange for coverage of winning entries in national and local press.

Eligibility

- 1** Architects and other environmental design professionals practicing in the U.S. or Canada may enter one or more submissions. Proposals may be for any location, but work must have been directed and substantially executed in U.S. and/or Canadian offices.
 - 2** Entries in all three general categories must have been commissioned by a specific client. Only work initiated on the client's behalf — *not* in fulfillment of academic requirements — is eligible.
 - 3** Architectural design entries may include buildings or complexes, new or remodeled, scheduled to be under construction in 1979 — that is, not completed in 1978 and scheduled to commence before 1980. Entries in this category must include detailed design of at least one construction phase.
 - 4** Urban design and planning entries may include only proposals or reports accepted by the client for implementation before the
- [continued on next page]

P/A 26th Annual Awards Program

for projects not yet completed
in
architecture
planning
and
research

end of 1979. Feasibility and implementation strategy should be documented.

5 Research entries may include only reports accepted by the client for implementation before the end of 1979. Submissions

should deal with programming, design guidelines, or post-evaluation for a *type* of project or problem. Research methodology and ways of disseminating findings should be documented.

Entry form: 26th P/A Awards Program

Please fill out all parts and submit, intact, with each entry (see paragraph 11 of instructions). Use typewriter, please. Copies of this form may be used.

Entrant:

Address:

Telephone number:

Project:

Location:

Client:

Category:

Entrant:

Address:

The undersigned confirms that this entry meets eligibility requirements (paragraphs 1-5) and that stipulations of publication agreement (paragraphs 6-7) have been and will be met. Entry has been reviewed for compliance with submission requirements (paragraphs 8-15).

Signature _____

Name (typed): _____

Awards Editor

Progressive Architecture

600 Summer Street, Stamford, CT 06904

Your submission has been received and assigned number:

Entrant:

Address:

(Receipt)

Awards Editor

Progressive Architecture

600 Summer Street, Stamford, CT 06904

Entrant:

Address:

(Return label)

Publication agreement

6 If the submission should win, the entrant agrees to make available further information, original drawings, or models, as necessary, for publication in the January 1979 P/A. The entrant will also provide appropriate slides for the presentation ceremony and reproducible black and white graphic material for press releases.

7 In the case of architectural design entries only, the entrant agrees to give P/A the first opportunity among architectural magazines for feature publication of any winning project upon completion.

Submission requirements

8 Each submission must be firmly bound in a binder no larger than 11" x 17", binders 9" x 12" or smaller preferred.

9 Submissions must include illustrations and drawings necessary to a full understanding of the proposal — all legibly reproduced. *No original drawings, actual models, or slides* will be accepted.

10 Each submission must include a one-page synopsis, in English, on the first page inside the binder, summarizing the intent and principal features of the entry. Synopsis should take up economic, environmental, energy, and user need aspects of the proposal, as pertinent. Synopsis must conclude with a statement on *why this submission deserves recognition*.

11 Each submission must be accompanied by an entry form, to be found on this page. Reproductions of this form are acceptable. All four sections of the form must be filled out — using typewriter, please. Insert entire form, intact, into *unsealed* envelope attached *inside back cover* of submission.

12 For purposes of jury procedure only, projects are to be assigned *by the entrant* to a category entered on entry form. Please identify each entry as one of the following: *Education (Higher), Education (Secondary), Education (Primary or Early Childhood), Housing (Single-family), Housing (Multiple-Unit), Commercial, Governmental, Cultural, Recreational, Religious, Health, Planning and/or Urban Design, Applied Research*. Mixed-use entries should be classified by the larger function. If unable to classify, enter *Miscellaneous*.

13 Entry fee of \$10 must accompany each submission, inserted into *unsealed* envelope containing entry form (see 11 above). Make check or money order (no cash, please) payable to *Progressive Architecture*.

14 No identification of the entrant may appear on any part of the submission, except on entry form. Identifying titles may be concealed by any simple means. Client and location should be identified. For the sake of anonymity P/A will seal stub of entry form in envelope before judging.

15 Deadline for mailing is August 31, 1978. Address entries to:
Awards Editor
Progressive Architecture
600 Summer Street, Stamford, CT 06904

P/A will take every reasonable precaution to return submissions intact, but can assume no liability for loss or damage.



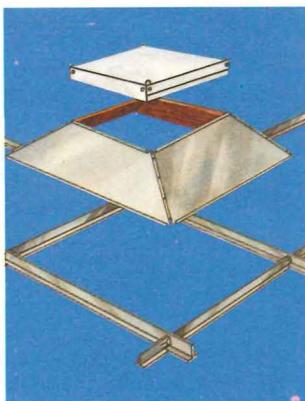
**General Electric,
the company that's
made a science out
of energy efficiency,
gives you a fresh look
at integrated ceilings.**

Only Lok Ceilings wrap performance and energy efficient system.

Let's face it. An integrated ceiling can be defined in many ways. But unless it coordinates air distribution, modular design and a range of lighting capabilities, it's not a truly integrated system.

The people behind General Electric/Lok Ceilings have not only assembled these interlocking functions in one ceiling, they have also refined the performance of each so the total system provides the kind of energy saving efficiency you've come to expect from GE.

Compatible with any environment — old or new.



The secret to Lok's integrated system is modular construction. Over 300 styles of steel and extruded aluminum grid members are available so you can design your ceiling to match the room (instead of designing the room to

match the ceiling). This versatility is particularly important when you're renovating an existing structure. Moreover, the range of functional and aesthetic options offered can bring a new dimension to any interior arrangement. And, if you wish, we'll support you with engineering expertise.

Two "Misers" that pinch every watt.

GE/Lok makes fluorescent fixtures available in a number of luminaire families

(regressed, recessed, semi-recessed or surface mounted). Furthermore, we can team Watt-Miser™ II lamps and Maxi-Miser™ II ballasts to provide you with what we believe is the most efficient



fluorescent system commercially available today. Compared to standard light-ballast systems, two four-foot Watt-Miser II lamps and a Maxi-Miser II ballast will typically deliver equal light output, while using fewer watts.

Lucalox® lamps substantially cut energy costs.

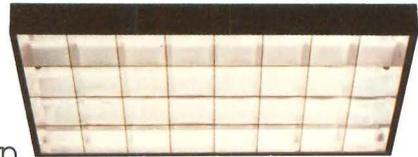
Considering High Intensity Discharge (HID) for brighter light levels? Specify the golden-white light of Lucalox lighting systems. At higher mounting heights, Lucalox lamps can cut your energy requirements up to 22 percent, achieve better light control than fluorescent, or provide a life span of 24,000 hours.

From General Electric Aesthetics into a totally



Better light utilization.

Achieving adequate foot candles doesn't necessarily mean the best light is reaching the subject. With parabolic louvers from GE/Lok, you can control the quality of light as well as the quantity. Deep louvering cuts the incidence of glare, and introduces high visual comfort to offices, educational facilities and general merchandising areas.



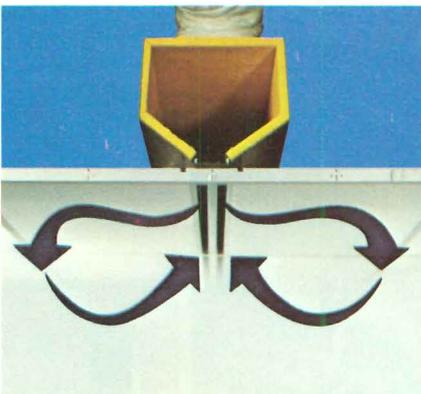
Why limit your options?

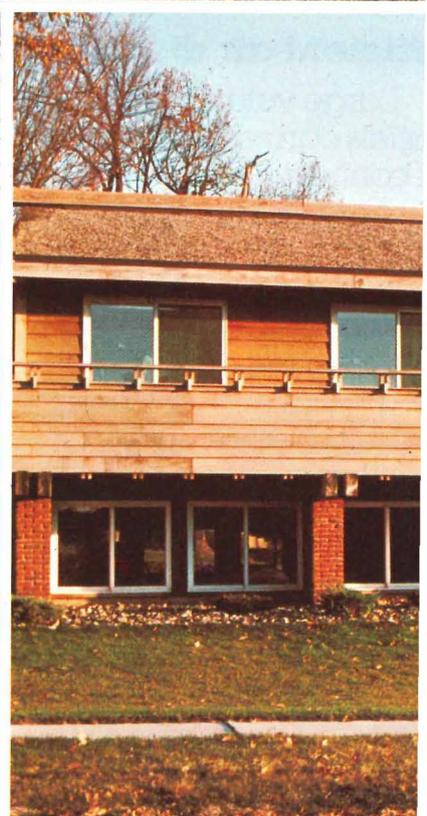
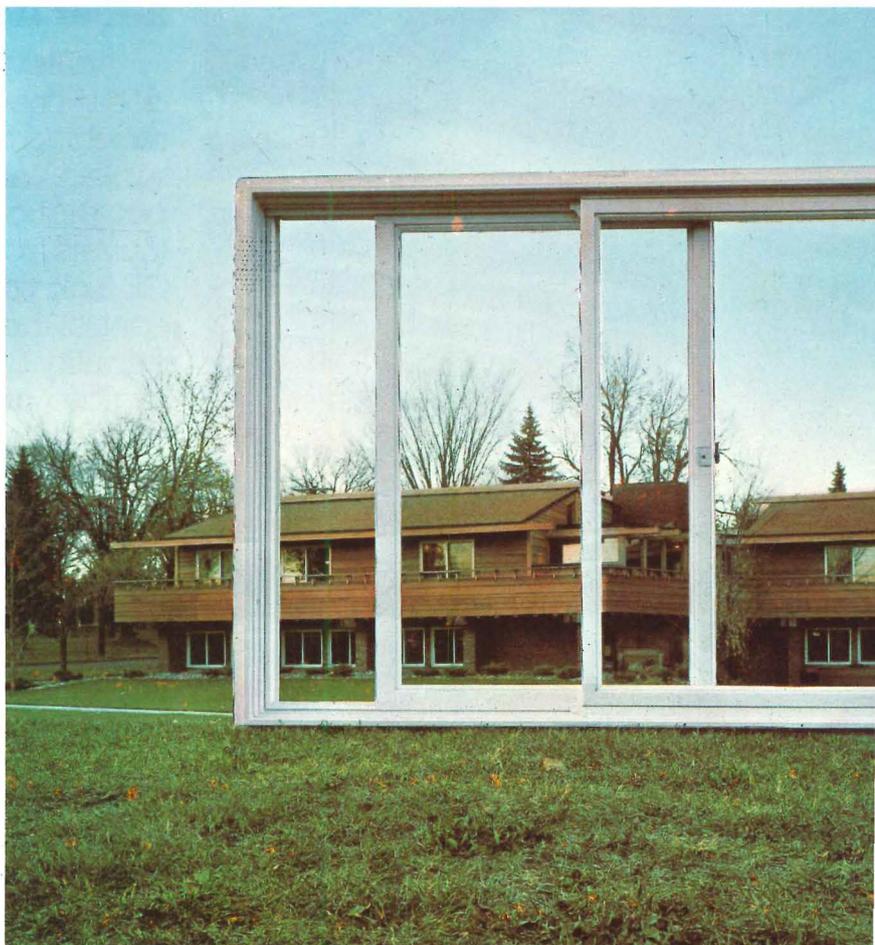
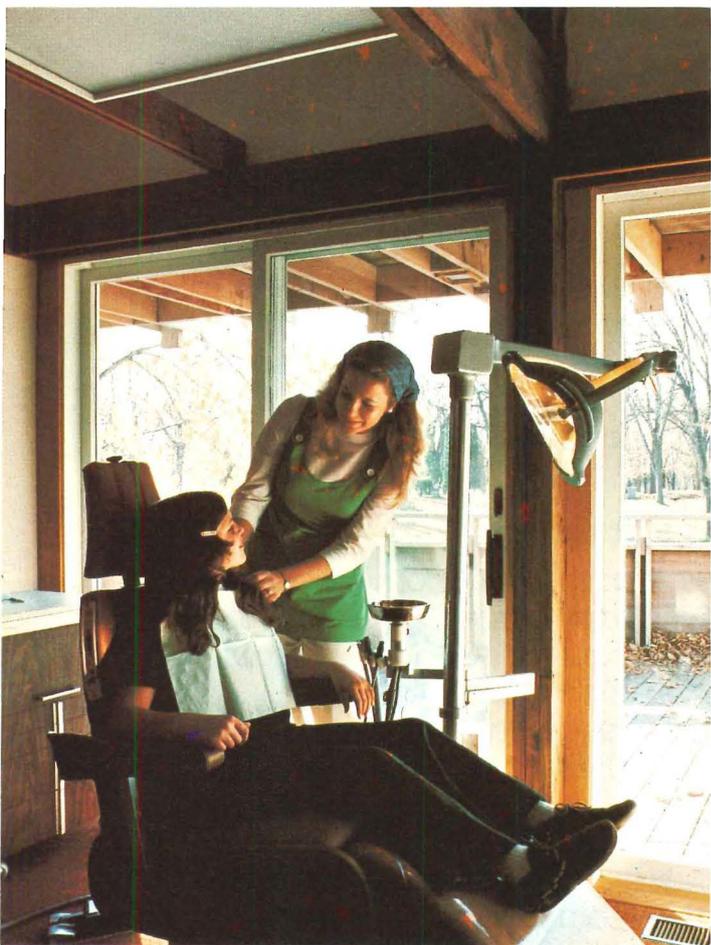
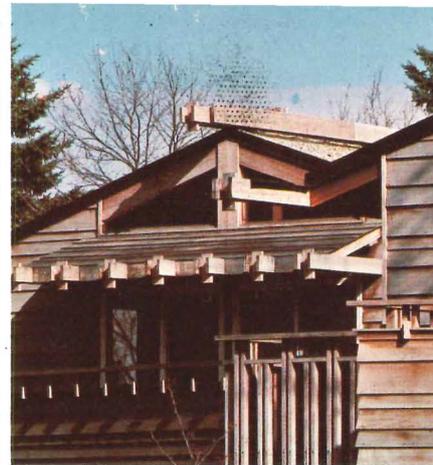
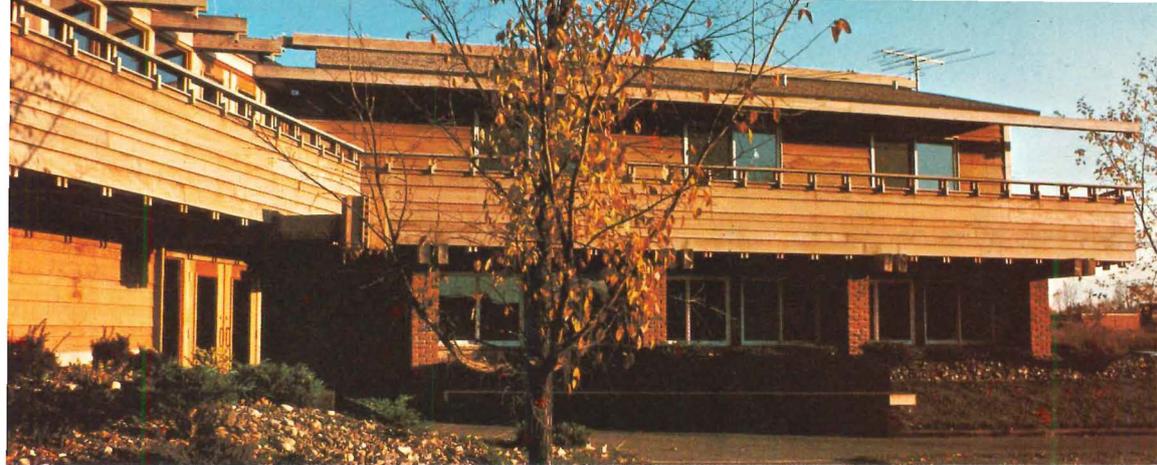
With GE/Lok, good looks, comfort values and system efficiency come together under one roof. And, because it's General Electric, the lighting you choose offers energy-saving advantages that add up to real savings. We stand behind this promise with 100 years of energy management experience.

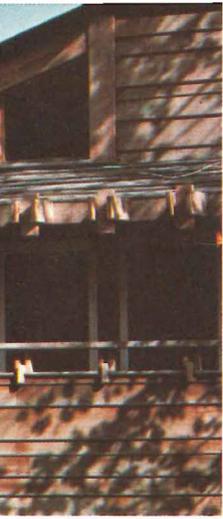
Lok Ceilings from General Electric. Find out more about them today by calling this toll-free number: 800-854-0180 (in California, 714-871-9500). Or write, and we'll send detailed literature to help you put a totally integrated, totally efficient ceiling in your next interior. Lok Ceiling Systems, General Electric Company, Dept. A, 801 South Acacia Avenue, Fullerton, California 92634.

Efficient air distribution control.

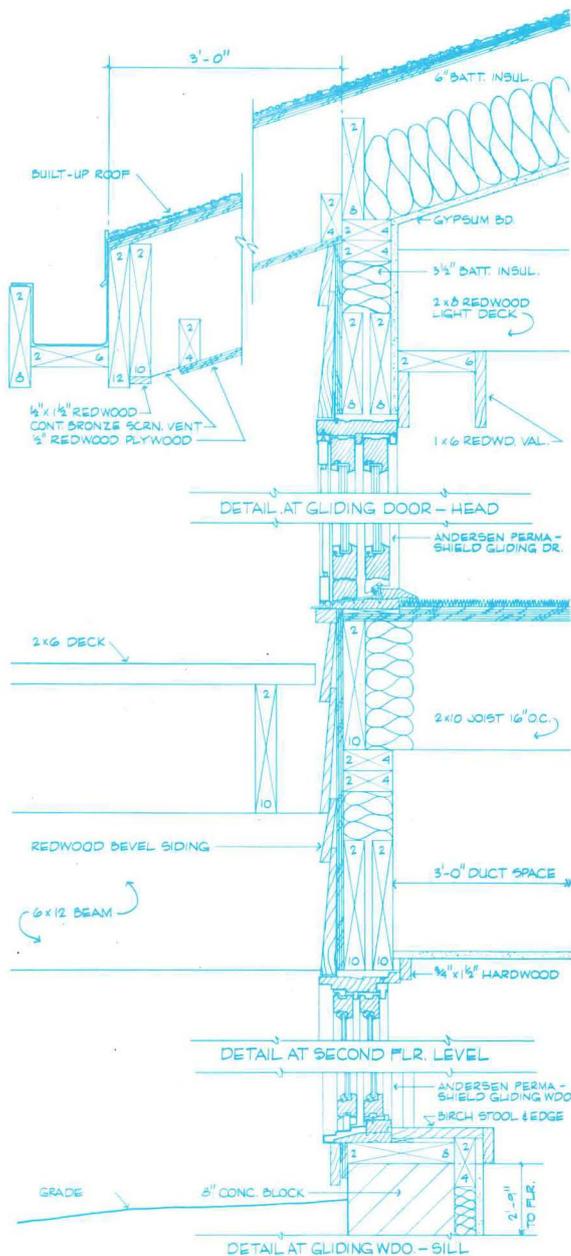
Large volumes of air delivered to single outlets can result in drafts and imbalances. In contrast, GE/Lok's air distribution system evenly diffuses applied air throughout the working environment for greater comfort. It efficiently handles low, normal or high volume requirements, while attractively interfacing with the ceiling suspension system.







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Southill Square Office Building
 Stillwater, Minnesota
 Architect: Michael McGuire,
 Stillwater, Minnesota

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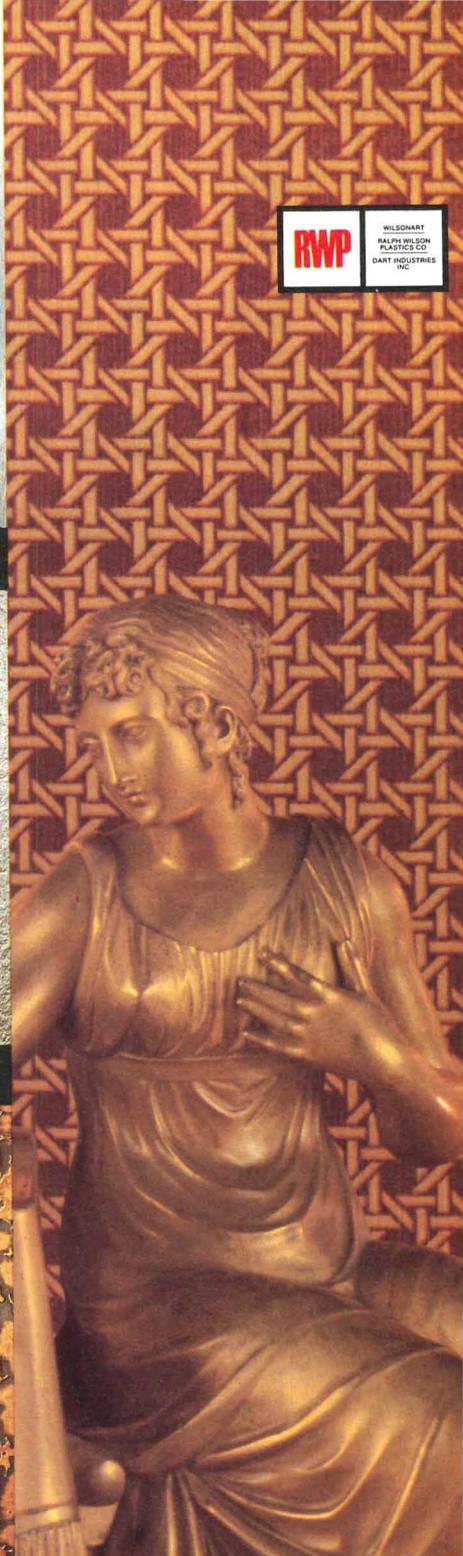
6250 Aluminum



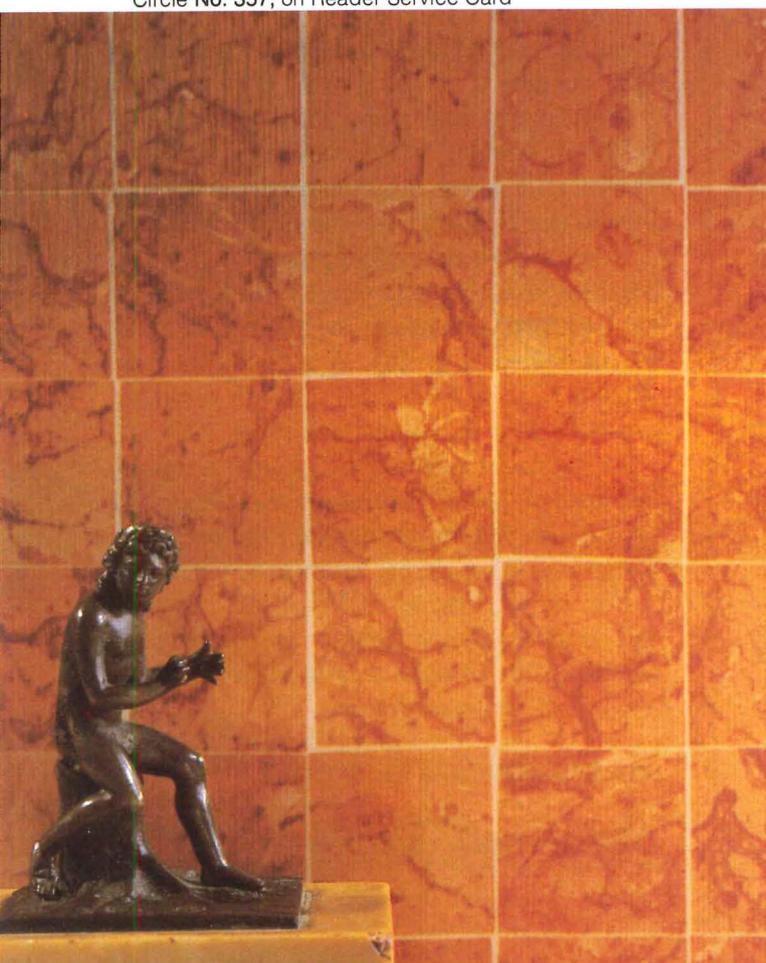
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News report

Supreme Court 'saves' Grand Central

The U.S. Supreme Court has ruled in favor of preservationists who sought to block owners of Grand Central Terminal, New York, from building an office tower above the station. The Supreme Court, 6-3, upheld the lower court's decision, which said that the application of New York's landmark law to the property does not constitute a taking of the property, a protection guaranteed by the 14th Amendment. The New York Landmarks Preservation Commission had denied Penn Central, owner of the station, a certificate of appropriateness for the proposed tower, thus blocking the development.

An attorney for Penn Central on the day of the Court ruling said that since the Court had recognized the value of the air rights, the company would immediately seek to sell portions of the 2.4 million sq ft of rights as transfers to neighboring buildings, such as the Commodore Hotel, which is being developed into a new Hyatt Regency Hotel (P/A, March 1978, p. 50). The sales tax on materials for the Commodore renovation has been earmarked to pay for the \$2 million in exterior cleaning and rehabilitation of Grand Central, a project to be handled by Hardy, Holzman, Pfeiffer Associates, New York.

The Grand Central case was a critical one for the preservation movement, which relies greatly on recent legislation dealing with landmark designation, permissible alterations and renovations, and measures offering



'Landmark Express' send-off at Grand Central (above) and reception at Union Station (below).



Carleton Knight

economic incentives. "It's enormously significant," said Doris Freedman, president of the Municipal Art Society, New York, which led the effort to stop the office tower project and which formed the Committee to Save Grand Central that attracted such spokesmen as Jackie Onassis and Jimmy Breslin (P/A, March 1975, p. 21). The day before the case went to the Supreme Court, a Landmark Express of celebrity passengers made the whistle-stop tour between New York

and Washington to show concern. In Washington, the group was met by Joan Mondale, Sen. Daniel P. Moynihan (D-NY) and National Trust president James Biddle. At a press conference, *New Yorker* critic Brendan Gill introduced the dignitaries including Mrs. Onassis, who spoke briefly. Then she and Mrs. Mondale cut a ceremonial cake. After a reception at Union Station, the New Yorkers reboarded the train for the trip home. The trip—a media extravaganza

News report

with Mrs. Onassis speaking about preservation and talking with people on the train—was widely covered in the press and on television. As one person noted, “We realize we can’t influence the Supreme Court, but we certainly can draw the public’s attention to the importance of Grand Central as a historic landmark.”

Engineering art at Guelph Dam

The Guelph Dam in Ontario, Canada, forwards the premise that engineering, properly conceived, can of itself render a work of art. Chief architect Hans Scheel of Kilborn Engineering, Toronto, set forth his principles as retaining his freedom as designer to express something beyond the accommodation of his client’s program. “Among engineering options,” he stated, “are always some which, without altering required functions, will be more suitable to the achievement of his (the designer’s) objective.” Scheel is an outspoken supporter of the architect as a full member of the design team on engineering projects. He worked with senior project engineer J.D. Jones on both the Guelph Dam and the Water Intake Structure, Ajax, Ontario, both recipients of *Canadian Architect* Yearbook awards.

The Flood Control Dam and Water Reservoir, Guelph, Ontario, is built in an area designed for both conservation and recreation as well as hydrology; the owner is the Grand River Conservation Authority. Thus the project had to harmonize with the landscape with minimum disturbance.

Program requirements enabled the heavy hoist motors to be located below the top deck, thereby allowing a light post and slab superstructure above. This development gave freedom to architectural form, which included a molded fiberglass control housing as a focal point. “All construction elements are articulated and allow the viewer to penetrate with the aid of architecture the opaqueness commonly associated with engineering,” said a statement of design.

The top structure also serves as transition from the vertical piers to the



Guelph Dam: artful engineering allowed a light superstructure accented by a fiberglass control room.



road deck which is cantilevered into the wingwalls. Visitors may stand on the balconies to view turbulent waters below which will rise up to 25 ft into the stilling basin when gates open for full discharge. The site includes picnic and restaurant facilities, trails, swimming, boating, and campgrounds.

NEOCON X: innovation, imitation

NEOCON X, the tenth annual edition of the International Congress on Interior Environment, was held on June 14–16 in the Merchandise Mart in Chicago. “This is the one indispensable mart,” said Ed Epstein, president of Stendig, Inc., one of the several hundred exhibitors participating in the annual event that has become the largest and most important show of its kind in the United States. Since its inception in 1968, NEOCON has been attended in increasing numbers by interior designers, architects and other design professionals, and while the Merchandise Mart does not reveal attendance figures, this year’s show seemed to most observers to have been the largest yet.

Aside from a formal program of some 18 panel discussions on a wide

variety of interior design subjects (two of the more popular sessions were on theme dining and marketing interior design services), NEOCON basically consisted of the time-honored tradition of making the rounds of the showrooms on the 9th through 12th (and a few other) floors of the Mart. The partially refurbished building is now a considerably more pleasant place for the thousands of design professionals who make the Dantean circuit of the showrooms, suspended in time, fortified by hors d’oeuvres, a sea of once-a-year faces floating by in the excitement and confusion. The emphasis on novelty seemed happily less intense than in past years, and that attitude was best expressed by ICF, Inc.’s vice president, Pat Hoffman, who said, “What’s new at ICF? Nothing. What’s new isn’t necessarily good, and what’s good isn’t necessarily new.”

While many fine new introductions were presented for the first time at the show, it must be said that there seemed to be more evidence of imitation than innovation at NEOCON X. Producers sent employees scurrying off to the showrooms of competitors to see if their new office system or plywood chair infringed on design patents, while the knock-off syndrome proliferated to the degree that it’s safe to say that only a handful of manufacturers have a true commitment to original or innovative design.

But longtime furniture industry figures feel that the quality of offerings has improved markedly in the past decade, and must be understood in [News report continued on page 30]

You Asked For It!

Contractors and Architects challenged Won-Door design engineers to construct a Folding Partition that was better than a solid wall. **Here's what you asked for:**

LONG-LIFE DURABILITY.

The new Won-Door Folding Partition has corrugated metal panels making it virtually dent and ding proof. The partition is available in many colors and finishes and will stand unscarred and beautiful for the life of the building even in high abuse areas.

FIRE PROTECTION. (UL)

Won-Door has the only folding partition fire-tested and labeled for both 1 and 1½ hour applications as a "special purpose fire door" by Underwriters Laboratories. In one UL test, after a one-hour fire, the surface temperature of the fire exposed side of the partition reached 1700 degrees F., yet the surface temperature of the unexposed side averaged only 243 degrees F.—dramatic evidence of the fireproof engineering that only Won-Door provides.

IN-PLACE REPAIRABILITY.

The high cost of removing a door and returning it to the factory for repair has been totally eliminated. In the rare instance that a partition is damaged, any panel can be quickly removed and replaced in minutes without removing the door.

TRACKING.

You asked for a strong track and trolley system and we're giving you the best. The Won-Door track system consists of two parallel tracks on 6" or 8" centers made of formed steel or extruded aluminum. Each panel is supported on double-race ball bearing rollers.

SOUND-PROOFING.

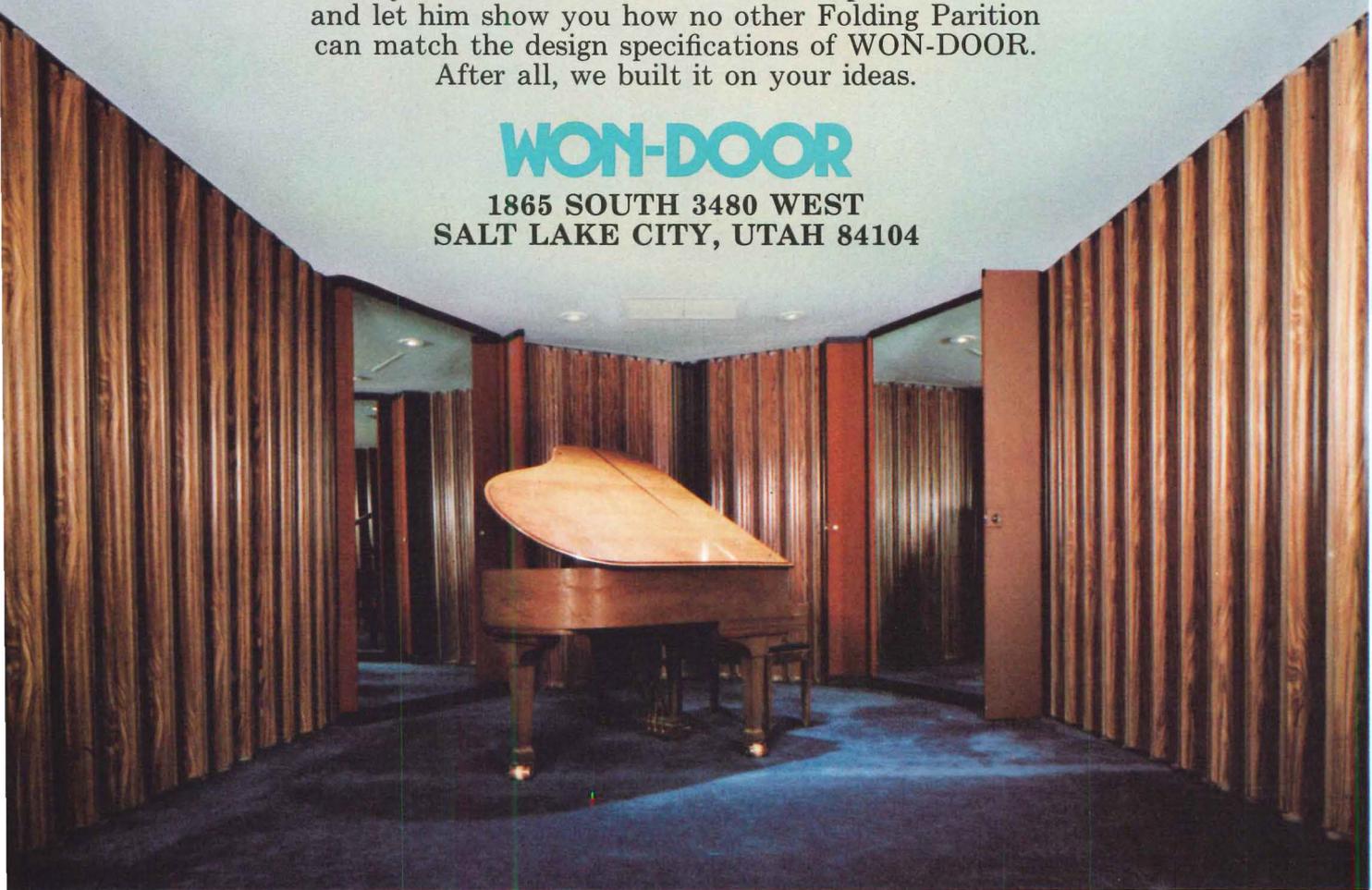
Won-Door has the most effective sound barrier in the Folding Partition industry. One of our models has an STC rating of 52! Un-heard of!

Call 1-800-453-8494 (Toll Free)

for your nearest Won-Door Sales Representative
and let him show you how no other Folding Partition
can match the design specifications of WON-DOOR.
After all, we built it on your ideas.

WON-DOOR

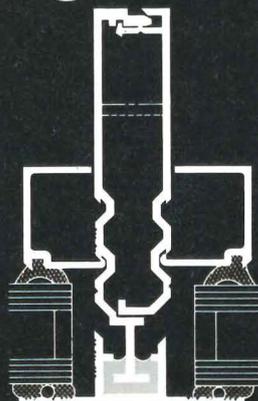
**1865 SOUTH 3480 WEST
SALT LAKE CITY, UTAH 84104**



Kawneer Seamless Mullion invites designers to go to great lengths.



Introducing a unique element that makes less of everything except your design opportunities.



Seamless Mullion is covered by U.S. Patents: 3,527,010 and 3,769,775.

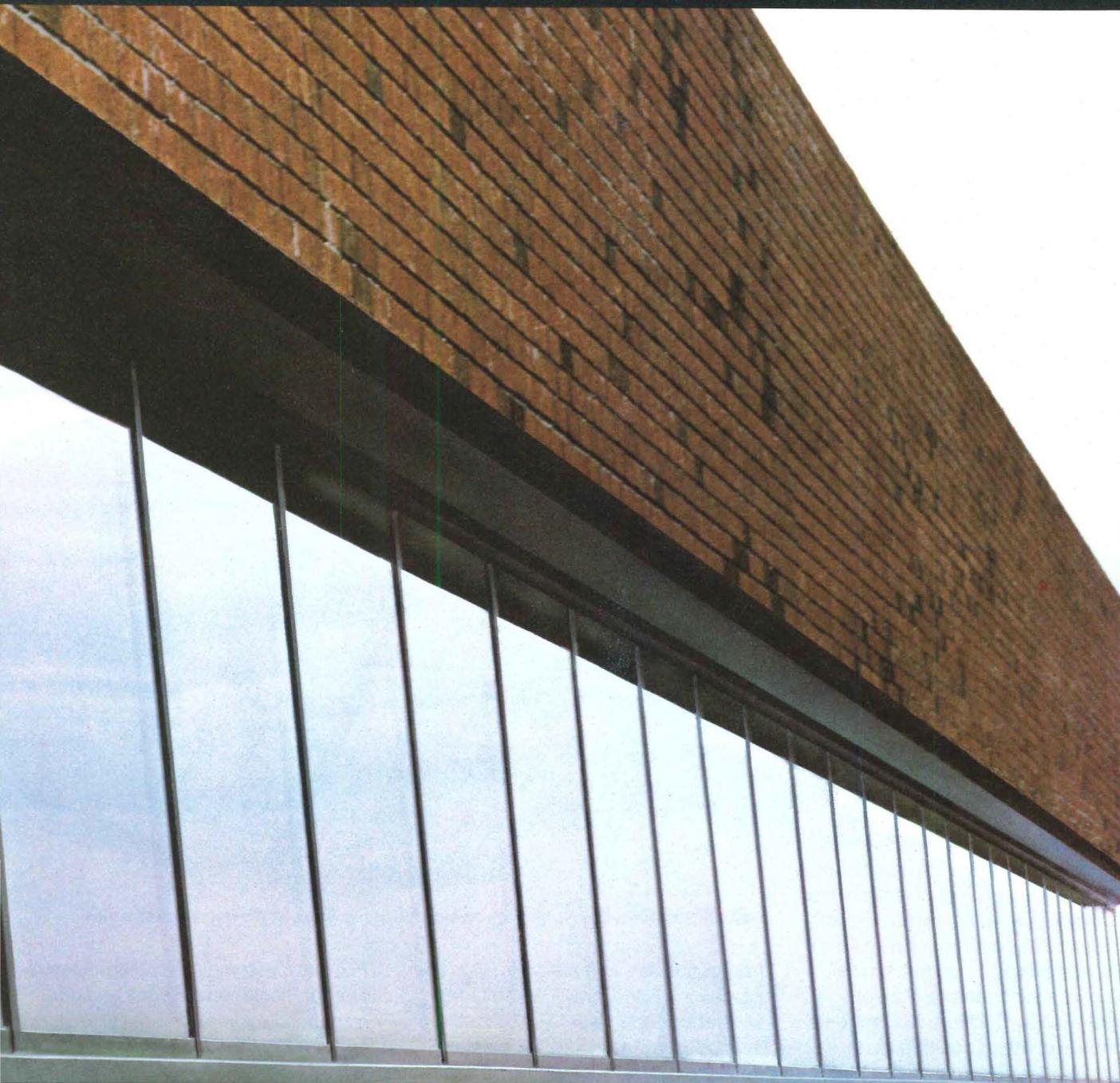
Seamless Mullion is a unitized framing system that does away with the exterior exposed seams often found in coupling mullions. But the name is only the beginning. When we removed the seam, we added a whole new range of design opportunities.

Narrow sightlines and minimum projections.

The first impression of Seamless Mullion is one of expansive cleanliness, because a proper glass bite is maintained with only a minimum obstruction of the vision area. This impression is enhanced by the extreme frontal placement of the glass with the greater part of the metal structure to the interior.

Efficient and secure.

In addition to a basic 4-inch frame depth, Seamless Mullion is also available as a thermally-broken system in 3 or 4-inch depths. The positive thermal break helps reduce conductive heat loss and virtually eliminates



Ohio Medical Indemnity, Inc., Columbus, OH
GOSNELL, ESSINGER, RETTSTATT, WEITHMAN ARCHITECTS, INC.

age caused by condensation. And, Seamless Mullion also accommodate operable vents for natural ventilation to help reduce heating and cooling costs. Thermal Seamless Mullion features the exclusive Kawneer Isolock® which creates a positive interlock of interior and exterior metal sections to enhance the structural integrity of the system.

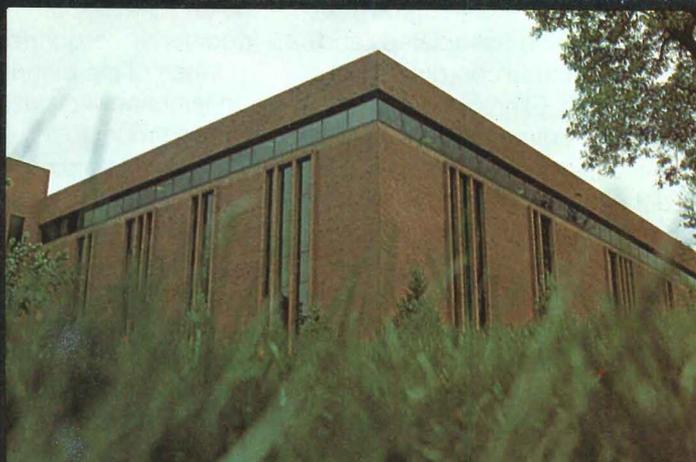
An inside job.

Kawneer Seamless Mullion is designed for inside glazing, eliminating the need for expensive scaffolding during construction.

Seamless Mullion.

the designer's element.

There's a lot more to the Seamless Mullion story than meets the eye. For more information please write or call: Kawneer Architectural Products, 1105 N. Front Street, Grand Rapids, Michigan 49503. (616) 683-0200.



KAWNEER
The designer's element.

terms of the late start that modern furniture design made in this country. In addition to the business sessions, NEOCON x also was the scene of the traditional entertaining that is part of any convention (the palm this year went to Shelby Williams's lavish Carnival at the new Marriott Hotel, the interior design of which was the *succès scandale* of Chicago.) The consensus among knowledgeable industry observers was that it has come a long way in ten years, and still has a long way to go. [MF]

1984 target for new Boston transit

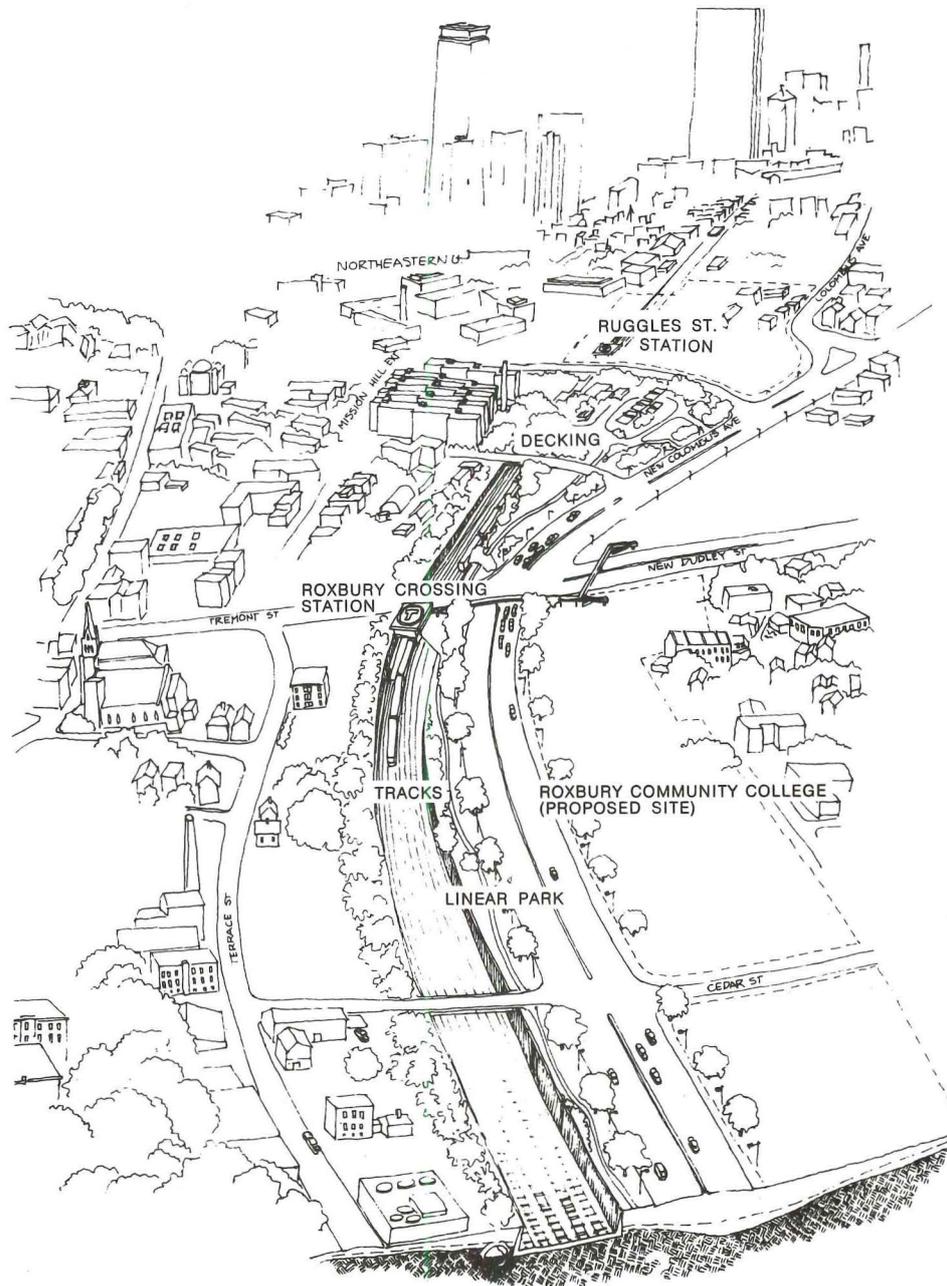
Approval is expected by summer's end of the \$500 million Southwest Corridor Project, a 4.7-mile-long transit program in southwest Boston. In January, Gov. Michael Dukakis broke ground on the first section, the South Cove Tunnel. Operation of the system is expected to begin in 1984.

The project was conceived as an eight-lane superhighway, but in 1970 the governor declared a highway moratorium; ensuing years saw the project change into a rail corridor funded by the Urban Mass Transportation Administration. The project also implemented a provision of the 1973 Highway Act which allowed highway funds to be used for mass transit.

Coordinating consultant for the project is a joint venture: Kaiser Engineers/Fay Spofford & Thorndike. Members of the consulting team include Charles G. Hilgenhurst, economic planning; Stull Associates, urban design and architectural coordinator; Roy Mann Associates, landscape architectural coordinator; and Wallace, Floyd, Ellensweig, Moore, planning and community coordinator.

Architect Anthony Pangaro of the Massachusetts Bay Transportation Authority is manager of the project; assistant manager is Ken Kruckemeyer, also an architect. The project has 30 percent participation by minority-owned firms.

Amtrak railroad service, commuter rail, and local rapid transit will be combined in the corridor, which will be a depressed trench varying in width



Boston's Southwest Corridor Project: reversed superhighway plans in favor of mass transit.

from a quarter- to a half-mile. In some places the corridor will be covered with landscaped parks so that neighborhoods, long divided by existing surface and embanked transit lines, will be reunited. A major feature will be an 85-acre park parallel to the corridor for three-quarters of the length.

Much of the planning was done in conjunction with citizen groups from the community.

Section designers and associate architects for the eight transit stations are: Section 1—Kaiser Engineers/Fay, Spofford & Thorndike: Back Bay Station (\$12 million), Kallman, McKinnell & Wood and Bond/Ryder Associates; Massachusetts Avenue station (\$3 million), Wallace, Floyd, Ellensweig & Moore and Equity Design Inc. Section 2—Frederic R. Harris: Ruggles Street station (\$15 million), Stull Associates;

Roxbury Crossing (\$3 million), Castro-Blanco, Piscioneri & Feder and Jung-Brannen; Jackson Square (\$3 million), Turner Associates and Huygens & Tappe. Section 3—Howard Needles Tammen & Bergendoff: Boylston Street station (\$3 million), Kubitz & Pepi; Green Street station (\$3 million), Mintz Associates and The Leon Bridges Company; Forest Hills station (\$19 million), Cambridge Seven Associates and Robert L. Wilson Associates.

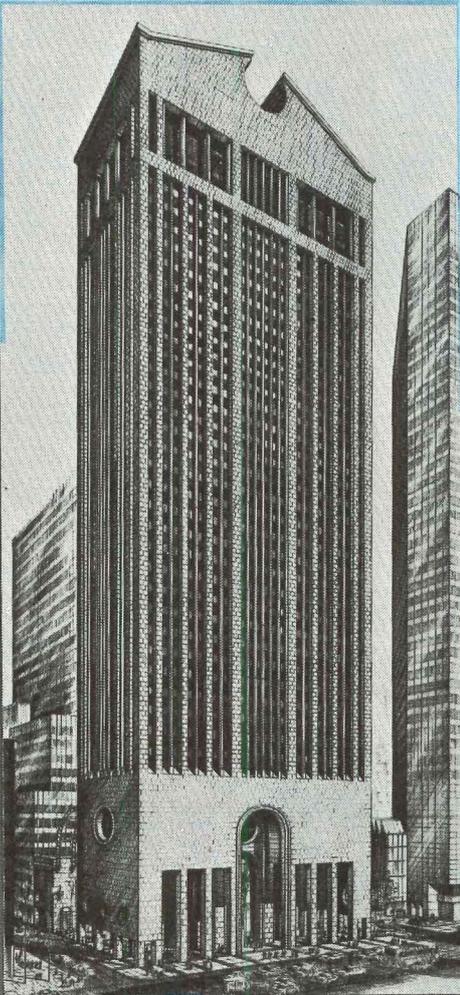
Barrier-free directory

The National Center for a Barrier Free Environment is compiling lists of professionals experienced in designing [News report continued on page 34]

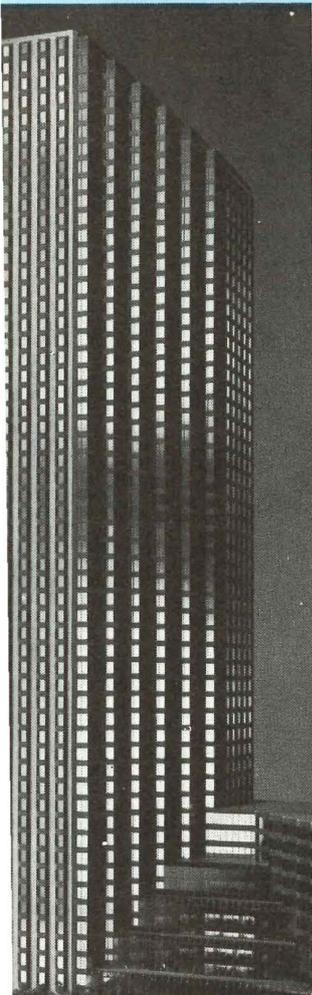
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Architects: Johnson/Burgee in
association with Harry Simmons
Stone: Granite



ONE PILLSBURY PLACE
Minneapolis, Minnesota
Architects: Skidmore, Owings & Merrill
Stone: Travertine and Granite



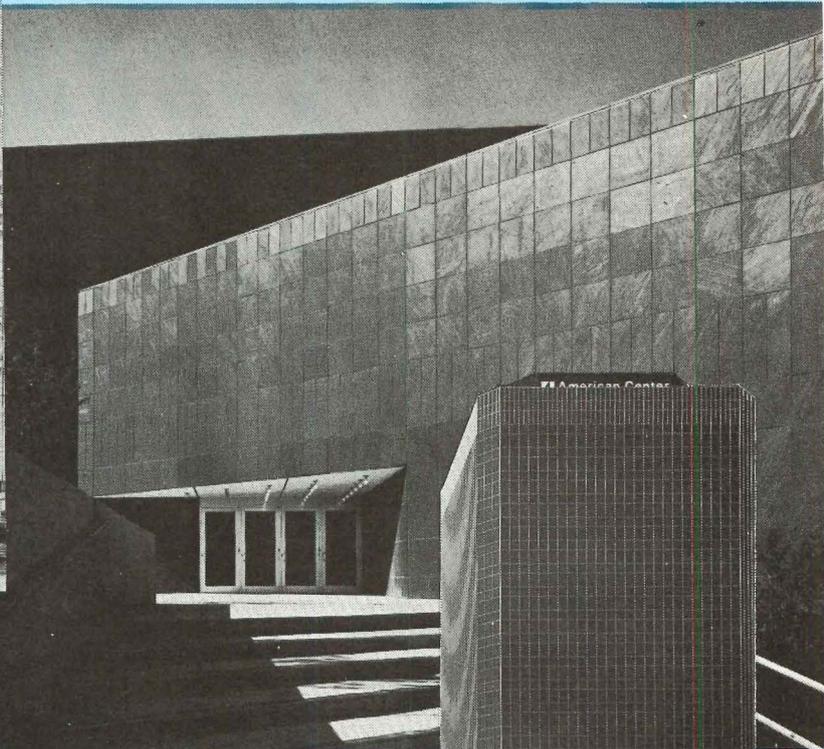
Prepared by BSI, the new 1978 *STONE CATALOG* is a hardcover, indexed volume, invaluable for researching stone application concepts and data on all types of natural stone. **WRITE TODAY FOR YOUR COMPLIMENTARY COPY.**



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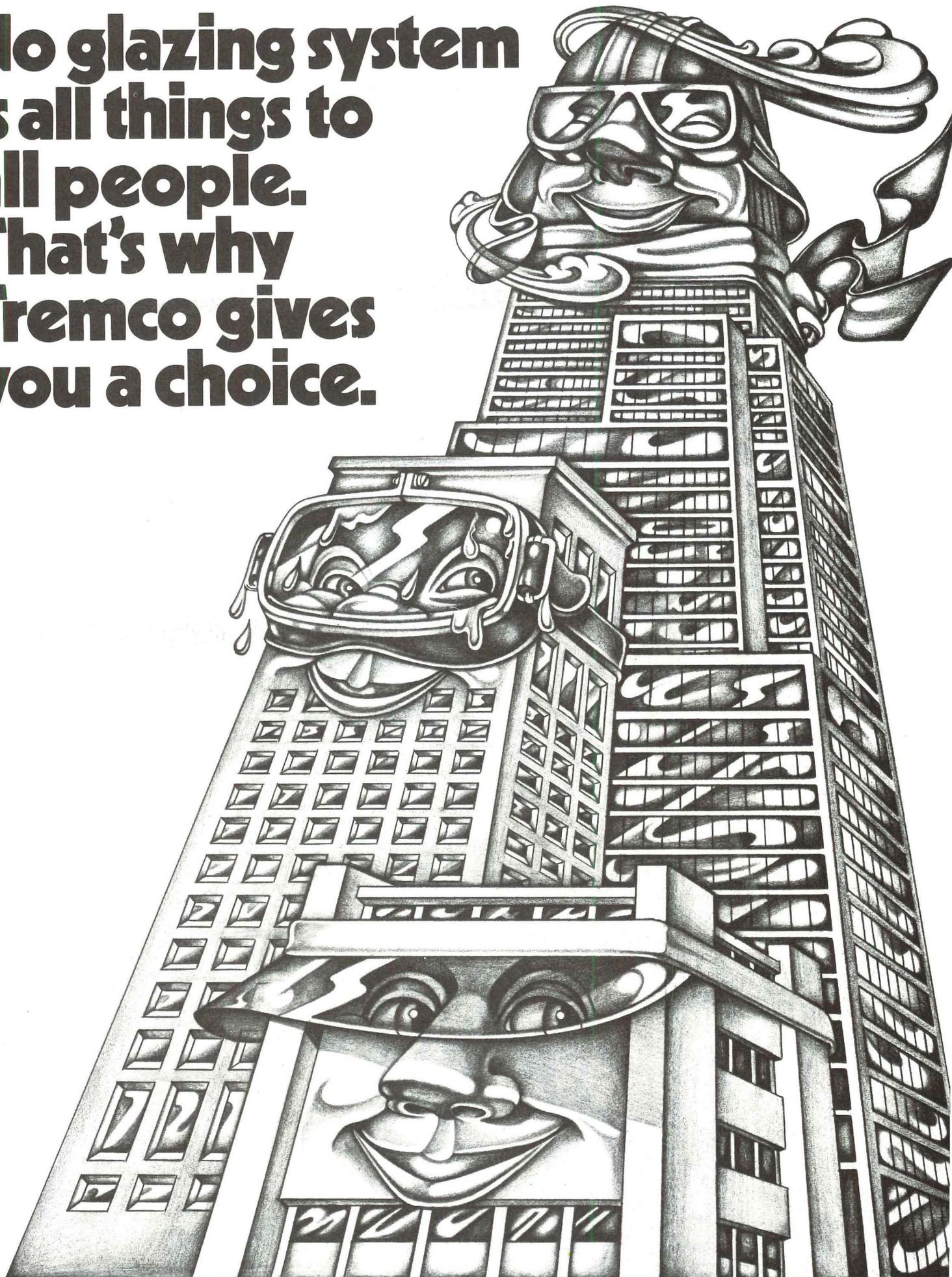
Building Stone Institute

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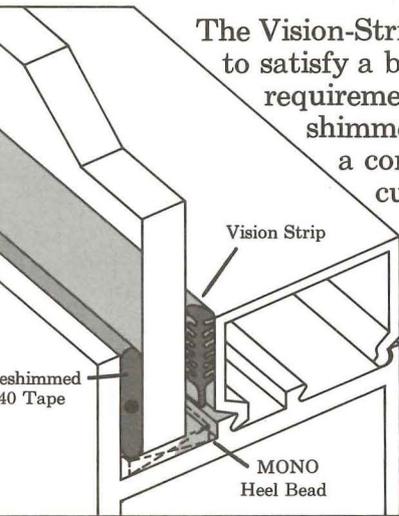


AMERICAN MOTORS WORLD HEADQUARTERS
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Architects: Smith, Hinchman & Grylls Associates, Inc.
Stone: Slate

**No glazing system
is all things to
all people.
That's why
Tremco gives
you a choice.**



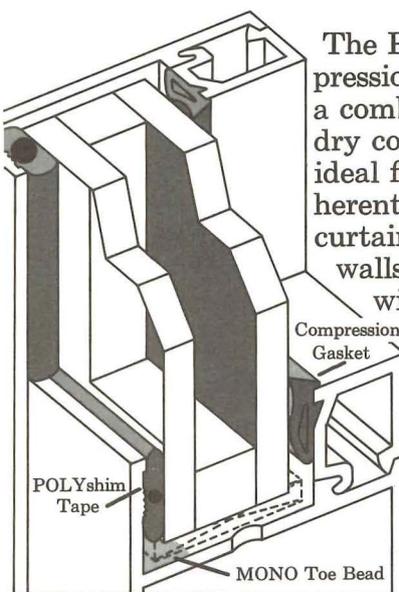
Every glazing system can't solve every design problem. Tremco gives you several systems — each developed to satisfy different design priorities without compromising appearance or performance. The Tremco Vision Strip, POLY-WEJ, Dry Glazing and WEJ-Grip systems can handle all or most of your glazing requirements. Occasionally, however, you may face very special glazing conditions. Then your Tremco man can help you combine Tremco glazing components into a special system that will do the job.



The Vision-Strip System is designed to satisfy a broad range of glazing requirements. Tremco Pre-shimmed 440 Tape provides a continuous shim that cushions the glass

around the full perimeter and prevents pressure points and squeeze-out. A continuous heel bead of MONO sealant prevents leaks at tape corners and sash joints. The Tremco Vision Strip shims

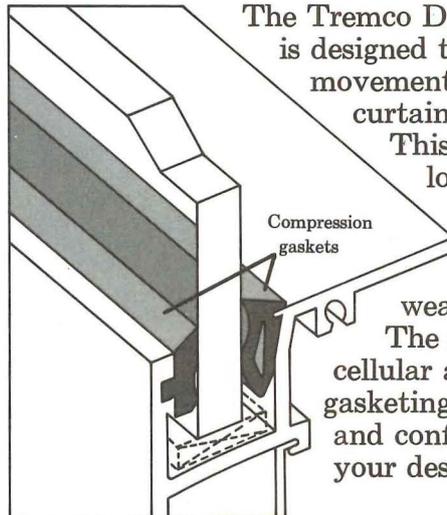
the full interior perimeter and provides a trim, clean sight line. These three components combine to give leakfree security in a broad range of applications.



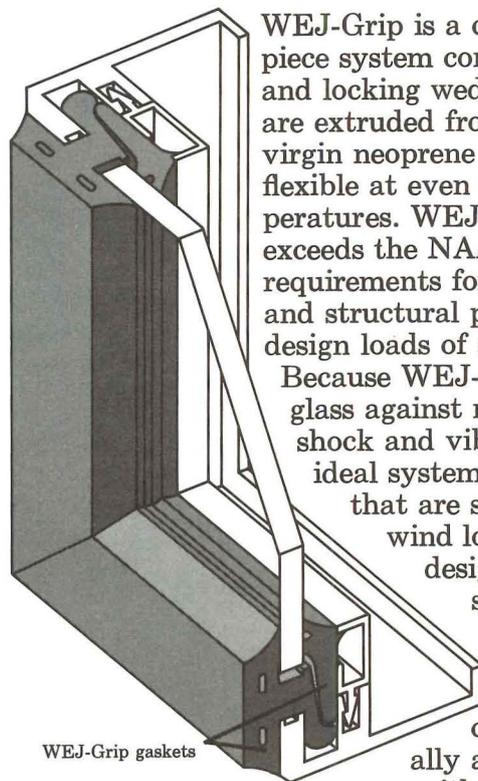
The POLY-WEJ™ compression glazing system is a combination of wet and dry components that is ideal for solving the inherent problems of stick curtain walls, rain screen walls, or offset strip windows. The pre-

formed, highly adhesive POLY-shim® tape provides a continuous shim for even windload transfer. The POLY-WEJ neoprene gasket is engineered for high

dimensional stability and held to close manufacturing tolerances to deliver trouble-free compression glazing. Maximum security for the whole system is assured by using MONO at all critical points.



The Tremco Dry Glazing System is designed to accept the high movement characteristics of curtain-wall construction. This two-piece system locks firmly into place, offering the simplicity of dry glazing and weather-tight security. The system includes cellular and compression gasketing in custom sizes and configurations to meet your design requirements.



WEJ-Grip is a clean line, two-piece system consisting of a gasket and locking wedge. Both pieces are extruded from ozone-resistant virgin neoprene which remains flexible at even the coldest temperatures. WEJ-Grip meets or exceeds the NAAMM performance requirements for water infiltration and structural performance for design loads of at least 40 PSF.

Because WEJ-Grip cushions the glass against normal movement, shock and vibration it is the ideal system for large lights that are subject to high wind loads. The two-piece design provides easy straight-in glazing from the interior. Overall, WEJ-Grip gives you a clean, architecturally attractive appearance with a narrow sight line.

Tremco stands ready to work with you through design and specification stages. Call on our 48-plus years' experience in designing high performance leak-proof systems. Job-proven sealants like DYmeric®, Lasto-Meric® as well as MONO®. The liquid polymer, Tremproof® waterproofing. And our roof edging system, Tremline®. Tremco, 10701 Shaker Blvd., Cleveland, Ohio 44104. Tremco (Canada) Ltd., Toronto, Ontario M4H 1G7.

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facilities for the handicapped and elderly. Architects, interior designers, and other professionals are invited to apply for free listing in the directory by writing the center, 7 and Florida NE, Washington, DC 20002. The directory will be distributed nationwide by the Community Services Administration.

AIA invites participation

Corresponding memberships in nine committees of the American Institute of Architects have been inaugurated by the AIA to broaden its base of participation. The memberships entitle the individual to receive all notices and meeting minutes and to participate in the meetings. AIA members, associate members, chapter professional affiliates, and accredited architectural students may join for \$9 per year. All others may join for \$15.

The nine committees are architects in industry; commerce and industry; education; health; architecture for justice; arts and recreation; historic resources; housing; and interior architecture. Maurice Payne, AIA director of professional interest programs at the headquarters, Washington, DC, will provide additional information.

Parks, plazas, and playgrounds

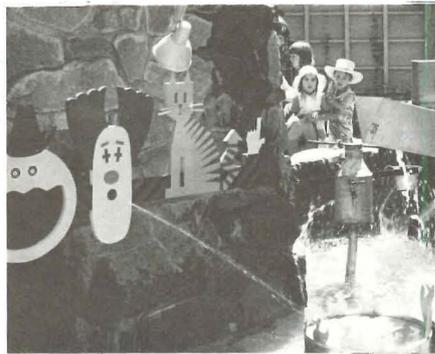
Outdoor spaces are the delight of summer, and recent projects here and abroad show the diversity of creative approaches to the design of plazas, playgrounds, and parks.

Peavey Park Plaza in Minneapolis is a one-acre civic meeting spot doubling as a multi-use amphitheater. It links the city's Nicollet Mall extension with the Loring Park development area, a new residential community downtown. It is the first of a series of public and private spaces in Minneapolis planned and designed by M. Paul Friedberg & Partners, New York.

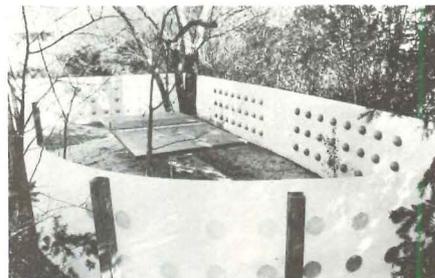
Down the coast, in Los Angeles, graphic designer Jerry Brande has created a Participation Pond playground for Magic Mountain's Spillikin Corners Village. Children must make



Peavey Park Plaza, Minneapolis.



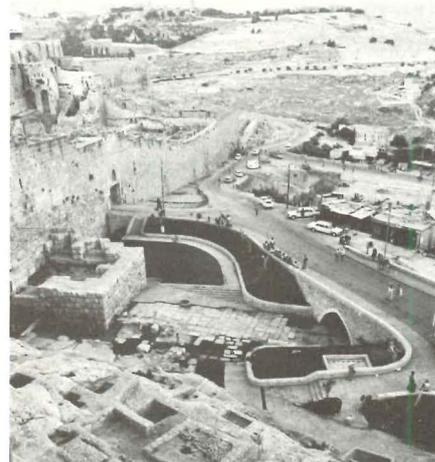
Participation Pond, Los Angeles.



Candy Button Fence, Larchmont, NY.



Play environment, Africa (above); archaeological park, Jerusalem (below).



the play equipment perform by turning wheels, pressing valves, or cranking hand pumps—all discharging water in some fashion, some even squirting back at the kids.

Candy Button Fence is the name New York designer Sheila Berkley gave her mixed media wall surrounding a play area in Larchmont, NY. The translucent fiberglass fence, with rows of colored metallic dots, looks like the ribbons of sugar candy children buy. The designer conceived it as an alternative to the traditional fence; it defines the play space and provides an ever-changing backdrop of shade and light patterns.

In Africa, orphans living on the outskirts of the planned new town in Nairobi, Kenya, have a village of their own: a community of individual "homes," each with a landscaped play space with colorful, sculptural equipment.

An archaeological park is underway at the base of the walls of Old Jerusalem. Planned and designed by architect Shlomo Aronson, the park embraces old and new in a way, according to the designer, that sets apart the antiquities—including a Roman road and other remains from a half-dozen different cultures, superimposed one upon the other. Stone in the new walls, for example, has a fine finish in contrast to the massive existing walls.

Recent literature on outdoor spaces includes "Plazas for People," a book by architect Don Miles, West Coast director of Project for Public Spaces, a nonprofit organization, with Robert Cook and Cameron Roberts. The 54-page book is available from PPS, 316 Second Ave. S., Seattle, Wa, 98104.

Connecticut material sought

The Connecticut Society of Architects is compiling a comprehensive guide to the architecture of the state, covering all periods from Colonial settlement to the present. It is planned to include about 1200 individual entries and 300 photographs and will be addressed to residents, tourists, and students, as well as to architects.

All architects who have designed buildings erected in Connecticut are [News report continued on page 38]

A sophisticated suburban office building. **ELEVATORS BY DOVER**

Park Central III enhances the North Dallas skyline with twenty-one stories of bronze glass and warm-toned concrete. Inside, a six-story atrium filled with cascading foliage welcomes visitors. Interfloor traffic moves quickly and efficiently on ten high-speed Dover Gearless Traction Elevators under the direction of Dover's Computamatic® control system. For more information on Dover Traction and Oilraulic® Elevators, write Dover Corporation, Elevator Division, Dept. B, P.O. Box 2177, Memphis, Tennessee 38101.

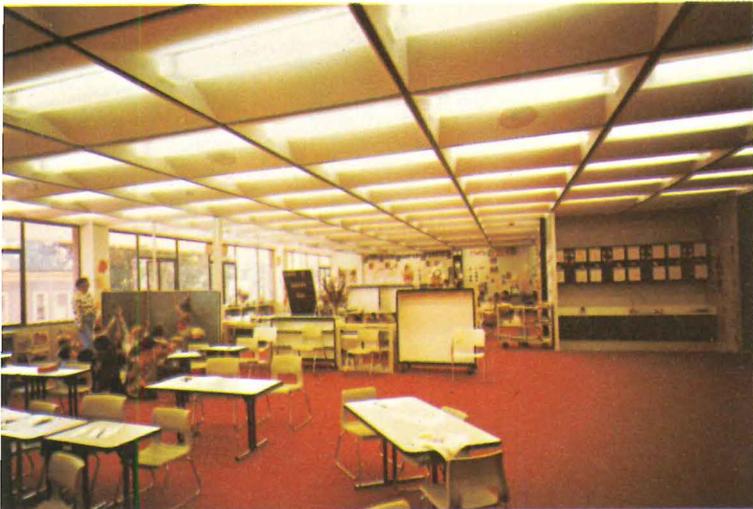
Park Central III, Dallas
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Architects:
Jarvis Putty Jarvis, Inc.
General Contractor:
Avery Mays Construction Co., Inc.
Elevators installed by
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Structural steel "system" cuts cost of Boston area schools.



Simple and repetitious structures hold down design and engineering time, ease problem solving, and save money.

Boston's Public Facilities Department has sponsored the development of a pre-designed, pre-engineered structural steel system that has been adopted for more than \$180,000,000 of new school construction in the Boston area. Known as the BOSTCO system (see box), it establishes guidelines in advance for structural framing, snow loads, fire proofing, and many other structural details. Developers were the Engineers Design Group, Inc. of Cambridge.

The BOSTCO system has been successfully used by a number of schools in the Boston area. Two schools are illustrated here, one in the city and one in an outlying area.

Bethlehem's Sales Engineering Division offers numerous technical and advisory services. For example, our preliminary frame analysis program is designed to help you determine the most economical steel frame for your



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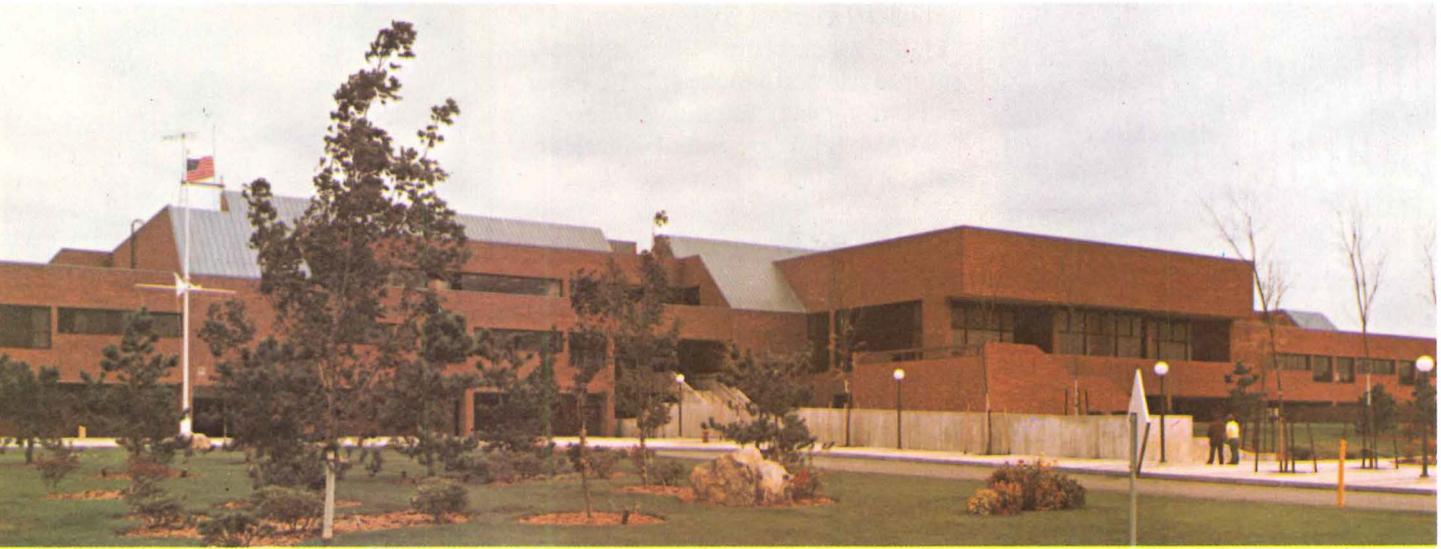
- Atlanta (404) 522-4918
- Baltimore (301) 685-5700
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- New York (212) 688-5522
- Philadelphia (215) 561-1111
- Pittsburgh (412) 281-5900
- St. Louis (314) 726-4500
- San Francisco (415) 981-2200
- Seattle (206) 285-2200

Andrew Jackson/Horace Mann Community Schools, Boston (Opposite Page)

Architects: Peirce, Pierce and Kramer/
Korslund, Lenormand & Quann, Inc., Boston, A Joint Venture
Engineer: Engineers Design Group, Inc., Cambridge
Steel Fabricator: Antonelli Iron Works, Quincy

Cape Regional Technical High School, Harwich (Below)

Architects: Drummey Rosane Anderson, Inc., Wellesley
Engineer: Engineers Design Group, Inc., Cambridge
Steel Fabricator: A. O. Wilson Structural Co., Cambridge



The BOSTCO System.

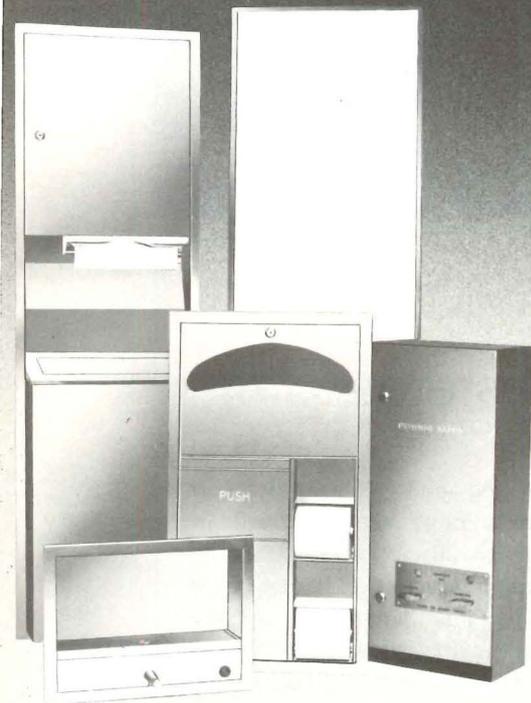
This structural system is based on a structural grid consisting of steel columns, one to six stories in height, and steel beams. The grid utilizes secondary members 10 ft on center to produce structural bays which may vary from a minimum size of 20 ft by 20 ft to a maximum of 30 ft by 50 ft. A 5¼-in. composite slab spans the beams. In order to provide a stiff floor system without paying an undue cost, the beams have been designed for composite action with the slab. Holes in the webs of all of the internal beams allow smaller piping and electrical distribution to be placed within the layer of the floor-ceiling envelope occupied by the structural system.

Long-span structures (clear spans exceeding 50 ft), such as gyms, pools, and auditoriums, are supported by beams and columns

and long-span joists at 5 ft on centers. Bays are restricted in width to 20, 25 or 30 ft in the primary direction. The length of the bays is determined by the requirements of the individual projects; however, the bay length is a multiple of 5 ft.

Foundations, other below-grade work, and grade slabs are not strictly part of the system; however, their design must be accommodated to the constraints of the system. Stairs, stair towers, and other similar secondary structural elements are also non-system, but must also obey system constraint insofar as their design affects the system's work. The external appearance of the schools is not affected by the system, and can, therefore, widely vary.

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right
the
second
time



There are many decisions to be made when remodeling a washroom. One of the most important of these is what washroom equipment to specify. You want units that are attractively designed, durably constructed and easy to use — like the Parker units shown. To make your washroom even better the second time around, choose stainless steel units from Parker's complete washroom equipment line.

S See our catalog in Sweets.



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Circle No. 346, on Reader Service Card

News report continued from page 34

invited to submit material for possible inclusion. Such entries should include name of project, location, date of completion, names of all principal professionals and contractor, and brief description, noting design and construction features. Glossy photos, 8" x 10", are welcome, but not mandatory. Address all correspondence to Peter H. Borgemeister, Executive Director, CSA/AIA, 85 Willow Street, New Haven, Ct 06511.

Calendar

Through Sept. 10. "The Architecture of Gunnar Asplund," an exhibition of the work of Sweden's leading architect in the years between the two World Wars, Goodwin Galleries, The Museum of Modern Art.

Aug. 28-31. Annual meeting, American Section of the International Solar Energy Society, Convention Center, Denver.

Sept. 9-12. International Interior Design Exhibition and Symposiums, Seventh Regiment Armory, New York.

Sept. 29-30. Canexus 78, showroom exhibition tour, contract furniture manufacturers, Toronto.

Sept. 30. Deadline for entries in the first Design Awards for Playgrounds sponsored by Columbia Cascade Timber Co., 1975 SW 5 Ave., Portland, Or.

Sept. 30. Deadline for entries in the "Mannington Award" competition of interiors featuring Mannington resilient flooring. Mannington Award, Box 1978, Salem, NJ 08079.

Oct. 8-11. NAHRO national conference, Olympic Hotel, Seattle.

Oct. 11-15. National Trust for Historic Preservation annual convention, Drake Hotel, Chicago.

Oct. 16-18. Building & Construction Exposition & Conference, McCormick Place, Chicago.

Oct. 16-20. American Society of Civil Engineers Convention & Exposition, Conrad Hilton, Chicago.

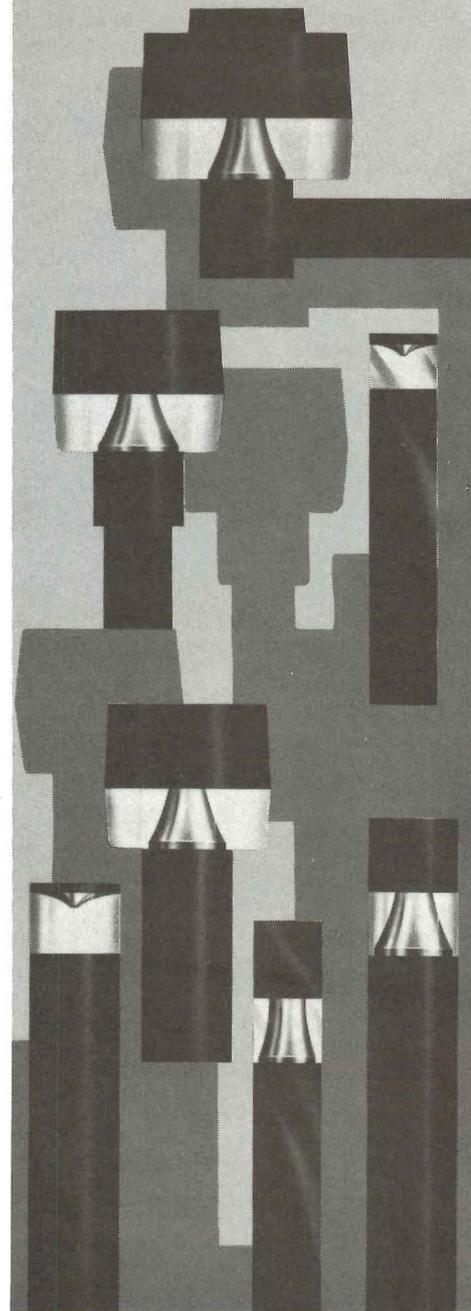
Oct. 23-27. International Union of Architects' World Congress, "Architecture and National Development," Mexico City.

Oct. 29-Nov. 3. Fall meeting, American Concrete Institute, Houston, Tx.

[News report continued on page 41]

NEW SITELITE 5

*for the added touch of beauty
in architectural landscapes...*



Here's a bright, new design collection of graceful bollards and indirect mid-level post lights... Square and round luminaires and poles, various heights, and companion models for wall mounting. Fresh, harmonious designs to help blend today's newly-created sites with their structures and total environment.

SITELITE 5 from McPhilben. It's the added touch of beauty from the experts in outdoor lighting.

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New, factory-formed zinc roofing systems



Lynwood Recreation Center, Lynwood, Wash. Architect: ORB Planners & Engineers, Seattle, Wash. Installation: City Heating & Sheet Metal, Inc., Everett, Wash.



Seattle Aquarium, Seattle, Wash. Architect: Fred Bassetti & Company, Installation: Pacific Rainier Roofing, Inc.

MICROZINC 70

reduces on-site costs in Seattle

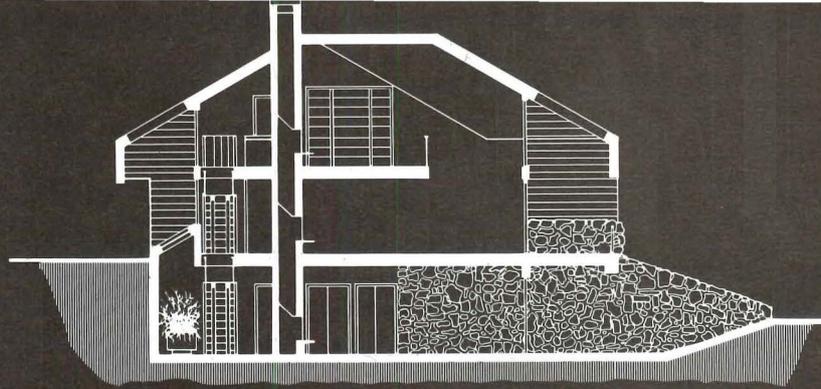
Gravel Stops • Coping • Flashing • Fascia • Mansards

From Seattle to Savannah, Microzinc 70 is well known for its beautiful pre-weathered patina—but it is even more attractive in economical ways! Each Microzinc 70 system is delivered in pre-engineered form. Installation is so simple that on-site labor costs are substantially reduced. No cleaning, no special soldering tools, no painting needed—and no priming should you want to paint. Once Microzinc 70 is installed it becomes still more attractive... *no maintenance problems*; no leaks, no staining from run-off, and no rotted materials. Investigate the on-site cost savings of

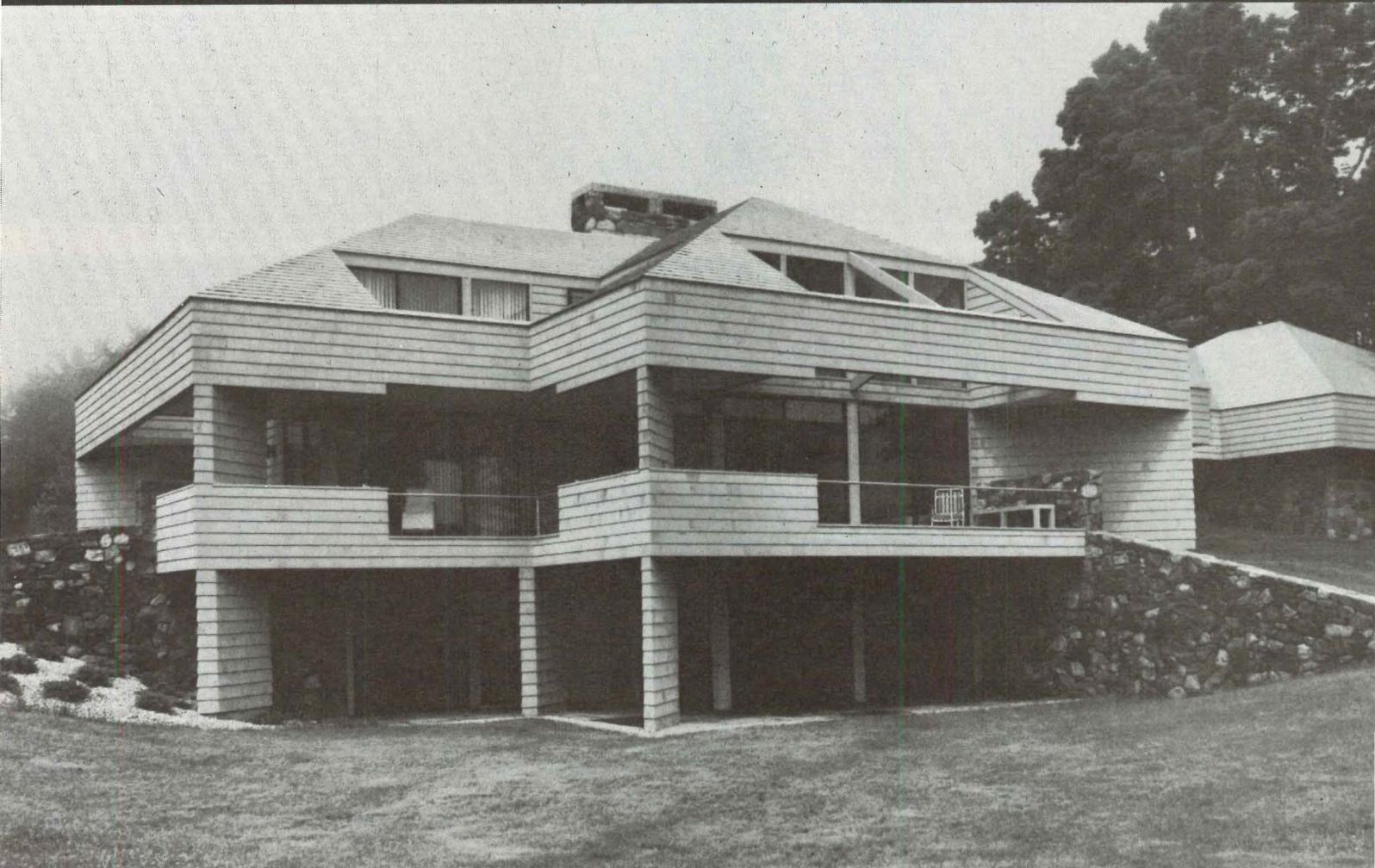
Microzinc 70 pre-engineered components. For further information, write today or call 615-639-8111. *Now available! Traditional lead roofing in two new Ball alloys: calcium/tin or soft lead.*



Greenville, Tennessee 37743 (615) 639-8111



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Residence on the east coast. Richard Bergmann Arch

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Cedar Shakes (Heavy)	1.69
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Cedar Shingles	.87
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Asphalt Shingles	.44
Built-Up Roofing, Smooth	.33
Asbestos Cement Shingles	.21
Slate	.05

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Energy update

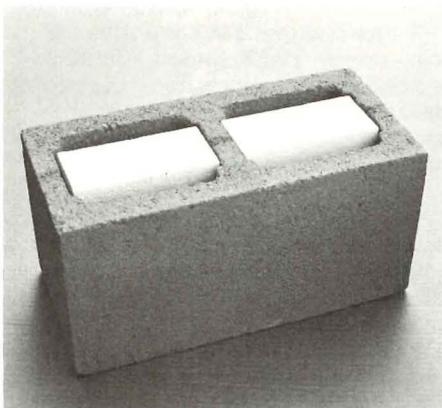
Mixed solar systems

Twin speculative, light industrial buildings nearing completion near San Francisco have south walls constructed with the popular tilt-up fabrication method. The concrete walls (poured on site in a horizontal position and then lifted into place) were designed by Habitec: Architecture and Planning, Santa Clara, to adapt to a Trombe-type (passive) solar collection system. The passive system, with the active system on the front canopy—both designed by Pacific Sun, Inc., of Menlo Park—provides 90 percent of the annual energy requirements for heating and hot water. A significant portion of the annual cooling requirements also will be supplied by the solar systems. A Department of Energy grant paid for 50 percent of the solar heating equipment. The buildings are being developed by Renault & Handley of Palo Alto.

Northern portions of the buildings are designed for office space; the southern portions will be used for fabrication and warehousing operations. The buildings are in the Oakmead Industrial Park, Santa Clara.

Core insulated masonry block

Energy legislation has challenged the masonry industry to keep pace with competition in providing energy-conserving materials. Millard Warren, owner of Southern Cast Stone Company, Knoxville, has patented his invention, the Warren Insulated Bloc, which compares favorably in ASTM C-236 Guarded Hot Box Tests and ASHRAE 90-75 performance calculations. The blocks come in different



One of several types of Warren Insulated Blocs.



Robert Isaacs

Speculative industrial building has combination active and passive solar systems.

shapes and sizes in split rib, split face, and other designs. The foam core inserts provide a strong binding action once in place; heat loss through the polystyrene cores meets existing code requirements.



Health building meets new energy code.

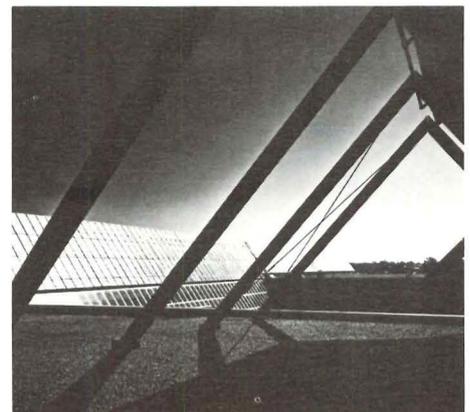
Foam spray to meet new code

The University of Minnesota Health Sciences Complex, initiated in 1968 and built with a series of sub-systems on a fast-track construction basis, has had to comply with newly established energy conservation standards. Therefore, a \$33 million, 15-story outpatient clinic, though identical to the precast concrete/steel frame buildings in the complex (completed in 1975), had to conform to minimal energy conservation requirements for heating and cooling. The Architects

Collaborative of Cambridge, Ma, which designed the complex in association with Health Sciences Architects & Engineers of Minneapolis, selected a sprayed-on urethane foam system that promised to be twice as effective in insulation as that used on the earlier buildings.

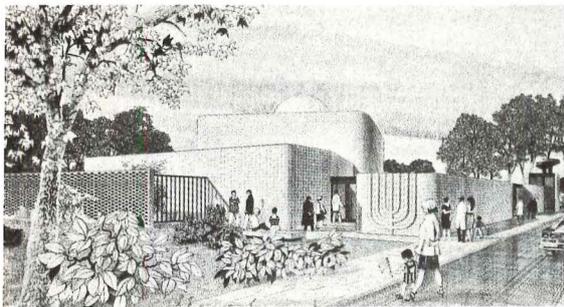
Mega-collector for college

One of the largest solar collectors in the world is in operation at the north campus of the Community College of Denver (P/A, June 1974, p. 25). The flat steel plate collectors, mounted in two rows along the roof, measure more than 35,000 sq ft. They provide 80 percent of the hot water and air requirements for nearly 305,000 sq ft of classroom space. A recent study has shown that the \$667,000 investment would be returned to the state in 11 years. The solar-equipped building will use an estimated 15.9 billion Btu of fossil fuel compared to an estimated 74.3 billion Btu in a similar conventionally heated building. The project was designed by John D. Anderson & Associates of Denver.

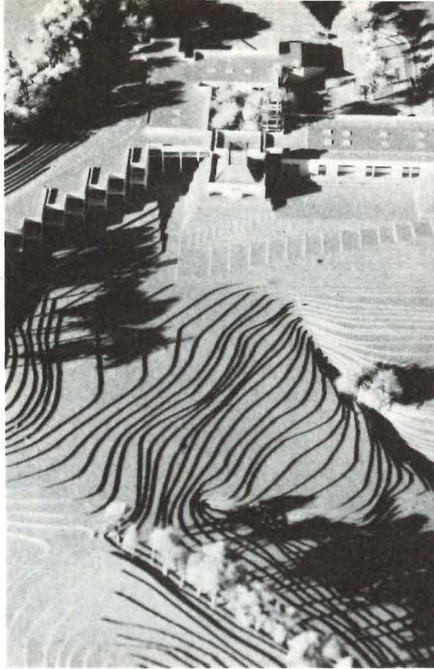


College has one of world's largest collectors.

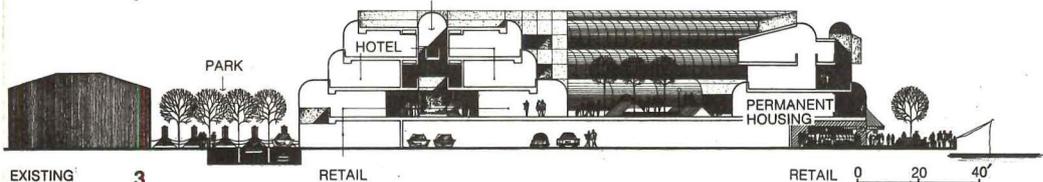
In progress



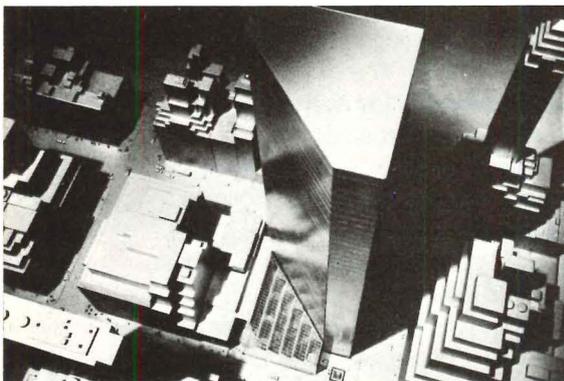
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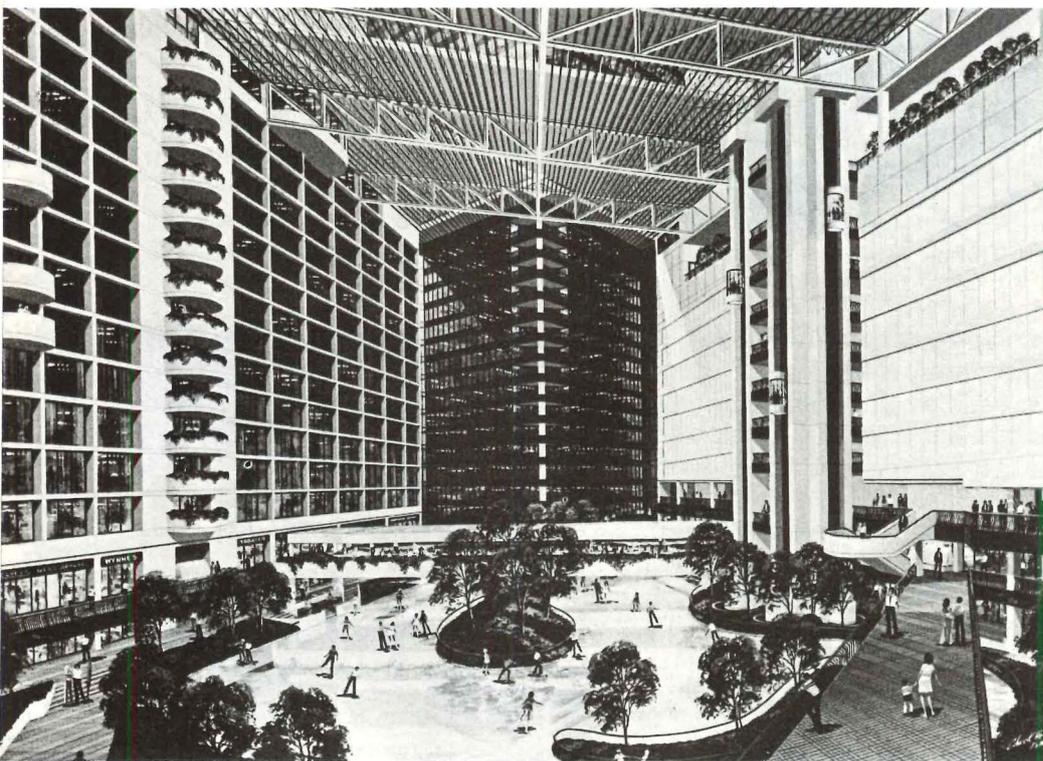
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6

1 Beth Sholom Congregation—In July, 1977, the Beth Sholom synagogue, of Chattanooga, Tn, was demolished by an explosion, an apparent bombing, and the case remains unsolved. Members of the congregation have proceeded with plans to rebuild on the same site. Their architect is Haim Zukerman of CIDECO Architecture & Planning, Knoxville, a subsidiary of CIDECO International, Zurich. The sanctuary will open into a large social hall. Other portions of the building will contain offices and support facilities. A walled courtyard will be on the north.

2 Benedictine Mission House—Construction has begun on the Benedictine Mission House in Schuyler, Nb, by Neil Astle & Associates of Omaha. The group of buildings will house three separate areas: a workplace where the activities of the brotherhood's foreign missions will be served; a community area for visitors; and a cloistered portion for members only. The heart of the monastery will be a chapel seating approximately 30. Warmth will be provided by a ceiling of laminated wood beams.

3 San Francisco Pier 45—The San Francisco Port Commission held a competition to develop its Pier 45, and the winning entry was by The Landau Partnership, Los Angeles. The program called for a mix of public open space, permanent and transient housing, office and retail space, and parking. The solution utilizes a variety of construction methods: reinforced concrete for major structures; wood frame for the 224 dwellings; and heavy timber for some of the commercial facilities near the housing. All elements are within a 40-ft height limit; the linearity of the site is visually diminished by angled siting and spacing of the structures, and open and enclosed views of the Bay and of the city.

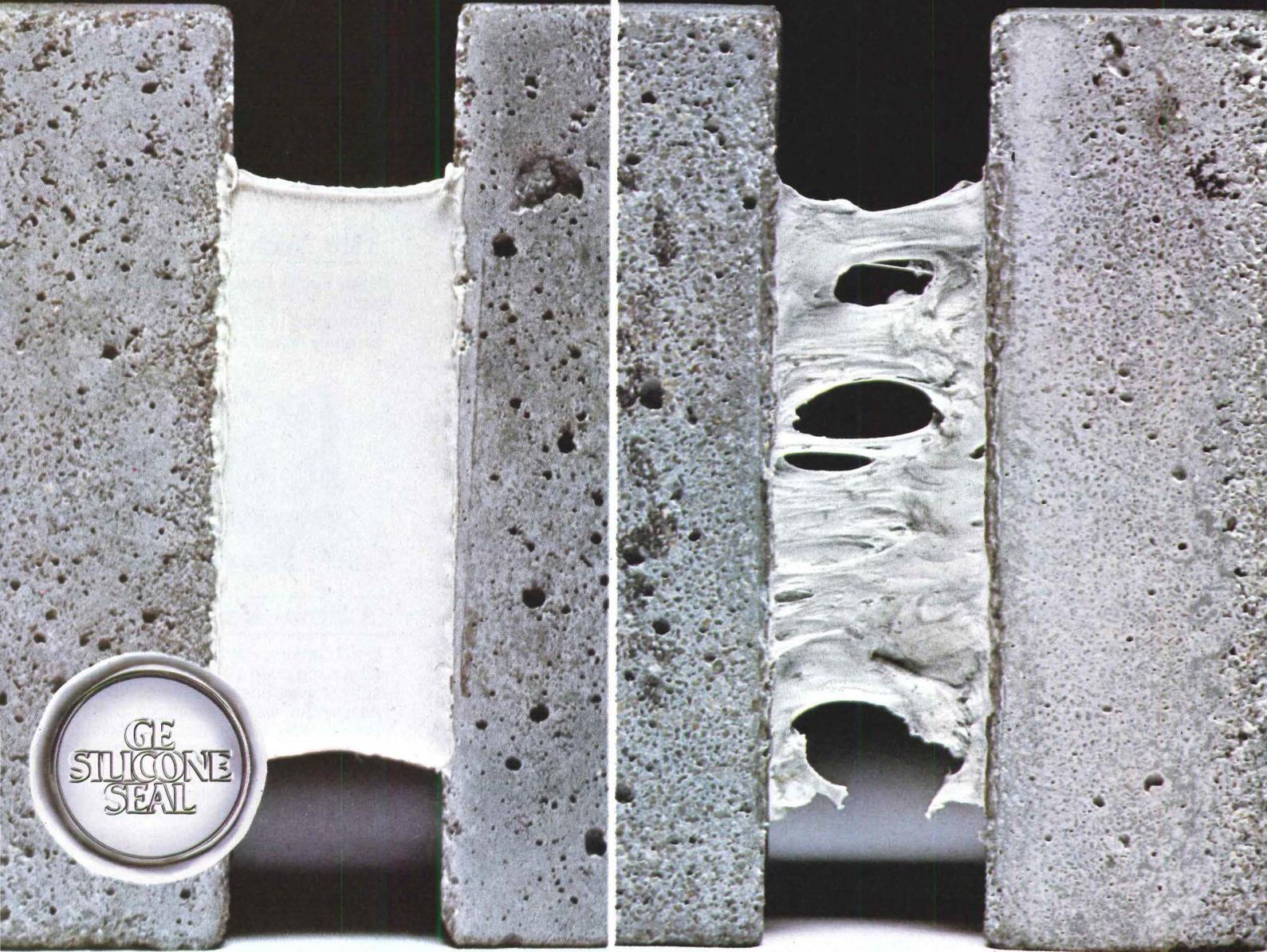
4 IBM building—The IBM Corporation has announced plans for a 43-story office tower in New York to house marketing and service operations. The five-sided building with a four-story greenhouse is by Edward Larrabee Barnes, New York. It will be sheathed in green-gray polished granite with bands of matching tinted windows. The tower, at Madison and 57, will be a block away from the new AT&T building (P/A, June 1978, p. 7, 44).

5 Newspaper's solar building—The Times Publishing Co. of Florida is building a new office in Clearwater to house its upper Pinellas County operations. Williams & Walker of Clearwater designed the building that will be heated and cooled by solar power collected with panels facing south at 20°. An eggbeater-type windmill on a 100-ft tower will generate some of the electricity—an estimated 10 percent. Insulation will be provided by an earthen berm encircling the nearly windowless building. Architects anticipate a saving of \$2000 a month in heating, air conditioning, and hot water costs.

6 Plaza of the Americas—Harwood K. Smith & Partners are architects for the \$100 million Plaza of the Americas, a multi-use center in downtown Dallas. The complex will include two 25-story office towers, a 442-room hotel, parking for 1000 cars, and 100,000 sq ft of commercial space. An atrium will unite the various structural components, and a parklike ice-skating area will be the centerpiece.

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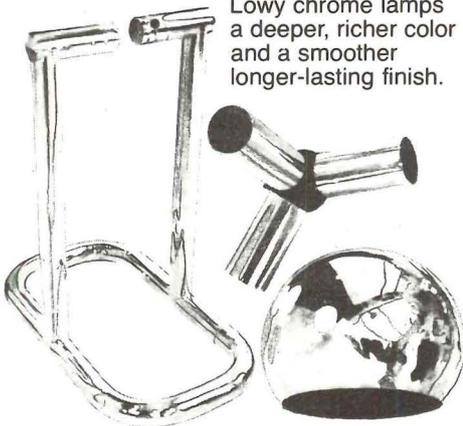
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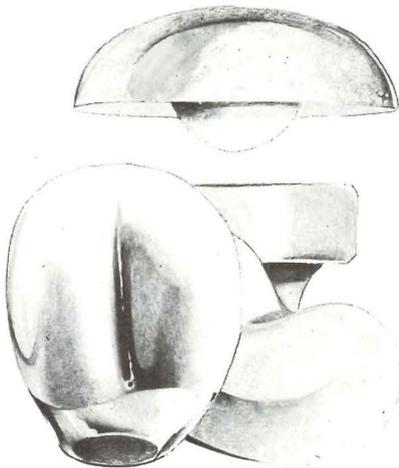
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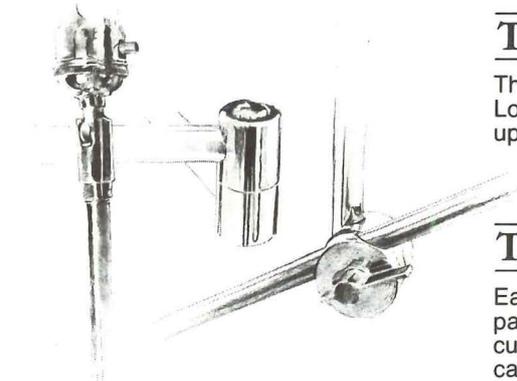
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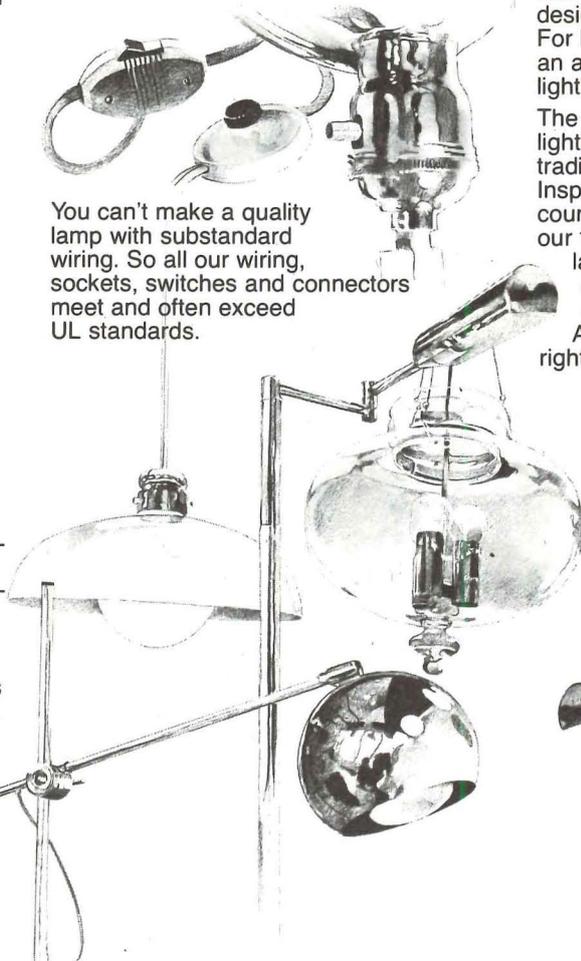


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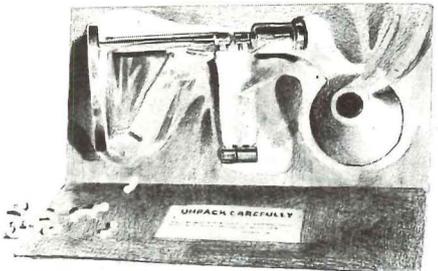


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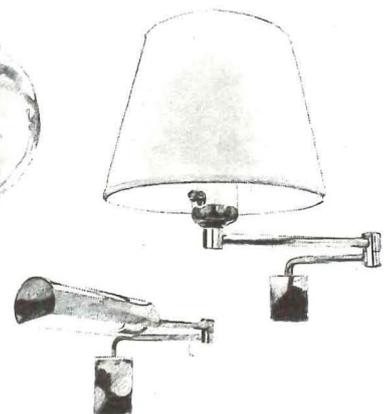
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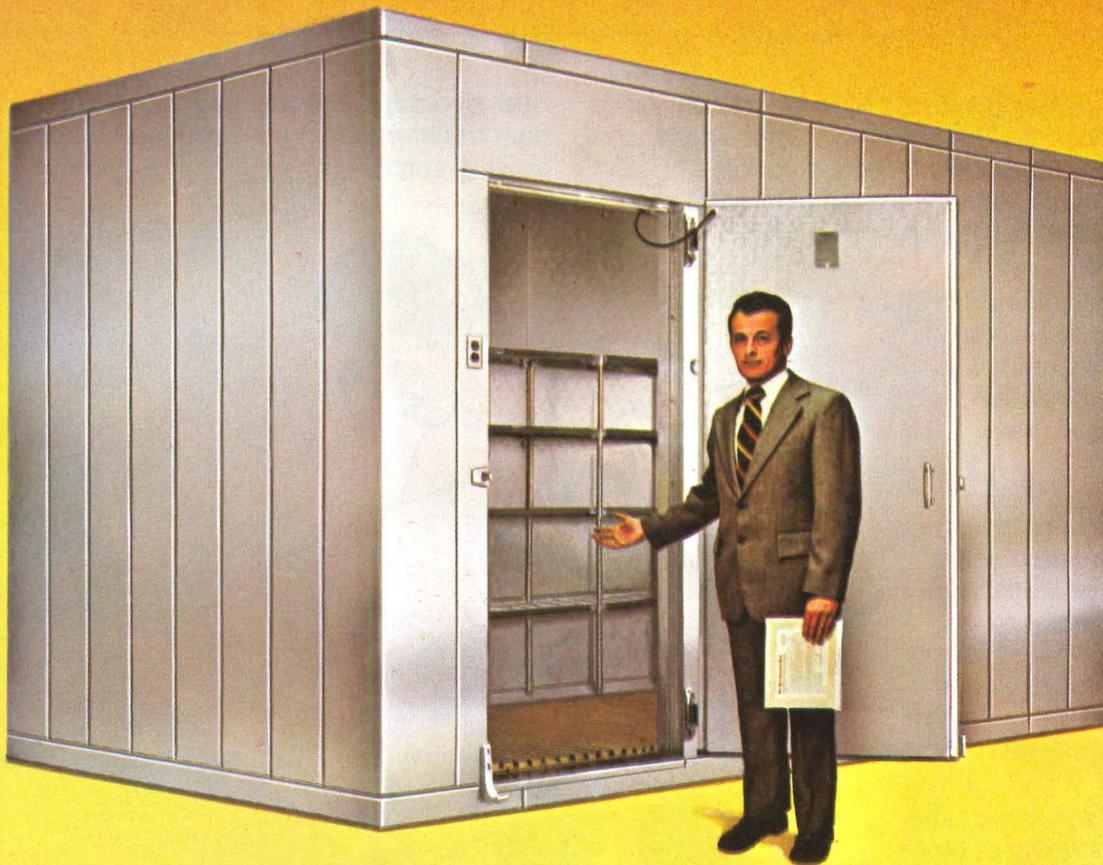
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RESIDENCE, Louisville, Kentucky—Designer and Fabr: James Carter, Central Ornamental Metals Co.

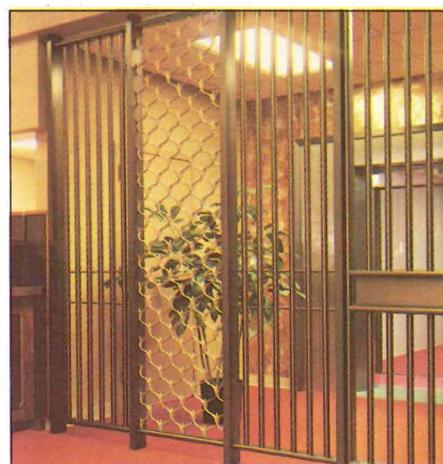
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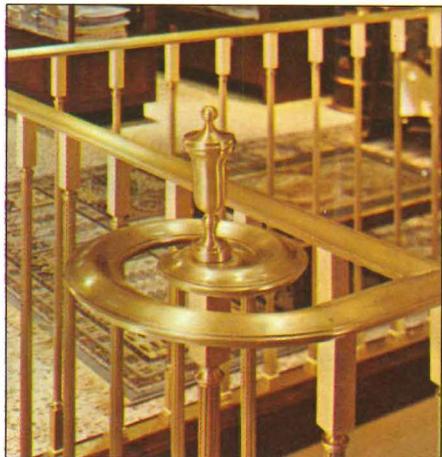
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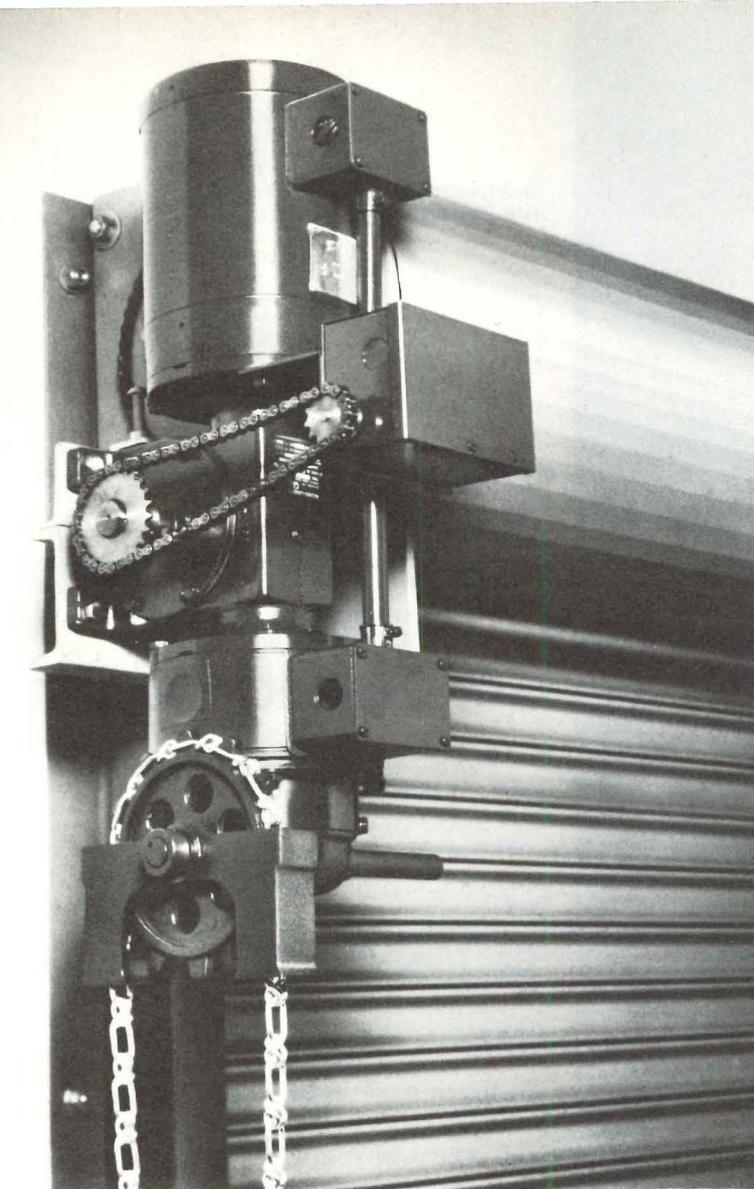
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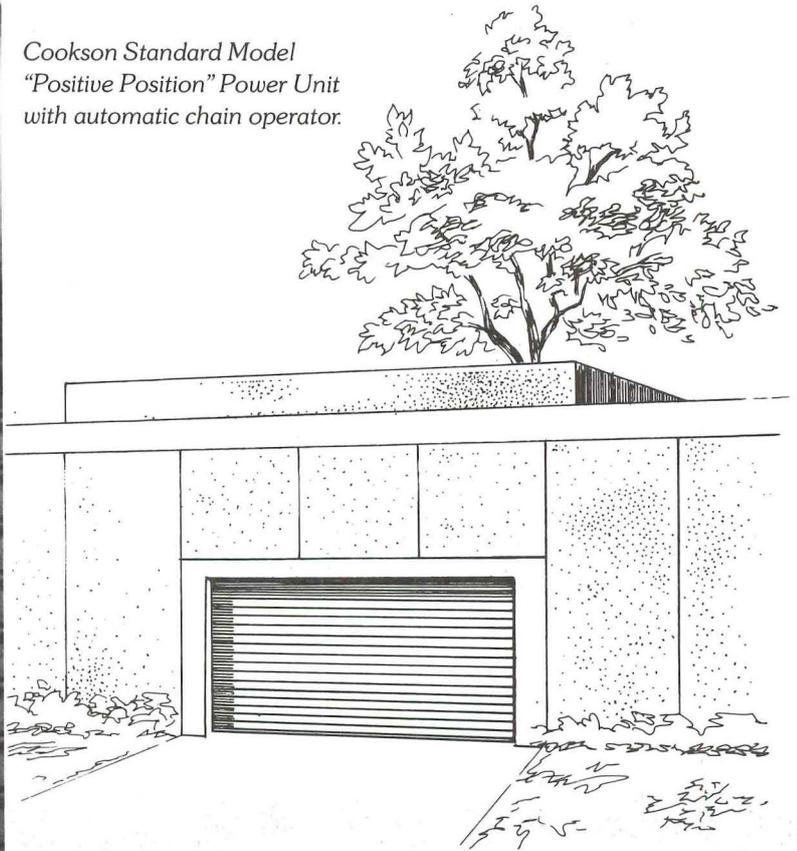
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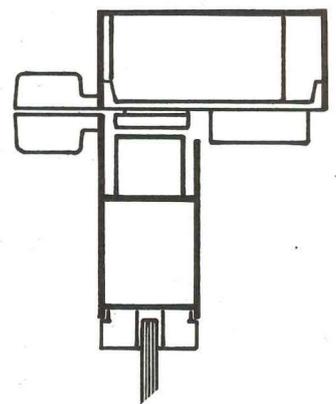
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Plying colors

While four recently completed buildings vary quite widely in program and siting, the architects for all shared a respect for color and the minimalist aesthetic.

If you hate colored buildings, you may not love the next few pages. Three of the featured structures—including, obviously, the one shown on the right—are green; one is yellow. All are detailed carefully to be minimalist statements, at least externally. All have a rationale for their use of color, and for the sculptural forms; both hue and concept are reasoned responses to the divergent sites and programs.

As John Dixon notes in our editorial this month, there is Post-Modernist design, either intentional or intuitive, and other forms of design; some, clearly, are more form-founded than others. The colored minimalist buildings are easily placed in this design spectrum as formal, non-Post-Modernist acts. This point is not to be misconstrued as willful or arbitrary design, but another way—a choice.

The Lake Erie Asphalt Plant office building on this page is one of the more light-hearted uses of color among the four examples. Like the school (p. 58), this building by Don M. Hisaka & Associates of Cleveland responds in a special way to its environment. Standing, as the architects put it, "in the unadorned environment of the industrial flats" along the Cuyahoga River, it is a welcome bright spot.

Why green? The existing equipment on the site, the manufacturing elements, was green already. The architects, after trying out ideas of precast, steel, or poured concrete, felt all were too contrived for this project. So they settled on a "simple wood box with minimal detailing," and on the same Kelly green. The architects feel that the design's success is attested to "by a backhanded compliment our client received from a customer who, upon seeing the building, congratulated him for having bought another piece of equipment."

The other Hisaka building is clad in insulated metal panels. Both of the two additional green buildings are in the Pacific



Asphalt plants are meant to function, not look pretty, but Don M. Hisaka and Associates saw a beauty in the legacy already on the site, the asphalt equipment shown above. The new headquarters is a minimal object in the landscape, green to match.

Northwest; one, Hiram's (p. 62), is metal-skinned, the Portland Y (p. 52) is of cement plaster. No group of four could have less in common programmatically than an asphalt plant office, a school, a restaurant, and a Y fitness center. The reasons for using green on three of these are equally divergent.

Does P/A see the color minimalists as another "direction" in architecture? No

more than "decorated sheds," "Whites," "Greys," "Silvers," or dedicated Post-Modernists. But not necessarily less, either, than some of the above. Certainly, minimalism will always have its followers, just as does object making. If, as some say, we are into an age of pluralism in architecture, color and minimalism are fitted to this era. [Jim Murphy]

A green Y

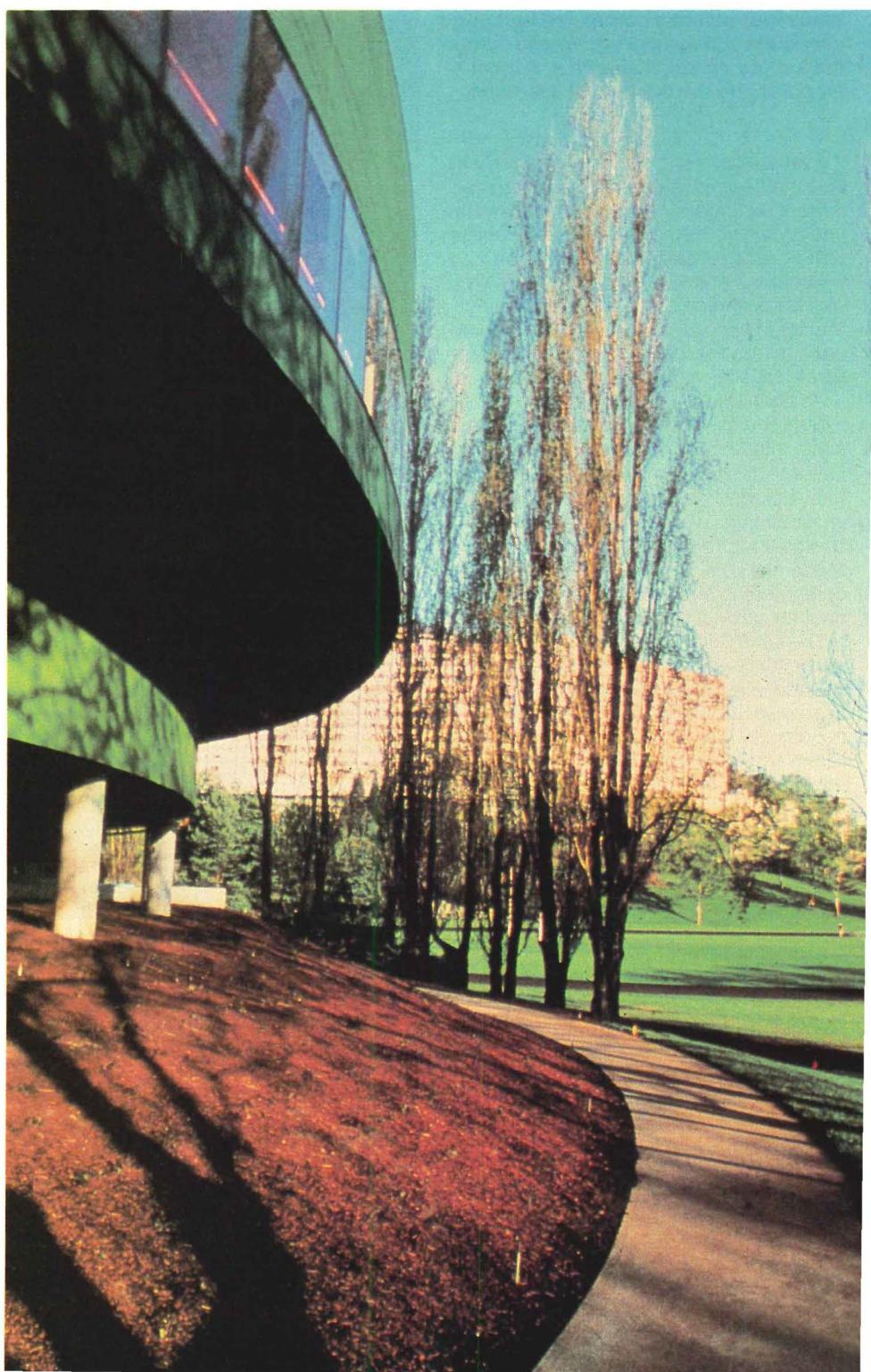


Russ Keller

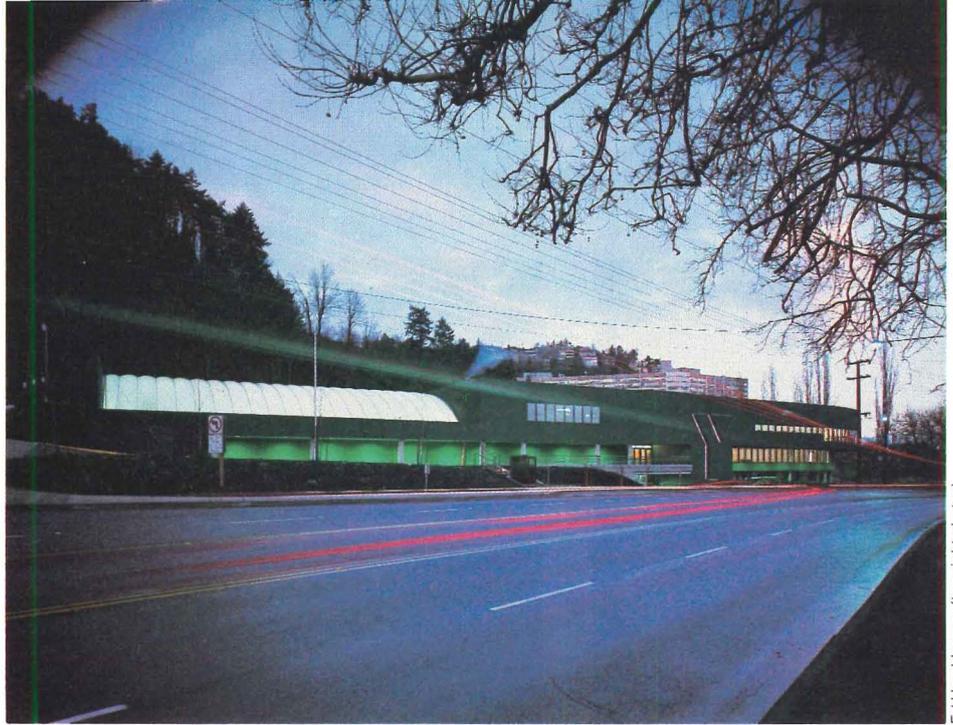
With awareness of physical fitness sweeping the country, this prototype adds new dimensions to the Y image.

If the mention of YMCA summons forth visions of inexpensive nightly accommodations and dim locker rooms, with the accompanying musty smells, you haven't seen the latest Y's. But even then the Portland, Oregon, YMCA Metro Fitness Center will come as a delightful surprise. The facility, by Broome, Oringdulph, O'Toole, Rudolf & Associates, has been named by the National Y Board as the prototype for some 40 similar projects nationwide, and prototypical it is, on many levels.

Portland is known, among other things, for its rainfall and consequent greenery. (It should be known as well for its fine restoration efforts, and the high quality level of its architectural community.) Because much of the land in the City of Roses is clad in green, the new fitness center is singularly hard to spot on first approach from downtown. Coming down around the base of Medical School Hill, Duniway Park gives way to an outdoor running track. Then a poplar-tree screen allows views of an object growing out of the woods and hillside, the new Y. And it, too, is green. It is a very carefully picked pair of greens, to be more precise; one is a grass green which marks the receding middle and lower levels, and an evergreen hue is used above. But, as the architects point out, the colors are "manmade green," selected to blend and complement the wooded hill, but not to deceive. Here, acrylic latex is applied to cement plaster surfaces. One local architect objects to the color, feeling that Oregon is green enough without green buildings. But P/A feels, to the contrary, that the new Y—color and all—is an extremely appropriate response to its site and to its program. It becomes, as the architects intended, a sympathetic man-made terminus for the hill, and a nice foil to the adjacent outdoor running track. The sweeping band of glass on the upper level becomes a kinetic billboard, revealing activity which parallels that of the outdoor



Forming the new base for Medical School Hill, the new Fitness Center backs into the woods, and turns its curved facade to a park (left) and outdoor running track (below, right). At night (below and right) the light from inside transforms the air structure of the pool end and the sweep of glass on the upper level into visible signs, indicating the activity within.



Ed Hershberger (two right photos)

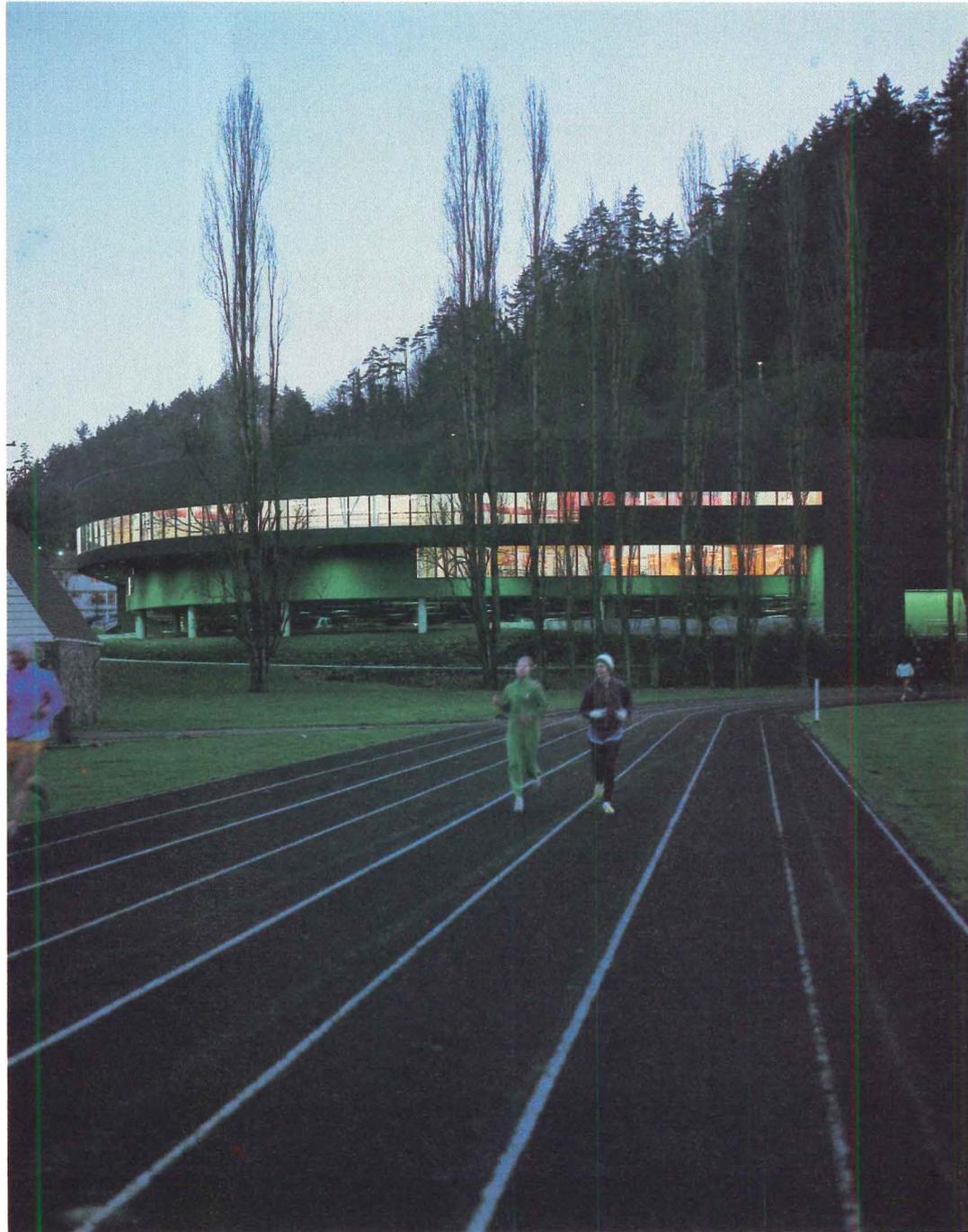
track. Parking is neatly tucked into the hill, under the facility.

Parking and mechanical facilities occupy that lower level, with elevator and pedestrian access up to the main entry and reception desk. The middle level, where the front desk and pro shop surround the entry hall, is where it (almost) all happens. Without a doubt, this is one of the finest places to shape up the body—and perhaps the spirit—that has come along. To the left of the desk, the user may proceed into the men's or women's locker room facilities. There, again, no dank, musty environment, but brightly colored lockers and ducts. The main part of the floor—excluding showers, of course—is carpeted in cool hues to promote a restful atmosphere before and after exercise. From the locker areas, one has two options, the pool to the south or the other activities to the north, beyond the desk.

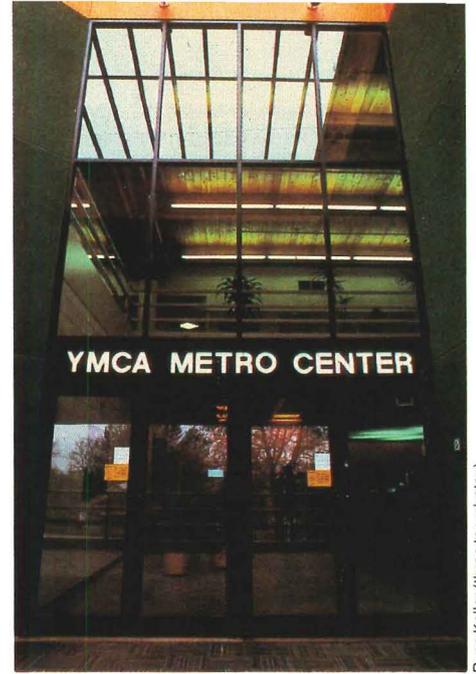
Multiple choice

Since Portland has a fairly moderate climate in terms of temperature, the pool portion of the building has an inflatable roof, springing from side walls about 9 ft high. Even on overcast days, natural light fills the space, and views up the wooded hill are common, even if slightly obscured by the 95 percent transparent Tedlar-coated Mylar air structure. Oranges and yellows carry the color theme of the rest of the building, contrasted with the blues of the pool. Even the rainbows in red, orange, and yellow that accent both ends pick up the theme, adding sunny qualities to the space on gray days. The pool may also be viewed from a small lounge on the upper level, near staff work areas.

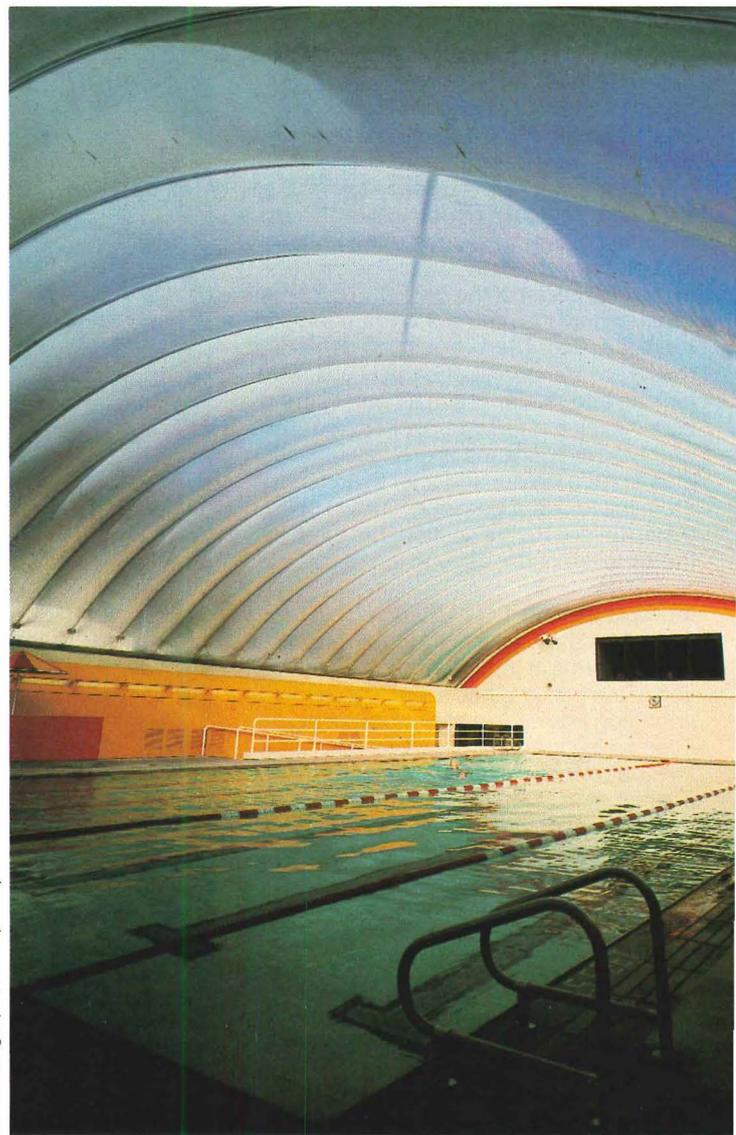
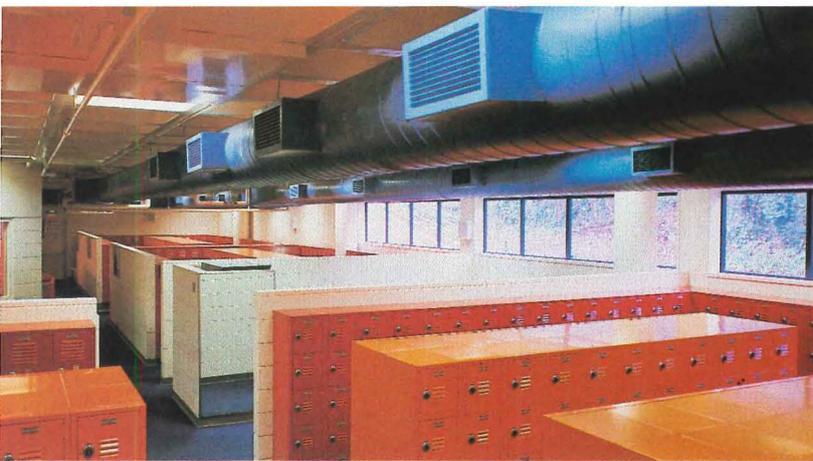
Employing a double-layer "pillow" configuration for the pool roof, the design allows for the circulation of heating and ventilating air, as well as for pressure to hold up the canopy. The combination of fan systems, air, and double skin provides acoustical cushioning, thermal insulation, and warm inner skin to eliminate condensation. As either inside temperature or exterior wind velocities increase, automatic tandem fans join the system to help cool or



Portland Metro Fitness Center

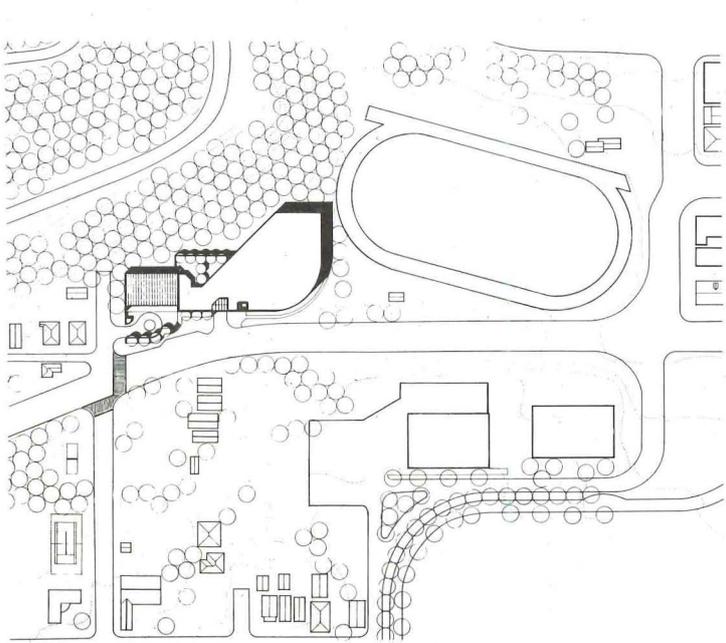


Russ Keller (three top photos)



Ed Hershberger (three lower photos)

The entry and attendant's station (top photos) are open to the upper level, with skylights beyond that at the roof deck. Cheerful locker rooms (center, left) carry out some of the colors that run throughout the facility, but with the addition of cooler hues to promote feelings of relaxation after exercise. Both the pool (above) and the exercise areas (left) are served by the same locker areas. Although difficult to show in photos, the air-supported pool enclosure is nearly clear, allowing sunlight in and views out to the hillside beyond. The pool may be viewed from a small lounge area (right) on the upper level.

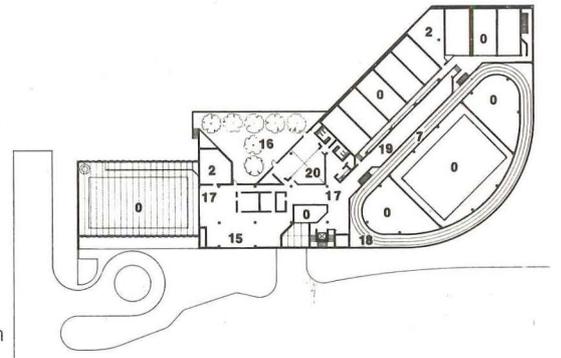


PLAN

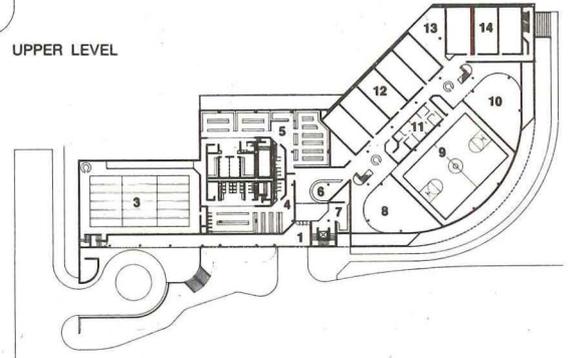
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Legend

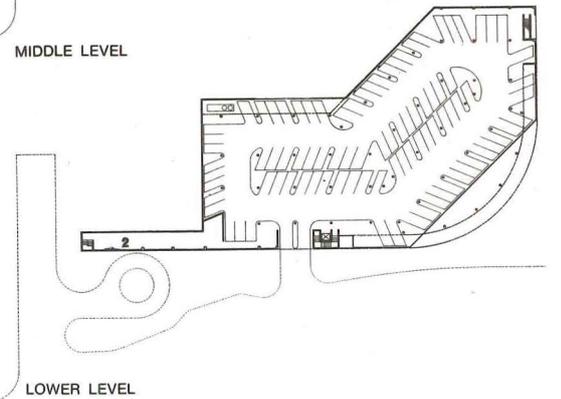
- 0 Open to below
- 1 Entry
- 2 Mechanical
- 3 Pool
- 4 Women's lockers
- 5 Men's lockers
- 6 Attendant
- 7 Pro shop
- 8 Indiv. exercise
- 9 Multi-purpose gym
- 10 Group exercise
- 11 Cardiac clinic
- 12 Handball
- 13 Medical school
- 14 Squash
- 15 Staff offices
- 16 Terrace
- 17 Lounge
- 18 Running track
- 19 Administration
- 20 Conference



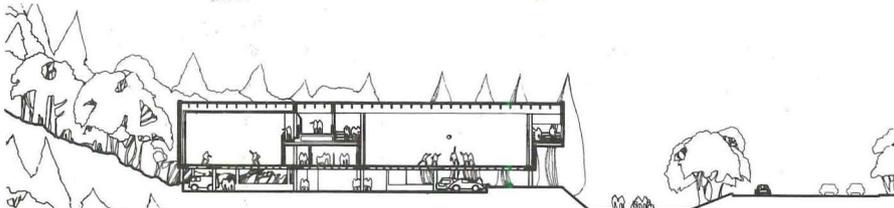
UPPER LEVEL



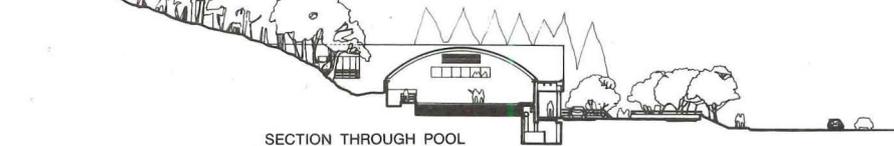
MIDDLE LEVEL



LOWER LEVEL



SECTION THROUGH GYM



SECTION THROUGH POOL



Portland Metro Fitness Center

support the structure. Pool lighting is accomplished at night primarily by bouncing light off the interior surface of the air structure which reflects enough to provide approximately 50 footcandles over the pool.

North of the main desk, many different programs are accommodated, again in spaces accented to highlight certain elements with bright colors; giving the facility warmth and vitality. To the left past the desk, one corridor leads to squash and handball courts on the uphill side of the site. Also included is a research space for the University of Oregon Medical School. The other side of the corridor is formed by a complete cardiac clinic which may be entered from either the corridor side or the exercise areas beyond. The clinic is fully equipped to administer analyses of cardiac functions before, during, and/or after specific forms of exercise.

Beyond the clinic, toward the downhill side of the building, are areas for individual and group exercise, and a multi-purpose gym. These spaces are open to the upper level, affording views of the encircling running track—one of the building's form-giving elements. The exercise areas have the advantage of light from both broad expanses of glass at the middle level and the continuous glass band by the upper level track. The borrowed light from larger windows above also contributes strongly to gym illumination. The entire space, therefore, promotes visual interaction between runners above and various activities below, and even runners outside. It is a very active and lively space with its cheerful colors. The coffered concrete slab forms the middle level canopy, while the carefully detailed glue-laminated roof beams carry exposed decking.

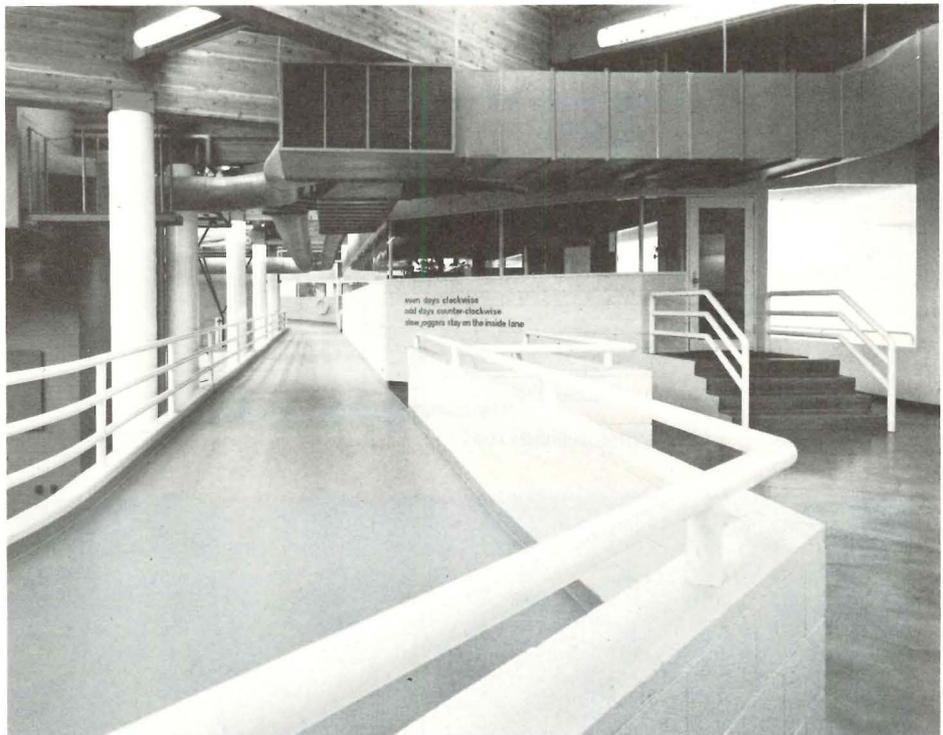
Fast track

For runners, the upper level track must be a delight, since both internal and external views afford a constantly changing context. The long sweeping curve leads to tighter end turns which bracket the interior straightaway. Even here, though, glazed administrative offices add a sense of openness, while gaining views for those working in them. Middle level handball and squash courts also are open to viewing from above, along an interior corridor.

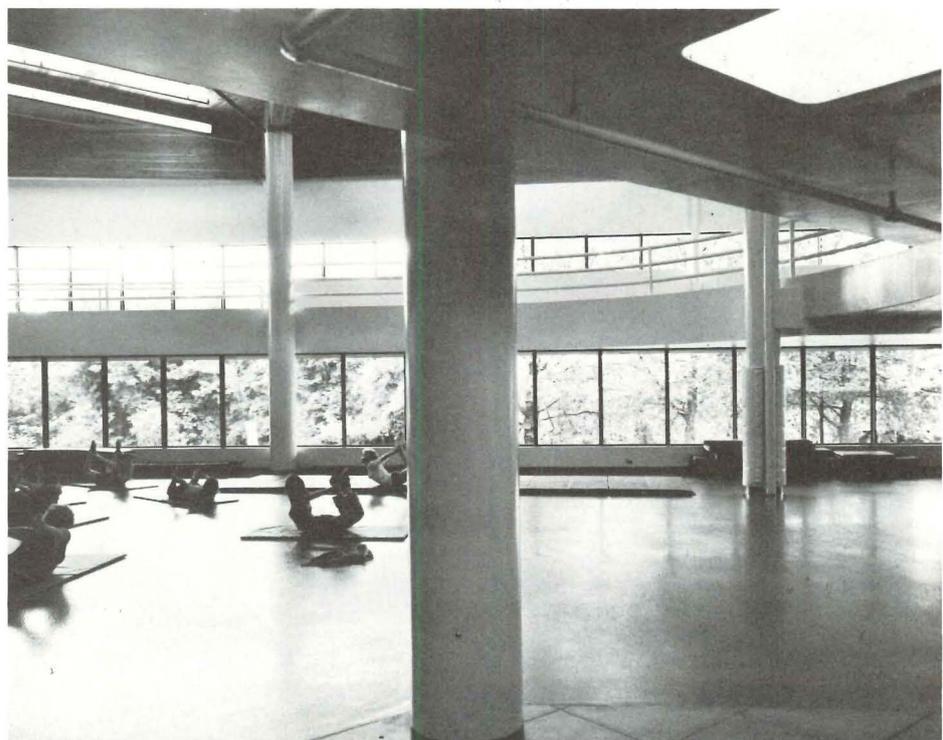
Continuing back toward the pool end on the upper level, the visitor encounters more staff work areas, a lounge, and a subdivisible conference area. This flexible conference block opens out to an outdoor terrace on the building's wooded uphill (west) side, providing for possible outdoor lounging or eating on fair days. Staff work areas are furnished in open plan fashion, with ample view, color, natural wood, and plants. The other upper level view down to the middle floor (besides the pool overlook) is at the main stair and elevator shaft, allowing a two-story-high space over the lobby at the front desk. Vertical and horizontal openness enrich virtually every area



Ed Hershberger



Russ Keller



Ed Hershberger



Russ Keller



Ed Hershberger

Exterior and interior lounge areas (opposite page, top and above) near conference and work areas (above, right). Track is visible from many spots.



Ed Hershberger



Russ Keller

of the building, giving overall vitality.

Combined, the experiences awaiting a visitor or a participant at Portland's Fitness Center can be described as nothing less than exhilarating, alive, fun, and extremely well thought out. From the minimal Y logo on the outside (less minimal at night, but still not objectionable) to the bold consistency of reds, oranges, and yellows throughout, it is an exciting facility. If the green exterior is mildly controversial, it is far from arbitrary or capricious. Interior colors, as well, have a well-considered rationale that works on clear days as well as on the more common overcast ones.

Opened in mid-1977, the Y has proved itself to the community. An almost overwhelming response produced a membership increase of 500 percent in the initial six months. It deserves its success. Broome, Oringdulph, O'Toole, Rudolf & Associates has clearly solved all of the dif-

ficult problems superbly. Portland should be proud of this facility and of its architectural community. It is becoming an exciting place. [Jim Murphy]

Data

Project: Portland, Oregon Metro Fitness Center.

Architects: Broome, Oringdulph, O'Toole, Rudolf, & Associates; principal in charge, Robert E. Oringdulph; project designer, Stanley G. Boles; project administrator, Gary E. Converse; partner in charge of construction administration, Dennis J. O'Toole; interior design, Nancy L. Richmond.

Program: complete physical fitness facility to include preventive medical concepts and study.

Site: narrow area confined by a city park and tucked against a wooded hill near the downtown area of Portland. Two sides bounded by city streets, one a major artery.

Structural system: exposed reinforced con-

crete waffle slab supported on concrete columns. Roof structure is exposed wood decking on glued laminated beams.

Mechanical system: central oil/gas boiler heats pool water and supplies air handling units. Air-to-air heat exchanger recovers locker room heat to warm 100 percent incoming air.

Major materials: exterior, cement plaster walls with integrally-colored vinyl acrylic glazed coating; interior, exposed concrete, exposed decking and beams, painted concrete block and gypsum board walls, synthetic flooring, wood and resilient flooring, and carpet. (see p. 106)

Consultants: landscape architect, McArthur/Gardner/Partnership; structural, CH2M Hill; mechanical, C.W. Timmer Assoc.; electrical, Langton, Mehlig & Assoc.; acoustical, Towne Richards & Chaudiere; interior equipment, Building and Furnishings Service, YMCA.

General contractor: William Simpson Const.

Client: YMCA of Columbia-Willamette.

Costs: \$3,737,028; \$37.74/ sq ft, w/parking.

Big yellow schoolhouse

Don M. Hisaka & Associates bring color to a drab suburban setting in a design that is as bright as the noonday sun.

"There's no *there* there." Gertrude Stein's immortal characterization of Oakland, California can likewise be applied to the suburban area of Columbus, Ohio, where the Liberty Elementary School now stands. Though the countryside surrounding the capital city of Ohio can be quite pleasant in places, the environs of this new building are exceptionally unattractive. At first one could almost believe that we have been transported back in a time machine to the remoter reaches of the Eisenhower Era. The grim stretches of the flat, treeless subdivision are eerily reminiscent of the endless vistas of pink-shingled "splanches" that typified the early 1950s. Though one might have thought that kind of tract development to have been supplanted by trailer parks at one end of the economic spectrum, and by Mansard Manors and Pseudo Mews at the other, rest assured that the ticky-tacky tradition lives among us yet.

Plowed into submission and denuded of natural vegetation, the landscape around the Liberty Elementary School is as depressing as the houses built upon it. Curving roads named with sylvan irony wind through this dismal scene, and one becomes aware that design is of vastly less interest to the inhabitants here than Shake 'n' Bake, crabgrass, and the Bob Hope Special. Then, above the uniform rooflines one begins to catch glimpses of something bright and unexpected. A bend is rounded, and there, at last, is some *there*.

A real winner

Winner of an award in P/A's 22nd Design Awards Program in 1975, Don M. Hisaka & Associates' design for the Liberty Elementary School drew comments from that year's architectural design jurors (Peter Chermayeff, Peter Eisenman, Paul Rudolph, and Eberhard Zeidler) that still hold merit even now that the project has been built. Though Zeidler objected to the

use of clerestory windows in the classroom and the lack of views to the outside, Rudolph correctly observed that "who's to say it's better to look at the houses around it than the sky?" Chermayeff saw the inherent contradiction between the building's minimal forms and maximal color but rather overdrew the divergence when he noted, "It's curious that it's a gesture toward playfulness but in fact it's as cold as ice." Eisenman, never one to be put off by coldness, rather uncharacteristically offered, "But its coldness—you can modify that. The kids can destroy the interior; they can move furniture and everything. . . . My kids go to an open-room classroom, and they think it's fantastic. For someone to take prefabricated components and make that much architecture out of it is good. . . . This has great architectural merit."

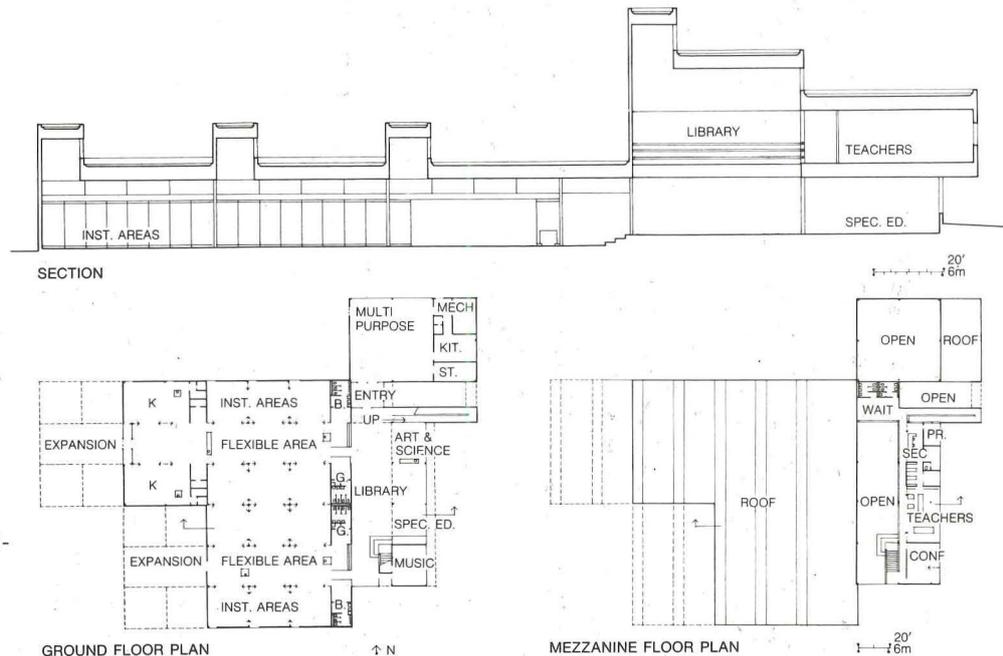
In the implementation of his award-winning project, Hisaka was fortunate in having a sympathetic and enlightened patron: Dr. John Ellis, then-superintendent of the Columbus Board of Education, was eager to have this school reflect his belief in a more flexible approach to primary education. Open-classroom teaching, widely and uncritically accepted in the 1960s, had come in for considerable criticism by the time this new school building was being planned. But Ellis was convinced that at least some aspects of the open classroom were worth retaining. Rather than encourage a return to totally traditional educational methods and school space planning, he wanted the Liberty School to reflect the diversity of approaches that he felt to be the best course for teaching children in the future.

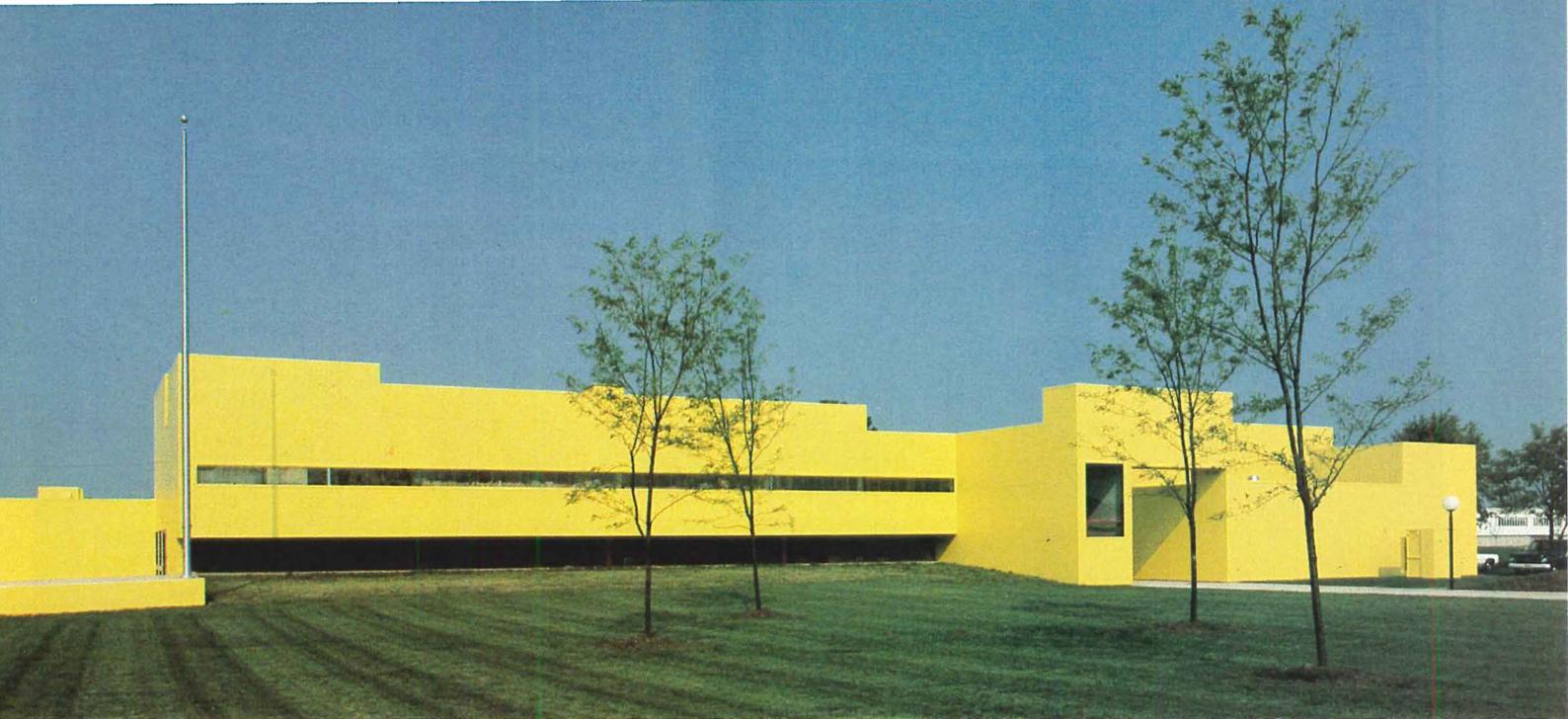
To further insure a satisfactory resolution of the building's programmatic needs, both client and architect encouraged close cooperation with the school's faculty, and Hisaka spent most of the summer preceding construction in consultation with the Liberty School's future teachers and administrators. Hisaka's design emerged with the flexibility and functionalism that were his client's main requirements. The Liberty Elementary School is a fine example of the kind of buildings (of all types) that we could have if people who want excellence work closely with people who can provide it.

Mellow yellow

The exterior of the finished building is not quite so stark as had been predicted, and despite the spare articulation of the boxy forms and sleek surfaces, it hasn't the monumental quality of the superior compositions of a Luis Barragan or a Mies. Hisaka's buildings somehow manage to seem friendly even when they use a vocabulary that can seem considerably less accessible when deployed by more formally minded designers. Thus, while this building looks much larger than it actually is, its scale remains human, a good thing for a building where the people are smaller, too. Passing through a massive entry portal, and then a small forecourt, we move through wood and glass doors much like those in many new school buildings. Through another set of glass doors we can glimpse the school's most unstructured space: the library-learning center.

This large rectangular room (the building's largest) has an order that is rarely





The school's bright color and bold but simple forms create a sense of place in a drab and featureless setting. Entrance portal (below) frames doorway.





seen in open classrooms, and was effectively designed to allow the intervention of its users while retaining a feeling of coherence that can be easily lost in an open plan arrangement. Opening onto the library on the ground floor are arts-and-crafts and music rooms, and on the second floor is a shared planning area for the school's faculty. A multi-purpose room on axis with the library is used variously as a gym, lunchroom, and assembly hall, and completes the development of spaces that can be read in the building's façade.

The classrooms of the Liberty School were placed behind the communal areas of the building so that the future projected expansion of classroom space could be developed back into the school's long, narrow site in an orderly manner. Though the classrooms' exterior walls have only clerestory windows, all interior walls in this section of the building are of glass, making the space seem exceptionally open, though in reality it is not. Most of these glass walls are capable of sliding open, allowing for several classrooms to be joined together, or later closed off again, thus allowing for considerable flexibility, whether team-teaching or more traditional instruction is desired.

Warm enough for you?

Interior finishes at Liberty are simple and economical. The Hisaka office is another young firm which now never gives a second thought to leaving structural members exposed, and their execution of the now-traditional painting of pipes, ducts, and trusses in vivid colors is more successful than most. Floors are carpeted (a specification that seemed wickedly opulent to many school boards when it was first proposed by architects not too long ago), and the carpeting is as easy (and cheap) to maintain as it was to install. The school's custodian gives high marks to the architects' specifications in general, though he rightly notes the lack of adequate tack-board surfaces in the glass-walled classrooms and the problems of taping artwork on painted walls.

The major problem reported by occu-

pants of the school is the heating system. The Liberty School was designed at the time of the recent natural-gas crisis that deprived this area of the midwest of its most common form of energy. Accordingly, the architects specified an electrical unit heating system, which they felt would be as flexible as the building's changeable spatial arrangements. Unfortunately, they did not anticipate the "what-if" of last winter's record-breaking low temperatures, the most consistently cold weather that had been experienced in the region for many decades.

Unlike oil- or gas-operated systems, the electrical units have safety elements which automatically shut off the heaters if they become overloaded. And although the electrically heated school was only one of six in the school district that was able to remain open during the worst days of the gas shortage, it nevertheless was said by its occupants to be particularly uncomfortable on days when the temperature was below 10 degrees. (Hisaka was unaware of the problem when questioned about it and feels that it might have been caused by a malfunction of the system.)

Hang out the flag

But if that is the building's least happy aspect, then certainly its exterior is its most happy. For reasons of economy, Hisaka decided to use an industrial, urethane-core metal paneling for the school's exterior walls, a specification which he found to be five times less expensive than a brick or block alternative. He wanted to make the paneling look less bleak than this utilitarian building material might otherwise seem, and he worked with the manufacturer in developing the siliconized polyester finish, in the one available color that he found most appropriate and congenial: yellow.

The simplicity of the exterior seems absolutely appropriate, and with a super-scale American flag (like those favored by roadside establishments in Southern California) acting as a completion of the primary color triad, the Liberty Elementary School becomes a very likeable building.

A run-of-the-mill middle school on a site adjacent to this one reminds us of what is the more usual outcome of school design in America, but its bright new neighbor points to that which still can be. [Martin Filler]

Data

Project: Liberty Elementary School, Columbus, Oh.

Architects: Don M. Hisaka & Associates, Architects, Inc.

Program: new elementary school (K-6) including 14-22 classrooms and supplementary educational facilities of administration offices, multi-purpose room, and library-learning center.

Site: flat, 6.4-acre lot in a suburban tract-house development at the edge of a midwestern city.

Structural system: steel frame construction.

Mechanical system: electric rooftop HVAC units.

Major materials: insulated metal panel exterior walls, gypsum board interior walls, carpeted and VAT floors, exposed structural ceilings. (see Building materials, p. 106)

Consultants: Evans & Associates, Inc., mechanical; Gensert Peller Mancini Associates, Inc., structural; Ferguson & Rieke, electrical engineers.

General contractor: Fry, Inc.

Client: Columbus Board of Education.

Costs: \$1,012,700; \$29.35 per sq ft.

Photography: Thom Abel.

Boldly painted structural members (above and opposite page) are used throughout building. Glass sliding walls of classrooms (above) can be opened to create larger spaces. Furniture in library (opposite page) is easily rearrangeable.



THE LIBRARY

TOP ON INTO THE LIBRARY

Giggles Dries Creams

Photos: Jim Cummins, except as noted



Susan Boyle



Hiram's restaurant (above left, from west side terrace; right, from across canal) seats 200 patrons in a number of different dining areas (below).



Fighting the system

The idea of adapting the Butler system to a sophisticated scheme was sound, but it was neither easy nor very cheap.

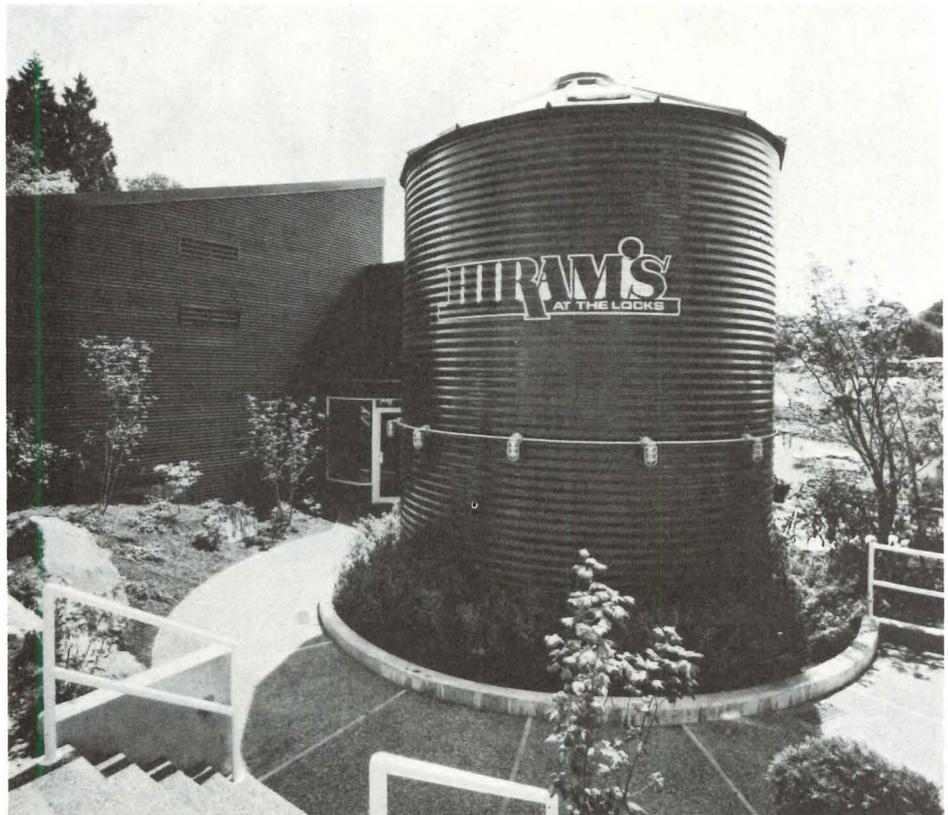
The Butler Building System, as everyone knows, is synonymous with economy and erector-set simplicity. But designers who try to use it in complicated ways for buildings more exotic than the straightforward structures for which it was developed may run into unexpected difficulties.

A case in point is the Seattle restaurant Hiram's at the Locks, which is spectacularly located just above the Lake Washington Ship Canal Locks. The client, Consolidated Restaurants, originally hired a Butler contractor with the expectation of getting a building for about \$20 per sq ft. When problems developed because of the complex program and a very tight site, the client then hired Barnett Schorr Co., designers of two of their other restaurants.

Project architect Patrick Gordon spent three days in Kansas City learning about the Butler system, and his early enthusiasm for its innovative use was shared by Butler. But efforts to adapt the system's standard rectangular envelope to the narrow site by shifting the plan 45 degrees, cutting corners, and stepping the roof to make clerestoried, view-oriented windows were rejected, even though standard components and connections were used. Shifts in the restaurant program also added to the architect's misery. The combined problems succeeded in bringing a two-year design process to this "jiffy" building.

Meanwhile, Gordon became so proficient in juggling the system to serve the more complicated program that he finally produced an approved design with an angled plan, a tiered roof sloping in two directions, and a multilevel interior. No other Butler building can make these claims or ever thought of doing so.

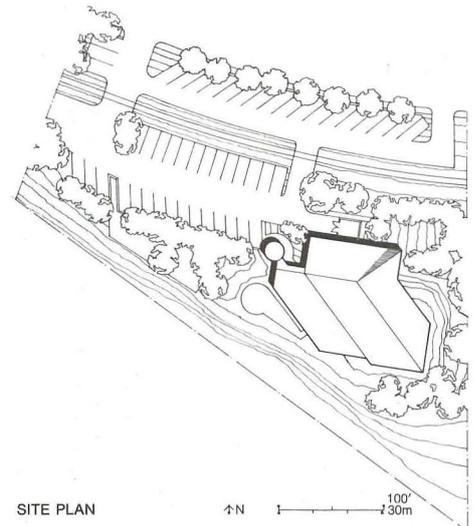
Thus, a maximum of 200 people can dine in a series of relatively intimate sections of the 8000-sq-ft building, with views of the endless procession of boats going through the locks. This can be a memora-



"Silo" near entrance at west side (above) is waiting lounge for diners (interior, next page).

ble experience when barges too wide for the lock have to be tilted, giving the viewer the thrill of being at the bottom of, say, a cascade of mobile homes.

After the design was set, the goal of achieving it for anything near \$20 per sq ft had vanished from the horizon. Butler announced that, because of the size and number of components, their costs would be at least double. Another factor that contributed to making the end cost \$58 per sq ft was sound insulation, since Butler buildings are not usually soundproofed. Nor is the vinyl-coated, insulated wall covering offered by the company suited to a chic restaurant clientele. In addition, the architects and their client were persuaded of the worth of preserving the basic Butler image by leaving the corrugated metal





finish inside and out. Thus soundproofing was achieved by the more expensive means of using a perforated roof decking with insulation in the channels. Interior partitions were covered with fiberglass and velour; the booths have plush seats and backs.

In view of rising costs from Butler, the architects, at the contractor's request, put some elements of the structural system and the decking out for competitive bids.

Ironically, "pure" (unpainted but clear-sealed) Butler was unacceptable to the community. Residents across the canal became alarmed by the structure's potential for glare. The architects were also accused of creating a hazard to the wa-

Waiting lounge (above), dining areas and bar (below, right), and main entrance (far right).

terway. So the building was painted green on the exterior. The inside is white, with green and dark blue structural accents.

Oblivious both to the architects' trials and to the subtle changes that prevent it from being an honest-to-God Butler Building, the public enthusiastically lines up every night to experience Hiram's. The stylish image of industrialism and the reality of it nearby, picturesquely complemented by the trussed, bascule bridge just down the canal, has pulled time and place together. [Sally Woodbridge]

Data

Project: Hiram's at the Locks, Seattle, Wa.

Architects: Barnett Schorr Co., Bud Schorr, partner-in-charge; Patrick Gordon, project architect.

Program: restaurant and lounge facilities for



200 patrons, single-story building of 8000 sq ft using Butler Building System.

Site: small, triangular lot on ship canal in mixed industrial/residential area; state shoreline laws influenced size and massing of building.

Structural system: Butler Building System, with all structural elements exposed.

Mechanical system: electric heating and air conditioning, exposed.

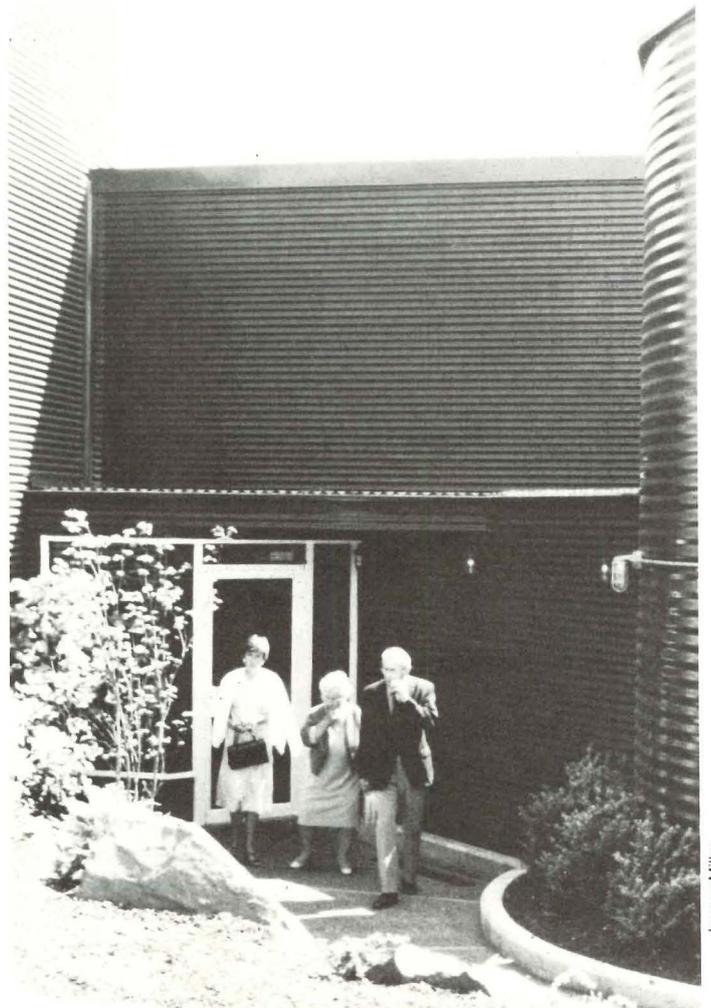
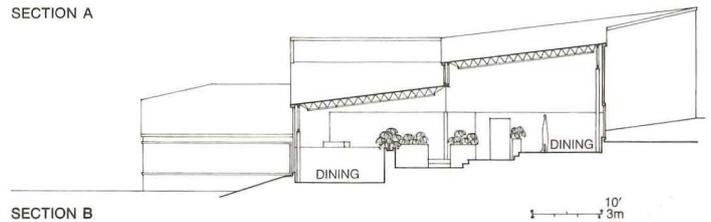
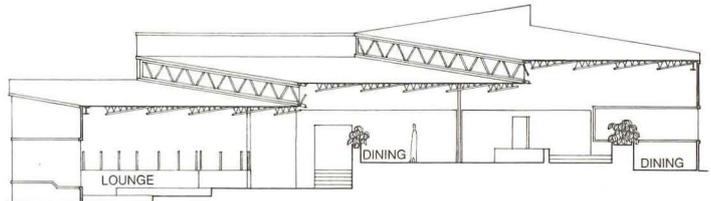
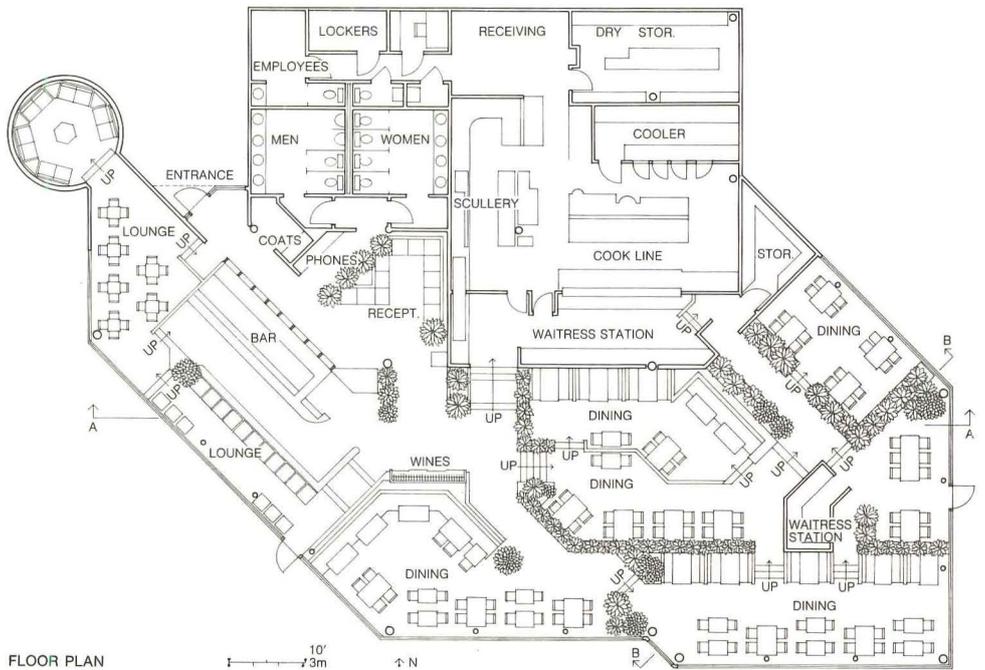
Major materials: cast-in-place concrete foundation; steel frame, metal stud walls, concrete slab floor, steel trusses and deck. (see Building materials p. 106)

Consultants: Jerry McAuliffe, landscape; Barnett Schorr Co., interiors; Bidder Design, mechanical; Mahan Howe & Assocs., structural; Marcia Johnson Interiors, textiles.

General contractor: Harbor Construction Co.

Client: Consolidated Restaurants, Mercer Island, Wa.

Costs: \$970,000 all inclusive; \$58 per sq ft.



Innovations in Housing

Sponsored by the American Plywood Association, P/A, and Better Homes and Gardens magazine, this housing competition got off to a fine start in the first year.

Beginning an annual competition is always a venture to be approached with a certain amount of concern; will it fly? Are the incentives adequate and the rules clear and fair? What if we give a nice party and nobody attends? Or, possibly everyone who shows brings an inappropriate offering for the hosts. These were akin to the trepidation we—APA, BH&G, and P/A—may have felt. Overall, however, we were both appreciative and gratified at this, the initial year's response. Over 270 (submissions, that is) came to our event, of which roughly 70–100 merited close attention.

As distinct from many competitions, including APA's established Plywood Design Awards program, this one is for design *ideas*, to be constructed the following season, and offered—in plan form—for sale, by BH&G. The jury comprised an architect, a developer/builder, and an editor from each of the cosponsoring publications. The architect was Donald Sandy of Donald Sandy, Jr., AIA, James A. Babcock, Architects in San Francisco. The builder/developer, representing The Green Company, Inc., of Centerville, Ma, was Neil H. Glynn, vice president, marketing. Representing Better Homes and Gardens and P/A were Noel Seney and this writer, respectively. We all found common concerns with design quality, marketability, versatility, and program compliance. Clearly, the actual First Award had to satisfy those aspects even to be considered. Daryl E. Hansen of Minneapolis did just that, producing the exemplary scheme described on the next two pages.

Other winners, given Merit Awards, were chosen with some relaxation in one or more of the criteria. Recognizing the need for good, thoughtful design in such programs, the jury weighed design heavily in the final selections. The Special Merit Award to Kevin J.P. Daly of Jacksonville, Fl, for example, recognizes the high level of design quality, while expressing some doubts about universality of marketing and questioning the square-foot cost realities. Two others, by Gray Smith of Philadelphia and by Tristram W. Metcalf, III, of Plainfield, Ma, were clearly more limited in general applicability and appeal. They were "lifestyle"

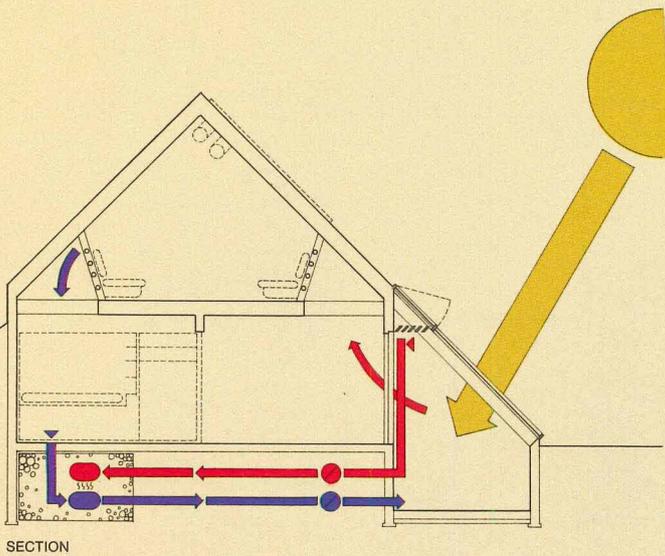


Winner Daryl Hansen (center, left) accepts his plaque from (l. to r.) APA's Linda Carlson, P/A's Jim Murphy, and Noel Seney of BH&G.

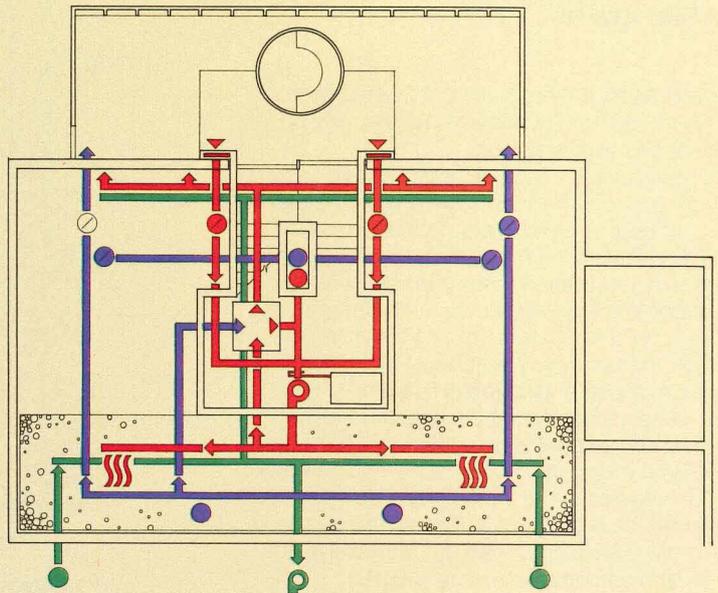
houses that delighted the jury, and were chosen for their spirit, while adhering to most other program constraints. The other three Merit Awards were serious and skillful attempts to satisfy the program.

Rules for next year will refine the same themes, with special emphasis on adaptability and optional conditions, while still stressing energy-saving design. Some comments before the judging this year were critical of the concept of universality in terms of building location. If there is any question that architectural professionals and designers *must* work to understand the marketplace, P/A would urge the questioner to look again. There is a great wasteland out there that we can help to improve, though not "from on high," but from participation. The public and the market require a certain amount of *innovative* universality. The one-off architectural gem will always be with us.

But our larger contribution can be felt only through efforts, not necessarily as precipitous as Venturi's, to understand the aspirations of different elements in our society. In terms of energy, we can lead, as well. But not by lying on the ground kicking our feet, screaming, "I can't design a piece of architecture to solve energy problems all over the country." Of course you can. Optional insulation, orientation, surfaces, and fenestration need to be spelled out; but what's impossible about that? Innovation comes from innovators. To those who innovated for our program this year, many sincere thanks. Let's do it again next year. [Jim Murphy]



SECTION



First Award

Daryl E. Hansen

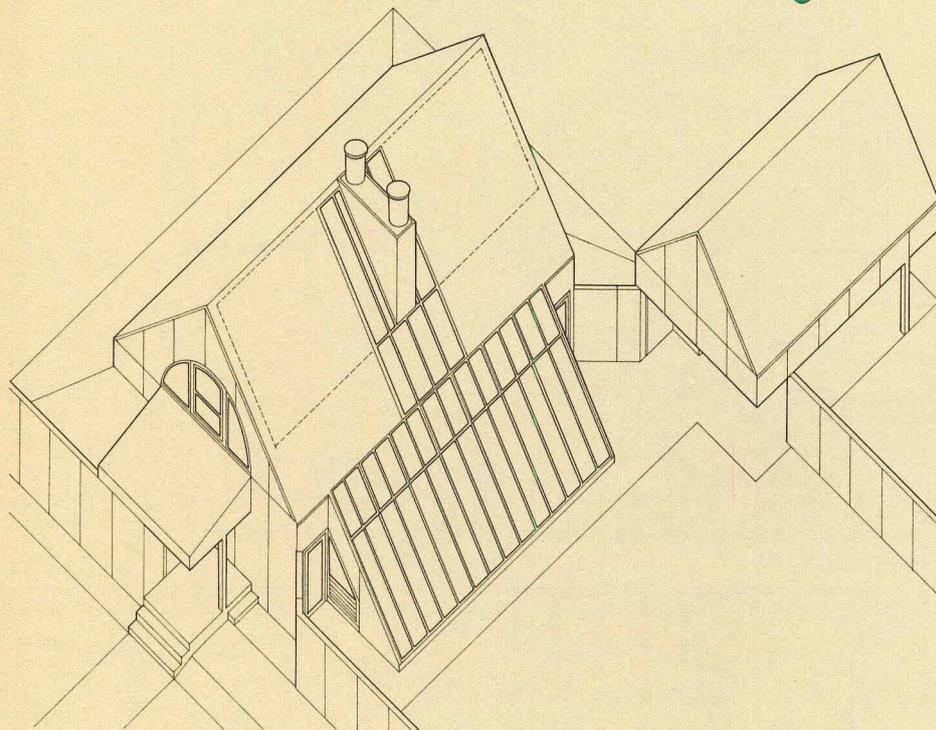
First Award carries with it several honors. There is, of course, the \$5000 prize plus the royalty from the sale of plans. But perhaps the greatest incentive is that it is being built. This is truly a scheme that deserves to be built, and deserves the recognition for its innovation.

Hansen has thoroughly understood and solved the problem. In a deceptively simple presentation, he has addressed all of the issues the jury considered vital to the First Award status. He has proved it possible to solve strictures of varied site and climate requirements. In turn, the scheme shows plan and massing alternatives, plus owner preference furnishing and finishing options, partially listing others.

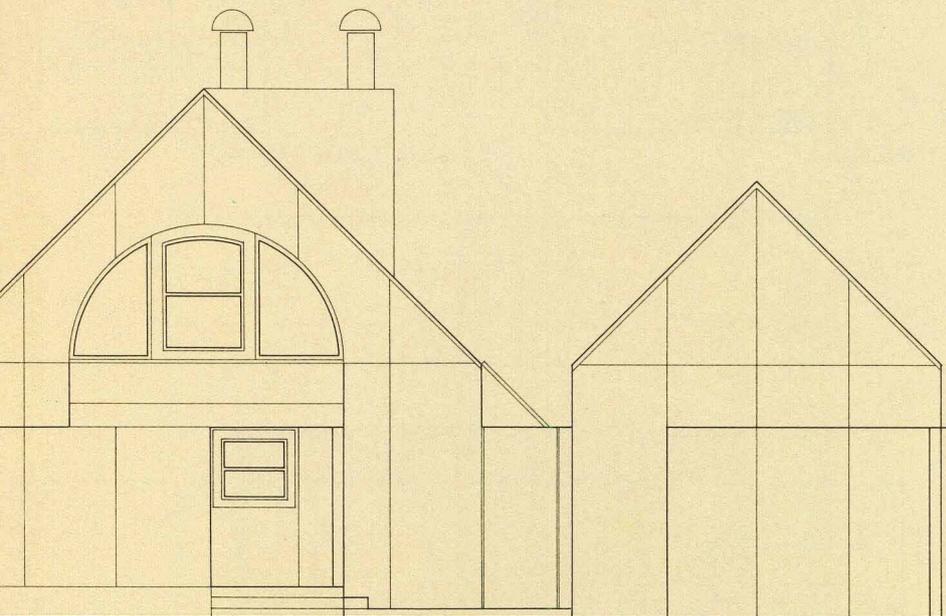
The basic plan contains much open space and a passive solar heating and cooling system, centered around a greenhouse approach. Then Hansen has dotted in a set of optional elements (including solar collectors, axonometric, center left) to be added in or left out at the owner's or builder's discretion. Color and finish choices are listed, as are provisions for thermal insulation amounts, variable as the climate dictates. Earth berms may be used on up to two and one-half of those exterior walls that do not incorporate the greenhouse element.

The solar storage is in a rock bin beneath the house. Provisions for present or future active collectors are indicated on the mechanical schemes, and operable awning window vents top the greenhouse glazing. Movable solar screening can be closed to limit excessive solar gain, and deciduous trees help by shading the greenhouse in summer.

Depending on the owner's or builder's wishes, the second floor may be left open to below along the long sides (section, top left), or closed off. Dotted alternatives show a sitting area on the second floor, and two small bedrooms on the first, as



AXONOMETRIC



ELEVATION

10' 3m

First Award

well as an eating counter off the kitchen. Also, the front window treatment may be varied in several ways.

Expansion possibilities are shown in dotted areas in the berms away from the carport (plans, right). Versatility of arrangement makes the plan adaptable to many site configurations, ranging from simply flipping the basic plan to mirror image variations, and finally to joining the units to form whole developments of attached housing, as shown in the site plan (right).

A testament to the jury's enthusiasm for Hansen's scheme is the fact that juror Neil Glynn proposed that The Green Company be allowed to build it on Cape Cod this summer. It appears at this writing that the project is going ahead, and P/A will report on the outcome when it is finished.

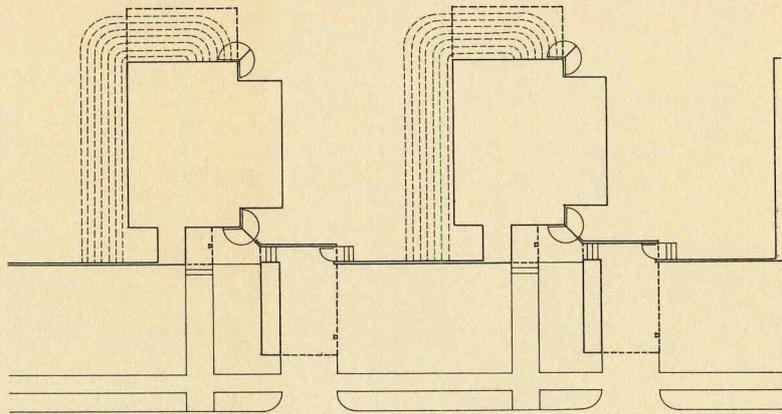
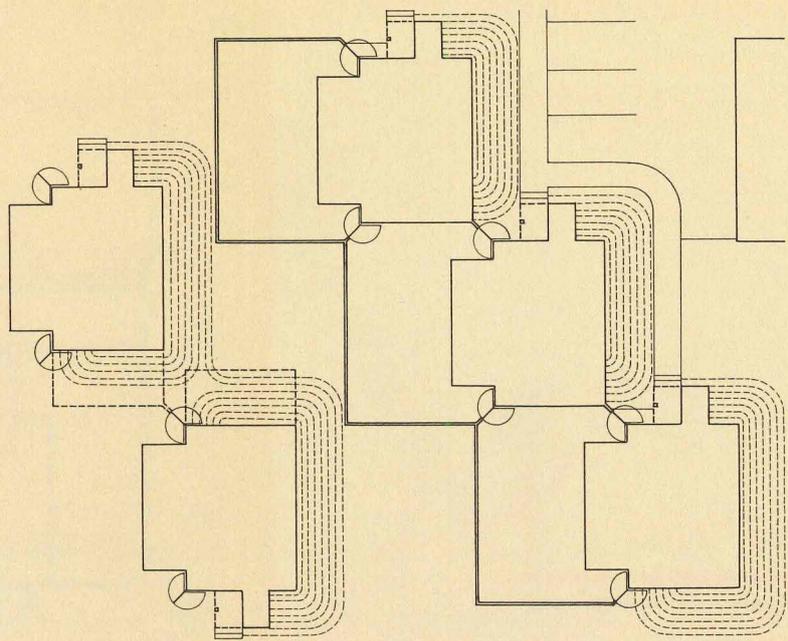
Jury comment

Sandy: The designer appears to have thought out everything extremely well. The excitement is in the tremendous variety of possibilities for expansion, contraction, self-help, self-expression, energy conservation, and exciting elevations. The use of plywood as an exterior skin has been carefully thought out. Of extreme interest to me are the possible ways of taking these units and clustering them very closely, yet giving each a private yard.

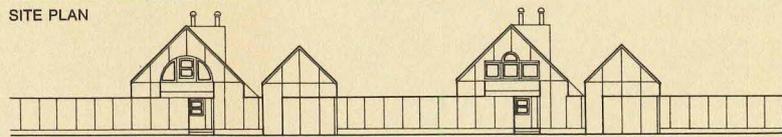
Senej: The logic and the reasoning that this designer spelled out are something that this country could use a lot more of. His approach and the result are truly innovative. Using today's possibilities, he has built in the flexibility for families to make this house pretty much what they want it to be. All the spaces offer more than two alternatives to their use, and the house should function for many different kinds of families, or for one family whose lifestyle might change as it matures.

Glynn: I feel that the universality of appeal here is breathtaking. The house is such a class act in and of itself that it's hard for me to comprehend. I can see that this house is going to have broad appeal relative to what people feel they want in the architectural aspects of their house. I also see it as being most satisfactory to the avant-garde person looking for something that is quite contemporary. On the other hand, it has the traditional appeal for that little retired couple with the most traditional kind of furniture. The concept is super.

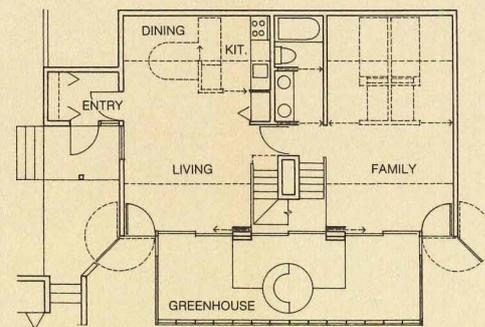
Murphy: The spaces show an incredible number of possible uses, especially compared with some of the other entries, where we had to imagine the uses. The house is in an idiom that would fit almost anywhere. The corner connections that can be made to join units together are also very nice—very delightful design elements. This person has spelled out ways you could change this, add to it, change the configuration. The description covers all aspects of the program extremely well. It's the best entry we've seen.



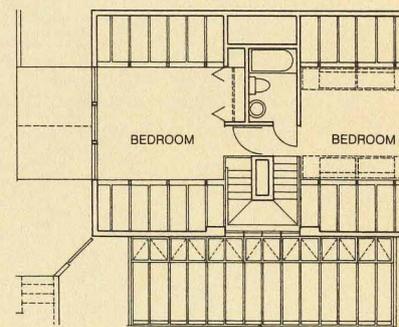
SITE PLAN



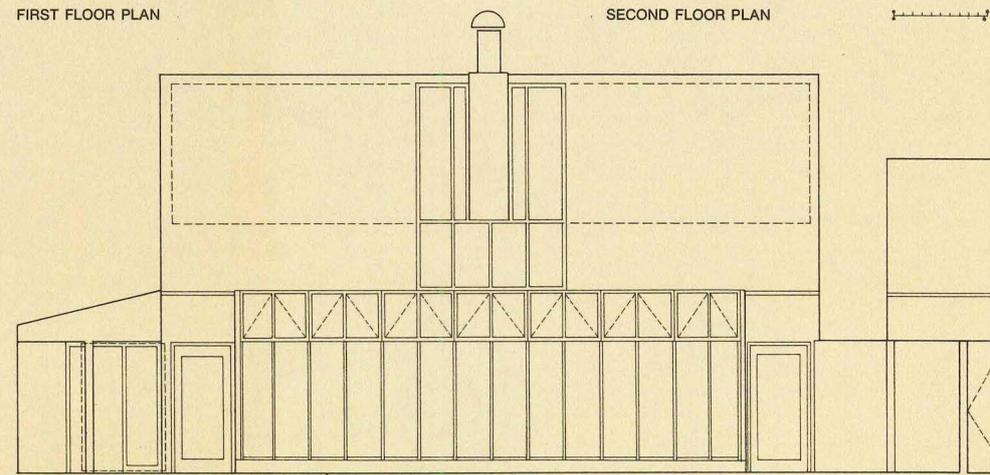
ELEVATION



FIRST FLOOR PLAN



SECOND FLOOR PLAN



ELEVATION

Merit Award

A. Dean Bell

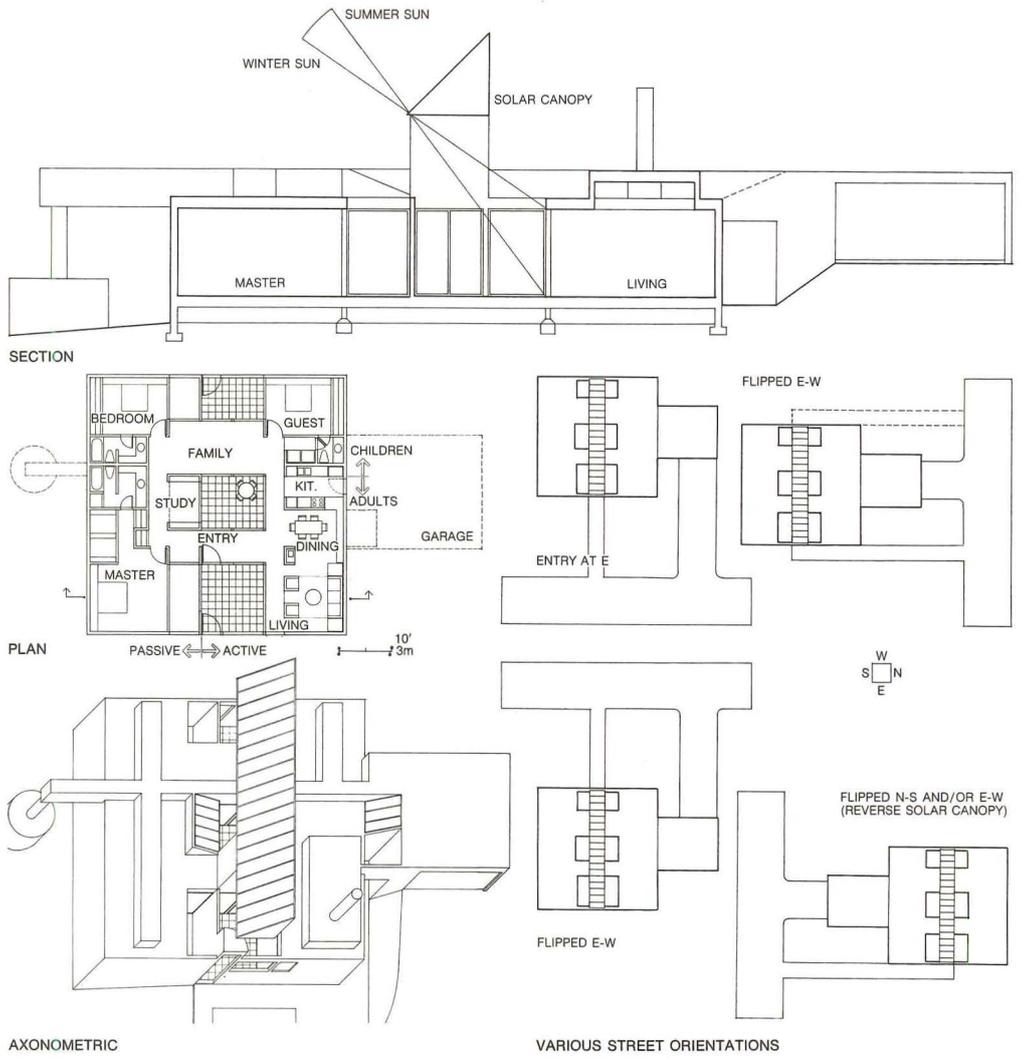
Jury comment

Sandy: You really have to start by looking at the floor plan, which has a lot of interest to me personally. It is a totally introverted scheme with basically no windows. It is really a series of atriums, starting with the entry atrium, into which the rooms look. The room arrangement works very well, the bathrooms work very well. It is a classic plan, probably from as far back as the Greek Islands. The courts are used as collectors for the winter, and as ventilators in the summer. The raised area in the living room, and possibly high openings in the bedrooms and other rooms, could have operable louvers for full cross-ventilation. This scheme could be done on very tight lots rather than what is shown.

Murphy: I love the geometry of it, especially the front and rear, as Don mentioned; I think it's really beautiful. It would depend very heavily on its staying very plain with punched holes. The designer is talking about grooved plywood siding painted white; I think it would be quite beautiful.

Glynn: The basic concept is a super one, and a very sophisticated use of the atrium house.

Seney: This kind of house could make some awkward sites offer pretty good living. I find the solar collector overwhelming.



Merit Award

Roger Kemble

This project was done by Roger Kemble and John M. Taylor, of Vancouver, B.C.

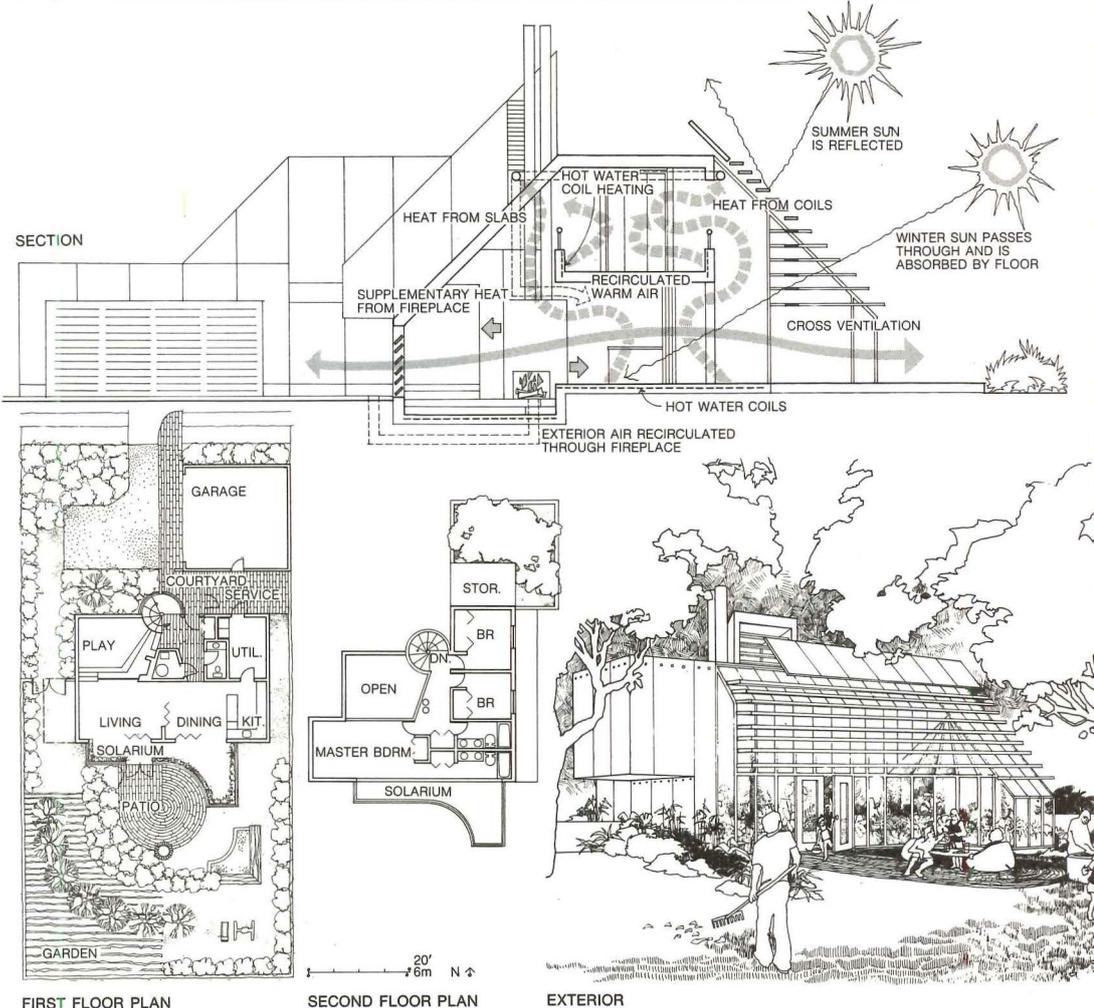
Jury comment

Seney: The floor plan offers a kind of fun that many families would love to be exposed to, from the relaxing area and the built-ins that dictate informality to the living and dining areas. A lot of living in a very small configuration. The solarium adds excitement to the whole rear yard, and should help with the heating bill. It also may be shut off with insulated shutters.

Glynn: I get a feeling of freshness here—something different. I don't have the feeling I've seen this before.

Sandy: I think that's very true. It has a nice touch to it—it's soft. I think it has a very nice texture. The elevations are very interesting; they have some interesting massing. Also, the interior overlooks are very, very exciting. The plain plywood panels might be questioned, as opposed to a grooved effect.

Murphy: The site plan looks very good, and the whole livability aspect, I couldn't agree with more. The sketches really tell a lot. There is a feeling of how that house is inside. The house doesn't look hard, even though the drawings are hardline. The solarium detailing would be critical, to avoid clumsiness. It's a good scheme.



Merit Award

Earl Durand, Jr.

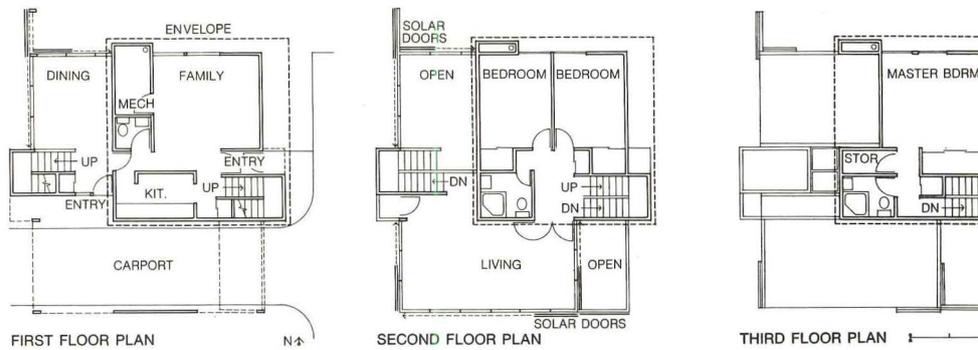
Jury comment

Murphy: You first have to accept the envelope concept (as expressed by the architect's statement, that the areas inside the dashed lines on the plans are the most important in terms of insulation and energy conservation). I question that just a bit because I think some of those other spaces will be used by some families just as much, if not more. I also question the living room up on the second level with the children's bedrooms. But the designer has done a lot of homework and has followed the program very, very thoroughly. I really like the house; I would like to see it built.

Sandy: I don't completely agree with Jim on the living room location, because the family room is designated as the primary living area; the living room is for more formal entertaining. It could be a sitting room one floor down from the master bedroom, with nice overlooks into the various spaces.

Seney: The exterior seems quite appealing, and the use of insulated plywood panels to cover large glass areas in the living room is a definite plus. I have doubts about the character of the living room and its relationship to other adult functions.

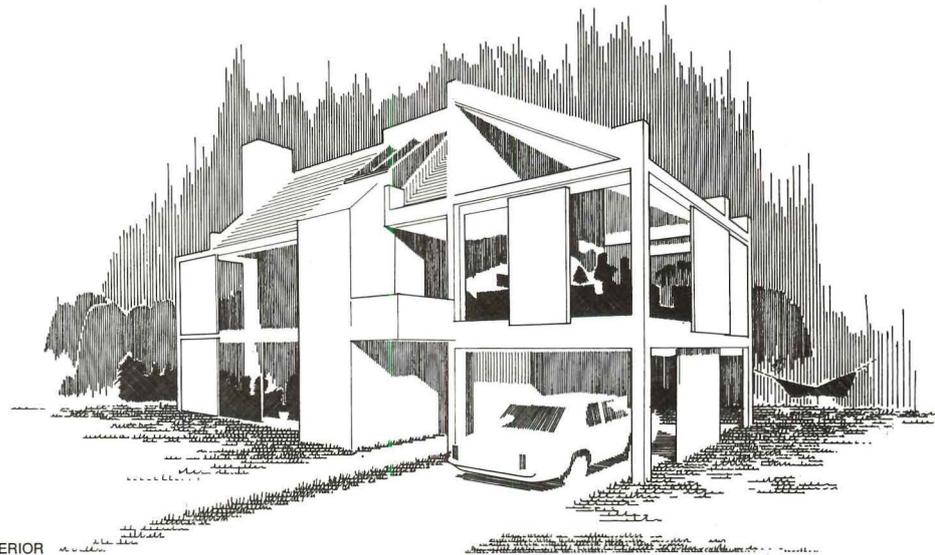
Glynn: This does deserve a merit because of the depth of study. As a builder, I would feel we were close to the right solution.



FIRST FLOOR PLAN

SECOND FLOOR PLAN

THIRD FLOOR PLAN



EXTERIOR

Merit Award

Tristram Metcalfe, III

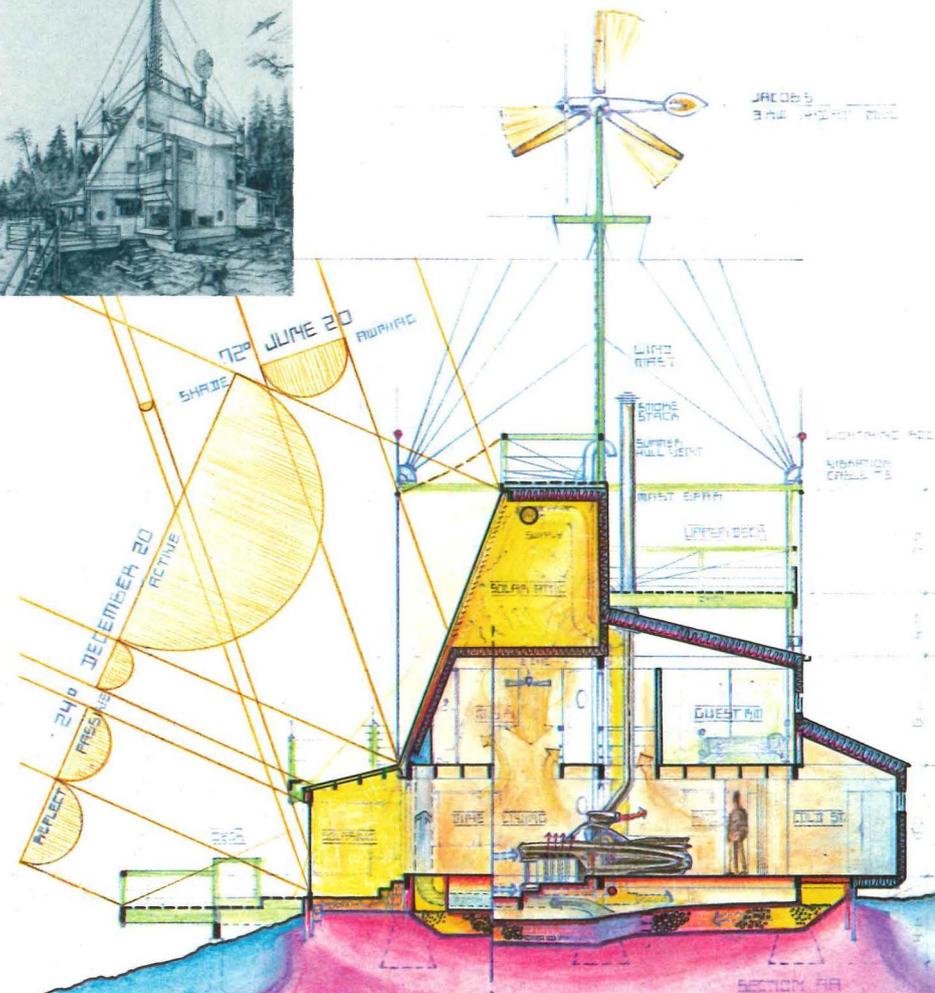
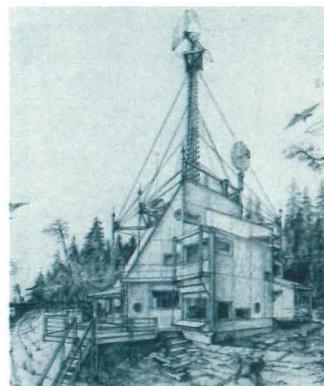
Jury comment

Seney: This house offers a big dose of whimsy. The shape and all of the attachments to the outside seem to bring a feeling of amazement and appeal; they offer an invitation to something quite unusual inside. The house is, of course, extremely informal. But it would have the aura of being somewhere special on the inside. I especially like the bridge and the opening between the two levels. Even the odd shapes of the bedrooms, the office, and guest rooms seem to pay off better than most of these kinds of rooms ever do.

Sandy: You don't live in this house, you happen in it!

Glynn: If it is built, I'll walk to see it from Cape Cod!

Murphy: It's the kind of thing that could only happen once, and I hope it happens. It's fantastically impractical in terms of what we have established in this competition, but we can't pass it up. I would have to refer to it as the Woodstock lifestyle kind of thing; as Don said, it's an occurrence. The coloring scheme on the presentation is just incredible. The designer has worked it and other aspects out very carefully. The colors are part of the thought process, denoting heat and cool zones. The heat exchanger is a Cadillac!



Merit Award

Gray Smith

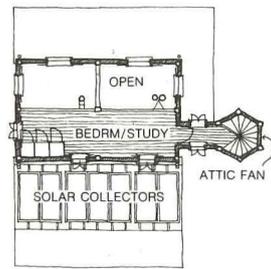
Jury comment

Sandy: This is a very interesting, almost one-of-a-kind house. It has stayed in among the award recipients primarily for its interior conceptual space, for its volumes and overlooks. Also, the solar aspects of the house have been very carefully thought out. The living room and the various rooms looking into the shaft create an absolutely dynamite space.

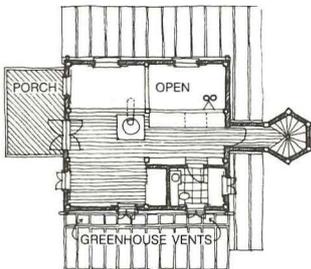
Glynn: I feel it's just super fun! I can't think of a place I'd rather spend a weekend or a vacation. As Don noted, it must be expensive on a square foot basis. I do think it's kooky, it's fun, it's clever, it's dramatic, and I think it has a lot going for it.

Murphy: The space inside is just spectacular. It does look like a delightful house to be in. We should say that the marketability is one of the problems that keep this design from being rated higher than it is.

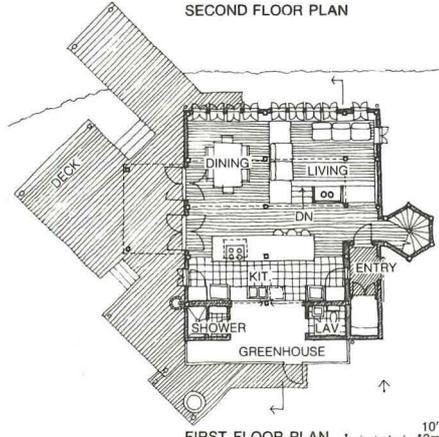
Seney: This "power house" offers a marvel of open living and would work extremely well for families of a certain lifestyle. The verticality and the openness are quite unusual, and appear to me to be most pleasant. The greenhouse space off the kitchen is a nice addition, and I believe it would help with the energy problem. The stair tower is very pleasant, as are other roof elements. The house is excellent for what it is.



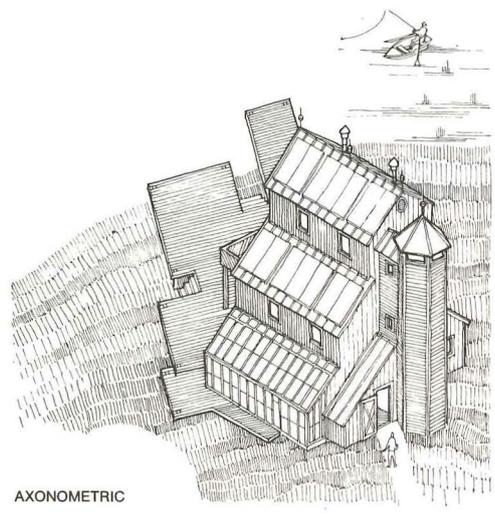
THIRD FLOOR PLAN



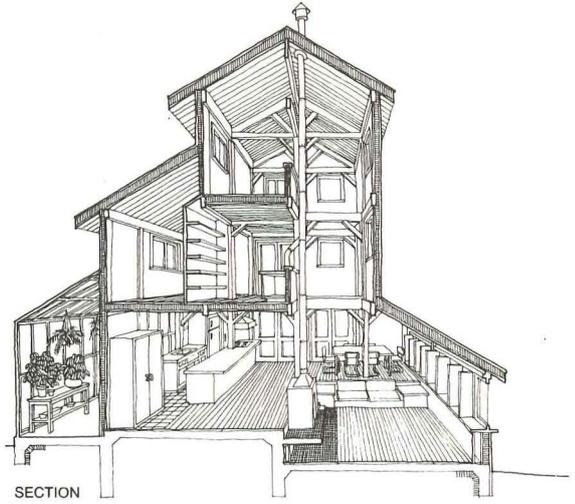
SECOND FLOOR PLAN



FIRST FLOOR PLAN



AXONOMETRIC



SECTION

Special Merit Award

Kevin J.P. Daly

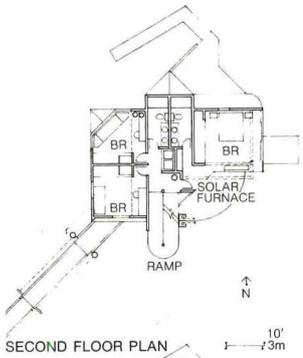
Jury comment

Murphy: We submit this scheme for a special award because it is by far one of the most handsome in terms of design submissions. We recognize that the house is undoubtedly very expensive, and out of the boundaries of the competition budget, but it's very, very nice. The presentation, while a little hard to read, is absolutely beautiful. The spaces look like they would be very pleasant, and the potential views could be just breathtaking. This is by far one of the best things we've seen.

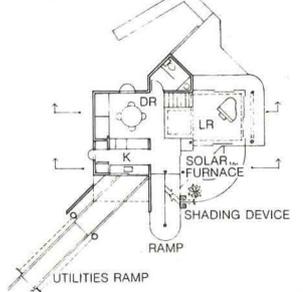
Sandy: It stays in among the award winners because it is an extremely exciting architectural statement, particularly from the exterior views. It's a three-story house which can also take some criticism, but the form, the use of glass, of skylights, the greenhouse effect, and the adaptive use of plywood could work very well.

Seney: The design is perhaps best described as "sophisticated"; it's very handsome but probably, to my feeling, a little beyond the understanding of most Americans and their limited appreciation of this kind of architecture.

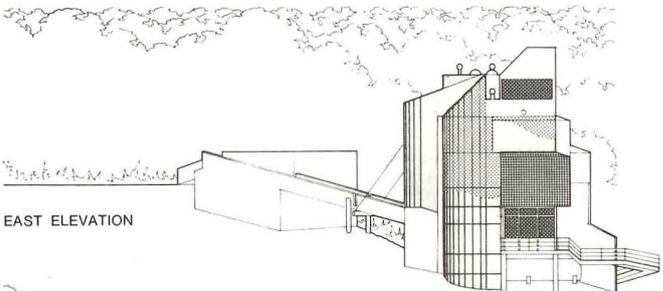
Glynn: It is a very functional piece of art, just a thing of beauty. It, combined with one of the others, might just be the forerunner of a trend.



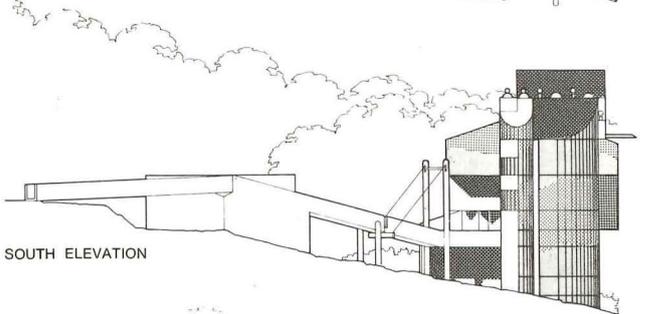
SECOND FLOOR PLAN



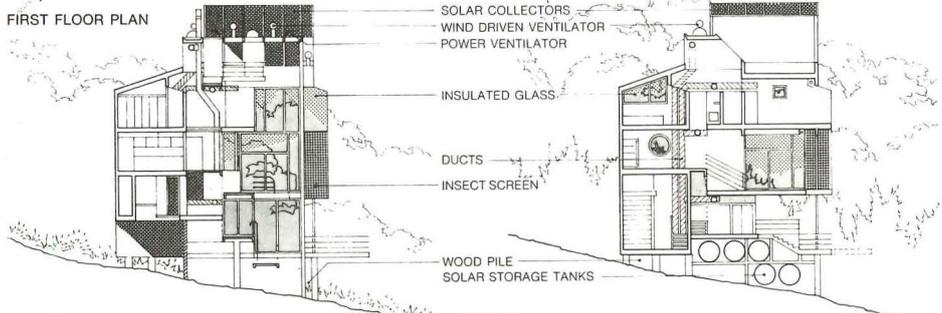
FIRST FLOOR PLAN



EAST ELEVATION



SOUTH ELEVATION



SECTION A

SECTION B

Niagara rises

In reviving a 19th Century building type—the winter garden—and refining 19th Century iron and glass construction, Gruen Associates designed a lush verdant setting to bring visitors to the falls year round.

You see it everywhere: when decaying downtowns want to inject economic vitality into their moribund centers, they use the shopping mall as magnet. These enclosed skylit extravaganzas, with planting, fountains, and seating after all attracted the people from the city to suburban locales in the first place.

Niagara Falls opted for a winter garden. If you don't know the difference between a winter garden and an enclosed mall, go there. The same elements may be present but the focus shifts dramatically. Instead of an environment where plants, sunlight, and seating subtly and not so subtly defer to the buying of objects and food, the winter garden offers a setting where the enjoyment of the garden under glass comes first. Contemplation replaces consumption. Granted, the sidewalls of the Rainbow Center Winter Garden are fitted with removable metal panels so that future department stores can be plugged into this space. And people still are permitted to picnic there. But this tropical setting filled with bamboo palms, corn plants, fiddle leaf fig plants, papyrus plants, Chinese evergreens, and Dwarf Dragon trees is indeed something else.

Niagara Falls introduced a winter garden into its downtown redevelopment for many of the same reasons that any other city would want an enclosed shopping mall. However, as one of the public improvements in the city's urban renewal plan, the winter garden does not have to be supported by private (commercial) developments. In fact it may not have money-making activities on the premises. It does, however, join a concentrated commercial cluster geared to year-round tourism, for the winter garden is one element in an 82-acre urban renewal program. Parts of the master plan, drawn up by architects Gruen Associates, who also designed the Winter Garden, have already been completed—the convention center by Johnson/Burgee, an outdoor plaza and skating rink in front of the convention hall by Abraham Geller, Raimund Abraham, and Giuliano Fiorenzoli, an office building by SOM, a hotel and parking

garage by Gruen, a museum by Hodne-Stageberg nearing completion. In the planning stage are another office building, a garage and shopping center (for further details see p. 81). A 1500-ft-long mall and arcade forms the axis of the development, extending from the convention center to the riverside park by the waterfall. The Winter Garden, 175' x 155' and 107 ft high, forms the oasislike nucleus of the development.

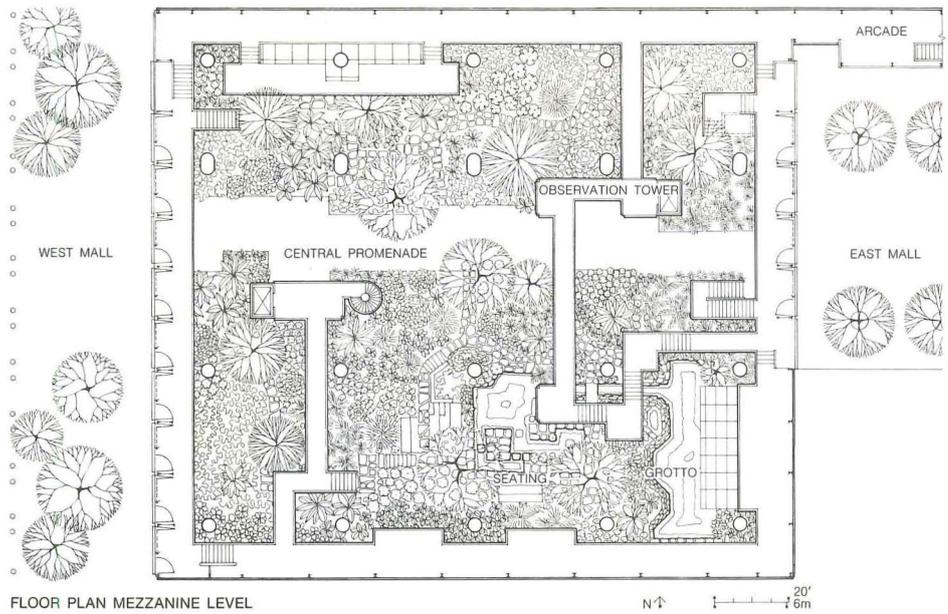
It was always the intention that the mall would have open and enclosed walkways on two levels to make moving around the center less grim during the severe Niagara Falls winters. But the Winter Garden was not part of the original plan. However when private development, especially retailers, proved reluctant to move back into a dying downtown without some assurance that people would already be there, Gruen Associates decided they needed more than just the mall and arcade to act as a catalyst. With \$7 million of the urban renewal funds designated for the spine, they decided to place a winter garden a little more than halfway down the mall—a future “lobby” and enclosed plaza for development occurring on either side. Designed to straddle the mall, the Winter Garden was meant to set as a *terminus* for the more formal development occurring at the east end of the mall around the convention center, a *pass-through* to the less formal mall development extending toward the waterfall park on the west end, and a *catalyst* for development on either side. To maintain the permeable quality of the structure and encourage pedestrians to pass through the Winter Garden to each end of the mall, the greenhouse was kept transparent, with east and west glass walls opening out french-door style on both upper and lower levels in the summer.

Roots in the past

The idea of the winter garden at Niagara Falls reverts to a building type that flourished in the 19th Century, and employs a technology developed at that time. While the cascading asymmetrical form of the Rainbow Center Winter Garden adheres to a modernist architectural aesthetic, not to the ornate one of its domed 19th Century predecessors, the solution still retains much of the aura of the past. Its steel and glass construction represents a refinement on the 19th Century explorations of iron and



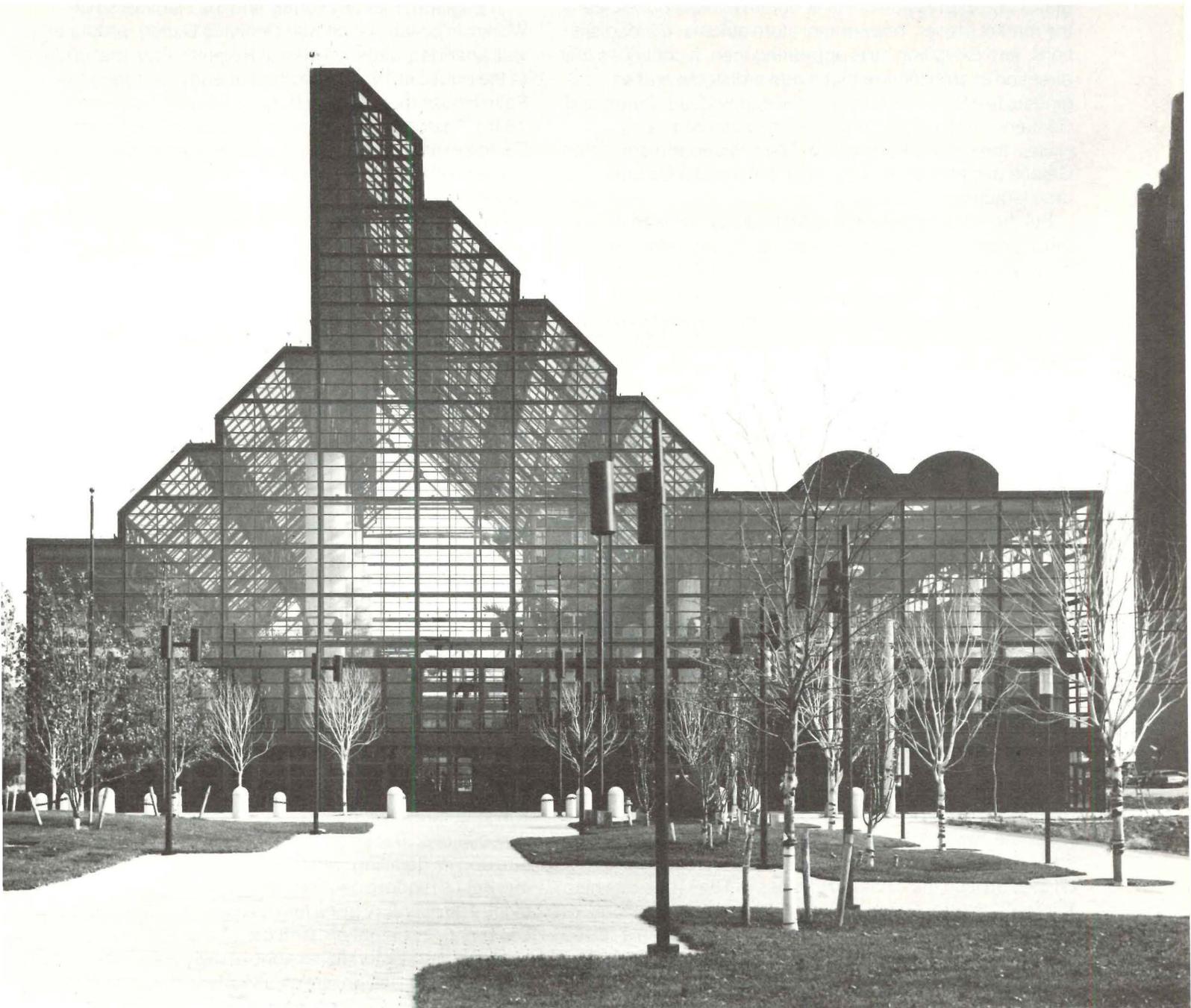
William Rothschild



FLOOR PLAN MEZZANINE LEVEL

N ↑ 20' / 6m

View of the Winter Garden from the West Mall (below); interior connection between east and west malls (above).



Norman McGrath

Rainbow Center Mall/Winter Garden



Norman McGrath



William Rothschild

On the mezzanine level (photos, above) spaces are defined by elegantly fitted industrial elements of a linear lightweight quality.

glass. The expression of the structure evokes quite clearly the market places, department store atriums, railroad stations, and exhibition halls appearing then. It continues that direction of architecture that made architects and engineers like Baltard, Paxton, Eiffel and Boileau, Dutert and Contamin famous, and the icons they created—Les Halles, the Crystal Palace, Bon Marché department stores, Galerie des Machines—so influential on 20th Century architecture.

But the building type where technology, art, and nature most lyrically came together was the conservatory. At first it was the personal possession of the rich and the royal. When it went public, so to speak, and became part of the urban scene, its potential for expanded uses could be felt.

The interest of Europeans in horticulture from the 16th Century on led to the emergence of this building type. As John Hix relates in *The Glass House* (MIT Press, 1974), horticulture had captivated the interest of cultivated persons for a number of reasons—expanded trade and travel, with the subsequent fascination in exotic flora, plus the dissemination of botanical data, itself part of the development of classification methods in the realm of general knowledge. Then too there was a growing interest in fresh fruits and vegetables, and increasing disenchantment with cold weather, with industrialization and urbanization.

The hothouse fever reached its peak in the 19th Century, paralleling an astounding growth in the density and size of cities. Public conservatories erected in parks and botanical gardens soon rivaled private ones. Meanwhile the rich were finding out that these mammoth glass and iron cages made idyllic settings for soirées, concerts, reading, smoking, and dining rooms. Soon the idea began to take hold in urban areas for use by the general public. The Pantheon Bazaar Conservatory and Aviary on Oxford Street in London by D & E Bailey in 1834 is an early example of the “winter garden” concept. One of the most splendid and popular had to be Hector Horeau’s Jardin d’Hiver built on the Champs Elysées in 1848 (besides his Winter Garden at Lyons of 1847): promenades, restaurants, cafés, ballrooms, a reading room, and even a raised promenade brought the public into the glass and iron 60-ft-high space filled with camellias, azaleas, and orange trees.

In England, Richard Turner and the Hammersmith Works, in collaboration with Decimus Burton, produced a well attended winter garden at Regent’s Park that opened to the public in 1846. (They had already designed the Palm House for the Royal Botanic Gardens at Kew in 1846). Paxton was instrumental in getting the Crystal Palace exhibition hall “recycled” as a winter garden when it was taken down from its Hyde Park site and reerected at Sydenham, in 1852.

But the conservatory and winter garden ceased to have appeal in the 20th Century. Travel to the places where the plants originated was easier to undertake with the improved modes of transportation. Labor (gardeners) was more costly. The major shift of urban populations to the suburbs and beyond also diminished the public’s desire for green oases in public places.

Today it’s a different story. Now that suburban sprawl has devastated many accessible rural areas, now that small cities with low-density development have become larger cities with overdevelopment, the winter garden is looking more appealing all the time—particularly in northern climates. And now that cities have planted shopping malls in their centers where you can go and find a dizzying whirl of jazzy shops, Muzak, donut and pizza stands in an interior skylit world, a real garden comes as a refreshing and innovative departure.

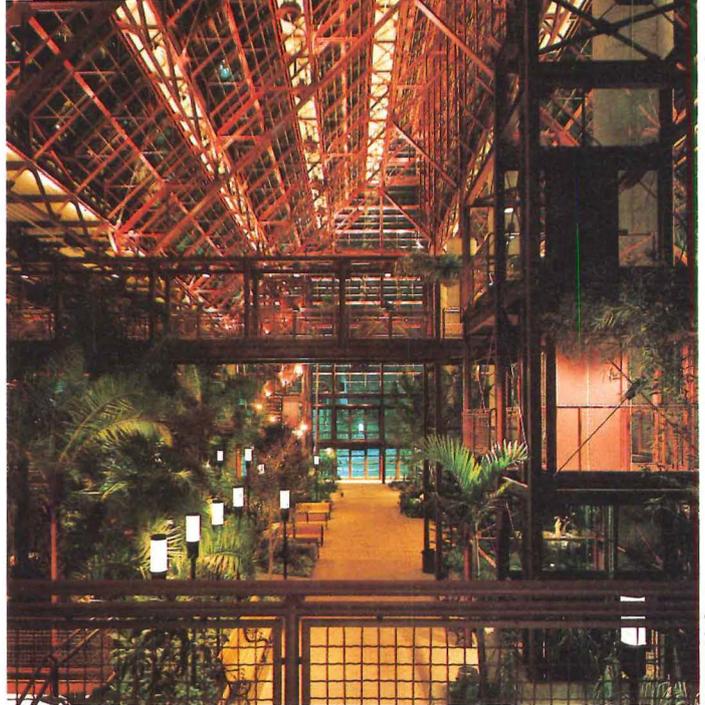
As architecture

The Rainbow Center Winter Garden, given a Progressive Architecture Design Award citation in 1977 (Jan. 1977, p. 65), uses structure sensitively as a proper foil for the plants. The various mezzanines, stairwells, elevators, along with amphitheatres and pools, divide up the space into special niches or places quite unique in character. The structure itself, painted a plum brown, is Victorian in its associations. The elegance of the articulated steel structure and its detailing, which Gary Engel of Gruen worked out, act as modern counterpart to the ornamental iron work of the 19th Century (for a full description of the structure, see p. 79). Its height of 107 ft creates a rather awesome spatial effect; Victorian versions usually were only 60 ft tall.

The exterior design strikes a modernist note, and especially bears the imprint of partner-in-charge-of-design for







Norman McGrath

By night the interior changes tone; view up to catwalks (opposite).

Gruen at the time, Cesar Pelli. Its cascaded configuration owes something to his 1969 scheme for the Vienna International Organizations Headquarters and Conference Center—which Pelli freely admits. Pelli explains the shape seemed particularly appropriate for a number of reasons (some having to do naturally with the plants' need for lots of sunlight). While designing a building that presented a permeable enough looking structure to pedestrians sauntering down the mall, he still wanted to stop the view dramatically. He desired something vertical since objects diminish optically in size from a frontal perspective. Conscious too of Johnson/Burgee's gently curved roof of the convention center on the other end of the east mall, Pelli wanted a form to play off of it; one, however, that disclosed the same not-quite-complete view of the building to people viewing it from the mall. A symmetrical stepped profile looked too much like a cathedral. The form began to take its lopsided shape in deference to landscape architects M. Paul Friedburg & Partners, lavish landscaping, and the south light orientation. The definite incisions of the zig-zag profile came from the knowledge that catwalks along the cascading glass roof would ease maintenance, drainage, and cleaning of the glass lights.

In its configuration, the form shows a close affinity with the early explorations of Paxton with his rudimentary greenhouses and ridge and furrow roofing. Its Matterhorn-like shape shows a kinship to one of Bruno Taut's visionary schemes for the Alps.

Because of the Winter Garden's open-ended quality and the way it straddles the mall, as a total form the design does appear incomplete; it appears to be the chip off of some crystal megastructure waiting for the rest to be built. (In the Vienna scheme, this shape acted more as a transitional form relating taller and larger elements to the ground.) Now that retailers are seeing people beginning to come back to downtown, that megastructural development might occur. But there are still caveats. As open ended as the Winter Garden is, to maintain its integrity it needs an architecture on either side that matches it in elegance *and* simplicity. Developers don't often do this. Shopping centers usually are anonymous boxes wrapped in cheap materials—the sort of design that could seriously detract from the Winter Garden's image.

Norman McGrath

Rainbow Center Mall/Winter Garden

The two-level arcade on the north part of the east mall seems to be waiting for something—which it is. But even when shops are added behind it, the second level of the enclosed walk still may remain as gratuitous as it is now. One wonders if there ever can be the density of pedestrian movement to keep it from looking like just one more vestige of the 1960s' fascination with two-level circulation.

At any rate, the Winter Garden is a superb experience and worth going to Niagara Falls even on a snowy day. The city must be congratulated for its acceptance of what must have seemed a rather romantic or retardataire notion. Interestingly, Bruno Taut dreamed of crystal palaces matching the grandeur of Niagara Falls. Little did he know that someday . . . [Suzanne Stephens]



William Rothschild

Quiet out-of-the-way places surprise visitors to the Winter Garden.



William Rothschild

Withstanding natural forces

One of the problems about building a large greenhouse structure at Niagara Falls, of course, would be wind pressure, snow loads and variation in temperature up to 100F. The wind pressure problem was accentuated by the desire to keep parts of the wall open in the summer. Computer analysis predicted that the glass curtain wall would move 1.5 in. vertically due to the various pressures.

To allow for live load, wind load, and thermal effect, the architects and structural engineers designed the 100-ft-high latticed steel frame to be laterally supported on twenty reinforced concrete columns, of which five (in the highest part of the structure) are 58 ft high. By vertically post-tensioning the columns, they reduced lateral deflections from four in. to less than one in. The four rows of columns support, with pin connections, five transverse trusses 36 ft on center. The trusses, which are continuous, cantilever about 14 ft on each end so that no columns had to be placed around the periphery of the greenhouse space to mar its lightness and transparency. Twelve longitudinal trusses between the transverse trusses also cantilever at the ends, and are further braced by custom-designed joists.

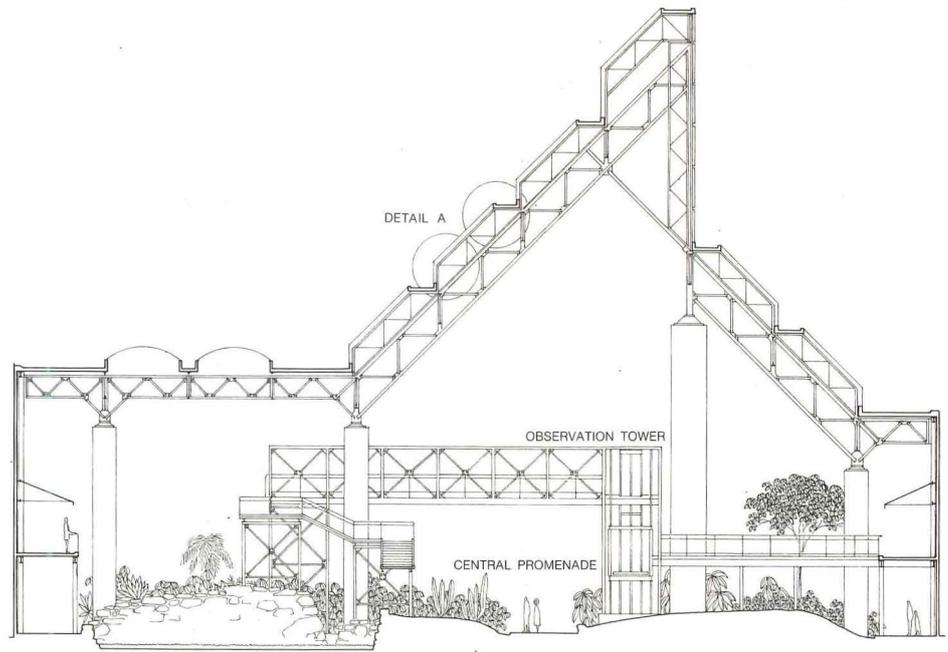
The exterior glass wall was hung from the cantilevered roof trusses with an expansion joint at the mezzanine level to allow free vertical movement. The vertical mullion support trusses, some as high as 80 ft, were thus hung from the roof trusses. To keep the lower ends from buckling, the architects and engineers added inward and outward lateral support by installing trusses at the mezzanine level that formed rigid frames.

Glass naturally presented another challenge. Clear float glass for the vertical walls, tempered glass ¼-in. thick in the mall and mezzanine-level high traffic areas, and laminated tempered glass in the sloping roof areas covered more than 44,000 sq ft of the building. Horizontal purlins attached outside the structural supports provided the three-dimensional adjustment between mullions and frame, so that conventional lights could be used instead of custom-built ones. Just to give an idea of what the architects were up against, more than 140 in. of snow fell during the 1977–1978 winter, and during one day wind gusts were 70 miles per hour. Obviously, all sorts of tests had been conducted. Fortunately, they have proved accurate.[SS]

Data

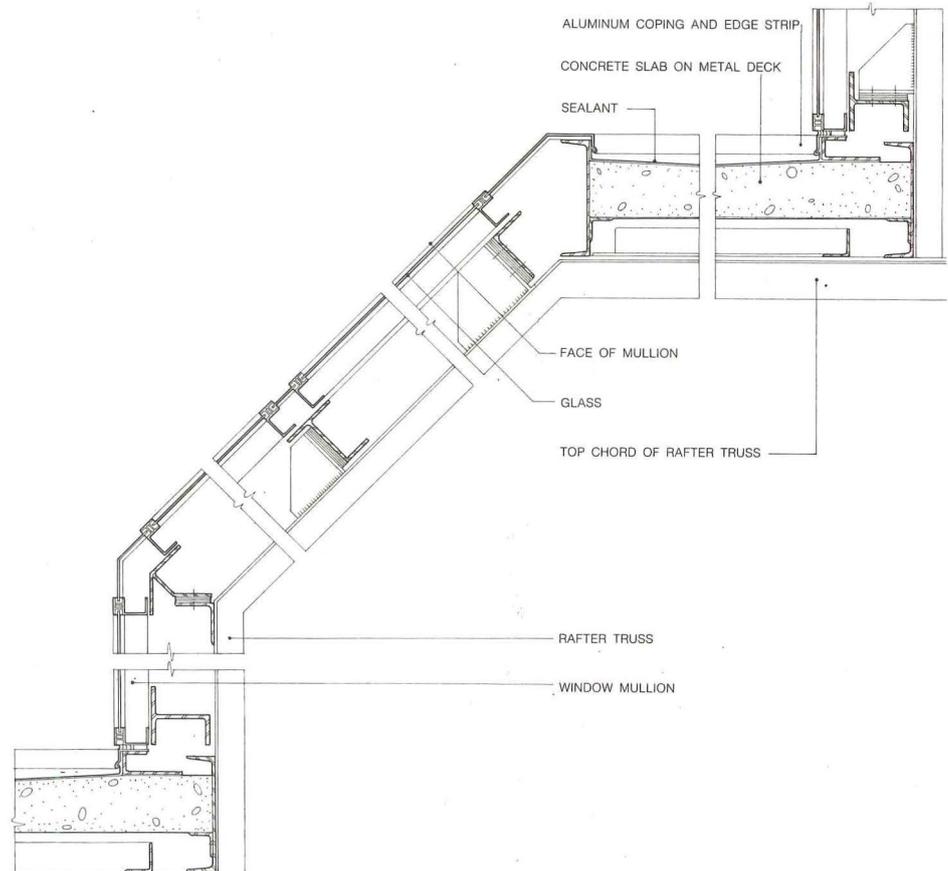
Project: Rainbow Center Mall and Winter Garden, Niagara Falls, NY.

Architect: Gruen Associates, New York, NY, Beda Zwicker, partner in charge; Cesar Pelli, partner in charge of design; Abbott Harle, partner in charge of technical development; Gary Engel, director of design, project designer;



TRANSVERSE SECTION

20'
6m



DETAIL A

12"
30cm

Thomas Loosbrock, project architect.

Program: develop circulation, spine a 1500-ft mall, and focus a 155' x 175' ft winter garden for 82-acre development area of Niagara Falls, to attract visitors and residents to downtown on a year round basis. Enclosed, as well as outdoor, pedestrian circulation between parts of development are necessary, and mall is major link.

Structure: steel lattice frame, with concrete columns supporting truss system; see above for full description.

Major materials: steel, clear float glass, tempered glass, and laminated temper glass, aluminum curtain wall, removable metal wall panels, brick and asphalt block pavers, plants. (see Building materials, p. 106)

Mechanical system: electric heating for plant

growth plus natural ventilation using stack effect of structure. Outside air admitted through grade level openings and emitted through thermostatically controlled louvered openings on top of the structure.

Consultants: M. Paul Friedberg & Partners, landscape architects; DeSimone & Chaplin, structural engineers; Cosentini Associates, mechanical and electrical engineers; Herbert Levine, lighting.

Contractor: Scurfari-Siegfried Joint Venture.

Interior landscape contractor: The Everett Conklin Companies.

Client: Niagara Falls Urban Renewal Agency, Angelo Massaro, director, Nicholas Marchelos, deputy director.

Costs: \$7,850,000.

Rainbow Center Mall/Winter Garden

Second honeymoon

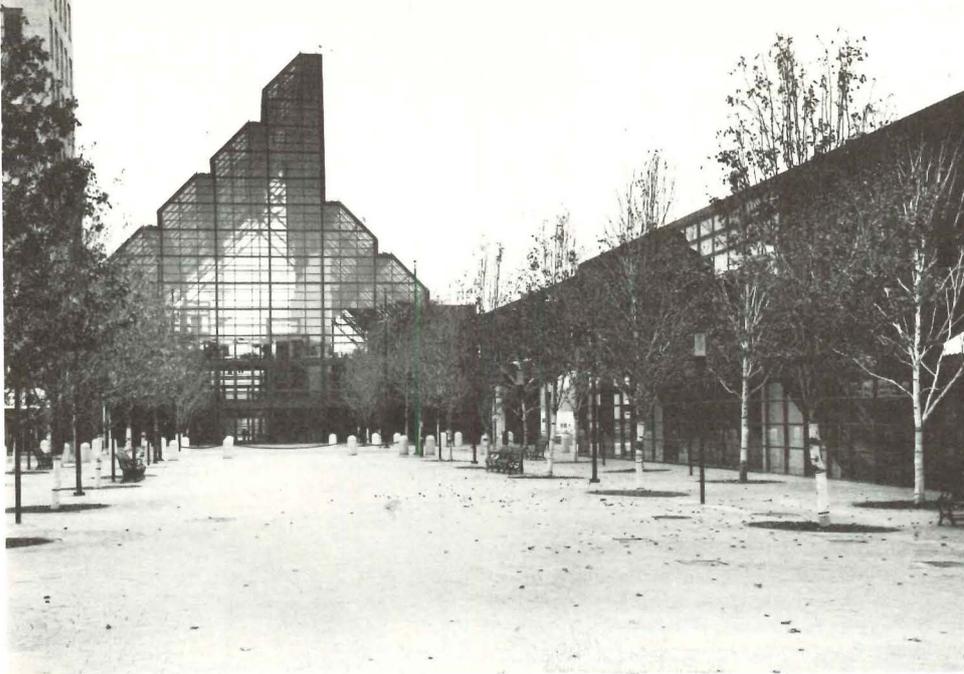
The first honeymoon began to end in the late 1950s. An out-of-commission hydroelectric plant lost a number of jobs and people for the city of 85,000. The famous resort spot was no longer attracting the hordes of tourists and honeymooners it once had. Although Niagara Falls now draws five million visitors annually, in its prime people stayed for several days. In the 1960s, even the number passing through dropped to 3.5 million. The town was suffering from being a ghost town except for July and August. Hotels were run-down, if not downright seedy. Suburbs and shopping centers had been siphoning away the resident in-town population. The Canadian part of Niagara Falls too benefited from visitors staying on that side.

In the early 1960s, the city leaders decided to explore ways of revitalizing the city. In 1969, the town was granted urban renewal status by HUD for 82 acres. The city of Niagara Falls, the Urban Renewal Agency, and the Niagara Falls Gateway to America Corporation joined together in the \$200,000,000 redevelopment scheme that would involve public and private monies. The New York State Urban Development Corporation was brought in to guide the new development, and in turn hired Gruen Associates to come up with the master plan for the Rainbow Center. Gruen established the basic uses and situated the new development where it is today, tying it together with an enclosed walkway system. One way the city could attract visitors to a place with a mean temperature of 23.5F in the winter and an average snowfall of 57 in. was to help visitors avoid such experiences.

A major retail complex Gruen envisioned on the north side of the mall and the shops and two hotels on the south didn't pan out. Private developers felt hesitant. Under UDC's auspices, one 400-room hotel of conventional brick and steel frame construction was executed by Gruen for a private developer. But now with the mall and Winter Garden, the convention center, plaza, office building, and garage, prospects are quite different.

Architectural ensemble

The new architecture of the rest of the development doesn't match the excitement of the Winter Garden. But it isn't offensive either. It is "nice" redevelopment architecture. The Convention Center, finished in 1974 by Johnson/Burgee, can seat 8600 people in its 600' x 500' space. While the rainbow-shaped metal plate roof is dramatic in form, the materials and details of the building, particularly inside, appear to be done on the cheap. The Carborundum Center, on the north side of the plaza in front of the Convention Center, displays better materials. Designed by Skidmore, Owings & Merrill, its precast panels of car-



The Winter Garden connects to a two-level arcade on East Mall (above).



The East Mall terminates at the Convention Center (above); arcade links to Hilton Hotel (below).



borundum aggregate of aluminum oxide are more interesting, say, than the limestone facing on the abutments of the Convention Center, or the brick of the Gruen-designed hotel. Yet the architecture of the seven-story block is humdrum. In this con-

text, the E. Dent Lackey Plaza in front of the Convention Center merits discussion.

No one would argue that the 5.4-acre plaza designed by Abraham Geller, Raimund Abraham and Giuliano Fiorenzoli clearly results from an imaginative con-

cept, and from diligence in execution. The plaza, generated by a UDC-sponsored competition in 1972, was designed to be the centerpiece of this eastern end of the mall. Year-round activities take place there, including concerts and lectures, outdoor skating in the winter, exhibits in the summer. Geller, Abraham and Fiorenzoli came up with an intriguing concept: the floor of the plaza is sunk below grade for a protected skating rink, exhibition area, and restaurant connected to underground passages, while a central "island" bisected by a bridge on an axis with the mall gives the plaza its topography. It contains functions such as a cyclorama water fountain, and some seating for the amphitheater.

The architects intended that the island be created out of the existing bedrock underneath the plaza. The problems involved led to the forms being sculpted in concrete. This now presents a major drawback. Because of the preponderance of hard surfaces everywhere else—hotel, convention center, office building, and the very muscular piers of the convention center—the last thing you want to look at here is more concrete. Despite its artistry, and its mounds of native planting, this concrete topiary looks overly contrived, and out of sync. It would be more welcome in a rural setting.

Furthermore, its location means that its uppermost point, a bridge that repeats the arc of the convention center in the cross-axial direction, obstructs the view down the mall. The aggressively sculptural form, in fact, hinders views on the cross axis as well. While the entry level to the convention center is slightly higher than street level, a different means of connecting to it would have made more sense in terms of the urban design. Nevertheless, it must be said that while the plaza is not appropriate to the context, it has proved enormously successful. Certainly visitors there will be challenged on some level to respond to its complicated forms.

Catalytic responses

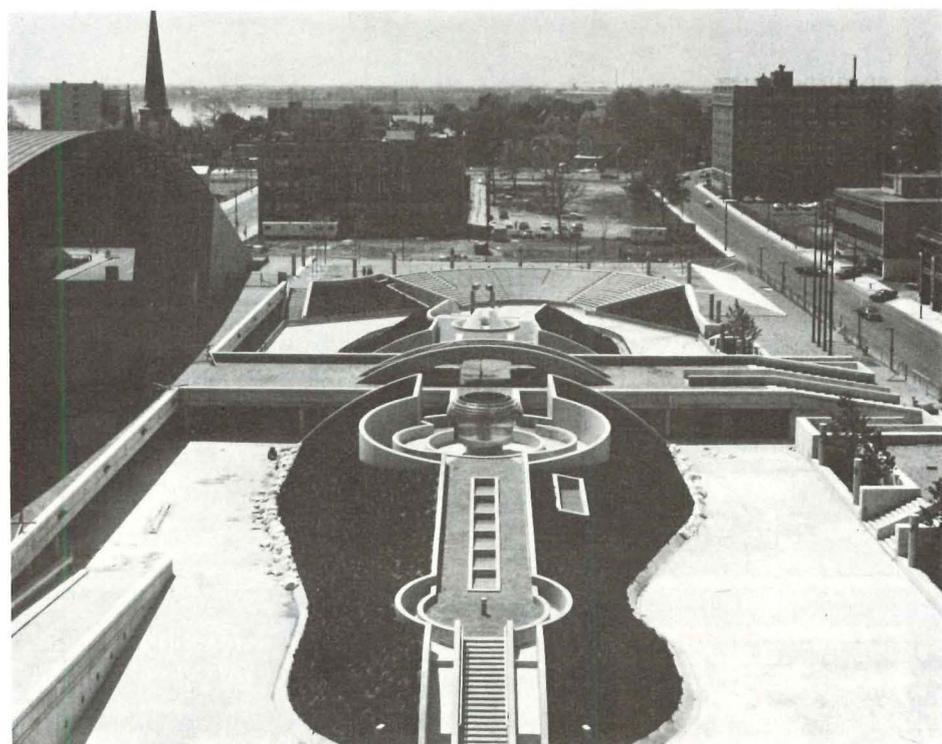
The overall results of the Rainbow Center redevelopment, however, are beneficial. The developers are now talking about shops and hotels. An old bank building on the mall across from the Hilton has opened as a restaurant. Meanwhile, the projected 214,000-sq-ft Piccadilly Shopping Center located north of the mall and Winter Garden is going through the financing and approval process. The 200,000-sq-ft Hooker Company building, a joint venture between Hellmuth Obata Kassabaum and the Cannon Partnership, goes into construction soon. Gruen will be designing the 1700-car garage and pedestrian overpass on top of the shopping center. Hodne/Stageberg's Native American Center for Living Arts, a 61,000-sq-ft museum, will open in 1979. The city is talking now with a developer about parcels near the Hooker building.

Thus Niagara is filling out. It has gotten off to a good start. Let's hope it ends well. [SS]



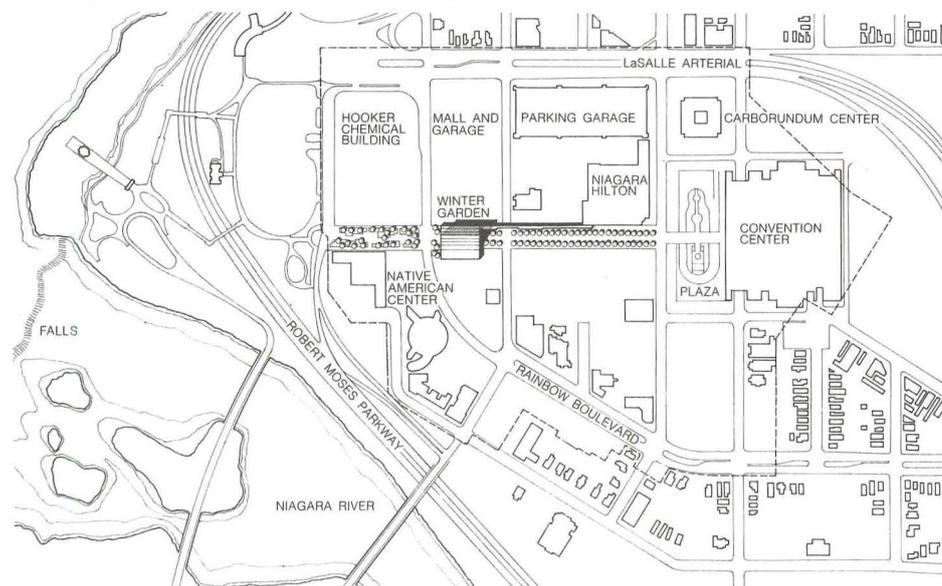
The E. Dent Lackey Plaza in front of the Convention Center lies on axis to mall.

Michael Geiger



View of plaza from the north side shows underground connection and cyclorama.

Michael Geiger



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Shop drawings, product data, and samples

Josephine H. Drummond

The date for submittals from the Contractor should allow ample time for the Architect to check and recheck, if necessary, so as not to delay construction.

Broadscope Section 01300 in the CSI Format is entitled "Submittals," and it includes shop drawings, progress schedules, layout data, and progress photographs, among other things. Under the Broadscope Section, Narrowscope Section 01340 is assigned to Shop Drawings, Product Data, and Samples. This article will discuss some points to consider when preparing Section 01340. For convenience, these subjects will be referred to as submittals, but the reader should recognize that the reference is only to a portion of the items in the Broadscope Section.

Section 01340, as usually written, does not list the items for which submittals are required. Construction administrators and contractors would like such a listing, as it could serve as a handy check list. But generally, time constraints during final preparation of specifications preclude this. Section 01340 covers the submittal procedure to be followed by the Contractor and the responsibility of the Architect in reviewing submittals.

The identification of submittals should be specified. Each submittal should be tagged or marked with the names and addresses of the Project, Architect, Contractor, and Subcontractor. The drawing detail and/or specification section and paragraph number represented by the submittal should be shown. The submittal should be accompanied by a letter of transmittal and possibly assigned a log number.

The General Conditions (Para. 4.12.5, *General Conditions of the Contract of Construction*, AIA Document A201, 13th ed., Aug. 1976: The American Institute of Architects) require the Contractor to approve submittals before forwarding them to the Architect, and by so doing he represents that he has verified quantities, dimensions, and field conditions. The Contractor can be required to stamp and sign the drawings to indicate compliance.

The time allowed for furnishing submittals should be specified. On simple projects it may be feasible to ask for all submittals within 30 to 45 days of general contract award. On long-term projects, subcontracts for finish

trades may not be let for months or even years after the start of work; therefore, submittals on these items cannot be made at the start. Architects may want all related materials submitted at once so they can review colors, interfaces, and so on. In any event, all submittals should be received by the Architect in ample time to allow for checking, and resubmittal and rechecking if required, without delaying construction. The schedule should recognize lead times for ordering and fabricating.

The submittal process should not be used as a request for approval of substitutions, though drawings and data may be submitted to substantiate requests for substitutions. If the Architect, inadvertently or otherwise, approves submittals which contain substitutions, he approves the substitutions, unless he specifies to the contrary.

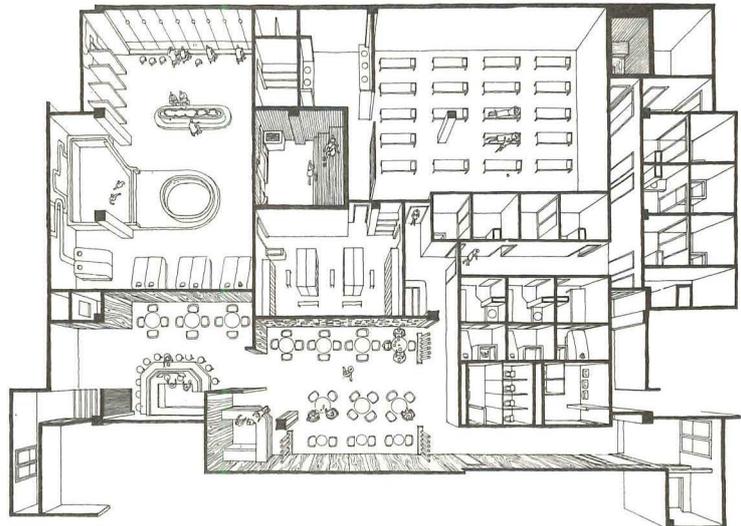
If the Architect chooses to restrict the use of his design drawings as shop drawings, he should include a statement about this. The sophisticated duplication systems available today make every print an original drawing, so his drawings can be used in this way before he becomes aware of it. The inclusion of title blocks of the Architect and Contractor, the responsibility for errors or omissions on Architect's drawings when used as shop drawings, and the reuse of the drawings for other work are some of the items to be considered here.

How detailed should submittals be? The design drawings usually do not illustrate every field condition, connection or fabrication detail, and indeed they need not. But the submittals can and do if completely prepared, for that is their purpose. Some architects want to review every detail which goes into the project. Others may wish to review only major components or custom fabricated assemblies. Some trades automatically prepare shop drawings, while others do it only when required (and others don't do it even if required!). Because reviewing submittals takes time, the Architect should consider the time he will spend on them. Asking for submittals and then not reviewing them wastes the Contractor's (and Owner's) money, and could increase the Architect's responsibility for errors in the work. Under the General Conditions, the Contractor has the right to expect the Architect to approve or take other appropriate action on every submittal he makes (Para. 2.2.14 of AIA Document A201 referred to above). If this is not forthcoming, he will probably assume the material or product represented is satisfactory. Architects should determine preferences and specify submittals accordingly.

The Architect reviews submittals to assure that the Contractor has properly understood his drawings and that the work will be executed in accordance with the intent of the design. The review of submittals gives him a final opportunity to scrutinize his design. While he should not redesign the project on the shop drawings, he can use them to refine and elaborate conditions within the intent of the design. Therefore, like all other phases of practice, the specifying and reviewing of submittals should receive careful, sensitive attention. □

Author: Josephine H. Drummond, CSI, is Manager, Southern Premises, Real Property Management Department, Wells Fargo Bank and is a specifications consultant in private practice.

Glorifying the body



Kabuki Hot Springs, Okamoto & Murata, Architects

People are preserving a natural resource, the human body. Physical fitness and pampering are revived. Historic methods inspire the present and the future as they find their way into our lives and our buildings.

The physical fitness revolution is usually traced back to the early 1960s when a youthful and athletic president inspired an interest in our health. Fifteen years after John Kennedy took office, Americans are seeking new ways to improve and pamper their bodies. Segments of the bathing and fitness industry are alluding to a "natural high" of relaxation produced by their products, and cashing in on the inherent sensuality of their use by either an individual or a group. Then add soundness of financial investment as the capstone of a newfound American passion.

Physical manifestations of new values gradually find their way into the marketplace. In the early 1960s Sherle Wagner began his own mini-revolution in the bathing industry. His task began with the embellishment of the simplest bathroom racks and fixtures. Faucets were designed, and then washbasins, which could properly augment the ornamental faucets. Tile was created to offset the colorful sculptured washstands. Custom designed marble baths complete the set.

The goal and significance of this achievement was to produce quality art for the bathroom. The plumber was no longer the fashion consultant. A new kind of place was born, like the body, not to be hidden but to be adorned and enjoyed. Whether Sherle Wagner actually sparked the revolution or not, he clearly recognized the need for a bathroom as a total new conception.

Simultaneous with the adornment of bathroom fixtures was a progression of new materials and production methods. Latest industry figures show that cast iron holds 31 percent of the traditional bathtub market. Fiberglass-reinforced polyester has 25 percent, and steel accounts for the rest. Fiberglass, for example, allows the entire bath or shower enclosure to be fabricated and preplumbed at the factory. Enclosures can incorporate grab bars, slip-free surfaces, and barrier-free design features. In addition to solving the old problems, new materials reach out for new functions.

Exercising the body cures some aches and pains and can create some others, unannounced. Muscle-tightening and poor circulation lead to hand and water massage. Hydrotherapy came out of the hospital and sports locker room and into the health clubs and weight-reducing parlors. A portable whirlpool unit was invented at a price that made it possible to convert a standard bathtub into a whirlpool, and the bathtub was in the business of body massage.

While the bathtub is massaging, other tools can be doing the bathing. The "Turkish" steam bath, sauna bath, and oriental "hot tub" have brought us ancient and exotic bathing techniques and we have Americanized them. New compact steam units can convert any enclosed shower stall or bathtub into a Turkish bath. American saunas heat rocks with electric heaters rather than wood. "Hot tubs" from Japan and the orient are made of California redwood and fiberglass, and are chlorinated, filtered, and jetted for hydrotherapy.

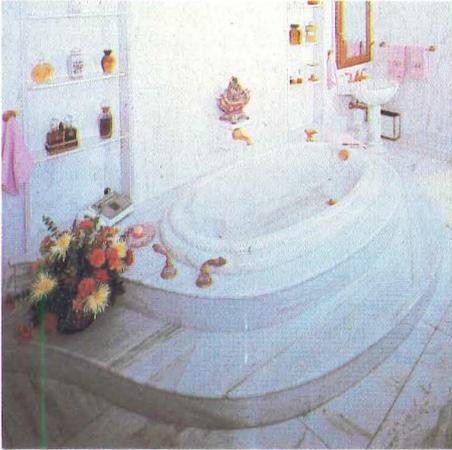
The popularity of jogging has caused a boom in treadmill sales for winter and bad weather use. Bicyclists inside can pedal in place. Rowing machines are priced into the consumer range. To control and simulate weather completely, Herbert Kohler has created a new concept in bathing environment that simulates four types of weather.

When the economic depression befell the country, people who could not afford new buildings spruced up old ones with health facilities. A health facility in an apartment complex puts exercise into the monthly rent check and health back into the winter city. Adding a mini-health club to an office building keeps the desk jockey in shape. For those who cannot afford to purchase the products, the bathhouse as a building type has returned.

The Japanese Cultural Center in San Francisco has the Kabuki Hot Springs shown in perspective plan above. *Wet* magazine editor Leonard Koren calls the design "the closest I have seen to a bathing reality which makes sense." Koren should know. He coined the phrase "gourmet bathing," and devotes his magazine to exploring inventive bathing environments and rituals. Kabuki Hot Springs is replete with hot tubs, saunas, steam baths, and body massage. It demonstrates that age old techniques need not be shackled by an ancient building vocabulary.

The products shown here represent less than one hundred years of evolution in bathing and fitness equipment. In 1888, a bathtub was an ornate, hand-crafted luxury item (1). Thirty or forty years later, mass-produced bathtubs in cast iron were common in American homes (2). Today's fiberglass bathing enclosures incorporate grab bars (3), and bathtubs have the option to use whirlpool jets (4). Sherle Wagner reignited concern in visual art in the bath (5), while Roy Jacuzzi has helped to make the fiberglass whirlpool bath a reality (6). The newest developments include a steam attachment for the common shower enclosure (7), an innovation in bathing ritual by Herbert Kohler (8), and the commercial sale of whirlpool spas (9) (10). Traditional bathing methods have also revived with common installation of the Finnish sauna (11), and the Turkish bath (13). Architectural installations can include fitness equipment (12) as well as the full spectrum of bathing products (14).

5



Sherle Wagner

9



Tradewind

6



Jacuzzi Whirlpool Bath

10



Cooper's Choice



Courtesy American Standard



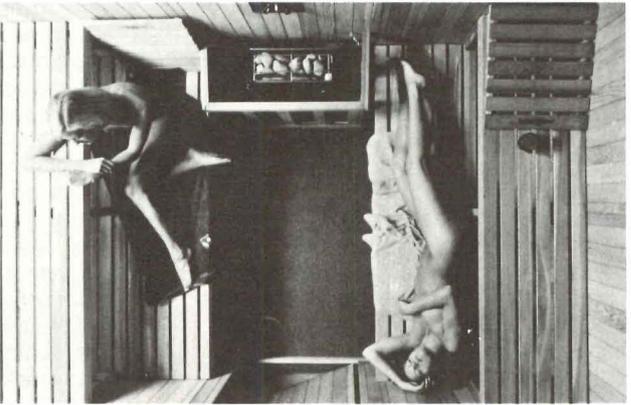
Kohler Company

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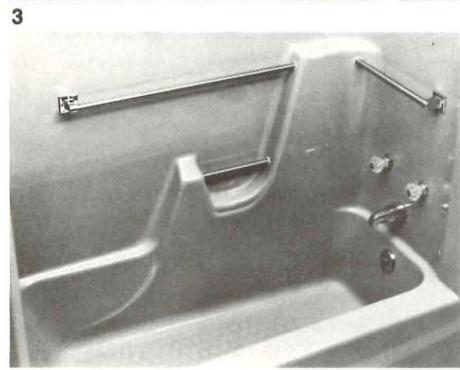


Steamist

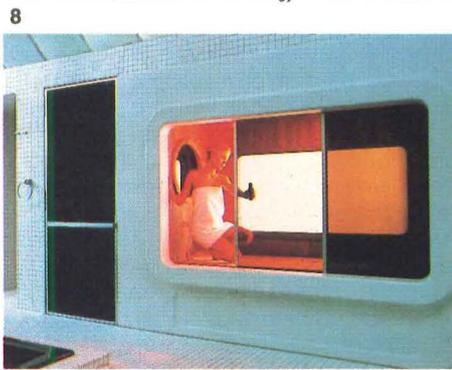
11



Viking Sauna

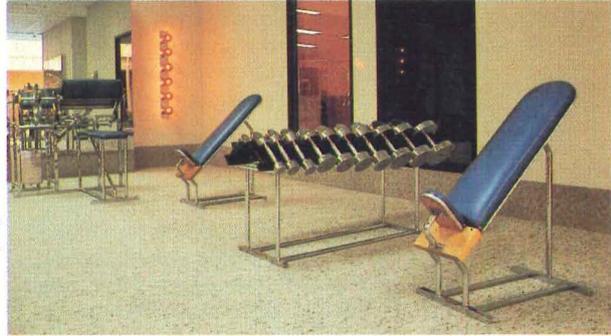


Universal Rundie

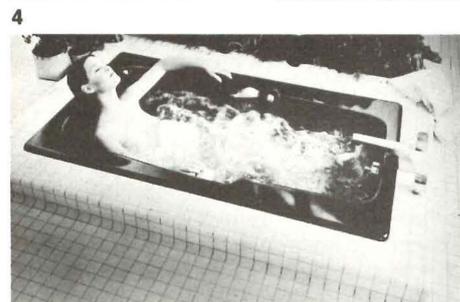


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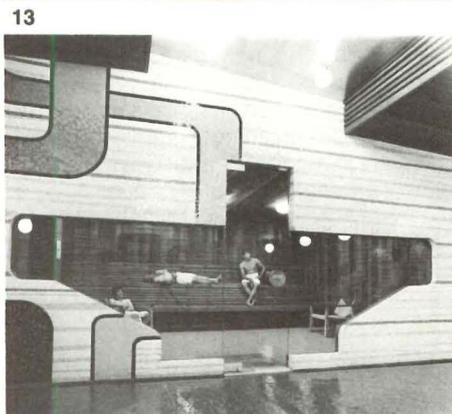
12 The Haden Company, Houston Tx, David Thome Architect



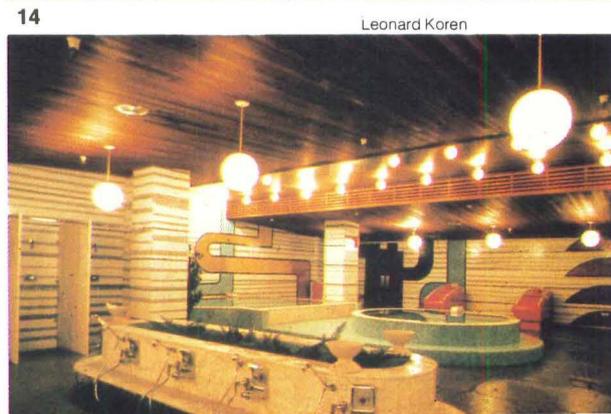
Leonard Koren



Kohler Company



Okamoto & Murata



Technics: Bathing and fitness

Putting socks on an octopus

The increase in interest and influx of products in the health and fitness field has been so rapid in recent years that much confusion exists in the nomenclature of the equipment itself. Often manufacturers do not agree about the appropriate generic name for their products.

Whirlpool bath: Another common name is hydrotherapy bath. This is like a traditional bath in the sense that it uses hot and/or cold water, and the drain plug is pulled after use to empty the tub. The mechanical difference is the presence of a series of hydrotherapy jets placed around the tub sides to produce a water massage. Once the bath is filled with water, a pump is engaged which recirculates it during the bath and adds air (more later about this). Most manufacturers use the term whirlpool bath. This name has less medical connotations but is also a misnomer for most equipment because the jetting water does not produce a spiraling "whirlpool" unless the jets are angled in the same direction. Some equipment distributors might erroneously refer to the hydrotherapy capacity of the bath as being or having a "Jacuzzi" after the company which originated the commercial use of hydrotherapy baths. Health spas sometimes bubble forced air through their heated pools to produce an effect similar in appearance to hydrotherapy jets. Architects should be clear in their specifications; if the client wants both normal bath capability and an effective water massage, he wants a whirlpool bath.

Spa: A spa is a heated container of water which is chemically treated, filtered, and aerated to prolong its healthful and safe use as a bath. The plug is not pulled after each use. To the contrary, most installations maintain the temperature of the standing water above 100F. Most spas contain hydrotherapy jets and many have air bubbled through the water. They are intended for use by one person or preferably several people simultaneously. They differ mechanically from a normal swimming pool in their small size, massaging jets, and hot water.

What then is a hot tub? or a Jacuzzi? Roy Jacuzzi, president of Jacuzzi Whirlpool Bath, says that to him a hot tub is "just a tub of hot water," although his firm makes a wooden and a fiberglass whirlpool spa. A hot tub manufacturer defined a wooden spa as a hot tub, and a fiberglass spa, a spa. Most people, when they say Jacuzzi, are referring to a wooden spa with whirlpool action. Most of the time (in books, photographs, newspaper articles, etc.), when the word hot tub occurs, the author is referring to a wooden spa, usually constructed outdoors.

A new industry

The Jacuzzi family entered the American business world in Northern California shortly after the beginning of the 20th Cen-

ture. Although their first endeavors were in the field of aviation, pumps and water filtration equipment soon became part of the product line. In 1943, a young member of the family was burdened with rheumatoid arthritis. A hospital whirlpool bath was effective in treating the child. The apparatus involved was similar to pumping products Jacuzzi was already in the business of manufacturing. The Jacuzzi family engineered and patented a portable whirlpool unit which could be used in a normal home bathtub. The first units were marketed in 1955. By 1976 the company name was changed to Jacuzzi Whirlpool Bath. By that time Jacuzzi was in full production of commercial whirlpool baths.

A reclining tub is ideal for the massaging action of the whirlpool jets. The hot water relaxes the muscles and the jets do not have to fight gravity to circulate the blood. Standing or sitting in a tub is also effective if the limbs are free to move.

Adding a recirculating pump to a bathtub of course requires careful engineering. Electricity and water are a deadly combination. For this reason the early whirlpool baths were made of fiberglass using polyvinyl chloride pipes and pumps. More recent versions of whirlpool baths also show copper piping and brass pumps. The plastic pipes and pumps are cheaper but can be time consuming to install; the copper piping and brass pumps are more expensive in materials but quick to install. Look for the UL rating on the equipment; the installed price is about the same.

The spa offers the further complication of gas or electric heaters, possibly two separate pumps for filtering and hydrotherapy, a skimmer, and possibly a blower. Needless to say, the layout of this equipment is a delicate matter. The units outdoors should be carefully housed and grounded, with switches, of course, placed remote from the tub itself. A traditional cast-iron tub takes three to five years from inception to production. Fiberglass tubs can take less than a year. One manufacturer has just introduced a whirlpool bath which is custom designed to the architect's specifications and built in ¾" plywood. It is fitted for hydrotherapy and plumbing, fiberglassed in the factory, then delivered to the site preplumbed and ready to tile to match the floor and walls. Another manufacturer bonds acrylic and fiberglass; still others have used aluminum, and traditional swimming pool technology Gunite. Models come in a proliferation of sizes, shapes, and colors, for indoor and outdoor use.

"Skinny dipping, naked as a jaybird"

The craze for hot tubs is usually traced to about five years ago in Santa Barbara. The hot tub itself is an ancient oriental custom prevalent in modern Japan. Coincidental to the increased interest in oriental culture in general was the changeover of some California wineries from wood to stainless steel, creating a cheap source of tubs. The placement outdoors is no surprise; a full

tub can weigh three tons. One California manufacturer claims all of her business for the first year and a half was with psychologists and psychiatrists. Other doctors and professionals soon followed. The recent wellspring of business is coming from family oriented homeowners.

The boom makes sense. The hot tub can cost less than a new car, less than a swimming pool, takes less space than either, provides social entertainment, and, for one season at least, can replace the vacation, with a trip every night. A \$3000 hot tub installed is supposedly worth \$10,000 on the housing market.

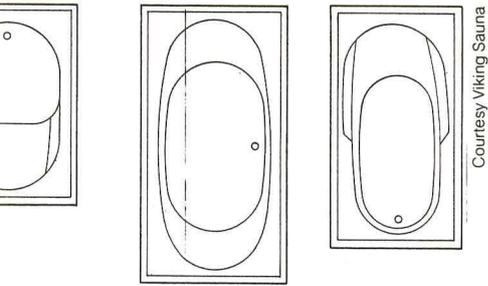
The hot tub is used primarily in the evening, probably after work. During the day it is covered with a thin floating layer of foam insulation and a wooden lid. Wine and light refreshment is common. Those hot tub owners we interviewed preferred cold weather. No suntan lotion is permitted in a wooden tub, and most commercial soaps and bubble baths are out, as are chopped vegetables. "A spa or hot tub," says Janell Shearer, editor of *Spa and Sauna* magazine "is not a swimming pool. It is a social center primarily for adults." The time spent actually in the tub is relatively short. Most people use the area immediately surrounding it for lounging and philosophical discussion. Those people who prefer to bathe nude order a bubbler for clothes. A shower or conventional bath is close by. At the end of each month or so of use, the water is drained from the tub, usually to water the lawn or flower bed.

With the exception of the hydrotherapy jets, the technology is not new. Swimming pools have been heated, filtered, and chlorinated for many years. As the spa and tub industry develops, however, smaller, more efficient heaters and pumps are being invented to reduce operational costs. Those who have hot tubs claim they use less house heat in the winter with the hot bath available at all times. Others claim they have cut way down on tranquilizers, and the water to take them. Says Janell Shearer: "We should not underestimate the potential for outdoor installation of spas."

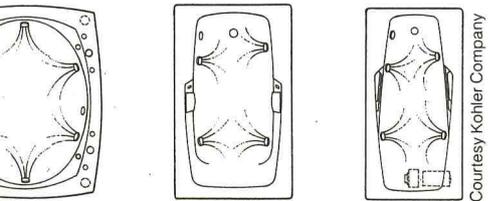
Sauna design criteria

Hot tub water is kept at about 105F. A steam bath maximum temperature is 120F. Extreme sauna temperatures reach 194F. The difference is the humidity. As Southwesterners know, it is the lack of humidity which makes hot arid climates bearable. A sauna is expressly designed for low humidity, less than 12%. An economic attraction of the sauna is that it does not need to be installed in a waterproof environment, as a steam bath does.

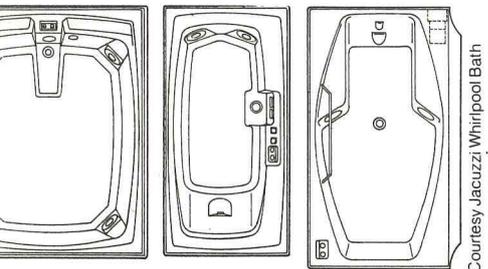
The modern sauna originated as folk architecture, and its justification for design bears the fascination typical of such architecture. The sauna is basically an oven. The reason an oven can be used as a bath is that skin is porous, and as the body is exposed to hotter environments it tries to cool itself by evaporating its moisture to its surroundings. Above 100F, the body main-



Courtesy Viking Sauna

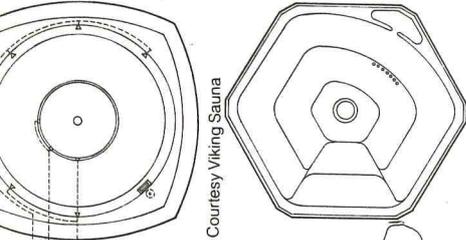


Courtesy Kohler Company

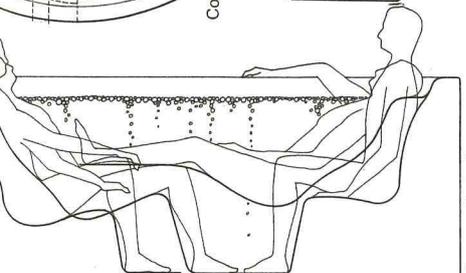


Courtesy Jacuzzi Whirlpool Bath

assortment of whirlpool bath shapes (above).

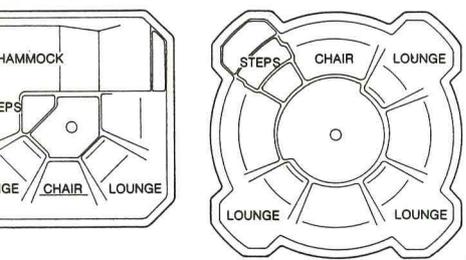


Courtesy Viking Sauna

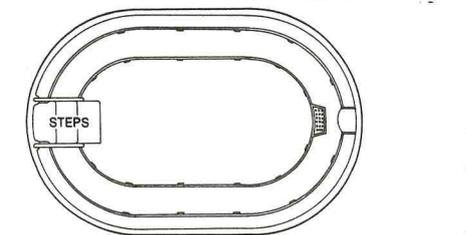


Courtesy Hydro Spa

erglass spa design shaped to body contours.

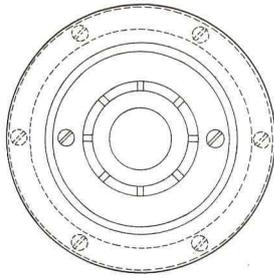


Courtesy Hydro Spa

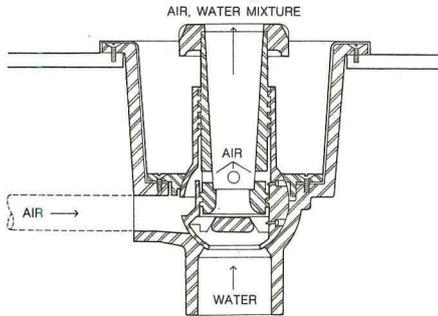


Courtesy Twirl Spa

assortment of available spa shapes.



PLAN VIEW

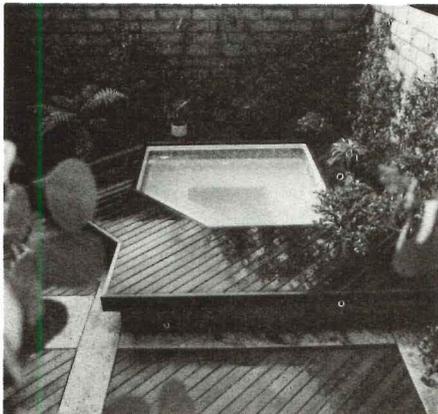


SECTION THROUGH HYDROTHERAPY JET

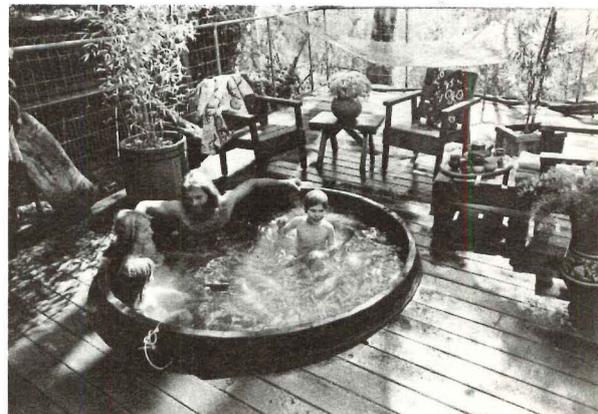
Courtesy Jacuzzi Whirlpool Bath

The Jacuzzi Venturi Jet

The patent that the Jacuzzi family received was for the design of a unique jet as shown here. The jet takes advantage of the venturi principle inter-relating the volume, pressure, and velocity of a fluid or vapor. As applied to the hydrotherapy jet, a large volume of water is pumped through an orifice at high velocity and pressure. The opening is reduced in size, increasing pressure and velocity. The throat size is then abruptly increased, and slotted top and bottom. The induced vacuum sucks air into the air intake chamber surrounding the venturi. If the pressure is great enough, the air virtually explodes into the released jet of water, and the mixture hurdles its spiraling spray into the already full tub. The jets act like thousands of tiny fingers, pelting the muscles and circulating the blood.

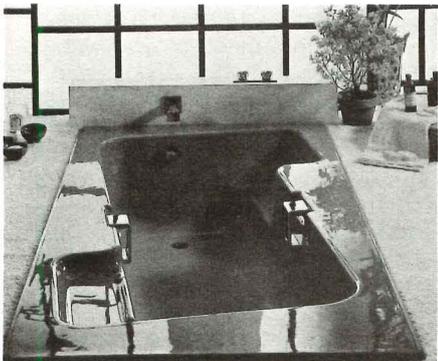


Tradewind



Spring Mountain Hot Tubs

A spa represents an innovation in lifestyle as well as the bathing ritual.

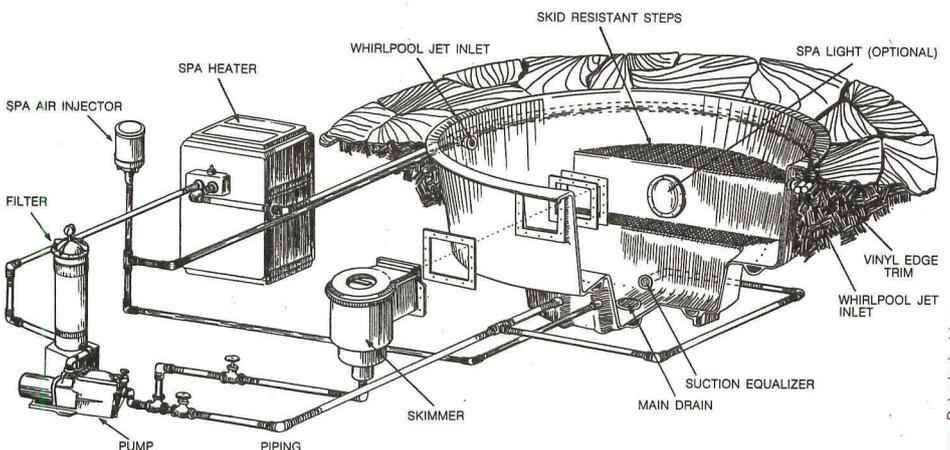


American Athletic Corporation



Jacuzzi Whirlpool Bath

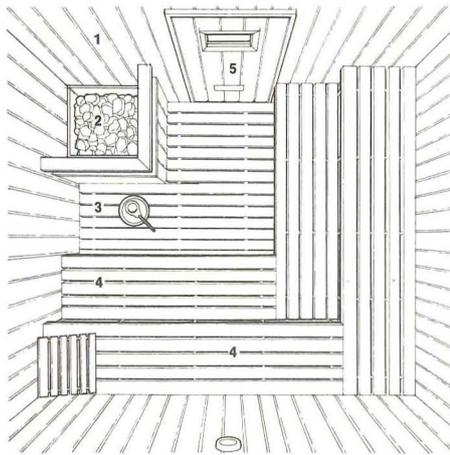
A whirlpool bath can prove to be an elegant addition to any bathroom.



TYPICAL SPA PIPING AND EQUIPMENT LAYOUT

Courtesy Baha Industries

Technics: Bathing and fitness



1 The walls: Wood is used to be safe to the touch, insulate thermally, and absorb moisture. Additional insulation can be added behind the wood depending on the installation. Only a low level of light is needed and small wattage fixtures are mounted on the wall, out of possible contact with people. Wiring needs insulation.

2 The heater: It should be placed as near to the floor as possible for efficient heating from floor to ceiling. The electric coil draws cold air from the vent and passes it across the rocks. The rocks themselves are tested periodically. Water is ladled over the hot rocks to produce humidity in the sauna, and the stone must be able to accommodate temperature shock. Humidity can be kept below 12 percent. A railing is used as a heater guard. Most heaters use 220V current.

3 The floor: This is the coolest surface in the room. Commercial saunas commonly have used shrinkproof rugs. Concrete floors which sandwich a layer of insulation are ideal. Removable wooden slats are laid as walking paths, and a drain is provided.

4 The benches: Nails and screws must be sunk out of the way. The wood must be smooth, dry, clear of knots, and unfinished (the wood needs to retain its porosity).

The benches are sloped to allow the sweat to escape down and the heat to rise up.

5 The door: Short door which swings outward saves heat as well as space. Door handles are wooden. The door is well insulated and fits snugly. In the traditional sauna, the door faced west, to catch the evening light.

The vents: At least one vent is used near the air intake of the heater. To insure fresh air circulation, an additional vent is sometimes placed near the ceiling, and a third between upper and lower benches. Natural convection is fundamental to the use of dry heat; no fans should be used. In principle, by the time it is hot enough for use, the electric heat has ceased and the rocks maintain the temperature by themselves.

The ceiling: Low, flat ceilings save space and energy as well as helping to bring the heat closer to the occupants. Holes in the ceiling should be avoided as well as electrical fixtures. A tight ceiling allows temperatures to vary up to 15F between benches.

tains its equilibrium entirely by evaporation. If sweating does not remove the heat fast enough, the body temperature itself rises, inducing an "artificial" fever. At high temperatures the blood vessels move closer to the skin surface and dilate. The increase in size draws the blood more rapidly through the body and provides a result similar to physical exercise, an increase in pulse rate. By moving faster, the blood does not heat up as quickly. Subjecting the human body to dry heat has proven to have four main advantages. The body is cleansed, the blood circulation is increased and blood oxygenated, the skin is made softer, and the muscles and mind are relaxed.

In order for the body to heat evenly, the person should be prone and unclothed. Heat defies gravity and maintains horizontal layers of equitemperature. Clothing can constrict free circulation in healthy individuals. The feet are commonly less sensitive to heat and can be exposed to higher temperatures to increase circulation. The basic design therefore provides for a naked person lying on his or her back with feet propped up.

Once the skin has purged itself, the bather may leave the sauna for a romp in the snow, cold bath, or shower. A return to the dry heat is often accompanied by whisking the body with birch branches to further stimulate circulation and delight in the tingling sensation which accompanies it. The bather then leaves the sauna and rinses himself with soap and water. After cleansing, the body needs a brief (about 20-minute) period to cool itself down. During this period it is best to lie still. A perspiration stage is reentered as the blood vessels return to normal size. The moisture is allowed to evaporate naturally.

Because of the intense heat involved, the sauna should not be thought of as being as simple as taking a bath. A novice can suffer nausea, faint, or worse if he has not used the sauna properly. Saunas are not an after eating event. An empty stomach is equally bad. The body needs energy to sustain itself during the bath. Entering the sauna with alcohol in the blood

can cause the bather to faint. The increased blood circulation causes the alcohol to recirculate faster and reach the brain more quickly. Eating and drinking in a sauna are out of the question. Glassware itself is too hot to the touch. (Even jewelry is removed.)

The sauna has strong demands on the building program which surrounds it. In hotels and public clubs a separate sauna is used by men and women, or hours for each are specified. In addition to the problem of nudity is the fact that men and women do not always have the same reaction to heat.

A room just outside the sauna is needed for undressing and waiting while the sauna heats up. This dressing room may also contain a cot or bed where the cooling down period may be spent. Showering and wet areas are necessary but care should be taken not to expose the sauna to water. The sauna should not exit into a shower or contain a shower. People who will use a pool after the sauna will want to rinse first as the body is covered with sweated dirt. An icy shower or plunge into a cold pool after a sauna stimulates the kidneys and facilities should be accessible.

The sauna as a bath is rarely followed by vigorous exercise, although it might be preceded by such exercise. The heat does loosen the muscles and might precede yoga, for example. The sauna has been found to be ineffective prior to strenuous competition because of its relaxing effect. It should not be entered immediately after such competition.

The products

Fifteen or 20 years ago, the sauna industry had a selling job to do. The first commercial sauna installed in America was put in Fleishman's Baths in 1947. By 1960 the industry really began in earnest. High population metropolitan centers provide the largest market for saunas, partly because the weather and space restrict exercise, and partly because sedentary work increases body and mind tension.

There are two basic possibilities of pre-manufactured saunas: freestanding kits

and custom-designed units meant to be supported by existing walls. The advantage of the freestanding units is that they can be dismantled and moved if necessary. Manufacturers get plans daily in the mail which show a single room and are asked to put a sauna into it. It should be apparent that really successful sauna installation relies heavily on the spaces which surround the sauna and that these spaces should be included in the plans.

The sizing of a prebuilt sauna is usually done by a manufacturer. One rule of thumb suggests 2.5 cubic yards of space per person as a rough estimate. The bench length is also used, allowing two feet of bench per person. Most commonly, a sauna is designed based on an existing space rather than starting with a specific number of people. Five ft 7 in. is a minimum length dimension for reclining in the sauna. Saunas larger than 12 ft in one direction are uncommon. The effectiveness of the heating stones and even heat distribution are diminished with size. In large hotels, pinpointing the proper size of sauna can be difficult. People average about 10 or 15 minutes in a sauna which allows use by 4 to 6 people end to end. The sauna takes 20 to 25 minutes to heat up. The novice should be carefully instructed in the use of the sauna. Elderly people or those with vascular problems should consult a physician.

Mechanization takes command

In recent years, the fitness machinery industry has shown record sales month after month. Treadmills for jogging in place are priced in the range of \$800 to \$3500. It is the high priced versions which are oversold. Exercise equipment is appearing in executive suites, fire departments, and nursing homes.

Most fitness equipment does not exist in the general contract for construction. It is the owner who provides it. The architect might find himself in the tricky position of advising the owner on the matter. The correct choice of equipment depends upon the age, sex, and physical condition of the individual as well as whether the use of the

machinery is supervised or not.

The fitness market for private use seems to fall into three main categories. The first category caters to a specific personal interest. A jogger in good weather may wish to stay in shape after hours, or at work, or in winter months. Exercise bicycles and rowing machines comply with these needs. The next category of the market includes the person who belongs to a health club but has a favorite machine which he or she enjoys or finds particularly beneficial. The third category is the person, or company, which wishes to have a complete fitness center on a small scale.

A typical five-piece fitness center might contain a bicycle exerciser, abdominal board, a treadmill, wall pulling machine or dumbbell set, and an exercise bench. Women might prefer a vibrator belt, or sun-lamp installation. The selection and organization of fitness equipment for large scale facilities must occur under the supervision of a consultant or manufacturer's representative. Large weight-lifting machines can weigh 3500 pounds and demand special placement. Other machinery is very rarely used, but it is necessary, and should be in a peripheral location.

The space itself should be well ventilated and air conditioned. Carpeting on the floor permits floor exercising, but shag carpets are to be avoided. Artificial fabrics have proven to be less eager to absorb sweat and odor but respond well to frequent cleaning. Ceiling height above 8'6" is preferred in order to permit easy use of barbells and chin-up bars. Walls are kept bare and free of windows, although mirrors are desirable. Circulation should not be permitted to pass through exercise areas and doors should be arranged to avoid cross passage. The light is not a difficult consideration although fixtures can be easily broken and should be kept out of the way. The room itself is relatively private and its own noise should be remote from quiet areas. Access to bathing areas is a necessity.

Integration, coordination, and sequence

The integration of the various bathing and fitness products has already occurred in industry. Manufacturers who do not actually make certain products have a full line of equipment available under their name. A variety of dishes, however, do not a dinner make. Combining these various products is a difficult and complicated task requiring complete understanding of their use and effect on human beings. In 1970, the president of Kohler company, Herbert Kohler, assigned his staff the task of developing such a combination. Two and a half years ago, the January 1977 deadline was given. The product, called "The Environment," was ready in time for that year's National Association of Home Builders show. As the name implies, the purpose of the product was to simulate different types of climate in timed sequence.

One enters the teakwood environment through sliding glass doors which are mir-

rored on the interior to reflect heat and light. The first weather simulated is direct sun. Spoonlike goggles are used to protect the eyes as the "bather" reclines on a cypress deck. Mounting sunlamps in the ceiling avoids harmful burning of skin. A steam cycle can follow which simulates a tropical rain forest. Cooling rains are next sprayed from a series of tiny showerheads also mounted in the ceiling. The hot and arid "chinook" winds blow you dry, through vents located in the end walls. The Environment is equipped with a tape deck to accompany and complement the "ride."

Environment arrives from the factory preplumbed and ready to install, a process which allegedly takes less time than installing a premanufactured sauna. A space behind the Environment is needed for service access while the front can be trimmed to match the existing room. An acrylic version of the Environment, the Habitat, has recently become available at about half the price of the teak Environment. Habitat does not contain the "chinook winds."

The new frontier

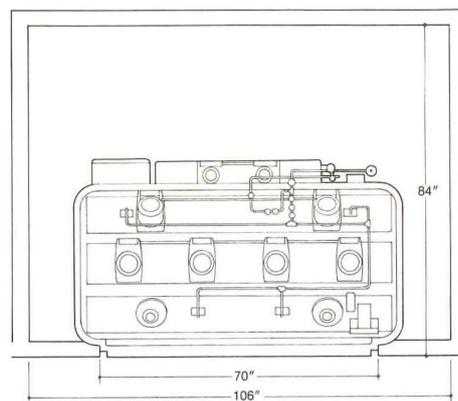
The Environment represents the attempt of a culture to digest customs and rituals from other lands while inventing its own. To work with such products and choreograph movement through them requires a thorough understanding of the effects each product has on the human body. An incorrect sequence of events can, in fact, yield results which are dangerous. The effect of the ancient bathing rituals is well documented; the combination needs study, understanding, and new rituals.

It is also hoped that the concern for energy, which has been affecting the traditional bathing market, will also find its place. The mind boggles at the potential. Why can't hot tubs have glass tops and black interiors to capture solar energy? How about a hot water coil for the hot tub spiraling through the sauna heater? The goal is a marvelous body-building and recreation environment which can become an integral part of our lives and our buildings by enhancing them. [Richard Rush]

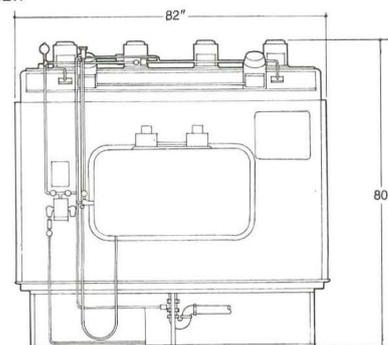
Acknowledgments

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For bathing and fitness product and literature information, see page 92.

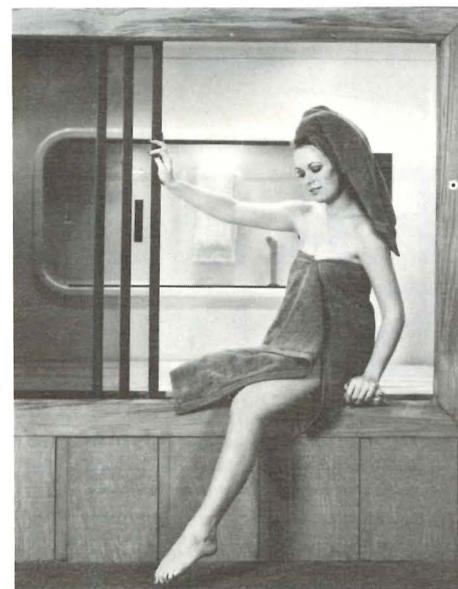


PLAN VIEW



FRONT VIEW

Habitat needs service access as shown in plan. It is shipped pre-assembled for easy installation.



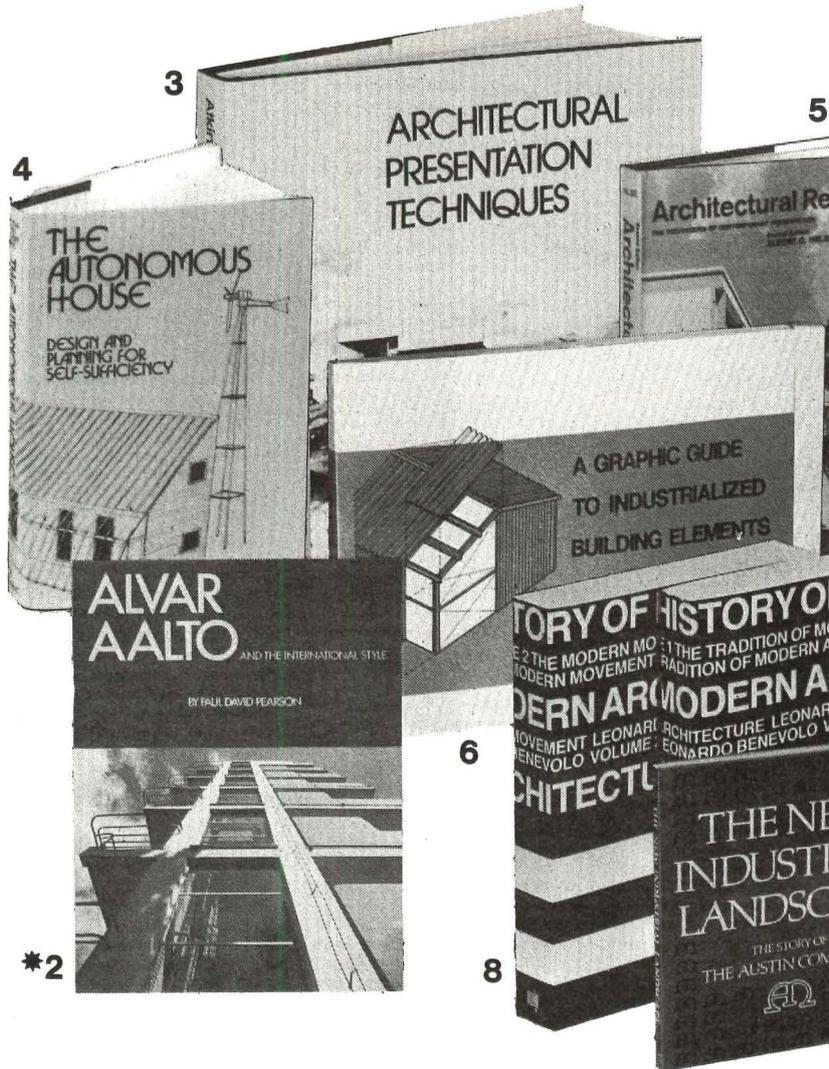
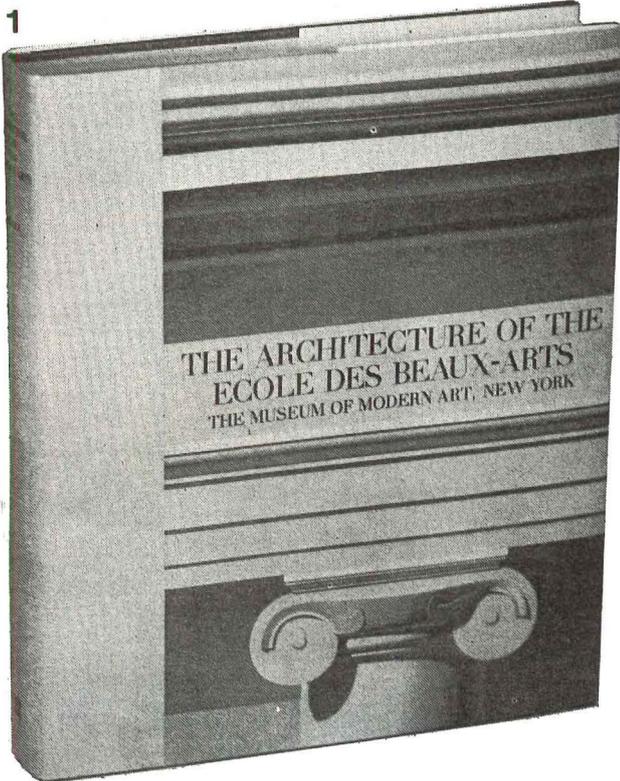
Kohler Company

Environment has sunlamps, rain, steam, chinook winds, stereophonic sound, and teak interior.



Kohler Company

Here, for the first time in this century, is an opportunity to re-examine the philosophy of the Beaux-Arts school of architecture.



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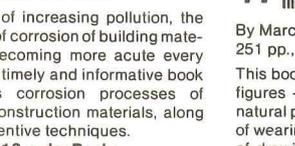
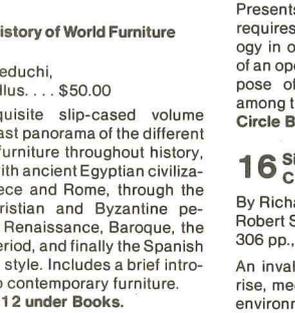
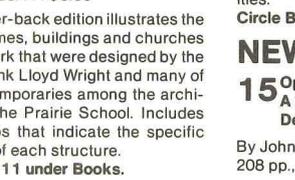
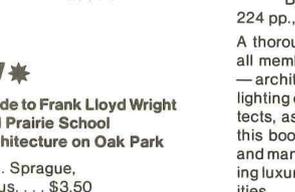
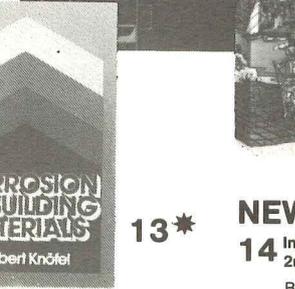
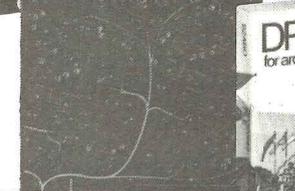
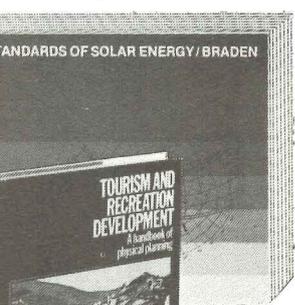
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10 Architecture and You How to Experience and Enjoy Buildings

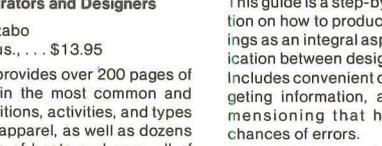
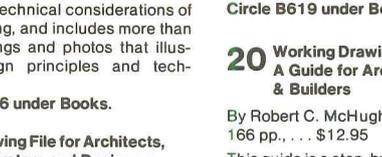
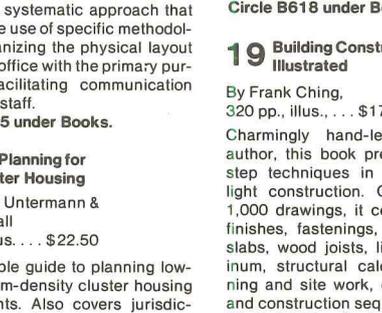
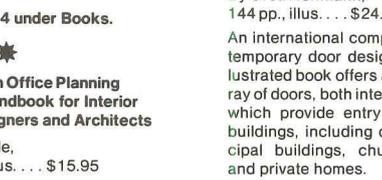
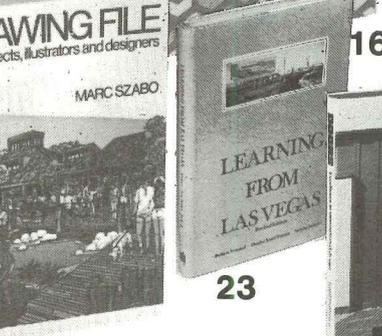
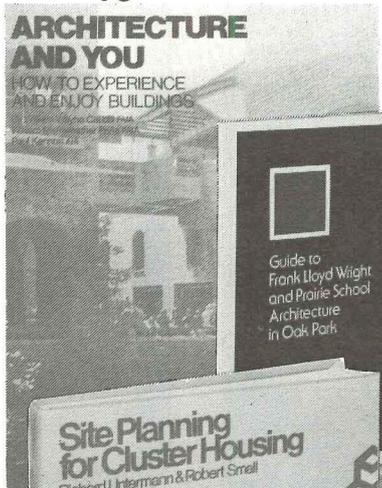
By W. W. Caudill, W. M. Pennington,
176 pp., illus. . . . \$16.50

Written by practicing architects whose buildings are used by people throughout the world, a book that explains how to experience and appreciate the space forms of architecture just as you experience a painting or a symphony.
Circle B610 under Books.

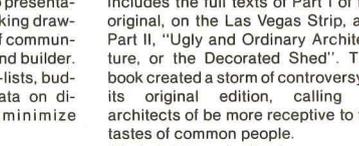
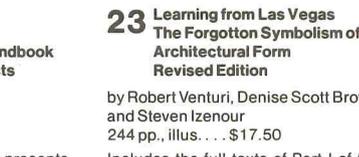
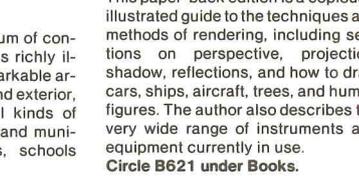
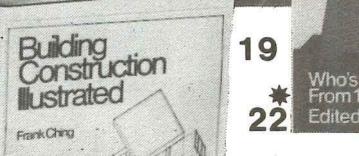
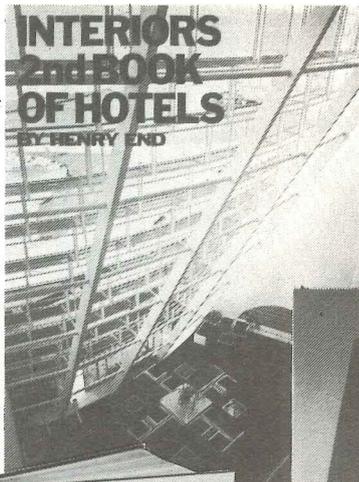
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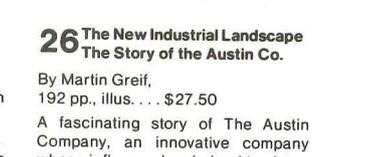
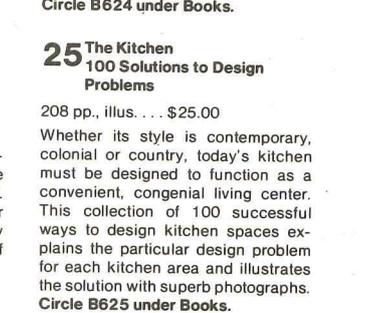
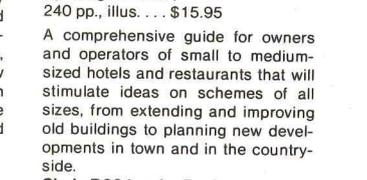
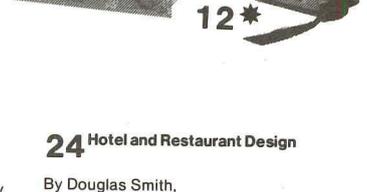
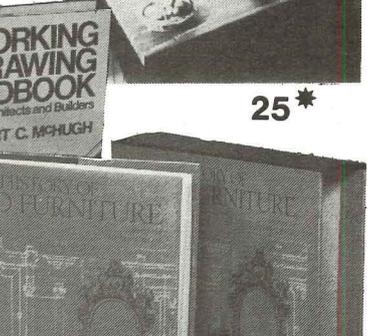
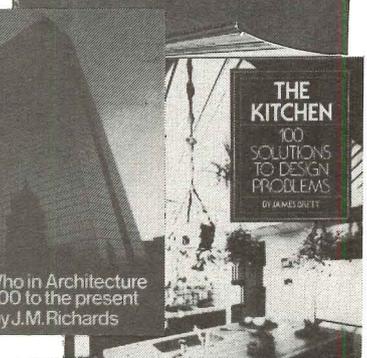
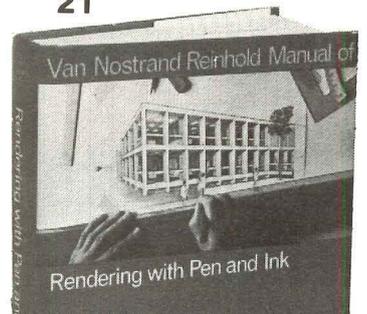
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NEW***14 Interiors 2nd Book of Hotels**

By Henry End, 224 pp., illus. . . . \$26.50
A thoroughly illustrated reference for all members of the hotel design team — architects, engineers, graphics and lighting consultants, landscape architects, as well as interior designers — this book is equally useful to owners and managers concerned with providing luxurious yet functional hotel facilities.
Circle B614 under Books.

NEW***15 Open Office Planning A Handbook for Interior Designers and Architects**

By John Pile, 208 pp., illus. . . . \$15.95
Presents a systematic approach that requires the use of specific methodology in organizing the physical layout of an open office with the primary purpose of facilitating communication among the staff.
Circle B615 under Books.

NEW***16 Site Planning for Cluster Housing**

By Richard Untermann & Robert Small, 306 pp., illus. . . . \$22.50
An invaluable guide to planning low-rise, medium-density cluster housing environments. Also covers jurisdictional and technical considerations of site planning, and includes more than 600 drawings and photos that illustrate design principles and techniques.
Circle B616 under Books.

NEW***17 Drawing File for Architects, Illustrators and Designers**

By Marc Szabo, 251 pp., illus. . . . \$13.95
This book provides over 200 pages of figures — in the most common and natural positions, activities, and types of wearing apparel, as well as dozens

which can be copied freely — by direct tracing, photostats, or photocopying machine. The pages tear out easily to form an easily accessible fingertip scrap file.
Circle B617 under Books.

NEW***18 Doors — Excellence in International Design**

By Gretl Hoffmann, 144 pp., illus. . . . \$24.50
An international compendium of contemporary door design, this richly illustrated book offers a remarkable array of doors, both interior and exterior, which provide entry to all kinds of buildings, including office and municipal buildings, churches, schools and private homes.
Circle B618 under Books.

NEW***19 Building Construction Illustrated**

By Frank Ching, 320 pp., illus. . . . \$17.95
Charmingly hand-lettered by the author, this book presents step-by-step techniques in residential and light construction. Containing over 1,000 drawings, it covers materials, finishes, fastenings, posts, trusses, slabs, wood joists, light steel/aluminum, structural calculations, planning and site work, cost estimating, and construction sequencing.
Circle B619 under Books.

20 Working Drawing Handbook A Guide for Architects & Builders

By Robert C. McHugh, 166 pp., illus. . . . \$12.95
This guide is a step-by-step presentation on how to produce working drawings as an integral aspect of communication between designer and builder. Includes convenient check-lists, budgeting information, and data on dimensioning that helps minimize chances of errors.

21 Rendering With Pen and Ink

By Robert W. Gill, 368 pp., illus. . . . \$7.50
This paper-back edition is a copiously illustrated guide to the techniques and methods of rendering, including sections on perspective, projection, shadow, reflections, and how to draw cars, ships, aircraft, trees, and human figures. The author also describes the very wide range of instruments and equipment currently in use.
Circle B621 under Books.

NEW***22 Who's Who in Architecture From 1400 to the Present**

Edited by J.M. Richards, 368 pp., illus. . . . \$19.95
Here is the long-awaited comprehensive guide to major architects from the early Renaissance to the present. This invaluable book provides over 500 entries arranged alphabetically for easy reference, irrespective of chronology or geography.
Circle B622 under Books.

23 Learning from Las Vegas The Forgotten Symbolism of Architectural Form Revised Edition

by Robert Venturi, Denise Scott Brown and Steven Izenour, 244 pp., illus. . . . \$17.50
Includes the full texts of Part I of the original, on the Las Vegas Strip, and Part II, "Ugly and Ordinary Architecture, or the Decorated Shed". This book created a storm of controversy in its original edition, calling on architects to be more receptive to the tastes of common people.

24 Hotel and Restaurant Design

By Douglas Smith, 240 pp., illus. . . . \$15.95
A comprehensive guide for owners and operators of small to medium-sized hotels and restaurants that will stimulate ideas on schemes of all sizes, from extending and improving old buildings to planning new developments in town and in the countryside.
Circle B624 under Books.

25 The Kitchen 100 Solutions to Design Problems

208 pp., illus. . . . \$25.00
Whether its style is contemporary, colonial or country, today's kitchen must be designed to function as a convenient, congenial living center. This collection of 100 successful ways to design kitchen spaces explains the particular design problem for each kitchen area and illustrates the solution with superb photographs.
Circle B625 under Books.

26 The New Industrial Landscape The Story of the Austin Co.

By Martin Greif, 192 pp., illus. . . . \$27.50
A fascinating story of The Austin Company, an innovative company whose influence has helped to shape the modern world. Traces the company's history from its beggling in the carpentry shop of a poor English emigrant to its spectacular growth as a major corporation responsible for "revolutionizing the international industrial landscape".

Products and literature

Bathing and fitness

The items below are related to the article on bathing and fitness equipment beginning on page 84 in this issue. They are grouped here for the reader's convenience.

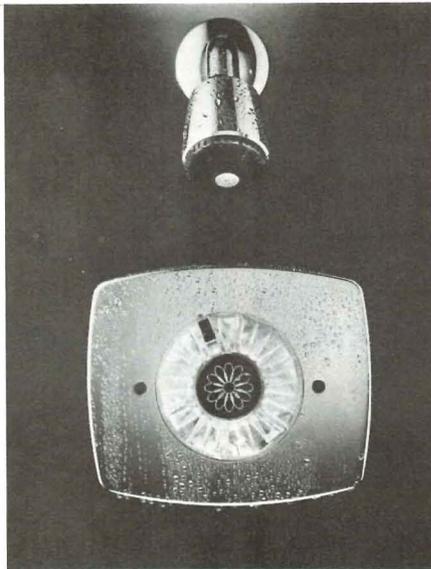
Products

Hydrotherapy tubs and steam baths. Hydrotherapy bath models range from small tubs for one to four persons up to large, outdoor and commercial installations. Smaller units are filled and drained with each use. Larger spas have recirculation systems. Steam bath heaters that can be installed in basement, bedroom, or closet, generate steam through a pipe connected to the shower. Viking Sauna Co. *Circle 100 on reader service card*

Habitat, an environmental enclosure, is programmed to provide 20 minutes each of sun (ultraviolet light), steam, a shower from four directions, then sun again. A heater-blower provides a warm breeze. Panel controls have a digital display showing elapsed time of each cycle and permit user to shorten cycles. There are interior lights and a three-panel clear safety-glass door. Outside dimensions of the unit are 86" x 50" x 64" high. Options include steam, AM/FM stereo radio, exterior pine frame, frosted or bronzed safety-glass doors, and hand-held shower. Kohler Co. *Circle 101 on reader service card*

Liberté wheelchair shower. Conforming to ANSI and HUD standards for wheelchair showers, according to the manufacturer, is the one-piece fiberglass Liberté. The enclosure is five ft in diameter and has fold-down seat, grab bars, and slip-resistant flooring required by HUD in showers for the elderly. Controls, soap holder, bars, and showerhead are all at convenient height and locations. U/R Div., Universal-Rundle. *Circle 102 on reader service card*

Washerless faucets. A washerless, single-control tub and shower unit has a safety feature to prevent the user from selecting water in the scald range. Preferred temperature can also be



Washerless faucet



Hydrotherapy pools

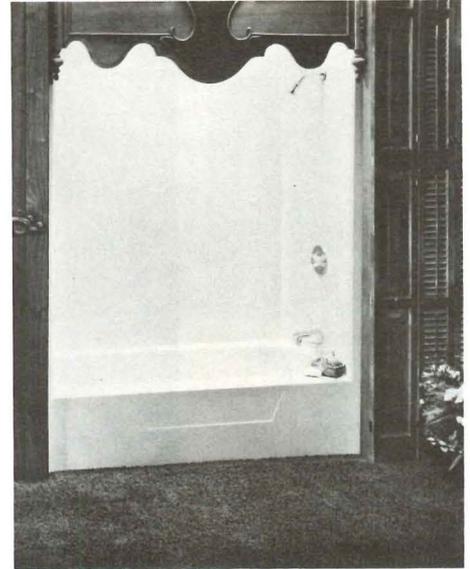
preset, and a stop prevents dialing beyond. The washerless cartridge uses water pressure for positive, leakproof sealing. The faucets are available as combination tub/shower, tub-only, or shower-only units. Nibco Inc. *Circle 103 on reader service card*

Thermostatic water controller. For use in hospitals, schools, apartments, hotels, and other installations requiring tempered hot water, TempControl maintains constant water temperature. According to the manufacturer, units are designed to maintain temperature settings anywhere between 85 F and 120 F, and are suitable for such varied applications as gang showers, therapeutic baths, scrub sinks, and photo-developing. Symmons Industries, Inc. *Circle 104 on reader service card*

Literature

Hydrotherapy pools. Four styles of spas, contoured to body lines for comfort, are illustrated in this 8-page color brochure. Cutaway diagrams show various positions provided within each pool. Also listed are accessories available and equipment required to complete residential or commercial installations. Chart of standard colors is included. Hydro-Spa, Inc. *Circle 200 on reader service card*

Exercise, fitness, and rehabilitation equipment. Eighty-four page catalog illustrates and provides specifications for equipment for general and specific exercise. Included are weight-lifting units, leg exercisers, benches, training



cycles, rowing machines, treadmills, whirlpools, saunas, and baths. A diagram of a typical health club layout is shown. Also discusses services provided by the company. MacLevy Products. *Circle 201 on reader service card*

Washerless faucet catalog. Pictured in typical settings are single-control and two-handled faucets for kitchen, lavatory, bar, and laundry, as well as tub and shower units. Provides details about washerless cartridge, noncorrosive CPVC underbody and other features. Nibco Inc. *Circle 202 on reader service card*

Water and energy conservers. Four-page bulletin describes water conservation products for residential, commercial, industrial, and institutional use. Included are Control-A-Flo adjustable cartridge to select water flow at the outlet; Econo-Flo adapters that limit water flow; and self-closing faucets, showerheads, and aerators. The Chicago Faucet Co. *Circle 203 on reader service card*

Plumbing fixtures for schools and industry. Condensed catalog describes and illustrates wash fountains, shower installations, safety equipment, and facilities for the handicapped. Showers include column styles, with and without miststalls, and modular shower and dressing compartments. Bradley Corp. *Circle 204 on reader service card*

Corlglas 28 replacement baths and showers. One-piece fiberglass tub and shower units are 28 in. wide, narrow enough to fit through most inside doors. Tubs are 60 in. long; showers, 48 or 36 in. The durable, lustrous, slip-resistant finish is easily cleaned with warm water and mild detergent. Colors match those of major fixture manufacturers. Corl Corporation. *Circle 205 on reader service card*

Safety washing fixtures. Catalog features several types of drench showers, eyewash fountains, combination units, and portable eye/face washing tanks. Specifications are listed for the various models, and diagrams illustrate methods of installation. Bradley Corp. *Circle 206 on reader service card* [continued on page 94]

Every building design consists of two parts: concept and compromise.

You build the ideal structure in your imagination, and then you begin accommodating that ideal to the real world. A world in which new imperatives, new practicalities, are constantly shrinking your design horizons. But it doesn't have to be that way. One building material, more than any other, can meet your aesthetic standards as well as the demands of the real world. Brick. Brick is uncompromising.

In an energy-starved age, brick is unsurpassed in thermal efficiency. Because of its mass, brick saves more energy than

other materials.

Brick is 10,000 colors and textures in a variable scale. It lets you create interesting walls (while saving energy) where interesting walls ought to be. Brick is versatile. It angles sharply or curves softly into just about any form you can dream up. So, far from restricting your design freedom, you can meet the new energy imperatives with as broad a palette as ever before.

If you want to know more about the design and energy characteristics of brick, call or write us. We're the Brick Institute of America.

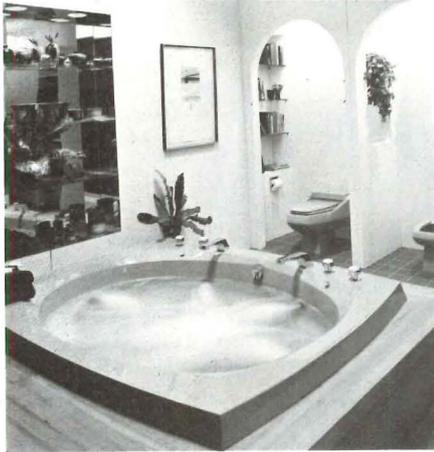
Circle No. 322, on Reader Service Card

Fine Arts Building, Wake Forest University,
Winston-Salem, N.C. Caudill Rowlett Scott,
Architects.

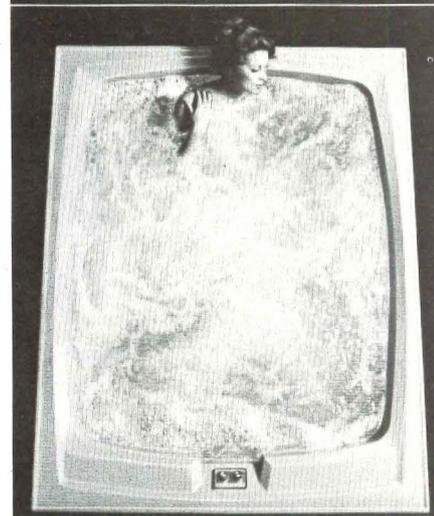
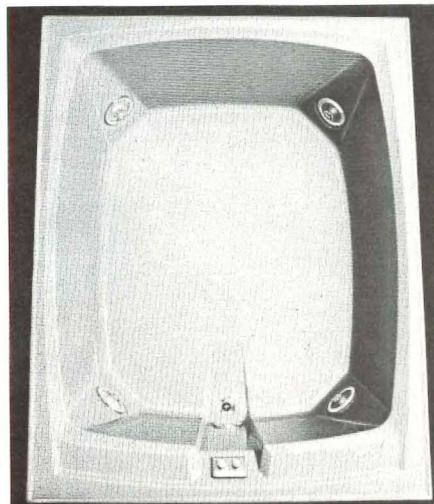
A Design This Bold Needs Brick, Not Compromise



Brick Institute of America
1750 Old Meadow Road / McLean, Virginia 22102



Bath ideas



Whirlpool baths

Bath ideas. Cast-iron bathtubs, whirlpool baths, fiberglass units, and showers are shown in color, along with decorating ideas. Features of each are described and illustrated. Accessories included in the 20-page booklet are mixing valves that maintain preselected water temperature; hand-held personal showers; a whirlpool bath that operates without a motor, pumps, or compressors; and water- and energy-saving showerheads. Copies are available at \$0.25 each from Kohler Co., Kohler, Wi 53044.

Whirlpool baths. Inlets on the baths mix air and water, forming a broad, circular pattern of bubbles. Systems are factory wired and plumbed, and are UL approved. Full-color brochure describes and illustrates components, several styles available, and typical installations. Specifications are included for each. Jacuzzi Whirlpool Bath.

Circle 207 on reader service card

Personal shower systems. Showers that can be wall mounted or removed and hand-held for easier use offer a variety of options. Push-button model allows water to be shut off during lathering to conserve water. Four-page catalog shows water supply attachments, various showerheads, wall brackets, typical mountings, and accessories available. Alsons Corp.

Circle 208 on reader service card

Deluxe pools and showers. Designer line of heavy-duty fiberglass-reinforced polyester includes oriental soaking tub, four bathing pools, one tub with integral surround, and four recessed showers. Each is photographed in color and includes description, diagrams of configurations, and suggested fittings and specifications. Twelve-page color brochure also shows available colors. American Standard, Inc.

Circle 209 on reader service card

Washroom equipment catalog offers 56 pages of washroom accessories, paper dispensers, waste receptacles, air dryers, soap dispensers, safety rails, hospital console units, and folding shower seats. Equipment specifications are provided as well as installation information. Chart lists company models and U.S. Federal specifications to which they conform. Bobrick Washroom Equipment, Inc.

Circle 210 on reader service card

Sports, athletic, and gym equipment. Catalog includes equipment for basketball, football, soccer, and tennis. Playground and gym apparatus such as climbing units, swings, seesaws, slides, balance beams and parallel bars are also listed. Mats, exercise equipment, standards, benches, and bleachers are included. Color photographs illustrate items appearing in the 16-page catalog which also shows prices. SportsPlay Products.

Circle 211 on reader service card

Twirl Spa. Six basic models are shown of therapy pool systems consisting of two parts. The Spa includes handrail fittings, steps, skimmer, light well, drain, and jet fittings, prepiped for field connection. The equipment package is made up of heater, filter pumps, time clock, piped and wired for connection to utilities and to Spa. Photos and drawings of available models accompany descriptive text. Specifying information and specifications are provided. Twirl Spa Div., Soden Properties, Inc.

Circle 212 on reader service card

Laminated plastic toilet compartments. Eight-page color brochure describes and illustrates toilet compartments, including those for the physically handicapped, shower compartments, dressing areas, urinal screens, and washroom accessories. Detailed drawings show typical installations and layouts. Chart

shows woodgrains and colors available as standard, with special colors available to meet specific requirements. Bobrick Washroom Equipment, Inc.

Circle 213 on reader service card

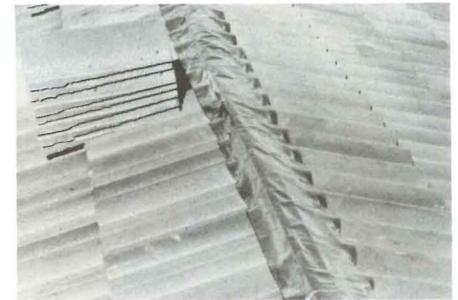
Other products

Barrier-free shower floor. A large shower floor of nonslip terrazzo has an entry ramp that offers free access for wheelchair patients. It is 60" x 42" allowing room to maneuver a wheelchair, with space for an attendant if one is required. The one-piece molded construction has an integral cast brass drain with removable stainless steel strainer. Stern-Williams Co.

Circle 105 on reader service card

Fostafoam expandable polystyrene insulation can be used in new or existing commercial and industrial buildings. It can also replace conventional sheathing in new construction. The manufacturer says that insulation R-value of 1 in. of Fostafoam used as sheathing boards is 4.16, compared with 1 in. of plywood (1.26), and 1 in. of fiberglass insulation (3.14). Installation must be within protective barriers in accordance with building codes. American Hoechst.

Circle 106 on reader service card



Flashband sealing strip

Flashband sealing strip is an aluminum-faced, self-adhesive, asphalt flashing used with concrete tile roofs. Suitable for warmer areas such as the South and Southwest, the system is used in sealing over ridgeboards and hips, replacing bedding tiles in mortar. The manufacturer says that putting down the sealing strip on a 36-ft ridge requires only a half hour, compared with a full day's time required to do the same task with mortar. Evode, Inc.

Circle 107 on reader service card

Stainless steel grabs bars with 1 1/2-in. standoff prevent arms from slipping behind bar and getting caught, but still allow room for patient to hold on. The manufacturer notes that those unable to hold the bar can brace themselves with their arms without having the arm slip through. Bobrick Washroom Equipment.

Circle 108 on reader service card

Skyview is a skylight with a radio-controlled acrylic shade. In the closed position, it lets in a controlled amount of light while reflecting sun and solar heat. A pushbutton switch or a transmitted signal can be used to operate the device. Skyview Control Systems, Inc.

Circle 109 on reader service card

[continued on page 99]

PENPLY & GLASS

Penply Western Red Cedar exterior 303 plywood siding alone is beautiful, durable and versatile. Together with glass, Penply's natural beauty is even more dramatic. In fact, using stone, brick or beveled siding as accents with Penply gives your building additional dimension and appeal.

When you use Penply, you realize a savings in total applied costs. Penply is less expensive per square than piecemeal sidings, such as brick, aluminum, shingles and lumber.

For your next project, whether it's residential, apartment, condominium or low rise commercial, specify Penply. The more you compare it with other materials, the better it looks.

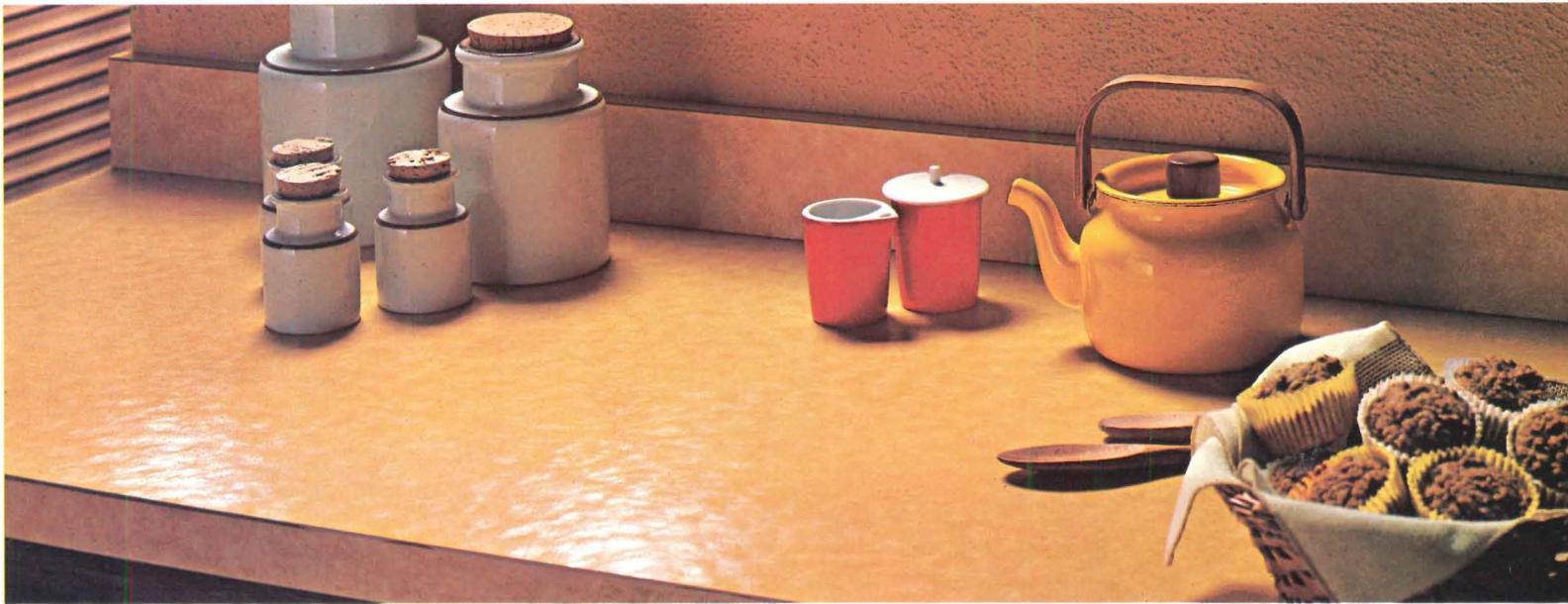
Penply
Wood Products from ITT Rayonex, Inc.



For further information, contact your nearest wood products distributor or see our catalogue in the Siding/Cladding Section (7.6 Pen) in Sweet's General Building and

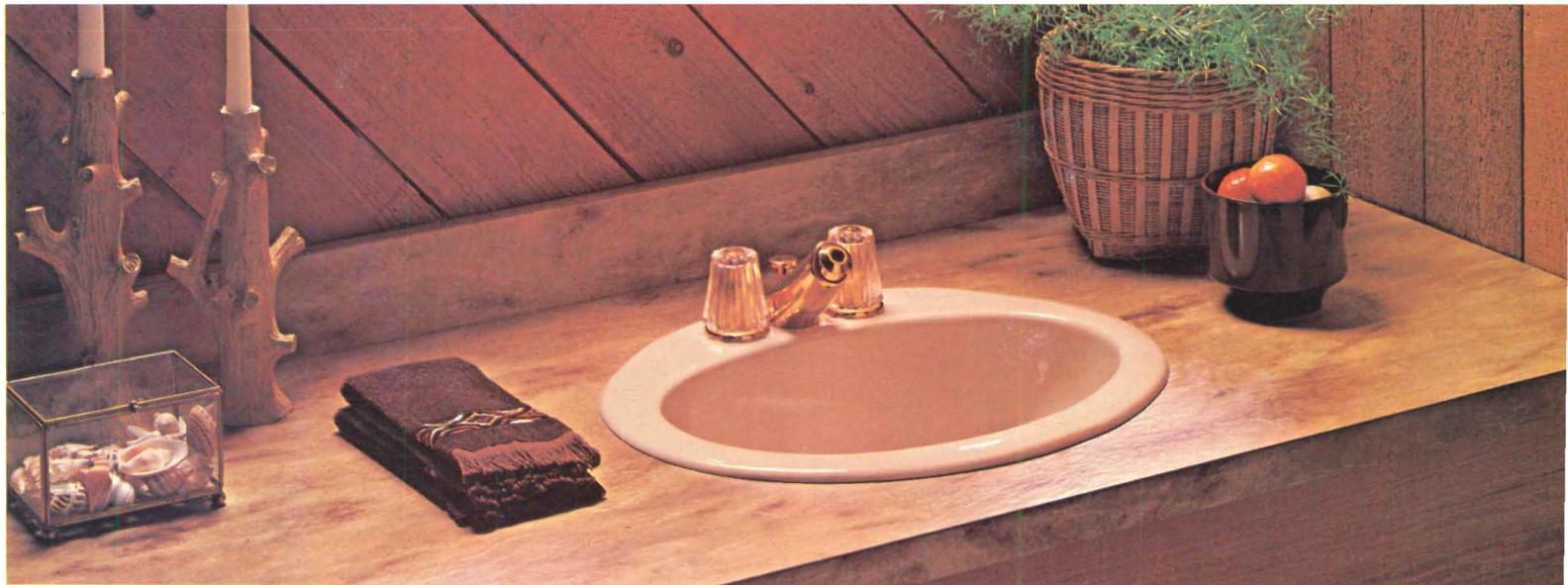
New Dimensionals

These new Nevamar® dimensional ideas offer surfacing opportunities for kitchens and baths like you've never had before.



Nevamar® Glaze

The first, Nevamar Glaze, duplicates the look and feel of kiln-fired vitreous china... in two colors, Solar and popular Almond.



Nevamar Stonehenge

This marble look is Nevamar Stonehenge, now given the added beauty and quarried dimensional surface of Nevamar Slate finish.

Big on new ideas

NEVAMAR®

Once you feel them, you'll see... both of these laminate ideas are from a new Nevamar collection that is setting new design criteria. Another new leader is Batik, a stylish abstract pattern in three colors... Almond, Sunshine and Burnt Orange. Write for samples: Marketing Department, Nevamar Corporation, Odenton, Maryland 21113.

You'll see first hand. Nevamar is changing a lot of ideas about what high-pressure plastic laminates should be.

Products continued from page 94

A multi-zone fire alarm control panel has built-in circuits to accommodate a variety of essential system functions. Trouble indicators show the nature of malfunctions and location to aid in correcting system faults. The panel has two built-in zones of fire monitoring and control. One or two additional zones may be plugged in circuit board modules since the terminal is factory-wired for up to four zones. According to the manufacturer, the panel meets all requirements of the National Fire Protection Association Standards 72A, B, C, and D. Rixson-Firemark, Inc.

Circle 110 on reader service card

CentraScan 73 is a fully automated, on-site security and building management system for single large buildings or building complexes. Alarm signals are relayed to an integrated command console from which control signals may be sent automatically to remote actuators. The system is site-engineered to meet specific building needs. Optional additions include closed-circuit television, with surveillance monitors and a videotape recorder. Equipment in a typical installation might include intrusion detection, fire alarms, sprinklers, and energy management. ADT.

Circle 111 on reader service card

Metal curtain door. An upward-opening metal curtain door for limited access areas features a centered neutral axis design with equal amounts of steel forward and to the rear of the centerline for even distribution of stress. The company says that this increases strength and adds years of service. The metal is hot-dipped galvanized sheet, prepainted and baked. It has vinyl wear strips, lock bars, deep guide rails, die-cast spring cones, and permanently lubricated ball bearings. Sizes range up to 16' x 16'. Kinnear Metalcraft, Div. of Harsco Corp.

Circle 112 on reader service card

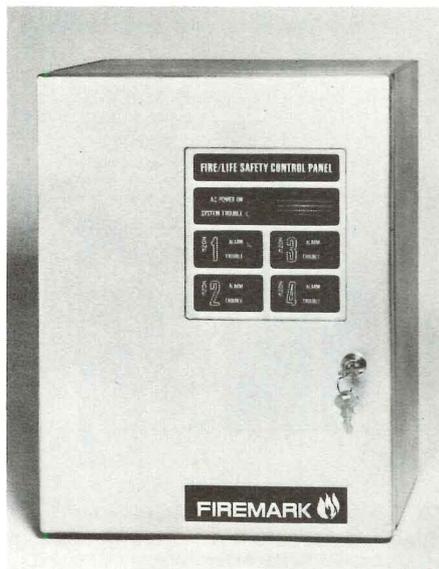
EnerCon reverse cycle air conditioners in two models offer nominal 10 and 15 tons of cooling capacity. They have multiple circuits and two-stage thermostatic controls. The 10-ton unit, with a 3-hp blower motor, is rated at 4500 CFM and has a 124,000-Btu per hour capacity. The 5-hp, 15-ton unit is rated at 6750 CFM and has a capacity of 181,000 Btu per hour. American Air Filter Co., Inc.

Circle 113 on reader service card

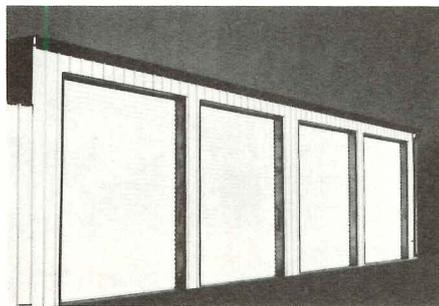
Residential well tanks feature an epoxy-coated inner shell, instead of standard inner boot, and heavy-duty, noncorrosive plastic swivel base. The coated lining is said to reduce seepage problems. The pump also has a light-weight steel tank, flexible butyl diaphragm, and single pipe construction. Tanks are available in seven models. Well-Pak, General Fittings Co.

Circle 114 on reader service card

Wooden doors, carved in designs reminiscent of Navajo rugs, have patterns available on one or both sides. The doors are standard size, 36" x 84", 1 3/4" thick, made from ponderosa pine or redwood. Finishes available are deep grain tex-



Multi-zone fire alarm control panel



Metal curtain door

ture, either sealed or oil stained. Pine doors are also available in toasted and sealed deep grain texture. Customwood Mfg. Co., Inc.

Circle 115 on reader service card

Century 2000 surface-mounted door closers that eliminate sizing of closers and spring adjustments come in three types: interior, high-frequency interior, and exterior. A hydraulic fluid filtering system assures smooth closing action, according to the company. All models have a multiple spring backup system, independent stroke, and on/off latch valves. All Century 2000 closers are UL approved and have a five-year warranty. Rixson-Firemark, Inc.

Circle 116 on reader service card

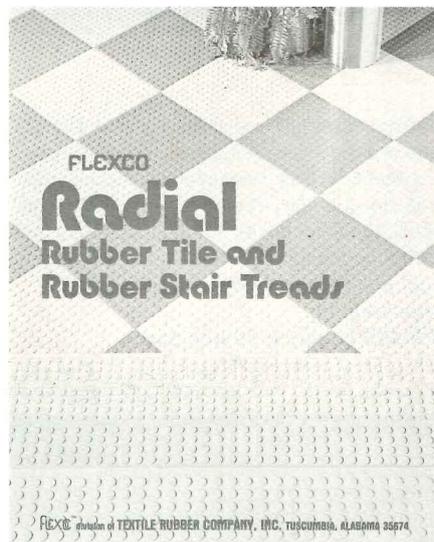
Other literature

Rubber tile and rubber stair treads. Floor tiles, patterned with 1-in. raised studs, are said to have superior resiliency. High profile, with 0.050-in. raised design, is for use in areas requiring especially safe footing. Low profile, with 0.025-in. raised design, is suitable for areas having light vehicular traffic such as shopping carts. Both are available with Acoustibak design on back of tiles to create dead air space for insulation. Stair treads have 0.060-in. raised design on the leading edge for secure footing, and metal-reinforced nose. Smooth trailing edge permits easy maintenance. Bulletin shows ten colors available, lists order numbers, and describes adhesives used for installation. Flexco Div., Textile Rubber Co., Inc.

Circle 214 on reader service card



CentraScan 73 security system



Rubber tile and rubber stair tread

Low-temperature heating panels. Four-page report discusses the use of low temperature (300 F) electric radiant panels for ceiling or perimeter heating. Graphs show thermal comfort requirements and compare radiant and convective heat systems. Advantages of the system are listed, along with typical applications. Photographs illustrate installations. Aztech International.

Circle 215 on reader service card

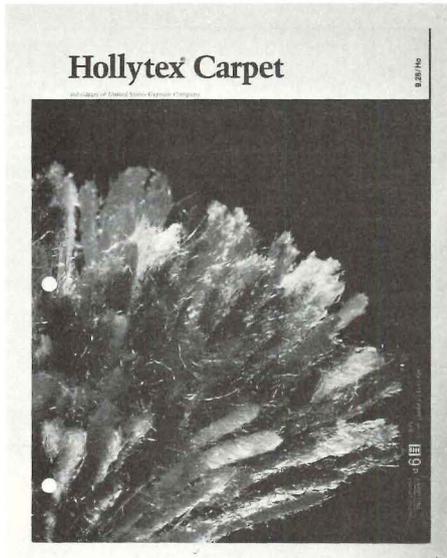
Lighted ceiling designs. Catalog offers descriptions, suggested applications, and technical information about lighted ceilings. Included are luminous skylights, decorative lighting, modular units, luminous textures, and reflective ceilings. Typical installations are shown in full color. Integrated Ceilings.

Circle 216 on reader service card

Sports surfaces. Five four-page brochures provide updated information about Bolltex surfaces for indoor and outdoor tennis courts and multi-purpose areas, Toptex resurfacing for indoor tennis courts, and Rinktex surfaces for ice rinks. Albany International Corp.

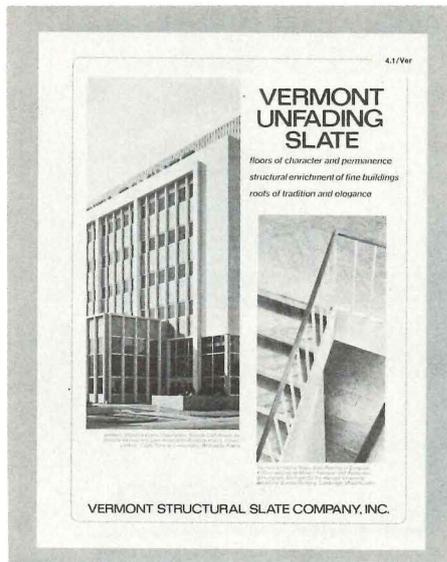
Circle 217 on reader service card

[continued on page 100]



Contract carpet

Contract carpet. Brochure has photos and descriptions of 11 contract carpet styles, with information on colors, fiber content, texture, static control, and weight. The company says its contract carpets meet or exceed industry standards for static reduction, flammability, wear resistance, and soil and allergy control. Hollytex Carpet Mills, Inc.
 Circle 218 on reader service card

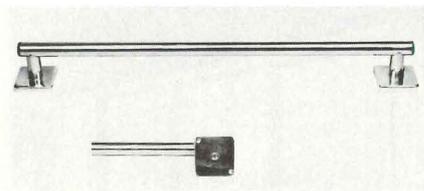


Flooring, roofing, and structural slate

public facilities. Also indicated are standards established by ANSI, UBC, GSA, and HUD. Tubular Specialties Mfg., Inc.
 Circle 219 on reader service card

Flooring, roofing and structural slate. Describes characteristics and physical properties of slate. Discusses its use for flooring, interior and exterior structural applications, and as roofing shingles. Provides typical specification for each use, and covers installation methods for flooring. Vermont Structural Slate Co., Inc.
 Circle 220 on reader service card

Acoustic-Vent drapery pockets provide ventilation between drapery and window, and offer a base to which drapery track can be attached. Four-page folder shows how drapery and curtain pockets are installed. Also illustrated are details of perimeter venting and five types of extruded moldings for acoustic tile ceilings. Fry-Reglet Corp.
 Circle 221 on reader service card



Grab bar guide

Grab bar guide. Folder shows in chart form, state by state, the requirements for grab bars in

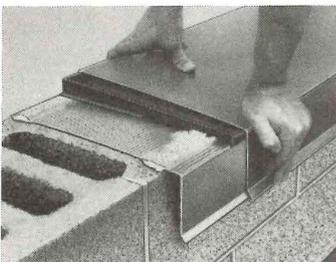
Utility blowers. Centrifugal fans in belt-driven models are designed for air conditioning and exhaust systems in schools, hospitals, and similar large buildings. Direct-drive units in slow speed models ventilate small areas; in high speed models they ventilate larger areas such as garages. Performance tables, application data and available accessories are provided in company's 28-page illustrated bulletin. Aero-vent, Inc.
 Circle 222 on reader service card
 [continued on page 102]

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Follow the S-U-N with skylights of Plexiglas®—use our free computer service

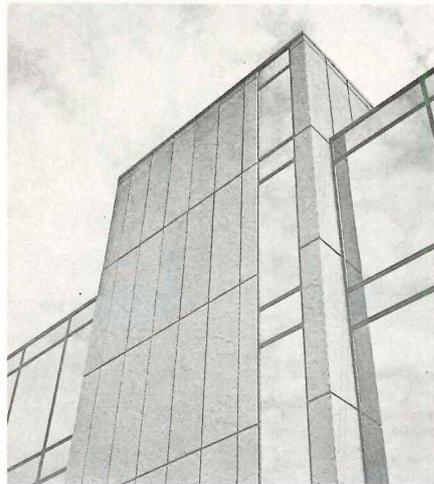
Architectural Aluminum Certification Program Directory. 1978 directory lists over 200 manufacturers of certified architectural aluminum products. The companies are listed alphabetically, by product name, and by ANSI specification subdivision. All produce certified aluminum prime windows, sliding glass doors, and aluminum combination storm windows and doors which meet AAMA and ANSI standards. For a free copy, write on company letterhead to: Architectural Aluminum Manufacturers Association, 35 East Wacker Drive, Chicago, IL 60601.

Webtex floor covering adhesives and specialties. Wall-size reference chart provides product number, description, general use, specific use, coverage, open time, color, recommended application, freeze-thaw stability, weight per gallon, and application notes for Webtex floor covering adhesives. Essex Chemical Corp., Specialty Chemicals Div. Circle 223 on reader service card

Tile setting patterns. Plans show 34 setting patterns for ceramic tile such as staggered joint, random, basketweave, herringbone, and plaid. Provides information about percentages of each tile needed for a particular pattern, and size in which it may be executed. Copies of the 34-page portfolio are available at \$2 each from: American Olean Tile Company, Lansdale, Pa 19446.

Johns-Manville
JM

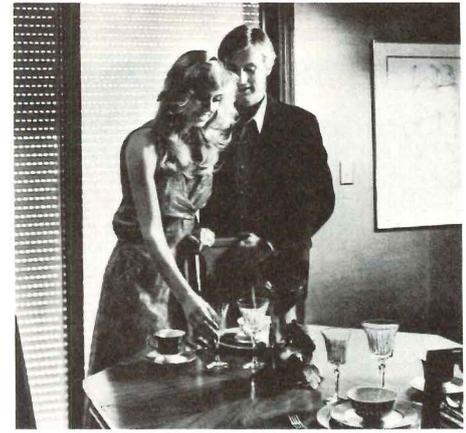
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tions. Johns-Manville, Building Systems Div. Circle 224 on reader service card



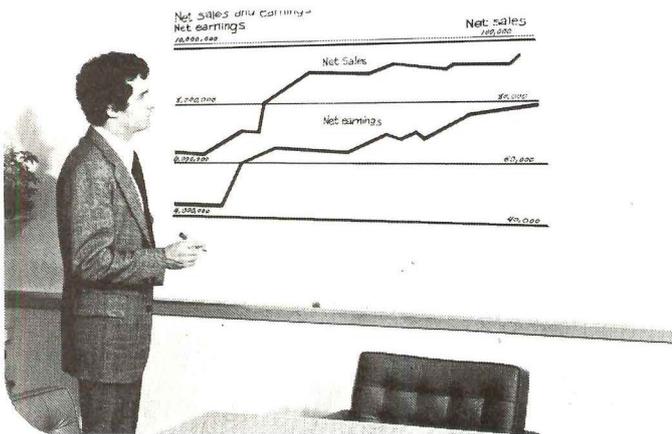
Outside rolling shutters

Outside rolling shutters. Energy savings, light control, security, privacy, and protection against the elements are advantages claimed for product. Shutters come in standard sizes. Installation steps are listed. Pease Company. Circle 225 on reader service card

Sarabond® "B" is a latex mortar additive for installing brick and tile pavers and quarry tile. Brochure explains advantages and properties, illustrates choice of installation methods. Masonry Systems International. Circle 226 on reader service card

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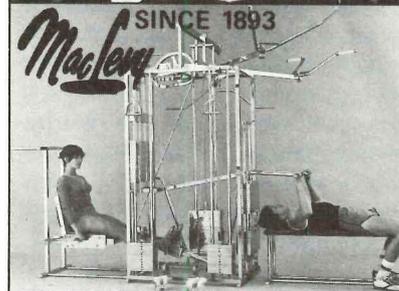
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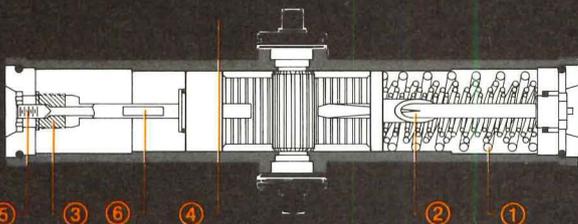
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THE PROGRAM

THE KEYNOTE, Monday, Oct. 16

11:00-12:00 Noon: THE U.S. DEPARTMENT OF ENERGY — A REVIEW OF ITS EFFECT ON THE CONSTRUCTION INDUSTRY.

SESSION I, Monday, Oct. 16

2:00-3:30 P.M.: ESTABLISHING ENERGY PERFORMANCE STANDARDS FOR NON-RESIDENTIAL CONSTRUCTION.

Speakers: Mr. Roger Alford, P.E. Heery & Heery Architects
Mr. Edgar K. Riddick, P.E., Riddick Engineering Corp.

SESSION II, Monday, Oct. 16

2:00-3:30 P.M.: A LOOK AT ENERGY PERFORMANCE STANDARDS FOR RESIDENTIAL CONSTRUCTION

Speakers: Mr. Joseph Sherman, — Director, Division of Energy Building Technology & Standards
U.S. Department of Housing & Urban Development
Mr. Daniel E. Morgenroth, P.E. — Manager, Building Construction Systems Development
Owens-Corning Fiberglas Corporation
Mr. Urban Gibson, Manager Technical Services, Texas Power & Light
Mr. John Ball, Consultant, representing Johns-Manville
Mr. Joseph S. Kimpflen, Certain-Teed Corporation

Moderator: Mr. John H. Ingersoll, Housing Magazine

SESSION III, Tuesday, Oct. 17

10:30-12:00 Noon: RESIDENTIAL DESIGN, LAND PLANNING AND MARKETING IDEAS FOR 1979

Speakers: Mr. Sanford R. Goodkin, Chairman, Sanford R. Goodkin Research Corporation

Moderator: Mr. Roy Diez, Managing Editor, Professional Builder

SESSION IV, Tuesday, Oct. 17

10:30-12:00 Noon: THE ARCHITECT & DEVELOPER WORKING CLOSER TOGETHER IN SEARCH OF QUALITY — the case for design quality in the market place.

Speaker: Mr. Arthur Cotton Moore, Architect — Arthur Cotton Moore Associates

Moderator: Mr. Walter F. Wagner, Architectural Record Magazine

SESSION V-A, Tuesday, Oct. 17

2:00-3:30 P.M.: REMODELING & HOME IMPROVEMENT

One of the most active and growing business opportunities on today's scene is in the field of remodeling and home improvement. This session will examine all aspects of this market growth opportunity.

SESSION V-B, Tuesday, Oct. 17

2:00-3:30 P.M.: THE LIABILITY DISTORTION

One of the most serious problems confronting the building industry today is the rapidly rising number of legal suits and other forms of costly litigation. How does one best protect against this increasing and costly problem? All facets of this subject including insurance coverage will be discussed in this session by top experts.

SESSION VI-A, Wednesday, Oct. 18

10:30-12:00 Noon: PROFITABLE BUILDING SYSTEMS AND INDUSTRIALIZED HOUSING

Speakers: Mr. Bernard E. Ury, President—Bernard E. Ury Associates, Inc.
Mr. R.L. Rotton, President—Trussway, Inc.
Mr. Willard J. Schulner, President—Wisconsin Trust, Inc.
Mr. Anthony F. Bosco, Product Manager—Trusses—Wickes Shelter Systems

Moderator: Mr. Don O. Carlson, Editor & Publisher — Automation in Housing & Building Systems News

SESSION VI-B, Wednesday, Oct. 18

10:30-12:00 Noon: THE REHABILITATION OF OUR INNER CITIES — A CHALLENGE AND AN OPPORTUNITY FOR THE CONSTRUCTION INDUSTRY

Trends of "back to the inner city" is on the move in many of our older cities, which has introduced considerable capital improvement, new construction and the upgrading of existing buildings and homes. Several success stories will be presented during this session, including ideas on how members of the building team can profitably participate.

NOTE: Confirmation of your hotel room reservations will be sent to your attention by the hotel to which you have been assigned. If room at the rate requested is not available, the bureau will reserve a room at the most comparable hotel available. All rates are subject to city and state taxes.

Code	Hotel	Suites on Request		
		S = Singles	D = Doubles	T = Twin
201	Allerton	\$27-32	\$31-37	\$35-43
202	Ambassador East	55-65	67-77	-
101	Ascot House	28-35	43-44	34-44
102	Avenue Motel	24-26	30-32	30-32
104	Blackstone	29-40	39-50	39-50
105	Chicago Dntwn Travelodge	30	34	38
111	Conrad Hilton	35-62	47-59	47-62
106	Essex Inn	30-38	38-48	38-48
208	Hampshire House	58-64	68-74	68-74
108	Holiday Inn Chicago Dntwn	37-45	42-47	42-47
213	Holiday Inn Lake Shore Dr.	38-43	48-53	48-53
210	Howard Johnson Lake Shore Dr.	36	42-44	42-44
109	Midland Hotel	34-44	44-54	44-54
114	Oxford House	32	42	42
112	Palmer House	40-62	52-74	52-74
115	Pick Congress	29-49	41-61	41-61
224	Playboy Towers	37	42	42
116	Ramada Inn Dntwn	—	38	38
219	Ritz Carlton	64-74	79-89	79-89
220	St. Clair Hotel	19-24	23-29	23-29
225	Travelodge-Heart of Chicago	26.50-30		32.50-38.50
226	Tremont	55	65	
228	Water Tower Hyatt House (no arrivals on 10/16/78)	50	60	60
229	Whitehall Hotel (King bedded rooms)	75	90	

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- 919 Third Ave: Harter Corp.
- 136 E. 57 St: CI Designs
- 145 E. 57 St: ICF Inc.
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- 950 Third Ave: Castelli Furniture, Inc.
Stow/Davis Furniture Company
- 745 Fifth Ave: B&B America
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- 595 Madison Ave: Atelier International, Ltd.
- 600 Madison Ave: Herman Miller Inc.
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- 315 E. 62 St: Helikon
- 321 E. 62 St: The Pace Collection, Inc.
- 410 E. 62 St: Stendig Inc.
- 305 E. 63 St: Beylerian Limited
Dunbar
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Turner Ltd.
- Fifth Avenue & 82 Street: The Metropolitan Museum of Art

Building materials

Major materials suppliers for buildings that are featured this month.

Portland Metro Fitness Center, Portland, Or (p. 52). Architects: Broome, Oringdulph, O'Toole, Rudolf & Associates, Portland. Reinforced concrete foundations: Portland Cement and Mercer Steel. Two-way reinforced concrete joist system: Portland Cement and Mercer Steel. Wood beams and decking: Rosboro. Tedlar-coated Mylar air structure: Environmental Structures. Poured-in-place synthetic flooring: Advanced Coating Co. Wood flooring: Robbins Sport-Tred. Ceramic tile: American Olean. Carpet: Armstrong and Stratton. Concealed spline ceiling: Armstrong. IRMA roof: Dow. Tar and

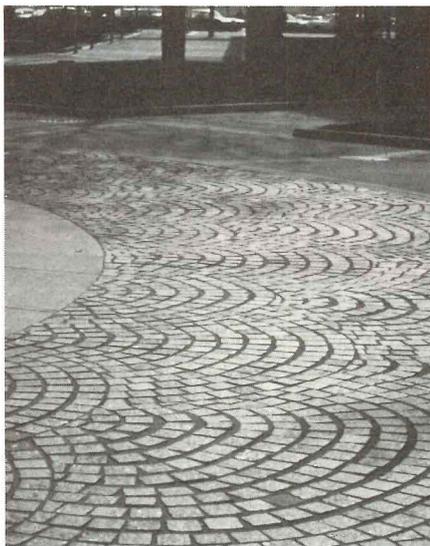
urethane waterproofing and/or dampproofing: MAMECO. Cast-iron roof drains: J.R. Smith. Operable walls: Modernfold. Toilet partitions: Mills Metals. Aluminum windows: Viking Industries. Aluminum skylight: Aluminex. Wood doors: Vancouver Door Co. Metal doors: Overly Mfg. Co. Aluminum revolving door: Crane Fulview. Passenger elevator: Montgomery Elevator. Aluminum storefront: Kawneer. Hardware: Schlage, LCN, and Lawrence. Panic hardware: Von Duprin. Security system: Detex Corporation. Exterior latex acrylic paint: Rodda Paint Co. Interior enamel: Rodda Paint Co. Vice Glaze over concrete block: Cota Industries. Intercom: Dukane. Fire alarm and Syncon System clock: Simplex. Sauna: Metos Sauna. Mercury vapor exterior light fixtures: MARCO-Marvin Electric Mfg. Co. Fluorescent strip lighting: Lightolier.

Fusible switchgear: General Electric. Plumbing fixtures: Kohler. Flush valves: Sloan. Wet and dry sprinklers: Grinnell. Boiler: Cleaver Brooks. Air handling units: Brod & McClung and Pace Equipment Co. Heat exchanger: Temp-Ex. Air cooled condensing units: Carrier Air-Conditioning Co.

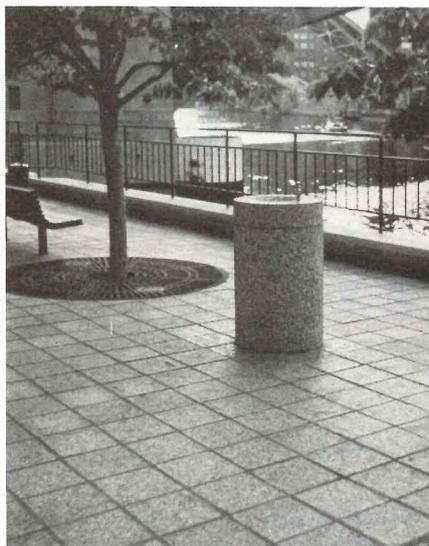
Liberty Elementary School, Columbus, Oh (p. 58) Architects: Don M. Hisaka & Associates, Architects, Inc., Cleveland, Oh. Insulated metal exterior panels: E.G. Smith, Cyclops Corp. Carpeting: Lee. VAT: Kentile. Fiberglass built-up roofing plies: Owens-Corning Fiberglas Co. Fiberglass roof insulation: Owens-Corning Fiberglas Co. Wall insulation: E.G. Smith. Dome drains: Smith Mfg. Co. Toilet partitions: Sanymetal. Folding partitions: Modernfold. Windows: Ohio Plate Glass Co. Sliding glass doors: Kawneer. Hollow metal and glass doors: Acme. Hardware: Sargent. Exterior paint: DeVoe Paint Products. Semi-gloss interior paint: Celanese Coatings Co., Glidden. Epoxy: PPG. Intercom: Altec. Fire alarm: Simplex. Speakers: Altec. Control station: Bogen. Tuners: Rauland. Folding stage: Vecta. Millwork furnishings: Plas-Clad, Inc. Exterior pole lights: Motif I. Incandescent downlights: Moldcast. Fluorescent strips: Keystone Lighting Corp. Exit lights: McPhilben. Mercury lights: Holophane. Underfloor duct electrical distribution: Walker Duct. Transformer and panel boards: General Electric. Building wire: Southwire. Underfloor plastic conduit: Carlson Co. Plumbing: American Standard. Electric rooftop HVAC units: Lennox Industries, Inc. Controls: Barber Coleman. Diffusers: Lennox. Electric baseboard: Singer. Fans: Jenn-Air. Air cooled condensers and air handling units: McQuay.

Granite.

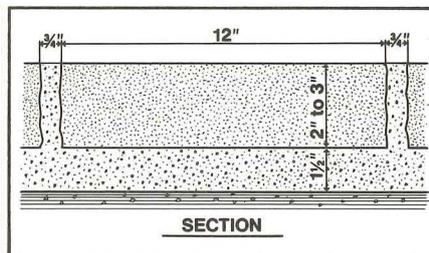
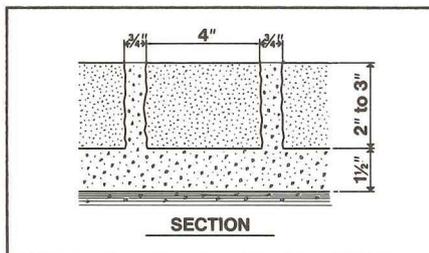
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Architect: Joe Karr & Associates, Chicago, IL



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Circle No. 324, on Reader Service Card

Hiram's at the Locks, Seattle, Wa (p. 62). Architects: Barnett Schorr Co., Seattle Wa. Open web joists: Vulcraft. Steel deck: Bowman, Edwin G. Smith Div. Carpet: Patrick Carpet Mills. Roof membrane: Dex-O-Tex. Insulation: Johns-Manville. Windows: Libby-Owens-Ford. Doors: Kawneer. Hardware: Corbin. Exterior paint: Parker Paint Co. Lighting: Benjamin Industrial Fixtures. Heating and air conditioning: General Electric.

Rainbow Center Mall and Winter Garden, Niagara Falls, NY (p. 72). Architects: Gruen Associates, PC. Structural steel frame: Bethlehem Steel. Removable metal wall panels: H.H. Robertson Co. Aluminum Curtain Wall: The Alumiline Corp. Pawtucket, RI. Brick pavers and asphalt block: Hastings Pavement Co. Aluminum and acrylic vaulted roof enclosures: EPI Architectural Systems, Inc. Projected windows in arcade and bridge: Marmet Corp. Clear float glass, tempered glass, and laminated tempered glass: PPG Industries. Zinc primer and epoxy finish on structural steel: Tnemec Company. Window cleaning equipment: Steeplejac Division of Alpana Aluminum Products. Glass-enclosed elevator cabs: Dover Elevator Company. Escalators (in Arcade): Otis Elevator. Pool lighting: The Simes Co. General overall lighting: Stonco/Keene Corp. Toilets and lavatories: American Standard. Flush valves: Sloan Royal. Drains: J.R. Smith. Pipes: Certain-teed. Sprinklers: Firematic. Irrigation: Toro. Drinking fountains: Haws. Heaters: Chromalox.

A large, multi-paned wooden window with a view of trees and a purple chair in the foreground. The window is made of dark wood and has several panes. The view outside shows green trees and some autumn-colored leaves. In the foreground, there is a purple chair and some green plants.

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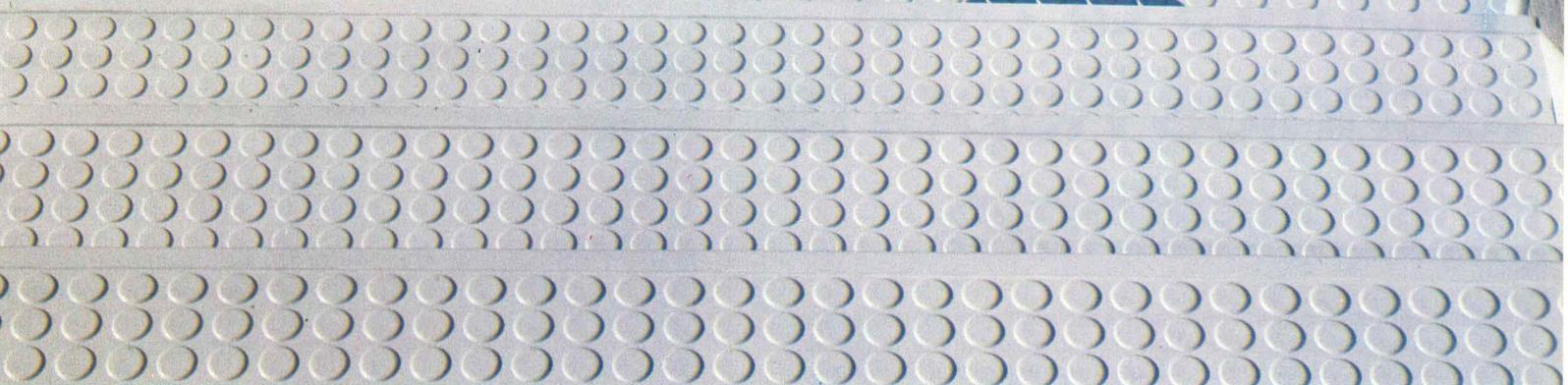
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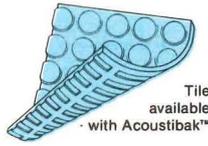
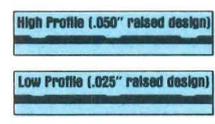
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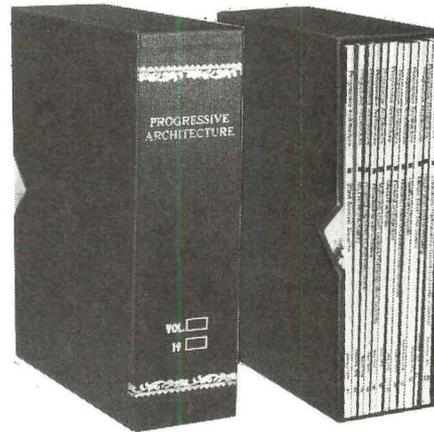
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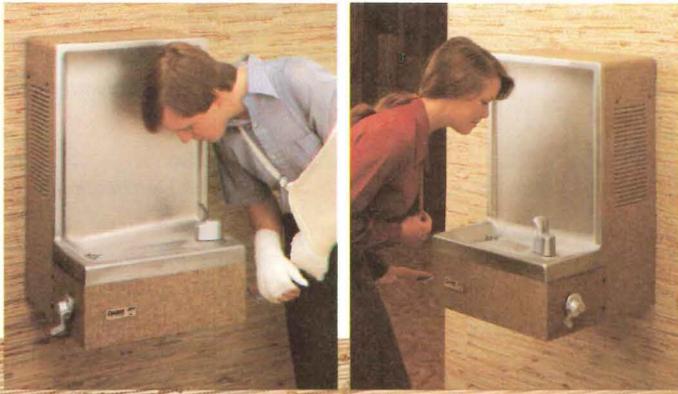
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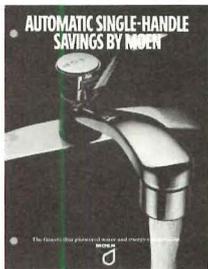
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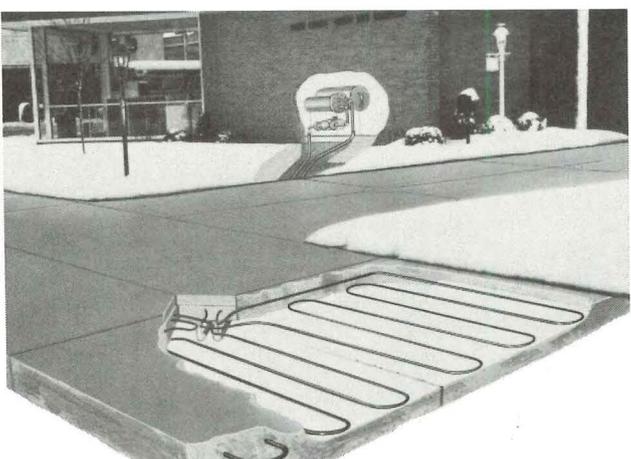
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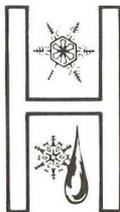


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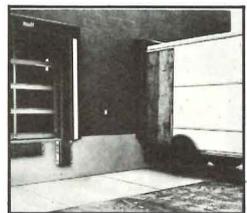
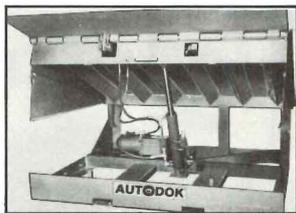
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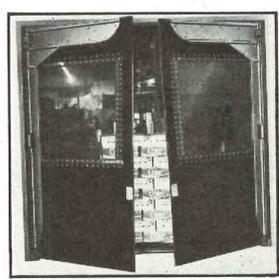
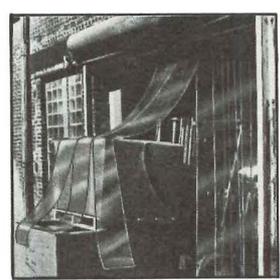
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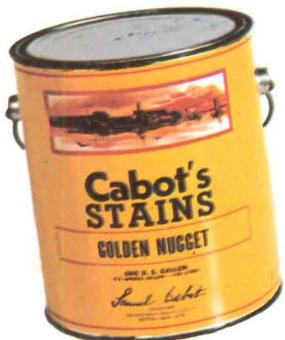
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