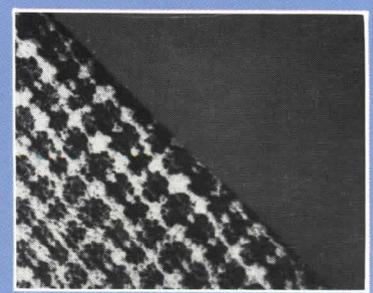
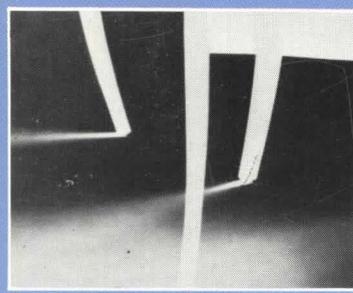
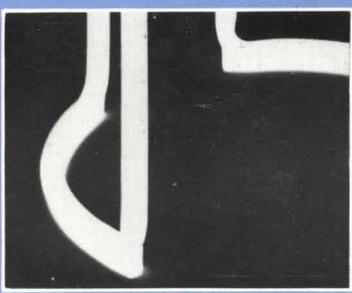
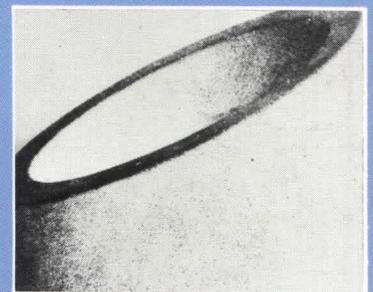
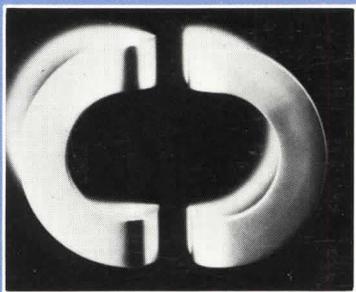
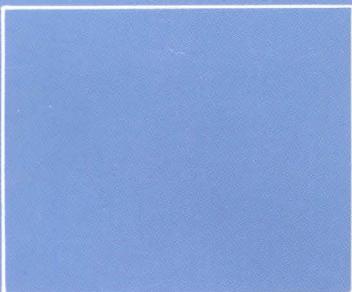
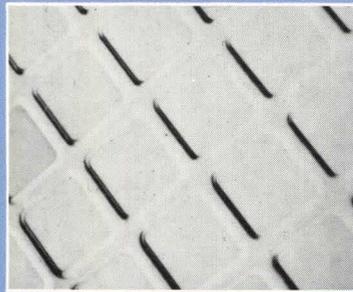
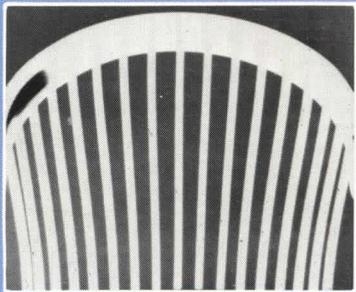
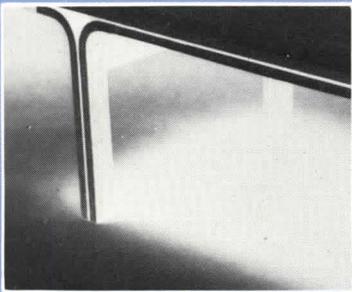
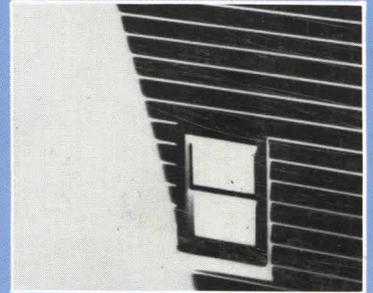
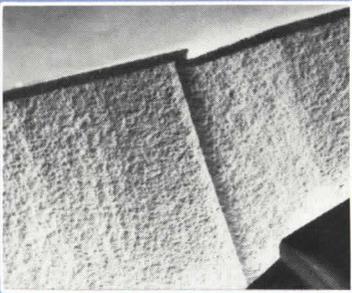


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Product Reports 1983





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Alberto Bucchianeri

January 11-15

Urethane Foam Contractors Association convention in New Orleans; featuring sessions on successful case histories, reports on sprayed urethane over metal decks, warranties and product liability. Contact: UFCA, P.O. Box 1288, Dayton, Ohio 45402.

January 22-25

National Association of Home Builders annual convention in Dallas. Contact: NAHB, 15th and M Sts., N.W., Washington, D.C. 20005.

January 24-27

Refrigeration Exposition annual product show in Atlantic City; runs concurrently with ASHRAE's national meeting. Contact: International Exposition Co., 200 Park Ave., New York N.Y. 10017.

February 7-11

SPI/Reinforced Plastics/Composites Institute annual conference in Houston; emphasizes new and improved materials and processing techniques. Contact: RP/C Conference Administration, The Society of Plastics Industry, Inc., 355 Lexington Ave., New York N.Y. 10017.

February 15

Postmark deadline for entries to Formica's Competition I (conceptual)—design of object no larger than 64 cu ft surfaced with Colorcore. Requests for information: Colorcore "Surface and Ornament" Competition, Formica Corp. One Cyanamid Plaza, Wayne, N.J. 07470.

February 16-18

1983 International Daylighting Conference in Phoenix; multi-disciplinary forum for examining potentials of daylight utilization in buildings. Contact: Marjorie Matthews, Oak Ridge National Laboratory, P.O. Box X, Oak Ridge, Tenn. 37830.

February 20-22

Window Energy Show in New York City; will feature latest information on window treatments that save energy. Contact: IFAI, 350 Endicott Bldg., St. Paul, Minn. 55101.

February 26 through March 2

The World of Concrete '83 in Las Vegas; will feature seminars on techniques, repair, product selection, management and finance. Contact: Dan Sladek, World of Concrete Inc., 426 So. Westgate, Addison, Ill. 60101.

March 3-5

CONDES '83—the Dallas contract/design show; theme is "Creativity in Space Planning and Design." Contact: Condes Public Relations, Dallas Market Center, 2100 Stemmons Frwy., Dallas, Tx. 75207.

March 9-12

CONQUIP (International Contractors Equipment Exposition & Conference) convention in Chicago. Contact: Martin C. Dwyer Int., 400 No. Michigan, Chicago, Ill. 60611.

March 12-15

Wood Heating Alliance Int. Trade Show & Seminar in Baltimore. Contact: WHA, 111 E. Wacker Dr., Suite 600, Chicago, Ill. 60601.

March 17-19

WEST WEEK in Los Angeles; theme is "Gateway to the Americas." Contact: Pacific Design Center, 8687 Melrose Ave., Los Angeles, Calif. 90069.

March 24-26

Photovoltaics: From Research to Reality conference at MIT, Cambridge, Mass. Contact: Alex Wilson, NESEA, P.O. Box 778, Brattleboro, Vt. 05301.

April 10-12

Kitchen/Bath Industry Show in Atlanta; runs concurrently with Multi-Housing World show. Contact: Ray Afflerback, American Institute of Kitchen Dealers, 124 Main St., Hackettstown, N.J. 07840.

May 22-26

American Institute of Architects national convention in New Orleans. Contact: AIA, 1735 New York Ave., N.W., Washington, D.C. 20006.

May 31 through June 3

Annual Solar Technologies Conference in Minneapolis. Contact: American Solar Energy Society, 1230 Grandview Ave., Boulder, Co. 80302.

June 8-10

A/E Systems '83 in Dallas; fourth international conference on automation and reprographics in design firms. Contact: George Borkovich, Conference Director, 3400 Edge Ln., Thorndale, Pa. 19372.

June 14-17

NEOCON—National Exposition of Contract Furniture Manufacturers—in Chicago. Contact: The Merchandise Mart, Chicago, Ill. 60654.

June 22-25

Pacific Coast Builders Conference in San Francisco. Contact: California Building Industry Association, 1225 8th St., Sacramento, Calif. 95814.

June 24-26

Construction Specification Institute annual convention in Kansas City. Contact: CSI, 1150 17th St., N.W., Washington, D.C. 20036.

July 28 through August 1

American Society of Interior Designers national convention in Boston. Contact: ASID, 730 5th Ave., New York, N.Y. 10019.

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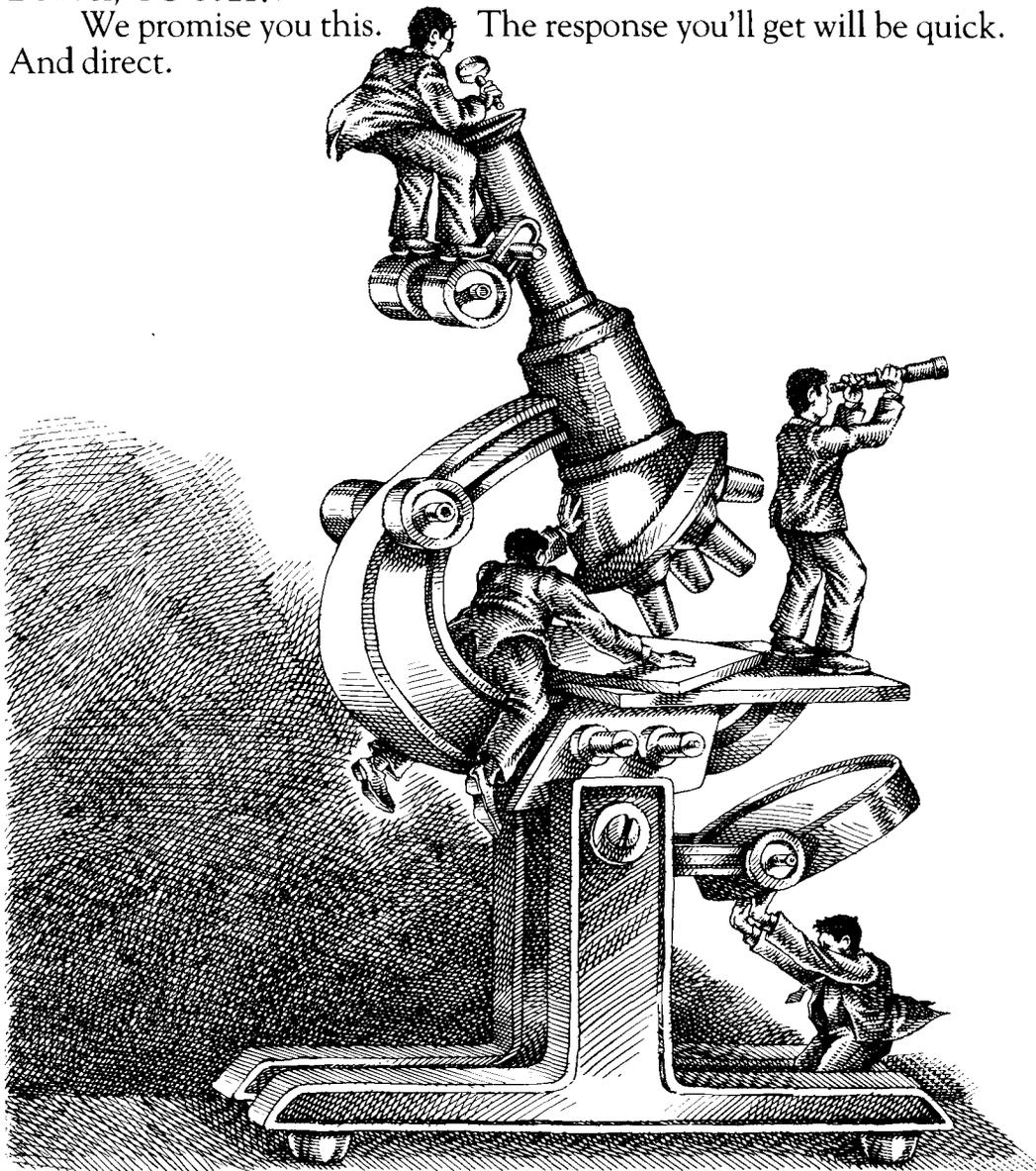
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Products are an important part of the design

This Product Reports issue, as it has in earlier years, is intended as a reminder and demonstration that the manufacturers and producers of the materials that make up our buildings must be as alert and responsive to changing markets and changing design philosophies as architects and engineers must be.

One especially important example today is the vastly increased amount of work in rehabilitation and re-use—work that presents very different problems to architects than does the design of new buildings—differences in design, in engineering, in construction management, in relationships with clients, and in product selection. The differences also affect, of course, the manufacturers—they affect what the manufacturers make and the marketing of those products.

The Round Table in this issue (page 28) explores the different problems for every part of the building industry caused by this change in what we build. A few examples: Said architect Tom Fridstein, “A big new market for everyone will be that whole generation of post-World War II office buildings that must be brought up to current standards. They will want to be retrofitted for energy conservation and for the new CRTs and computers—and that involves everything about the building skin, the glass, the furniture, the wiring systems, the lighting, and the mechanical systems.” Consider the design and product implications in architect Herb McLaughlin’s comment that, “Maybe all of our systems should be installed on the assumption that they will be changed sometime down the line. Because they will be.” Or architect Bill Bain’s comment that, “On one hand we are using terra cotta again. On the other we are experimenting with the new glass-reinforced concretes to create the special finishes we need. . . . I think the manufacturers will be bringing out all kinds of new products and materials that will have special effectiveness in the rehabilitation area. And we will be anxiously waiting for them.”

Everyone at the Round Table talked of the “fast-tracking” involved not just in design but in product selection required in the redesign of older buildings—for the obvious reason that the client who owns an existing building is even more impatient to put that building to work than is the client for a new building. And, inevitably, given the greater uncertainties (and therefore the greater risks) of rehab work, the old question of shared liability was discussed by the Round Table.

In this Round Table, in the case histories beginning on page 20, and in the product pages themselves, beginning on page 39, we all hope—as I’ve said in the editorial to this issue in earlier years—that you find 100 solutions to your problems and 100 fresh ideas.

This year, as before, Product Reports is organized on the 16-division UCI format. The page number for each division can be found in the Table of Contents, page 3; and more information on any product or literature item in the issue can be easily obtained by using the Reader Service cards on pages 9 and 219. An index to manufacturers whose products appear editorially can be found on page 6, while advertisers in this issue are indexed on page 216. *Walter Wagner*

Urban botanical park glassed in at ChemCourt



George Cserna photos

When Chemical Bank decided to move its world headquarters offices into a 50-story high-rise at 277 Park Avenue, there was a great deal of discussion about how the bank might make a lasting imprint, and coincidentally signal its arrival, on the Avenue, home of many other banking institutions. This has been accomplished with the design, by architects Haines Lundberg Waehler, of ChemCourt—a three-story, 12,500-square-foot entrance encased in glass, with a botanical garden.

The architects were hired originally to redesign 15 floors (450,000 square feet) of executive offices and open-planned quarters for 2,400 employees. The new entry was commissioned after this other work started, when the architects suggested various solutions to street-level problems such as the redesign of Chemical's branch bank, provision for barrier-free access, circulation and security at the entrance for this 1960s tower.

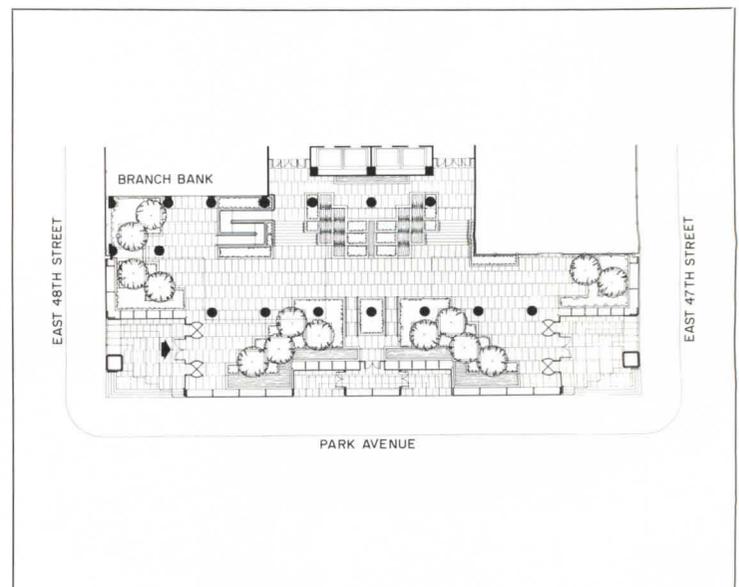
Conceived as a crystalline, sculptured glass enclosure, it steps to a three-story height. The atrium is formed of insulated glass panels (some vertical, some sloping at a 45-degree angle and some horizontal) set in aluminum framing modules of 5 by 10 feet—all supported by an ordered maze of 4- by 4-inch trusswork. To aid in the reduction of heat build-up in the court, the skylight glazing is gray-tinted heat-absorbing glass. Temperature reset and enthalpy control provide economy in heating and cooling. Return air is recirculated, and roof vents permit the exhausting of hot air during the summer months.

What the bank calls its "gift of greenery," and the architects call "putting the park back into Park Avenue," the court will have four seasonal horticultural displays undertaken by the New York Botanical Garden. Employees using the second-floor cafeteria have a view to the courtyard.

Some criticism locally has centered on the structure's intrusion along the walkway. The architects contend, however, that by bringing the enclosure out and by covering the old, open-air plaza, ChemCourt now aligns with other high-rise office towers, St. Bartholomew's Church and the Waldorf-Astoria Hotel down the block, reinforcing the nature of Park Avenue.

Multi-faceted ChemCourt does provide a properly dignified signature for the client and an urban space unlike anything else found in midtown Manhattan. Its greenhouse-like environment is intended to be used by employees and the general public, who are invited to walk through, explore and simply enjoy.

Janet Nairn



*ChemCourt at 277 Park Avenue
New York, New York*

Owner:

Chemical Bank

Architects:

*Haines Lundberg Waehler—
Michael Maas, partner-in-charge;
Theodore S. Hammer, project
designer; Edwin A. Dirkes, general
project manager; Jay Fleishman,
project manager (and designer of
branch bank); John McLean, project*

*architect; Fred Jaross, field
supervisor*

Engineers:

*Haines Lundberg Waehler
Engineering Division (structural/
mechanical/electrical)*

Landscape architect:

*Haines Lundberg Waehler—Mark
Morrison, in charge*

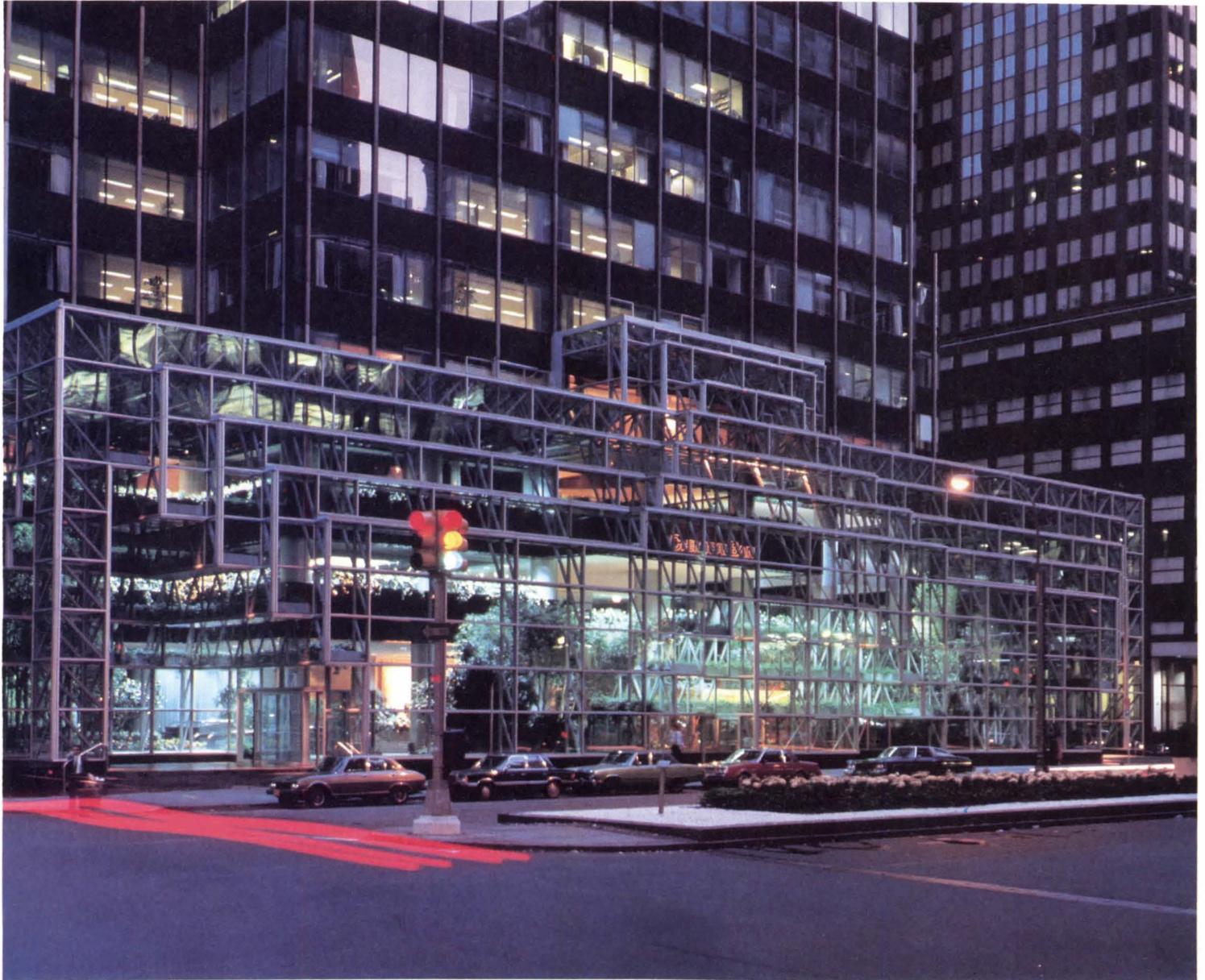
Consultants:

*Galbreath-Ruffin Corp. (general);
Tillyard & Partners, Inc.*

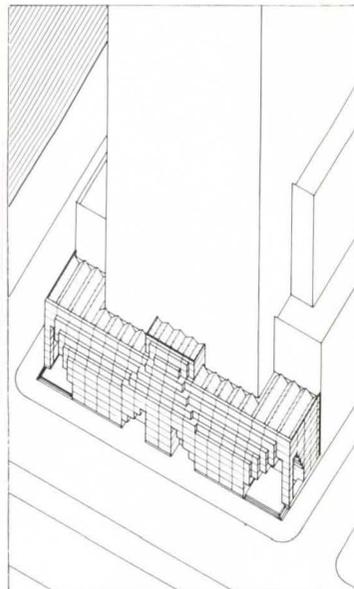
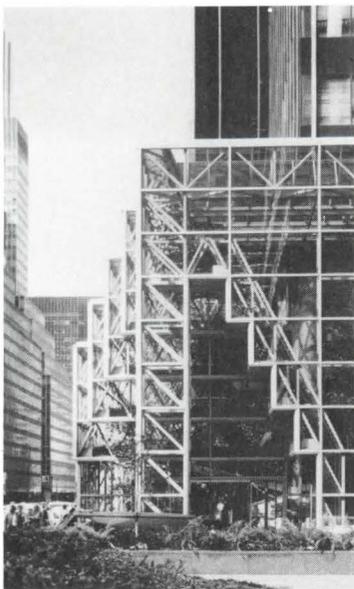
*(financial); Howard Brandston Inc.
(lighting); Ostergaard Associates
(acoustical)*

General contractor:

William L. Crow Construction Co.



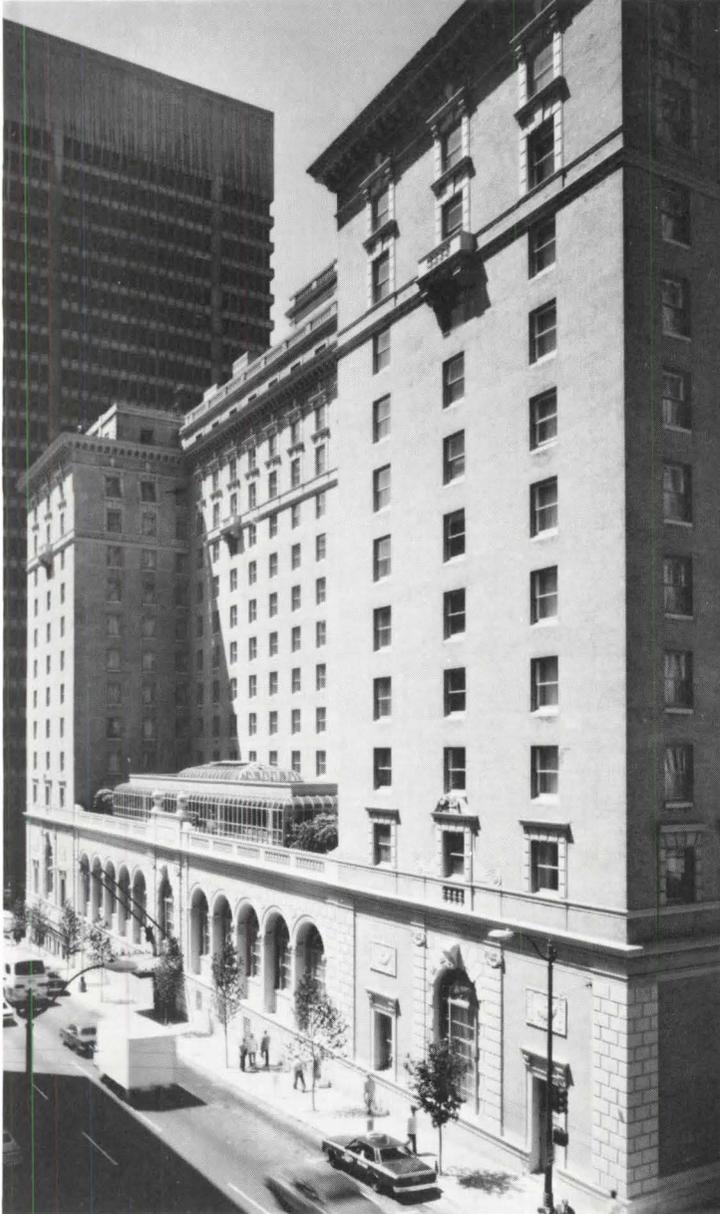
Design



Glass-enclosed ChemCourt appears differently as natural light changes, particularly at dusk (above) when the glass is semitransparent and partially reflecting light and movement. The main entrance is located along Park Avenue, with side entrances (left) subtly indicated by stepping of the structure. Inside, anodized aluminum-sheathed, cylindrical columns aid in providing an urbanistic feeling to seasonal gardens created by the New York Botanical Garden (opposite page).

Classic elegance revived in Seattle's Olympic Hotel

Dick Busher photos



One of the major restored elevations (above) sports the glass-enclosed pool-house addition (right). While all interiors were renovated, the public spaces—dining rooms and lobby (far right)—are resplendent as a result of meticulous refinishing of original details and oak panels, and the addition of period furnishings.

What was usually thought in earlier years to be only a bustling frontier town dominated by the lumber industry, Seattle was known by insiders as a cultured haven in the Northwest wilderness. The original Olympic Hotel, built in 1924, introduced this era of elegance, counterbalancing that rough image. Designed in the Italian Renaissance style by architect George B. Post & Sons on land given to the University of Washington by Seattle pioneer Arthur Denny, it is now listed on the National Register of Historic Places. With the hotel's recently completed renovation by architects The NBBJ Group (formerly Naramore, Bain, Brady & Johanson), this symbol has been revived, significantly contributing to the city's downtown redevelopment.

The general design scheme concentrated in three areas: infrastructure (structural reinforcement, mechanical/electrical improvements, and restoration of the exterior); design of new interior spaces (such as enlarged guest rooms and new kitchens and laundry facilities); and refurbishing interiors (both finishes and furnishings). The renovation was, therefore, not just a simple facelift, even though that was started in 1980. Fifty-six years of dirt and grime were removed with a masonry restoration cleaner to minimize damage to the exterior brick and terra cotta. Next came replacement of cast-iron trim; the marquee fascia was cast of glass-reinforced polyester resin with a textured catalyzed urethane product to simulate cast iron. Where pieces of the original cast-iron marquee fascia had been demolished in earlier modernizations, new molds were designed and new pieces cast—all based on the original shop drawings. Glass-reinforced concrete was used in the replication of damaged terra cotta, duplicating finishes from existing materials on flat panels, raised panels, intricate coping, balustrades and railings.

To meet local seismic and wind-force codes, improvements to the structural system were imperative. Steel studs were attached to the inside of the perimeter masonry walls to provide support to the exterior wall, and to act as framing studs for the new guest room walls. There was installation of horizontal steel strut beams below the floor slab, filling of existing concrete floor openings, and the steel moment frame above street level was reinforced.

The attention to these details, plus those involved in the total interior refurbishing, has resulted in the saving of the hotel's best 1924 elements and elaboration upon them has brought back its classic aura. *Janet Nairn*



*Four Seasons Olympic Hotel
Seattle, Washington*

Owner:
University of Washington

Developers:
*Urban Investment and
Development Co., and Four Seasons
Hotels*

Architects:
*The NBBJ Group—William Bain,
Jr., principal-in-charge; Dorman D.
Anderson, project architect; Donald*

A. Winkelmann, project designer

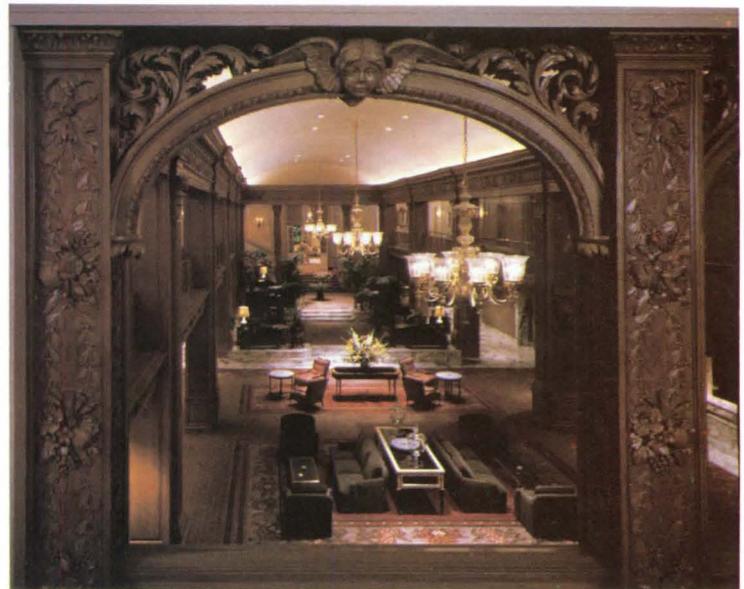
Engineers:
*Andersen-Bjornstad-Kane-Jacobs,
Inc. (structural); Ralph E. Phillips,
Inc. (mechanical/electrical)*

Interior design:
*Frank Nicholson, Inc. (public
spaces); John S. North Designers,
Inc. (guest rooms)*

Landscape architect:
William G. Teufel and Associates

Consultants:
*Towns, Richard & Chaudiere
(acoustical); Manahan & Cleveland,
Inc. (kitchen); Don Pertl &
Associates (laundry); Calvin Sager
(solid waste disposal)*

General contractor:
Sellen Construction Co., Inc.



Adaptive-reuse of garage into office building

Andrew Kramer photos



In the highly competitive office market in downtown Denver, this conversion of a parking garage into 100,000 square feet of offices provides spatial and cost alternatives to the large number of high-rises completed during the last five to eight years. The challenge for the architect and engineers was more than the obvious overhaul of the exterior and a new interior design; there were necessary modifications to structural, mechanical and electrical systems, circulation, and fire equipment to provide a safe, yet attractive, building.

The parking structure, completed in 1953 for the City of Denver, had a central 11-story-high, 120- by 22-foot automobile elevator shaft, with 10-story-high, 39-foot-wide 9-foot-high bays on each side. Because there were no windows, except a few on the street elevation, and to avoid major structural alterations, the design called for dividing the shaft into two halves. The front half became an atrium topped by a pyramid-shaped skylight which now permits daylight to enter glass-enclosed offices facing the atrium. The back portion was designed to house new pedestrian elevators, restrooms, stairs/fire escape, and a mechanical equipment room.

Providing for modern hvac, electrical and fire systems became difficult when the architects discovered the floors sloped 3 inches (cutting down plenum height to only 9 inches), and a flat concrete beam running the full length of each floor (prohibiting positioning ductwork the shorter distance from side wall to atrium wall). The solution was to run the air supply and return ducts, with diffusers on each side, parallel to the beam, the full length of each floor. In line with the diffusers are deep cell parabolic light fixtures and sprinkler heads. The variable-air-volume diffusers were the only elements that had to be modified on site in order to fit into the plenum. This arrangement still provided 8-foot ceiling heights in the offices.

The building obviously needed a new visual image, created by replacing the original brick and concrete facing materials with a curtain wall of reflective insulating glass in an emerald green color. The entrance was clearly defined by a concrete frame and aluminum canopy set out from the facade line.

All of these detailed modifications have collectively created an adaptive-reuse solution that has met the business objectives of the owners while enhancing the streetscape. The building's image now reinforces its importance in relation to its high-rise neighbors. *Janet Nairn*

Materials and finishes for both exterior and interiors are very important in the creation of a new image (as well as for durability) for this converted parking garage (right) into an office building (above). A new curtain wall of reflective glass unifies the exterior and contemporizes its appearance, quite an improvement over its 1950s look. The interior atrium (opposite page) has tile flooring, sand-blasted concrete columns and beams, and rift-cut oak paneling offsetting glass-enclosed offices (opposite page).



*Park Place
Denver, Colorado*

Owner:
Park Place Ltd.

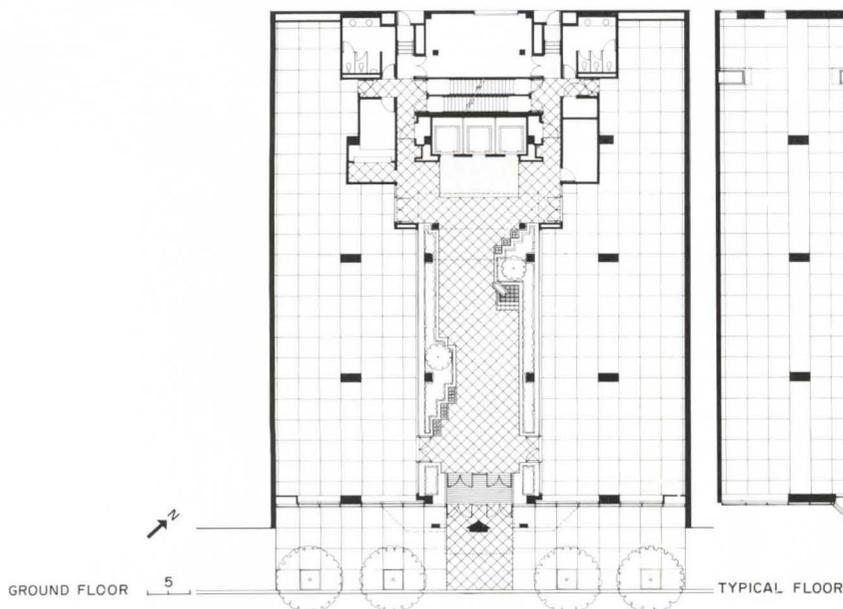
Architects:
Johnson Hopson & Partners—Bart Smith, partner-in-charge; Kin Du Bois, project architect; Dick Farley, Bob Root, designers

Engineers:
Bierbach Consulting Engineers (structural); BHCD Engineers, Inc.

(mechanical); Garland D. Cox & Associates, Inc. (electrical)

Consultants:
Lerch-Bates (elevator); Ross Investment Co. (leasing)

General contractor:
Brown-Schrepferman and Co.



Glittering splendor of Rialto Theater restored



Hans Keerl photos

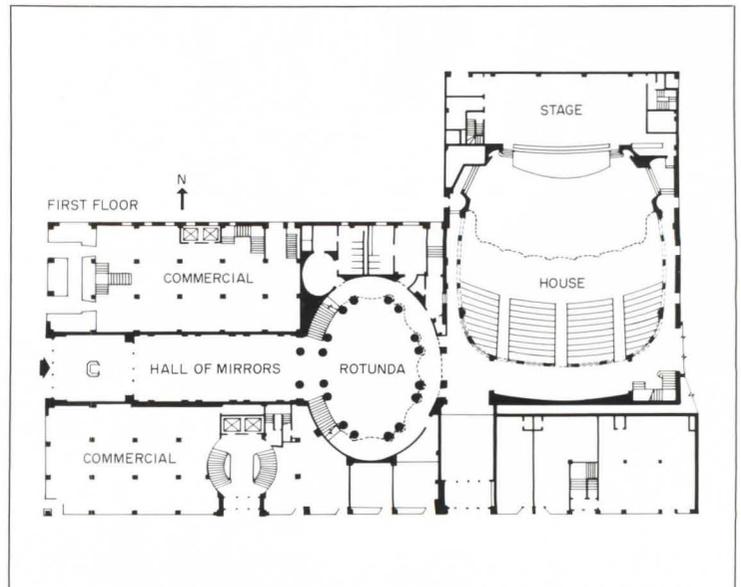
The “Jewel of Joliet,” the Rialto Square Theater was a masterpiece in the movie palace era when completed in 1925. Hailed by architectural critics of the time as “one of the ten most beautiful theaters in the nation,” its design—by Chicago architects Rapp and Rapp—was a combination of Greek, Roman and Byzantine styles. After the movies’ golden age passed, so did the theater’s—until 1972 when a “Save the Rialto” campaign was started by local citizen Dorothy Mavrich and the Rialto Square Arts Association. The theater became public property after it was listed on the National Register of Historic Places in 1978, and the Joliet Metropolitan Exposition and Auditorium Authority was established to oversee restoration of the theater and the ancillary 65,000 square feet of commercial/office space that also had not been well maintained for almost 60 years.

Now referred to as the Rialto Theater Complex, architects Pfaller Herbst Associates and restoration specialists Conrad Schmitt Studios were hired; they began by cleaning and tuckpointing the polychrome terra cotta exterior, and replicating an immense vertical sign and marquee followed. A major portion of the project’s \$4.2 million cost was spent on behind-the-scenes work on the structure, mechanical, electrical and fire systems.

The visual focal point, however, was the restoration of the auditorium, the Rotunda and the Hall of Mirrors (see floor plan). The auditorium (opposite page, top and bottom left) was first cleaned, and then significantly patched, repainted or regilded. New stage rigging, lighting and sound systems were designed to fit into the existing shell. Supplemental lighting was concealed in ceiling slots. Of the total 2,000 theater seats, only the original balcony seats remained. Similar seating, used on the first floor, was salvaged from a theater in Indiana, and then refurbished to recapture the aura of the period. Support facilities, such as dressing rooms and delivery entrances were updated, and if found lacking, added.

The block-long, 4½-story-high Hall of Mirrors (left) had badly fractured wall and ceiling finishes, having been water damaged. The dull, cracked terrazzo floor was patched, reground and sealed to bring back its original luster.

The complete technical and decorative rejuvenation of the exterior and interior with its sculptural details has reinstated this as a performing arts center. But the restored complex also serves a larger purpose in the community, as a catalyst for the revitalization of Joliet’s central business district. *Janet Nairn*



*Rialto Theater Complex
Joliet, Illinois*

Owner:
*Joliet Metropolitan Exposition and
Auditorium Authority*

Architect:
*Pfaller Herbst Associates, Inc.—
Mark F. Pfaller II, principal-in-
charge; Thomas G. Meuer, project
designer; Kerry A. Keenan, project
manager*

Engineers:
*Computerized Structural Design,
Inc. (structural); Bert Fredericksen,
Inc. (mechanical); Leedy & Petzold,
Inc. (electrical)*

Consultant:
Beling Consultants (plumbing)

Decorating contractor:
Conrad Schmitt Studios, Inc.

Construction manager:
d'Escoto Inc.



Reopening two exit lobbies enabled the theater and outer lobbies of the Rotunda and Hall of Mirrors to be used simultaneously without interfering with each other. Work on the Rotunda included the terrazzo floor and ornate ceiling, and details such as terra cotta drinking fountain, glass fountains, and 20-foot-tall crystal chandelier. The color scheme in lobbies was based on colors found on the original columns (left) covered with "scagliola" (a lost art of mixing by hand dust and plaster to produce a look and finish of marble).

Round Table:

The special design and specification problems in rehabilitation and re-use

RECORD assembled a Round Table of architects, engineers, construction managers, builders, and owners to explore the design and engineering and management problems in redesigning an older building compared with the problems of designing a new one. Conclusion: Almost everything is different. . . .

First question to the Round Table:

As you stand looking up at an existing building (rather than a blank sheet of paper), where do you begin?

Said architect Jim Polshek: "The first thing we do is to try to recognize the natural rhythms of the building. We study the circulation systems—the way people move through the building (which has to do with everything from convenience to fire egress) and the way the mechanical systems 'move' through the building. We do very elaborate drawings and models of these systems, which play a big part in defining the solution to the redesign, and which—most importantly—are critical in helping everybody in the office to understand the building.

"Once we understand the starting points, we try to make sure that the client, and the consultants, understand it—so that we communicate from the same base about the problems that we have and are going to have to solve."

Architect Der Scutt: "I think it has to be emphasized that no two retrofit or rehabilitation or renovation projects are alike. Because there are so many 'givens' in the existing building, the architect must give special attention to understanding the client's intent.

"When we renovated the Commodore Hotel into the Grand Hyatt the client wanted a flagship hotel—and they did not want us to save any of the exterior. They wanted a brand-new skin. In the end, we gutted most of the building. At about the same time, we were involved in the renovation of a McKim, Mead & White building—where it was important to us and the client to preserve as much as possible. We did a great deal of research, we found the original drawings, and we did extensive tests of the materials, we researched the best cleaning methods, we sought out workmen who knew how to work with tile and mosaic.

"So one important starting point is agreement on the intent of the rehabilitation. And then of course there are physical concerns. For example, structural soundness can never be taken for granted. I'm working on an old building now in which the brick vaulting is supported by steel vaults under the sidewalk—and the vaults are corroded. Another key area is lighting. An awful lot of bad lighting was introduced into all kinds of buildings in the 1950s and '60s—lighting that is inefficient, consumes enormous amounts of energy, produces discomfort for the occupants, and is not compatible with the architecture. Those are some of our starting points. . . ."

Architect (and AIA president-elect) George Notter: "In one important sense, re-use and retrofit are not really very different from the design of new buildings—if one sees architecture as problem-solving, then the problems are not really all that different. What we start with—in a re-use project or a new building—is the problem.

"However, with an existing building you have an opportunity (I don't see it as a constraint, but as an opportunity) to let the existing building speak—in terms of what will work and what will fit and how you can take advantage of what is there in terms of what you want to accomplish. I sometimes think we get more responsive solutions starting with an existing building than we get starting with a blank piece of paper. . . ."

Architect Tom Fridstein pointed out the difference in "thinking time": "With a new building, you start with the client

buying the land, and are involved with the thinking there. You typically have time to think out carefully the preliminary design. You have time, as the foundations are going in, to study and restudy your work. But, particularly in today's financial climate, once the owner makes a decision to buy an existing building, he wants (and usually needs from a financial point of view) a usable building in the shortest possible time. Design time and construction time have to be condensed—which affects our project development, affects decisions about what products and materials we use, and (since some parts of the building are often left in use, or put into use floor by floor) it affects the whole construction and construction management process."

Builder and construction manager Irving Fischer got nods from everyone and stirred a lot of comment by saying that. . .

In retrofitting existing buildings, you must have accurate surveys of existing conditions—and then be prepared and organized to cope with problems as they arise

Said Mr. Fischer: "The time spent probing the building with the architect and the engineers and the subcontractors is the most productive part of the design process for everyone involved. Without detailed study of the building before any other work gets started, you simply don't know what you are facing. Without detailed study, the designer just designs away and it will never get built the way he designed it; and the owner ends up with costs that bear no resemblance to the budget.

"On any job where we are construction managers, we insist on spending the money for a thorough survey before anything else starts—including the structure (no one really knows where the columns are), the locations of all openings, the location and condition of services. You can't take old drawings and assume it was built that way, or that no changes have been made that can drastically affect the new work. Dimensions have to be checked; the condition of materials (and particularly the structure) have to be checked.

"And given all that, I always advise the owner to pay for full-time, on-site architectural and engineering service—because the problems are day-to-day, moment-to-moment. You can't wait for any back-and-forth between the office and the field; you need design expertise on the site. That's expensive, and clients are often reluctant to face that cost. But it's critical."

Added structural engineer Charles Thornton: "Just because a building has stood for 50 years does not mean it was designed or built right 50 years ago, and does not mean it is good for another 50 years. On the other hand, a good survey may reveal tremendous latent capacity in an old building. For example, there have been a lot of code changes since 1900, and most of the codes have become less conservative or more liberal in terms of allowable stresses. If you take the AISC code in particular, the safety factors have gone down from, say, on the order of 2 to 1.6. Given those code changes, and fact that engineering approaches taken 20, 30, 50 years ago were extremely conservative, you may find that you can actually add three floors, five floors, to a building.

"So that up-front survey can work both ways: When you get into those old hotels in Atlantic City, you tend to find that the salt air, the corrosion, has eliminated most of the spandrel beams, that the relieving angles are gone, and that the building is standing because the masonry walls are now acting as a bearing wall, not a curtain wall. On the other hand, we got involved in looking at some old Quonset-hut seaplane hangars of the sort knocked out to standard designs all over the country during World War II. With a \$20,000 computer analysis, we were

able to show that cranes could be hung from the existing structure for a new industrial use—which reduced the project cost from something like \$6 million to \$1.2 million.

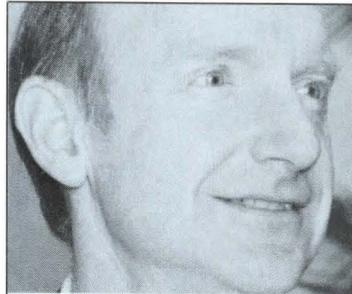
“A related problem,” said Dr. Thornton, “is the danger of overlooking ‘hidden’ structural integrity when remodeling an older building. In more than a few downtown buildings in cities across the country, owner and/or architect have decided to remove the original masonry facade and put on a new, more energy-efficient, more contemporary curtain wall. The trouble is that the new system—lightweight, high performance that it is—has no inherent load-carrying capacity; whereas the old wall, whether or not it was designed with that in mind, did contribute to resisting loads. The problem of changes like this is compounded by the fact that in most cities the code requirements for wind loading have been increased substantially. Similarly, you cannot, without careful study, remove solid masonry interior partitions and replace them with an open plan system—because while those partitions were never intended to resist wind loading, they do in fact resist wind loading. These factors must be considered—and needless to say the liability considerations in failing to consider them are considerable. . . .”

Architect Bill Bain pointed out that the survey is important not just from the point of view of physical constraints, but as a feasibility study: Given the new codes dealing with seismic concerns in our area [Washington State], rehabilitating an older building up to standard may prove completely impractical from a cost point of view. And even if you can find those beautiful old drawings, they seldom show mechanical systems—tradesmen just put them in on their own backs in those days. You need a careful study of the old building not just to find out whether it’s sound—but whether the work required is justified from a cost point of view. It’s a different kind of feasibility study than the one always made for new buildings—but it’s just as important from a go/no-go point of view.”

Engineer Arnold Windman: “Exactly right. Many owners purchase buildings for rehabilitation with no idea of what they have bought in the mechanical and electrical area. You can’t assume that since a system lasted for years it will keep on working. There is usually a considerable investment required just to keep the building functioning, and that’s before you get into the costs of program changes and redesign for energy conservation.”

Architect Joan Goody: “Most of the work that we have been doing is in New England colleges. Often the buildings are quite handsome, and have good spaces. But the client wants the building reorganized to improve space efficiency, and upgraded in terms of energy efficiency, handicap-code compliance, and the like. Sometimes the client appreciates the architectural heritage, sometimes not. I find that as the architect I have to be the advocate for the building. I see my role as one of educator and advocate and explainer. A good building tells you things, things that you might not have thought of doing if you were starting from scratch, other things that you might like to do but can’t given the existing conditions. My job is to help adapt the program to the architectural character we’re dealing with.”

Given these complicated concerns, the talk at the Round Table turned to very special concerns of the owner Builder-construction manager Seymour Cohen said: “On any reuse or retrofitting project, all of the professionals involved—and the client—have to sit on the same side of the table. There is no time for adversary positions. Everybody has to be there all the



William Bain
architect
NBBJ Architects
Seattle



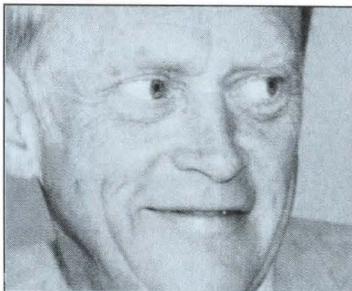
David Dibner
assistant commissioner
for design and construction
Public Building Service
General Services Administration
Washington



Seymour Cohen
president
Tishman Interiors Corp.
New York City



Irving Fischer
construction manager
HRH Construction Corp.
New York City



Jack Curtis
acoustics consultant
Bolt Beranek and Newman, Inc.
Cambridge

“Nobody has yet addressed one of the most critical problems in the management of historic-building rehabilitation: Pigeons! Do you know how much it costs to de-pigeonize a building?”
David Dibner

time. We're rebuilding Carnegie Hall to Jim Polshek's designs. We did all that survey work we talked about earlier, we have a beautiful set of drawings . . . and day in and day out we find things that aren't where they're supposed to be, or aren't there. The other day, we found a piece of steel that was spanning 40 feet—and was split right down the middle. Polshek's people were on the job, as they are all the time, and figured out a solution in a matter of days. If they weren't at the site, or if there were an adversary position between them and our builders, the problem could have been months in resolving itself. You all work together—or the job goes sour.”

Said developer David Teitelbaum: “As developers, we have problems beyond the construction itself. We work primarily with landmark buildings, and we do an extensive history of the building itself. We examine the heritage of the building, what the designer was thinking about back in 1890, what purpose the building served, how it is functioning in the neighborhood. We then study its present value to the neighborhood, and try to understand how the property can best be adapted to meet the needs not only of today but of tomorrow. In our rehabilitation of the Archives Building in Manhattan, we are going to create a 65,000-square-foot Farmer's Market for which we are the tenant. In redoing the Barbizon Hotel, we are creating a spa, a series of restaurants, and some shops—and again we are the tenant. So we look at these buildings as the end user, and ask ourselves how to position these properties. . . .

“After we know what the building should be, it's our job to be sure that the project makes economic sense. We have to raise, say, \$50 million of debt and \$25 million of equity—all pegged to a floating prime. Then there are syndications and guarantees of completion and cost, and all those little things that architects and engineers and construction managers try not to get involved in. . . . It's a tough game, yet it's a great opportunity for fun and profit.”

Bill Walker, owner's representative on the refitting of New York's Union Carbide Building for Manufacturers Hanover Trust: “When I look at the fees I pay, I am convinced that retrofit is more difficult than new design. And I cannot emphasize too much the time pressure on these jobs. When you buy an existing high-rise tower, as we did, you have a lot of square feet sitting there, ready for all those decisions and all those redesigns and new products—and you have no time. Further, you must decide what has to be replaced—and what to keep. Our building was just 25 years old, so there were a lot of products and systems that (a) we owned, (b) were in place—so there are major savings if you can decide to simply modify them and bring them up to your new standard.”

David Dibner of the Public Building Service, GSA: “As you know, the Cooperative Use Act requires that we examine the possible use of older and especially historic buildings before *building a new office building*. So we are deeply involved in the recycling of a lot of older buildings. You get involved in a lot of questions very early in the game: Is the building worth preserving? What kind of economic pressure do you apply to a historic building—the same as a new building? The answer of course is no—because we all have a responsibility to preserve worthwhile older buildings. The economics sometimes get a little out of balance because of the special problems involved—and that requires a special kind of creativity and dedication. You've got to provide fire safety for the occupants, but you usually need to do it in a way not exactly prescribed by the codes; you have to find ways to distribute the hvac systems without abusing the interiors of the building. As has been said, you begin with a

survey of the building's condition. Then you need to study what can be done with the building in terms of its configuration and its systems. Then you need to figure the economic feasibility of what you want to do with the building. And then the owner and the consultants need to work well together in developing a building that meets our needs, the building's own needs, and history's needs.”

In the redesign of an older building, space utilization is as critical as in new buildings—but more complicated. And very different in relatively new vs. older buildings

Architect Tom Fridstein: “In the renovation-rehabilitation of existing office space there are really three aspects you must begin with: The first is to improve the functioning of the space. The second is to improve the esthetics or the atmosphere of the space so that it looks up-to-date, improves productivity, and is attractive to customers. The third—extremely important today—is to cut down on energy usage.

“And today, improving the function of a space generally means increasing the density—simply because space is getting more and more expensive. In recycling the Union Carbide building into the Manufacturers Hanover building, that was relatively simple—because we were changing a building that was mostly in small modular offices into an open-plan building. That change also made possible considerable energy saving—because without office walls we were able to make extensive use of daylighting. Because of daylighting, we were able to sharply reduce the watts per square foot for lighting and redirect the existing power service into the existing (happily oversized) underfloor raceways to supply the considerably increased power requirements of computers and CRTs.”

With so many office recyclings calling for a change to open plan, acoustics consultant Jack Curtis cautioned: “Perhaps even during the initial survey period we discussed earlier, it would be valuable to give thought to acoustical considerations. On one hand, designers and owners may be reluctant to remove partitions, or believe that existing space dividers or open plans may be inadequate for the new use—without realizing that there are all kinds of techniques for working with background noise levels, or matching ceiling systems to partitions, or working with different finishes, that can help. . . .”

Architect Joan Goody addressed the special concerns in working with older buildings: “We just finished renovating a McKim, Mead & White gymnasium at Radcliffe College, which illustrates some of the limits as well as some of the opportunities that older buildings present. The gym space was two stories high, topped by a beautiful exposed wood truss—and the client suggested that we could get two floors in there. And I said ‘No. Not by my hand.’ So it became our job to ‘find space.’ In the end we saved the grand open space, and put the library stacks with a very heavy floor load into the old swimming pool; put new offices into the old locker-room space even though the fenestration was very limited. The general message is that, with older buildings of some worth, there are certain changes you just shouldn't make. There are limitations of existing partitions, existing finishes, existing spaces that are too special to be spoiled for some new use—and you must make up for saving what is important to you by finding attic space, basement space, underused space that you can trade off with.”

Architect George Notter added: “The trade-offs, the found opportunities, are always essential in preserving the existing fabric. For example, in new buildings we tend to think of handling services in a horizontal pattern—in the floor or ceiling.

"Maybe all our systems should be designed and installed on the assumption that they will be changed. Because they will be."

Herbert McLaughlin

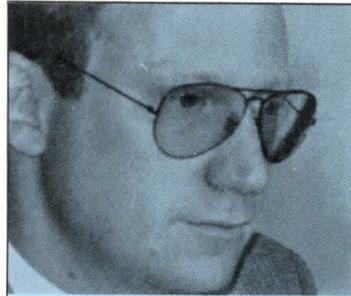
In an old building, you may want that main circulation to be vertical, so you disrupt less the existing ceilings. You have to be imaginative and flexible—we once transformed an old prison into some pretty nice housing. It was worth doing because the prison happened to be located right in the center of town. It had nice old walls, and a good roof—though the rooms were a bit small and required extensive rework. In another instance, the only building available in another good residential area was a parking garage. We created some apartments with (obviously) all kinds of level changes inside, and they rented much more quickly than standard apartments because they had some element of fun and surprise. We've designed housing in old schools, working with the existing classroom walls and spaces to keep costs down—but have found the fastest-renting units to be ones tucked up into the attic of the old building. With good space utilization, including those found spaces, the dollars can come out pretty well for the owner."

Architect Ken Walker: "Keeping space efficiency at a high level is pretty easy when you are dealing with post-war buildings—especially when you are upgrading an older office building into a new one, or upgrading an existing store. But maintaining space efficiency is much harder—and often impossible—when you are dealing with buildings of architectural or historic merit. We are working now with The Ehrenkrantz Group in recycling Pittsburgh's old North Station, designed by Daniel Burnham around 1900. We have explored several new-use options, and for each one we did a pro forma on the economic return. But governing every study of alternatives was our initial agreement on what spaces in that building were untouchable because of their architectural and historic importance. Like studying the structural and mechanical integrity of an old building, deciding what portions of a building must be preserved, no matter what, should be part and parcel of every adaptive re-use project. Right from the start. . . ."

"Sometimes," said architect Bill Bain, "you have a chance to upgrade a building by making a building a little *less* 'efficient.' We had a client who wanted to upgrade his hotel by cutting the number of rooms from 760 to 451, believing that a better grade of accommodation and service would generate greater revenue. The public rooms had been well designed, and there our job was to restore them. But the rooms, of course, were totally redone. The old windows were beautiful but inefficient; we did decide we could simply restore them, even if they did leak, by better insulating the rest of the walls as we upgraded the room interiors. That was a good and sensible trade-off of esthetics for efficiency, I believe."

The Round Table argued energy conservation—the opportunities, and the realization that even with high energy costs, the payoffs are not always adequate

Again, the panelists pointed out that the methods of approaching a relatively new building—especially the enormous numbers of post-war office building rehabs—is essentially different from the energy conservation techniques you can use in older buildings. Speaking of an office retrofit job, lighting consultant Jim Kaloudis pointed out that: "There are major savings in retrofitting even a relatively recent, high-quality lighting installation. For example, in the One Chase Manhattan building we applied new lamps with high-efficiency ballasts to the existing system—and were able to use only one lamp in each two-lamp fixture. By using available techniques, we were able to give the appearance of a two-lamp installation, which is important; simply removing some lamps gives a ceiling a sort of



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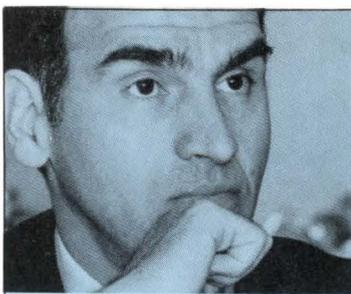
Herbert McLaughlin
architect and developer
Kaplan/McLaughlin/Diaz
Architects
San Francisco



Joan Goody
architect
Goody, Clancy & Associates, Inc.
Boston



George Notter
architect and president-elect, AIA
Anderson Notter Finegold
Associates
Boston



James Kaloudis
lighting consultant
Meyer Strong & Jones
New York City

"The older building has a personality of its own, a history of its own, a place of its own in the community. . . . Approaching such a job is a very special responsibility." James Rhodes

snaggletooth look. We also found we could extinguish the exterior row. The net: only 25 per cent less illumination, which was acceptable here, for a cost saving of 50 per cent.

"Utilizing daylight is easier said than done, especially in offices where CRTs are dominant, because of the critical glare-free lighting that is required to read a CRT comfortably for any length of time. This problem may be eased in the future when we have contrast-reversal devices, so the operator will see something like a printed page, rather than a bright character against a darker background."

Engineer Arnold Windman: "Lighting is, of course, a prime target for saving energy in a recycling job, because it uses so much energy. But once you get beyond lighting, it is usually very difficult to save energy. It can be very expensive to modify systems to conserve energy, and the pay-back time is often unacceptable. To take an existing air-conditioning system, and try to change the duct work and the fans—using 15 or 18 per cent money—just doesn't make the kind of pay-back arithmetic most clients insist on."

Architect Jim Rhodes spoke of the very special problems of attempting energy conservation in preservation work: "With a building of importance, you must take the course of minimal intervention. Clients and users do expect these buildings to be as comfortable as a modern building, and you find yourself trying to snake services through a warren of walls. You are forever assuming that a wall is hollow, but then come upon a bridge truss just where you didn't need it. You find yourself making constant, on-the-job decisions about what you can save, should save, must save; and striving for that minimum intervention. In the end, working with historic buildings, you must handle almost every room on its own terms."

GSA's David Dibner: "I quite agree that, especially in historic buildings, energy conservation cannot be the prime consideration—but we shouldn't use historic value as an excuse not to try to make a building more efficient. Often there are found opportunities here, as in space utilization: The thermal mass of the building can often be used effectively with minimum intervention of new services. There are often hidden duct-work systems that offer possibilities for moving air in a way the original designer never intended. And in most older buildings, you are usually not too far from the window in any of the spaces—and daylighting can be made to work with a little careful design. How do you distribute power to the center of floors without damaging that beautiful ceiling? You think about electrical distribution and lighting in a different way than you would in designing a new building. In several of our buildings, we have simply decided there was no way to have lighting in the ceiling at all, and went to lighting kiosks and lighting built into the furniture systems. I also am looking carefully at the new flat wiring systems—that could give us enormous flexibility with *minimum intervention*. All work of this sort—bringing services up-to-date and minimizing energy usage—takes real creativity and real examination of all the options."

Architect/developer Herb McLaughlin discussed some of his concerns, and his frustrations, in rehabbing older buildings McLaughlin, who has recycled both historic buildings and "plain-vanilla" warehouses, and the like, said: "My special concern, when I have my developer hat on, is to hit the market very fast—within six months or a year. For example, I bought a 250,000-square-foot building in Dallas, rehabilitated it in less than a year, and leased it out just ahead of a glut of new office construction. Working that fast means that you make

compromises that you would not make in a new building. For instance, I might leave systems in the building that I might not want to leave in long-term, just to hit a rental market. I might leave in a base-line air-conditioning system or a lighting system that I figure has a five-year remaining life, fully expecting to replace it five years from now (or perhaps sooner if tenant turnover starts). Now I'm not talking here about top-line corporate office space; I'm talking about lower-rent space—for small law firms, for businesses just starting up—maybe even for architects (they can always use a low-rent space). These kinds of tenants don't expect quite the level of sophistication or finish or performance in their systems. They also seem to buy the idea of separate metering of energy use—so I'd like to see manufacturers offer more small packaged systems—like single-room air conditioning, the sort used in hotel rooms."

Several panelists raised questions of the special code and liability problems related to rehabilitation

Herb McLaughlin began: "I think architects and manufacturers need to work together on code reform as it applies to rehabilitation. Access for handicapped is an especially difficult problem with many older buildings—and maybe one solution has nothing to do with building design at all, but with inventing a better wheelchair. Fire-code requirements are another especially difficult problem with older buildings. Are sprinklers, which are very hard to fit into an old building, really the only alternative? Atria, which can often be the key to making a big old building work for a new use, are very difficult to get approval on. I don't want to be accused of risking lives, but we really do have redundant systems in our buildings. To use another example to make my point: In the last 25 years, there have been no multiple deaths in a modern hospital built to at least Hill-Burton standards, yet we currently spend at least \$10 per square foot on totally redundant fire-safety systems in hospitals. And that for a building that is staffed 24 hours a day by trained people observing all of the rooms all of the time. It's not as bad in most rehabilitation jobs—but those NFPA regulations are a real problem, and in my view we can make changes without taking unreasonable risks."

George Notter raised the related question of liability, and said: "It seems to me if we are going to come out of this liability problem in a whole way, it is going to be through shared responsibility by architects, engineers, contractors, building officials, and also the owner."

"Code and liability problems are especially difficult in an older building; they have to be looked at differently than with a new building. As we said earlier, an older building 'tells you things'—you become an advocate for the old building and its sensitive redesign, and you must work with the code or building official to show him that your proposals, even if they are 'special,' are reasonable. If you work together, they are willing to make judgment decisions—and that is what is required."

Architect Joan Goody: "In general, the risk is greater in recycling work than it is in new building. Any building, but especially a rehabilitation, is a unique combination of parts and pieces and materials, and each building is unique. We are constantly solving problems that haven't been solved before. We have a harder time finding precedents."

"Like any conservative office, we don't want to be the first on the block to try anything. We want to know, for example, how a product we are considering using has been used before, and what its history of success has been. But it is very hard, in many cases, to find reassurance on the special problem you are

"All buildings will grow old, and we should try to design our new buildings so they will grow old gracefully." Der Scutt

involved in. And I think that is a risk that has to be shared with the client. I think it is our duty to inform them of the risk as we see it, but then there has to be some way to share the risk."

Added engineer Arnold Windman: "I think the problem is more fundamental than liability. I think that the professions have done themselves a real disservice by letting the owner believe that he is buying a perfect product from us. We have to get across to the owner that we, just like doctors or lawyers or that client himself, are bound to make mistakes no matter how careful we are—and until we do that we are going to have serious liability problems. . . ."

Architect Bill Bain: "Absolutely right. And we can share responsibility. Some years ago, we had a difficult reroofing problem, and we learned about a new roofing material that was unproven but seemed to have enormous potential. We did explain the potential risk to the owner, and we did involve the owner and the manufacturer in sharing the risk. The product, despite everyone's best efforts, did fail, and needed to be replaced some five or six years later. We did the additional drawings that were required for the replacement roof; the manufacturer provided the new material, and the owner paid the labor costs. I think we can do more projects like that—as long as everyone understands the risks up front."

A final Round Robin brought out some reinforcement of the day's most important ideas, some additional hard advice—and some thoughtful philosophy about design implications

Said architect Tom Fridstein: "As I said before, I see preservation or rehabilitation or recycling as a totally different problem from the design of a new building. This isn't form following function; this is function being squeezed into an existing form—and I will let someone else figure out the design-theory implications of that. . . ."

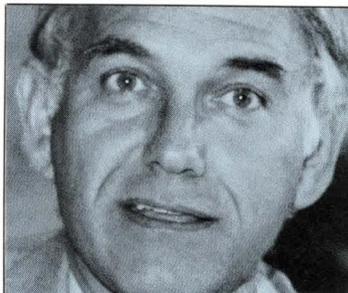
"I think we are going to see much more renovation in the future—and the big market will be a whole generation of large post-World War II office buildings which we will want to bring up to current standards. They will want to be retrofitted for energy conservation; and they will have to be fitted for the new CRTs and computers. That involves everything about the furniture, the wiring systems, the lighting, the hvac.

"I find the renovation projects more difficult and more demanding than a new project—but the challenge makes them a lot more fun."

Architect Bill Bain: "I think it's important to reinforce our first discussion point: the absolute necessity of making an in-depth analysis of existing conditions, a thorough feasibility study, before proceeding with a rehabilitation job. Indeed, ideally, those studies should be made when the building is simply under option—so you and the client can back away if you find too many unpleasant surprises.

"I would also like to reinforce the importance of negotiating with the building authorities to preserve the essence, the spirit, of an older building. To avoid spoiling the best features of a building you may have to work very hard to get favorable judgments in the area of fire and life-safety codes, as well as obtain reasonable alternatives for handicapped access.

"There are product implications. You see terra cotta being used again. We have begun to experiment with glass-reinforced concrete to create special shapes and finishes that we need. It would be wonderful if some manufacturer would find a way to snake utilities through difficult spaces—flexible water lines, more flexible wiring systems. I think the manufacturers will be bringing out all kinds of new products and materials that will



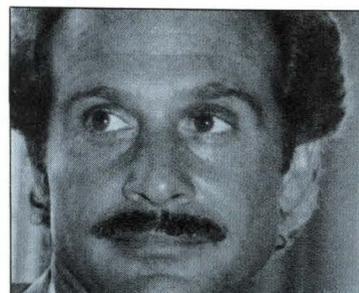
James Polshek
architect
James Stewart Polshek
& Associates
New York City



Dennis Still
architect
RTKL Associates, Inc.
Baltimore



James W. Rhodes
architect
New York City



David Teitelbaum
developer
Teitelbaum Holdings, Ltd.
New York City



Der Scutt
architect
Der Scutt Architects
New York City

"Just because a building has stood for 50 years does not mean it was designed or built right 50 years ago, and does not mean it is good for another 50 years." Charles Thornton

have special effectiveness in the rehabilitation area. And we will be anxiously waiting for them. . . ."

Builder Seymour Cohen emphasized that "this business of renovation and restoration is really a highly-specialized business and I think it requires highly-specialized knowledge from the architect, the engineers, the construction manager, and the contractors themselves—and I think we all ought to gear ourselves for this work because it is the wave of the future. As has been said, there is no room in this kind of work for adversary positions. The architect, engineers, construction manager, and builders don't just have to be expert—they all have to be in on the job very early in the game. Contractors with good experience have a lot of help to offer the architect and owner during the design phase. . . ."

Builder Irving Fischer reinforced the importance of real expertise on the part of all professions involved in rehab: "I used to tell young people who came to work for us that they were not going to be worth much for the next five or 10 years—even if they just graduated from some fine technical university. Now I think it may be a 15- or 20-year process. We are still, all of us, experiencing a lot of failure, and that is a very painful process. But I don't think there are any shortcuts in this business we are all in—no matter how difficult that may be for the Pepsi Generation to swallow."

And architect Dennis Still reinforced the teamwork approach: "It is necessary for everyone to understand from Day 1 what the problems are, what processes will be used. Many of the owners we deal with today—especially developers and others who are building all the time—are very sophisticated and knowledgeable, and their expertise is valuable during the design process. Further, most of the work we are doing today is fast-track, which presents a whole range of other problems. The design problems are different, there are enormous problems of coordination of the various packages, tricky questions of determining costs when you are receiving bids during separate negotiations with contractors. . . . But no matter what it takes, we are going to see a lot more of this kind of work, and we will have to educate ourselves and work together to get the work done right."

"And that includes the special disciplines," said acoustics consultant Jack Curtis. "Some big mistakes are made up front. We might even be able to advise against buying a building because of noise conditions that would be difficult to handle as a retrofit."

"We haven't developed anything fantastic in the art of acoustics—the understanding of basic laws—in some time. But our ability to solve acoustics problems has been greatly refined, greatly improved. We can solve problems more effectively, and more effectively predict the results of alternative systems. And, perhaps most importantly, we understand how people—personnel, the users of the building—are going to react to alternatives. And understanding that, I would argue, is critical information to have from the beginning of design."

PBS Commissioner David Dibner got the biggest laugh of the day: "Nobody has yet addressed one of the most critical problems in the management of historic-building rehabilitation: Pigeons. Pigeons have delayed work on several fine old buildings we are responsible for renovating by over a year! And how many others do you know who budget for de-pigeonizing a building? You can't even send anyone in there without all kinds of special protective clothing and other paraphernalia. Except of course the architect—we send him in like they used to send canaries into a mineshaft."

"But beyond that critical problem," Dibner said, "I do think the architect takes on liabilities and the responsibility for professional judgments that are not inherent in a new building. As an architect playing owner for a few years, I would argue that the important thing in handling these added problems is communication. If an architect or engineer feels uncertain about something, or feels in his professional judgment that something must be done or a caution must be declared, he must make that clear to the owner. Talk to me and I will talk to you and we will solve the problem."

"In my role as the client for an awful lot of Federal building, I also expect and demand real creativity. What can I do about that beautiful stair that the fire code says has to be enclosed? The owner is looking for the professional to provide options—with costs attached—so that he can participate in making the decision. Communication—and the understanding of options—is very important in restoring or recycling older buildings. . . ."

Architect George Notter: "For all of the special problems and special liabilities and need for special knowledge, I would argue that the architect's major challenge in adaptive re-use or restoration is the same as it is in new building: creative problem-solving. Finding out what the problems are, and how to fix them, and how to make an older building new again are matters of judgment and clear thinking—and creativity. A good re-use can be as or more efficient than a new building. It can be less costly, yet it can rent for more or sell for more. And it can preserve the fabric of existing neighborhoods and cities, which is a factor that our society is putting more and more value on every year."

Architect Der Scutt: "I totally agree that the owner must be constantly educated and informed as a rehab project develops. There are great opportunities, and there are great risks, and the client must understand that and participate in choosing among options all along the line—especially when the inevitable surprises arise in the course of the work. I agree that the total team approach is critical; and that the up-front survey is essential. I would add two thoughts we haven't covered:

"1. Architecture students are not learning anything about this kind of work in school—and something clearly has to be done about that."

"2. I believe we can learn much from rehab work that is appropriate for new design. All buildings will grow old, and we should try to design our new buildings so they will grow old gracefully. We can learn how to do that by thinking about what our problems were in redesigning someone else's older building."

Architect Ken Walker reinforced the need for training in the schools in rehabilitation work: "The schools could start simply by giving adaptive re-use problems to the students. That's beginning to be done, but a lot more schools need to give a lot more problems like that. Knowledge and respect for the past is now acceptable, as we all know. Those of us with experience in the field can offer ourselves as jurors, or offer help in setting problems."

"One other thing I feel compelled to say. To me, at least, adaptive re-use is one of the most joyful forms of architecture. Give me one great railroad station and I'll give you three big office buildings. I want to have fun. I want my clients to have fun. And most of all I want the people who live in, or work in, or visit, or pass through my projects to enjoy them."

Corporate client William Walker: "As others have said, I do not think the traditional team of architect and engineer is sufficient for most retrofitting or adaptive re-use work. You need a larger team, including the contractors and construction

"Adaptive re-use is one of the most joyful forms of architecture. Give me one great railroad station and I'll give you three office buildings." Ken Walker

managers. It's the job of all of us—including corporate people like me who are responsible sometimes for millions of square feet of space that must be constantly changed and upgraded—to be aware of all the new ideas and new products and new approaches that can help us do the job better and more efficiently. We should not make the same mistakes over and over. We should go and see other work; we should constantly experiment in our existing buildings with new carpeting, new air conditioning systems, new ceilings, new roofing—so we have experience when a major job like Manufacturers Hanover Trust comes along. Experienced owners, like experienced contractors, should have a lot of expertise, including product expertise, that can help make the job run smoothly and help solve the problems that come up at every stage of the job."

Arnold Windman: "Reluctantly, because I believe deeply in energy conservation, I must say again that energy conservation has to earn its own way. When oil first hit \$34 a barrel, the cost of money was 8 per cent. Today, oil still costs \$34, but the price of money is twice as high. That changes the arithmetic of how much capital you can put into a retrofit to save operating costs and energy. I believe that energy conservation should be re-established as a major national priority. But until it is, in a competitive society, arithmetic is very significant."

Architect Joan Goody: "We should, of course, look on a building as a renewable entity—needing constant maintenance as well as the occasional major facelift. Both kinds of work are part of the normal life of a building, or should be. On a trip to China with a delegation from Boston, I was asked whether our buildings in Boston would last as long as the Great Wall—and I pointed out that the wall had been rebuilt many times over the centuries."

Architect Herb McLaughlin: "I think we are learning a lot from reworking older buildings. We are learning that some romance in our work really is OK. We are daring to do bolder and more spatial things in rehabilitation work than we seem to do in much of our new work. I hope we are beginning to understand that our new buildings will indeed be remodeled, probably fairly substantially, at some point in their life—and perhaps we should design as if you want to return a new building to the shell every 10 or 20 years. Maybe that means we should make the shells a little better looking or more permanent or a little more amenable to retrofitting sometime down the line. And maybe it means all our systems should be installed on the assumption they will be changed. Because, as we have been discussing all day, they will be."

Architect Jim Rhodes, who has done a great deal of restoration work, finished with an especially evocative thought: "Architects and the public alike are clearly interested these days in ornament—in rich forms, in rich materials, in hand-crafted kinds of detail. I think we forget, as we look at wonderful old buildings, that *it would have been cheaper then* to do a simple flat facade. Today, ornament is too often considered as if it were an extra, an optional frill. But if, as we seem to be doing, we have come to consider ornament in forms and materials as an essential, then we must design it in and pay for it. The craftsmen are still available if you look for them.

"But I think the most important idea is this essential difference between designing a new building and redesigning an older building: The older building has a personality of its own, a history of its own, a place of its own in the community. And that means that approaching such a job—for architect, engineer, builder and owner—is a very special responsibility."

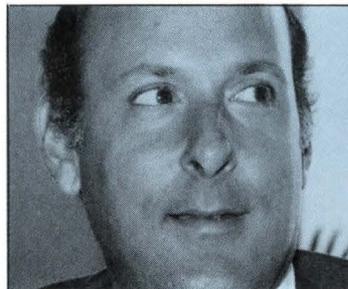
—Walter F. Wagner



Charles Thornton
structural engineer
Lev Zetlin Associates, Inc.
New York City



William Walker
vice president,
headquarters project
administration
Manufacturers Hanover Trust
New York City



Kenneth Walker
architect
Walker Group, Inc.
New York City



Arnold Windman
mechanical engineer
Syska & Hennessy, Inc.
Engineers
New York City

Radiators work as “architecture” components

Alex Beatty



The Lamont Building (interior, above) attaches to a new sculpture studio (exterior, right; interior, across page) to consolidate art space. Lamont includes ceramics, woodworking, drawing, architecture, and painting. The other new space (not shown) is a large art gallery below grade which is daylighted by a series of skylights at grade that, at their inboard ends, abut the Lamont Building at the

student-gallery level (across page, top left). Existing space and the sculpture studio are heated by Runtal radiators, imported by North American Energy Systems of Hampton Falls, New Hampshire. The new art gallery is heated by forced warm air because of difficulty in providing runs of piping for hot water.

Architects have preferred to see as little as possible of mechanical systems (except for exposed pipes and ducts in high-tech design), probably because mechanical components have little visual relationship to architectural motifs. But architects who have seen Runtal radiators from Switzerland have become fascinated by them, partly because of their bright colors, but more so because they look “architectural.” And the reason they look architectural is that their basic component is a flat water tube 2 $\frac{3}{4}$ -in. high, combined in multiple widths for a variety of shapes, heights and lengths, providing a natural modular vernacular. The tubes are welded to each other and to headers to form panels that look somewhat like tongue-and-groove siding. Fins are added to, or sandwiched between, panels to increase convective output. When fins predominate, the units become convectors. The tubes also can be attached edgewise to headers, in which form they sometimes resemble conventional radiators. But when this type is used in tall heights, it looks like a trellis.

Architect Kenneth MacLean of Amsler Hagenah MacLean of Boston found Runtal radiators to be just what he wanted for two older buildings and a new sculpture studio that are part of a \$2.4-million remodeling-and-addition project for a consolidated art complex at Phillips Exeter Academy in New Hampshire. A large portion of the remodeling involved the Lamont Building, built in 1902 as the school’s dining hall, which had been added to in 1930 and remodeled, not too successfully, in 1952. The Lamont Building originally had cast-iron radiators under tall sidewall windows. In 1952 these were removed, the recesses covered, and hot air ducts installed in the attic. For appearance and practical reasons, MacLean wanted the heating system returned to radiation. His choice for heating the large space of Lamont (photo left) was a Runtal panel radiator that fit into the original wall recess. For an enclosed student gallery at first floor level on one side of the “dining-hall” space, the architects chose 16-in.-high panel-faced convectors (across page, top left). And for the new sculpture gallery, the architects selected 8-in.-high convectors with exposed fins (across page, bottom left). “We liked the ‘toothy’ appearance,” said architect Ellen Watts. Recognizing the radiators were to be an architectural feature, consulting engineer Paul Tocci said his role was to inform the architect of design constraints related to getting sufficient heat from the units, and to select the units from an engineering standpoint. *Robert E. Fischer*



Mayer Art Center
Phillips Exeter Academy
Exeter, New Hampshire

Owner:
Phillips Exeter Academy

Architects:
Amsler Hagenah MacLean,
Architects, Inc.

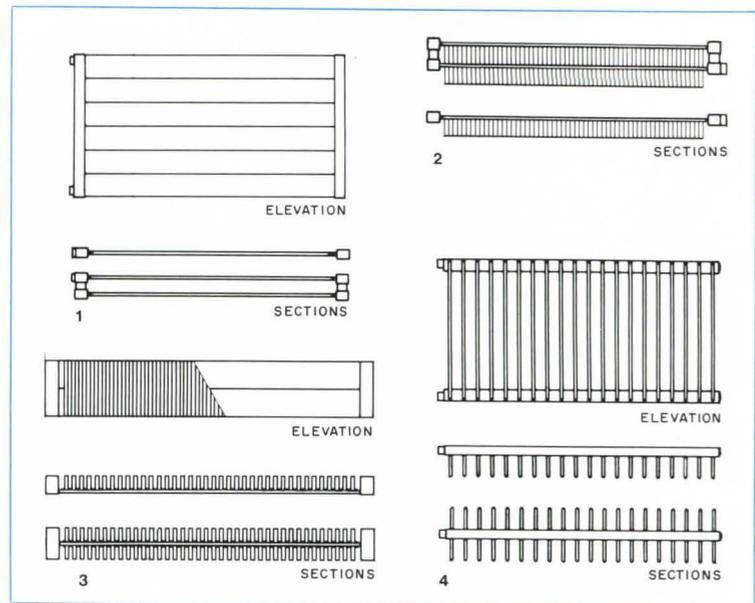
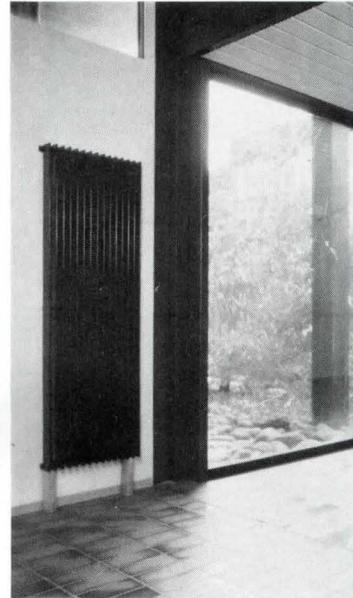
Engineers:
Fitzmeyer and Tocci, Inc.
(mechanical); Brown, Rona, Inc.
(structural)

Consultants:
Sasaki Associates; Jules G. Horton,
Lighting Design, Inc.

Contractor:
Davison Construction Co., Inc.



Alex Beatty (above and below)



Four of the five basic types of Runtal radiators are shown in elevation and section. The most radiant source of the group is the flat panel (1) which comes either as a single-panel unit or a double-panel unit. The water tubes can run horizontally, as shown, or vertically, for a fifth version. The flat panel's heat output is increased by adding fins (known as lamellas in Europe) in one or two layers (2). The highest heat output comes from the convectors (3) which have teeth-like lamellas in layers from one to 10, which are interspersed with, and in many versions covered by, panels. A vertical radiator (4) is formed when the flat tubes are attached edgewise to the supply and return headers. Cost per square foot of the vertical radiators (photos, top of page) reduces as they get taller. The large radiators in the Lamont Building comprise two

plates and two layers of lamellas. The plates are 44-in. high, and the lamellas come within two water tubes from the top. The convectors in the student gallery have two lamellas sandwiched between two plates, and are 16½-in. high. The convectors under the circular windows in the sculpture studio have one layer of lamellas attached to one plate, with the lamellas facing out, and are 8½-in. high.

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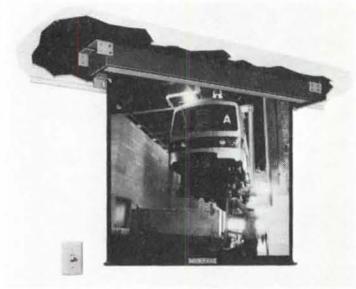
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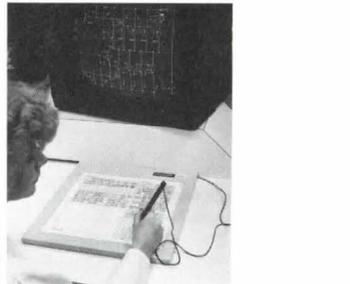
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1 CAD system enhancement
New capabilities in this company's software cover drawing display, layout features and expanded systems furniture catalogues. The company claims increases in drawing display and speeds up to 8 times previous capabilities. Arrigoni Computer Graphics Inc., Los Gatos, Calif.

2 Project management
Computer programs are offered by this company to monitor up to 20,000 project activities including time, resource, cost and labor functions. Called the "Scheduler," the system was developed for flexibility and ease of application by non-technical persons. Gateway Systems, Inc., San Francisco, Calif.

3 Desk accessories
Units for pen holders, calendars, memo paper, paper clips, pencils and ash trays can be attached in a variety of combinations and are available in polished aluminum, brass, bronze, and other finishes. Smith Metal Arts, Buffalo, N.Y.

4 Computer drafting system
Designed specifically for architects and engineers, this system is claimed to increase productivity by up to 500 per cent. Software includes libraries of commonly used symbols and products. Carrier Corp., United Technologies, Syracuse, N.Y. *E

5 Projection screen
Designed to retract into a housing concealed in the ceiling, this motor-operated screen is the first of its type offered by this company. Screens are available in beaded or non-gloss finishes in sizes from 50- to 12-in. squares. Da-Lite Screen Company, Inc., Warsaw, Ind. *GB

6 Computer printers
Four models of printers offer typewriter-like reproduction, and are available to receive input from or interact with computer systems. A large selection of type faces and character types including those for scientific, engineering and foreign languages are available. Harris Corporation, Ft. Lauderdale, Fla.

7 Computer graphics
The "PS 300/ROMULUS" package allows the user to create and manipulate solid three-dimensional models. It replaces sketching with pencil and paper, and reduces the need to build mock-ups and models. Evans & Sutherland Computer Corp., Salt Lake City, Utah.

8 Color graphics workstation
Up to 16 colors can be used at one time with this new enhancement to the company's CAD hardware and software systems. The station can be integrated into the company's existing systems. California Computer Products, Inc., Anaheim, Calif. *GB

9 Computer digitizer
The 11-in.-square digitizer is designed for CRT cursor control and menu selection at the lowest cost available. Called the Series 2000, it has a resolution of 200 lines per inch, accuracy limited to an .025-in. error and three operating modes. California Computer Products, Inc., Anaheim, Calif. *GB

10 Printer/plotter
This new general purpose, microprocessor-controlled, electrostatic unit is claimed to feature high-speed resolution and reliability with quiet operation. Complex programs are produced at paper speeds up to 1.2 in. per second. Harris Corporation, Ft. Lauderdale, Fla.

11 Computer digitizer
The COMPLoT "Series 7000" is claimed to have unparalleled flexibility and user "friendliness." A built-in menu surrounds the active area; 40 controls and host down-loading allow tailoring to specific applications. Houston Instrument, Austin, Tex.

12 Calculator holder
The "Wooden Accents" line includes this hand-size calculator holder made of oak, walnut, teak, or exotic woods. Other company specialties include an executive desk accessory line. Heartwood Creations, Rockford, Ill.

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



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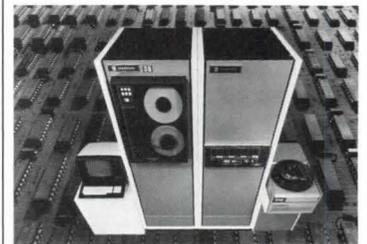
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13 Personal computers

Allowing use with the company's "HP7470" graphics plotter and "HP82905B" printer, the "HP-87" computer includes dual-disc drive. The lower-price "HP-86" features software for word processing, information management, accounting and other functions. Hewlett Packard, Corvallis, Ore.

14 Minicomputers

Offering large capacities for both real and virtual memory, the "H800-1A" and "1B" are compatible with the company's other minicomputers, and can support up to 128 concurrent uses. Harris Corporation, Ft. Lauderdale, Fla.

15 Plotter media

The vellum and a new polyester film are designed specifically for use on plotters, and have surfaces receptive to high-speed inking pens. Both media are claimed to have excellent reproduction qualities, and are available in sheets and rolls. Stanpat Products, Inc. Port Washington, N.Y.

16 Voice and data transmitter

The Lexar Business Exchange is claimed to be the first demonstrable private automatic branch exchange that provides simultaneous voice and data transmission through telephone wires between phones, computers or data terminals. Building Automation, Inc., United Technologies, Farmington, Conn.

17 CAD/CAM system

Incorporating new hardware and software packages, the "Series 4000" is designed to be easily and economically upgraded with changing requirements. The series includes 3 new graphics processors and 2 new workstations. Applicon, Inc., Burlington, Mass. *GB

18 Minicomputer

Claimed to be the fastest and most powerful available, the "Gould Concept 32/8780" is also said to be "aggressively" priced. The capabilities are attributed to parallel processors and large cache memories. Gould Inc., Ft. Lauderdale, Fla.

19 CAD system

This new *Aycad* is an interactive graphics workstation with a complete internal computer system, configured with 3 "Intel" microcomputers, 2 high-speed math processors and a bipolar bit slice computer. Applications include three-dimensional design. Aydin Computer Systems, Ft. Washington, Pa.

20 CAD system

A computer-aided design and drafting system, this combination of hardware and software has a light pen input and easy-to-understand menu. The system supports plotters, microfilm output units and other peripherals. Information Displays, Inc., Armonk, N.Y.

21 CAD software

The "Dynamic Design and Drafting (DDD)" system includes three-dimensional modeling, which enables users to "walk through" a simulated building, as well as plan and elevation capabilities. The program can be used to associate graphic and alphanumeric data. Herman Miller, Inc., Zeeland, Mich.

22 Management software

Enabling managers to keep track of time, cost and resources, this computer program is described as easy to understand and use, requiring a minimum of experience and training. A menu on the screen gives pre-set or yes-and-no choices. Input can be checked and updated easily. Structural Programming, Sudbury, Mass.

23 Minicomputer

These two new units quadruple the capacities of this manufacturer's previous minicomputers. Called the "H80-1A" and the "H100-1A," the units are compatible with a full range of peripherals and many computer languages. Harris Corporation, Ft. Lauderdale, Fla.

24 CAD system

This system is described as capable of use by people with little or no computer experience, and comes with a tutorial tape cassette. The menu shows functions or symbols instead of numbers, and the 19-in. screen offers direct-view storage display. Keuffel & Esser Co., Morristown, N.J.

administrative systems that take the work out of paperwork. As well as distributed systems that simplify and speed up the process of sending information back and forth between several locations.

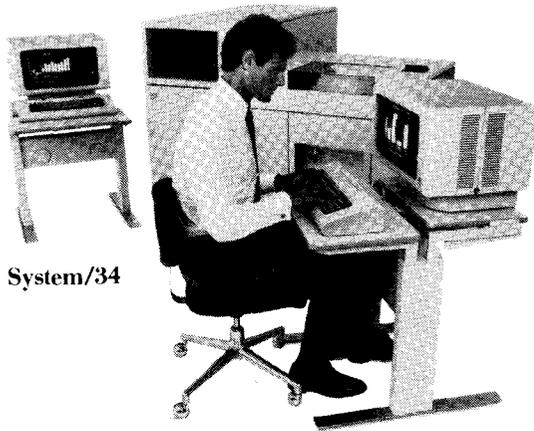
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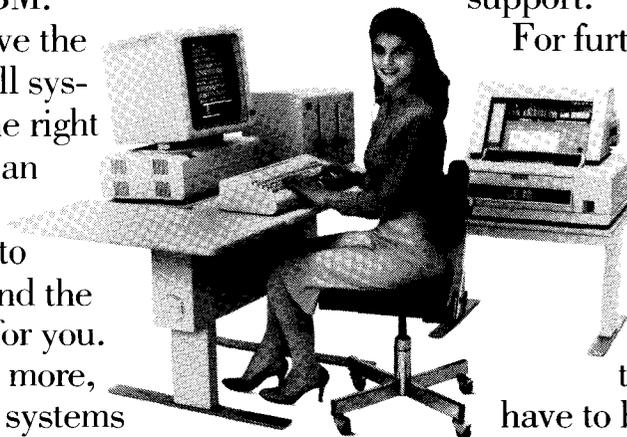
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2 Site Work

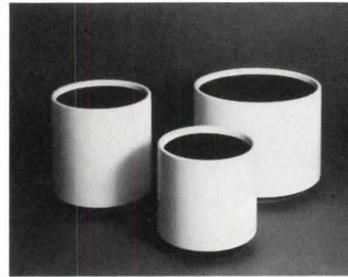
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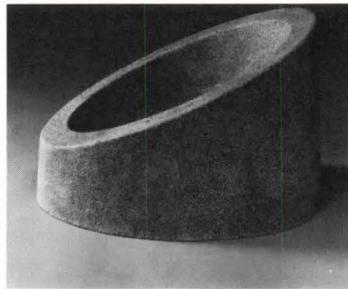
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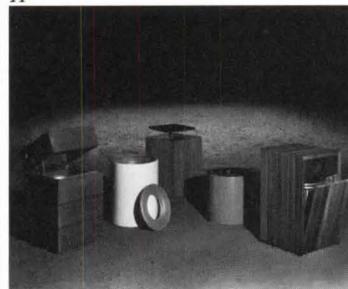
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37 Planter bench

The "Big Apple" planter bench combines a 23-in.-wide by 72-in.-long bench of 2- by 3-in. members with a 2- by 2- by 2-ft tongue-and-groove planter. Both are available in redwood, cedar, Philippine mahogany, oak, and purpleheart. Sitecraft by Rosenwach, Inc., Long Island City, N.Y. *GB

38 Solar collectors for pools

Sebra "Solar Petals" are peaked hexagons of *Lexan* (made by General Electric Co.) film which are designed to trap solar heat through a greenhouse effect. About 3 ft across, the petals nestle together on the pool surface, replacing unwieldy pool blankets. Engineering & Research Associates Inc., Tucson, Ariz.

39 Hydraulic mulch

Using the hydraulic mulch process, *Hydro Mulch* wood fibers, seed, and fertilizer are mixed and sprayed over the area to be seeded. The fibers form a tough continuous mat that promotes quick turf establishment and prevents erosion. Conwed Corp., St. Paul, Minn.

40 Protective tree tape

"Guard-Tex" self-adhering tree wrap protects newly planted trees from animals and harsh weather and comes in reflective white to repel, rather than absorb, heat from the sun. Ninety-foot-long rolls are available in 2- and 3-in. widths. General Bandages Inc., Morton Grove, Ill.

41 Fiberglass finish

Sandform, a new finish for fiberglass planters and contract furniture, embeds sand in a tough binder for a durable precast look. Finish will not fade or crack under harsh weather conditions. Glassform, Compton, Calif.

42 Motorcycle parking stand

The "MotoSafe" parking stand for motorcycles and mopeds, with the addition of any padlock, gives protection against theft. The lock guard is designed so that cutters or other tools cannot be used. Rally Racks Div., Rally Enterprises, Inc., Sonoma, Calif.

43 Fiberglass planters

The Pouliot line of fiberglass planters can be ordered to match colors offered by leading contract furniture manufacturers or custom matched to any color swatch submitted. Pouliot Designs Corp., Shakopee, Minn.

44 Outdoor seating

The AE2000 Series of street and park seating includes a radius arrangement of heavy-gauge perforated aluminum and tubular aluminum framing. The perforated surface prevents heat absorption and water pooling and comes with coating in a range of colors. Forms & Surfaces, Santa Barbara, Calif.

45 Litter receptacles

A wide range of top- or side-opening litter receptacles are available in 12 standard fiberglass colors as well as oak or redwood. Landscape Forms, Inc., Kalamazoo, Mich. *GB

46 Bicycle rack

The model RR-300 bicycle parking stand is a two-component unit that secures the bicycle frame and both wheels. The rack accepts all bicycles and locking devices. Rally Racks Div., Rally Enterprises, Inc., Sonoma, Calif. *GB

47 Tree grates

Decorative cast iron gratings, for use when trees are to be planted in paved areas, come in more than 85 different sizes and styles and can be made to specification. Neenah Foundry Co., Neenah, Wis.

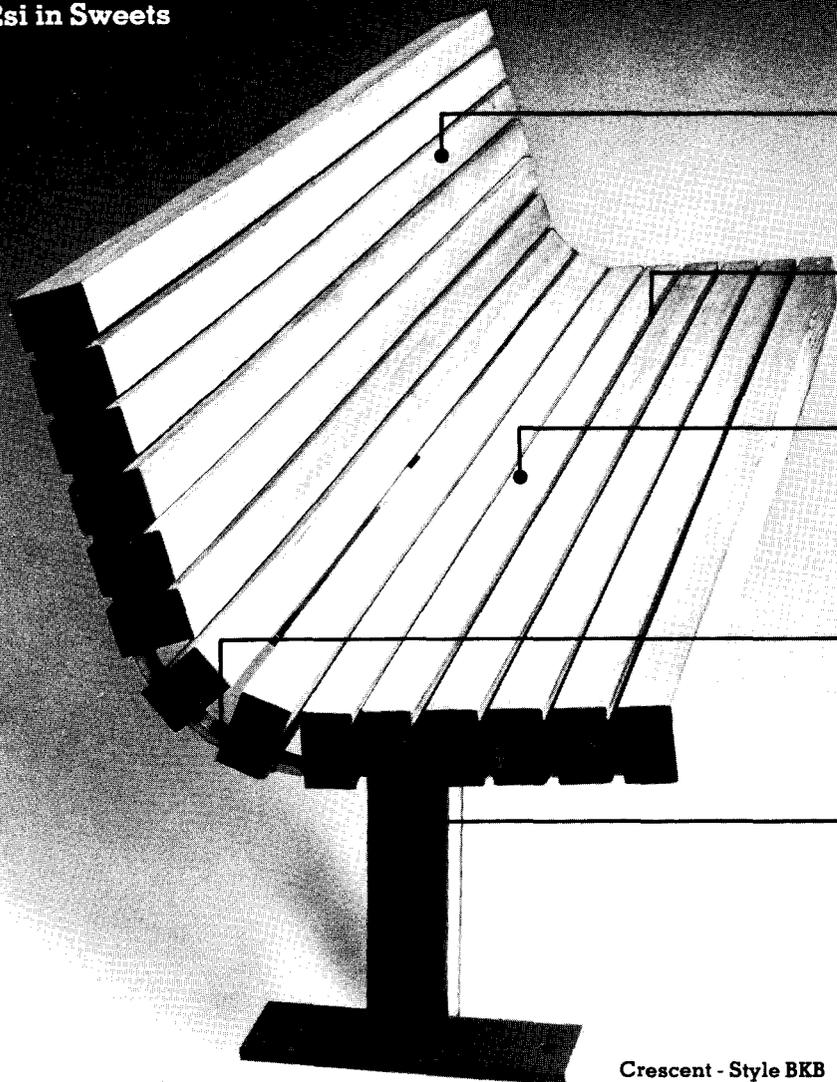
48 Slat bench

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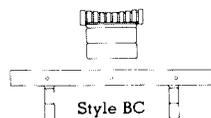
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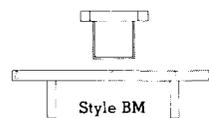
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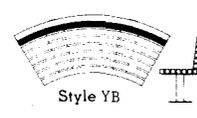
Style BC



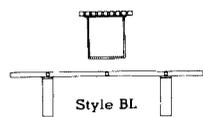
Style BCW



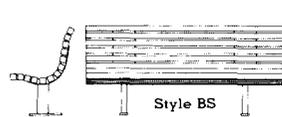
Style BM



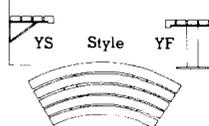
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Style BL



Style BS



Style YF



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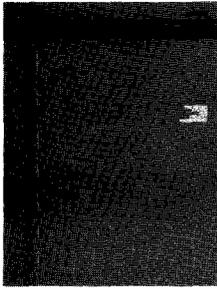
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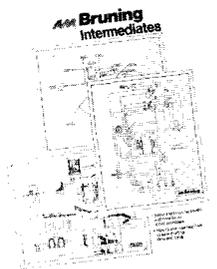
3000 Project management

A 28-page color booklet covers the concepts, components and capabilities of "Artemis," a hardware and software computer system designed for project management. Diagrams illustrate features of typical printouts. Metier Management Systems, Inc., Houston, Tex.



3006 Color design

A 34-page booklet serves as a basic introduction to color design, covering wavelength, the structure and function of the eye, the gray scale, "pleasant colors," glazing and light. Color photographs, charts and diagrams illustrate each chapter. STO Energy Conservation, Inc., Rutland, Vt.



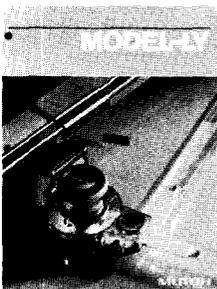
3001 Drafting media

Saving drafting time and safeguarding originals are the goals of the films and vellums described in a 6-page foldout brochure. Step-by-step diagrams illustrate masking with blackline print, scissors drafting and the cut-out method. Bruning, Itasca, Ill.



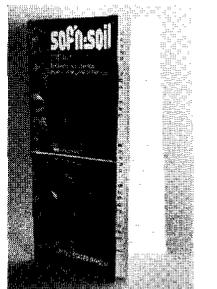
3007 Computer-aided design

A 12-page color brochure describes and illustrates the "Series 4000" family of computer hardware and software systems. Diagrams illustrate the configurations of a variety of workstations while text covers plotters and networking. Applicon, Burlington, Mass.



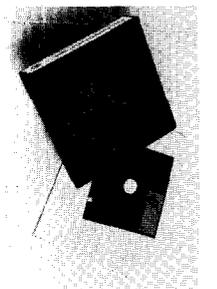
3002 Drafting machines

A 6-page foldout brochure describes the "Model-LY" drafting machine which features a dial angle readout with accurate angle readings to 5 minutes. Photographs illustrate each component of the mechanism. Mutoh Industry, Ltd., Niles, Ill.



3008 Soil conditioner

As described in a 10-page booklet, "Sof'n-Soil" is a gypsum product to be used with fertilizer and water to loosen clay and provide calcium and sulfate for grass and plants. Directions for its use with shrubs, flowers and trees are included. United States Gypsum Co., Chicago, Ill.



3003 Microcomputer software

A 4-page brochure explains the uses of Means "General Estimating Program" which allows user to develop labor-cost information for particular construction tasks. The mathematics of applying material costs, labor rates, overhead and profit is included. R.S. Means Co., Inc., Kingston, Mass.



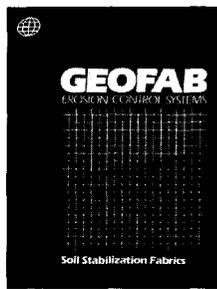
3009 Site furnishings

Redwood planters, benches and trash receptacles are illustrated in a 12-page color brochure. Product descriptions, specifications and ordering information are included as well as a diagram of each product and photographs of typical installations. Sitecraft by Rosenwach, Long Island City, N.Y.



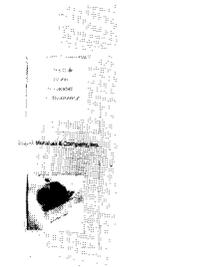
3004 Financial management

The "CFMS 2" is a computer-based management service designed for the small architectural firm. Users of the service send information via mail or microprocessor and receive reports detailing project control, profit and loss, and accounts receivable. PSAE Div. AIA/SC, Washington, D.C.



3010 Erosion control

A silt fence, downdrain, drainage system, and woven and non-woven soil stabilization are described in a 20-page brochure. Photographs illustrate typical installations while diagrams show how each system works. Mercantile Development, Inc., Westport, Conn.



3005 Liability insurance

Professional liability is discussed at length by this underwriting company. Coverage is written on a per project basis in conjunction with the architect's professional liability insurance. Shand, Morahan and Co., Inc., Evanston, Ill.



3011 Tree grates

A 32-page catalog details cast-iron tree grates for landscaping malls and street plantings. Grates are intended to be both decorative and functional and come in over 85 sizes and style variations. Custom shapes are available. Neenah Foundry Co., Neenah, Wis.

3 Concrete

UCI 3, Concrete:
 Cast-in-place concrete
 Cementitious decks
 Concrete accessories
 Concrete formwork
 Concrete materials
 Concrete reinforcement
 Precast concrete



61



62



63

61 Concrete anchors

Hilti Fastening Systems offers 2 new anchors for heavy-duty use: the "HVA Adhesive Anchor System" and the "HSL Expansion Anchor." Both are suitable for dynamic and static loads. Applications: HVA—stadium seating; HSL—power-plant piping. Hilti, Inc., Tulsa, Okla.

62 Concrete fastener

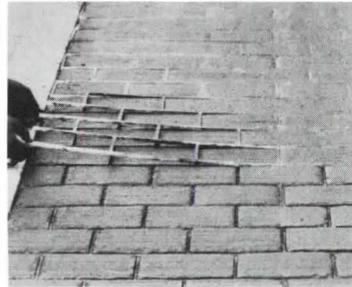
A system for securing materials such as insulation to concrete features a threaded fastener, *Con-Fixx*, that can be driven at low torques and has an average pull-out load of 1,600 lb. A wedge bit drives the fastener via a star-shaped recess. Fabco Fastening Systems, West Newton, Pa.

63 Prestressed panels

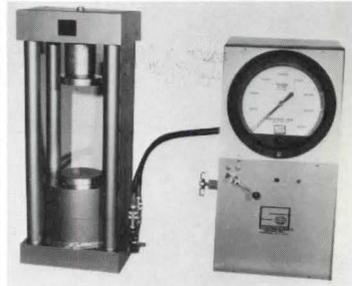
Corewall panels come with Upjohn's rigid polyisocyanurate foam in the cores. The system, developed by Butler Manufacturing Co., has been licensed to Breeko Industries. The panels comprise two 3-in. prestressed faces and a 2-in. core. The Upjohn Co., Kalamazoo, Mich.



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64 Coating for concrete

With a high solids, acrylic-emulsion base, *Thorolastic* is suited to use on concrete, concrete block, precast panels and stucco as a protective coating. Thoro System Products, Inc., Miami, Fla.

65 Pattern system

Making a brick-like pattern in plain concrete is possible with the *Mr. Bryk* system of plastic grids that are positioned and "floated" into fresh concrete. The grids are removed after the concrete reaches the plastic state. Chem-Masters Corp., Chagrin Falls, Ohio.

66 Concrete testers

The "CT-875" and "CT-880" concrete compression testers are used for 6- by 12-in. cylinders, and are designed to satisfy requirements for ASTM C-39. With accessories they can test 2-in. cubes or concrete blocks. Soiltest, Inc., Evanston, Ill.



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67 Concrete roof tiles

Made in a variety of shapes, textures and muted earth tones, concrete tiles are colored integrally with iron oxide pigments. The tiles are said to resist both fading and discoloration. Mobay Chemical Corp., Pittsburgh, Pa.

68 Concrete pavers

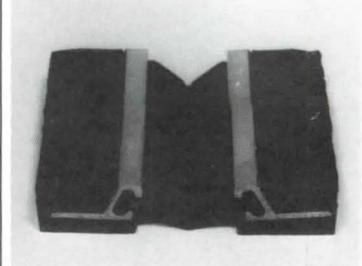
Interlocking concrete pavers made by Paver Systems, Inc. of West Palm Beach, Fla., comprise a very dry mixture of crushed rock, cement and pigment. They have a compressive strength of 8,500 psi. to withstand heavy traffic. Mobay Chemical Corp., Pittsburgh, Pa.

69 Cement colors

"SGS" cement colors are mineral pigments for integral coloring of concrete blocks, concrete floors, walks, patios, and precast panels. Solomon Grind-Chem Service, Inc., Springfield, Ill.



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70 Resin-concrete panels

Polymer concrete precast panels called "An-Lite" comprise 2 layers of resinous concrete with a foam core for insulation. The resinous concrete product substitutes resins for cement for strength and thinness of panels. Architectural Wall Elements, Inc., Martinsville, N. J.

71 Elastomeric system

Wabocrete "FMV" comprises field vulcanized, fusion-bonded moldings of synthetic rubber and aggregates for use in chemically aggressive environments such as bridge decks. They are designed for heavy traffic loadings. Watson Bowman Associates, Inc., Getzville, N. Y.

72 Concrete form panel

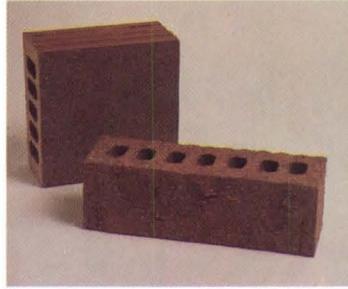
A-Matte FoamGuard is a moderate reuse overlaid plywood with higher resin content than its predecessor, "Multi-Pour," to allow more pours with the same formboard. The panels are available in 4- by 8-ft and 4- by 10-ft sheets. Simpson Timber Co., Seattle, Wash.

4 Masonry

UCI 4, Masonry:
 Masonry accessories
 Masonry restoration & cleaning
 Mortar
 Refractories
 Simulated masonry
 Stone
 Unit masonry



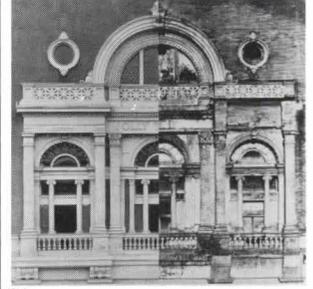
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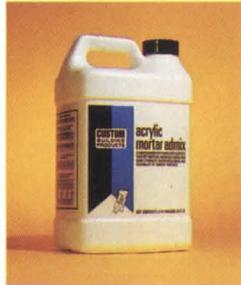
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85 Swimming pool coating
 Designed for renovating commercial pools, filter tanks, or wastewater treatment centers, *Fibre/Crete PG* is a high-solids, three-part epoxy coating system used to rebuild and protect masonry or metal surfaces. Primer, liner and finish layers are applied like paint. Recreonics Corp., Indianapolis, Ind.

86 Mortar color
 "SGS Concentrated motor color" is a pre-measured, unit system that combines controlled uniform color with flexibility in selecting the proper compressive strength and mix design of either prepared masonry cement or Portland cement and lime mortar mixtures. Solomon Grind-Chem Service, Springfield, Ill.*GB

87 Colored concrete block
 Integrally colored with *Bayferrox* iron oxide pigments, concrete masonry blocks are available in a variety of textures and earth tones to provide greater design flexibility than the usual gray blocks. Mobay Chemical Corp., Pittsburgh, Pa.

88 Special finish bricks
 Two new bricks are "Stark High Brick," with a manganese fine speck finish in 8- by 8-in. or 8- by 16-in. stretcher and corner units, and "Mesa Blend Utility Brick," a rough-cut severe weather grade, loadbearing, kiln-fired brick in 4- by 12-in. face size and bed depths of 4, 6 or 8 in. Stark Ceramics, Inc., Canton, Ohio. *GB, ICR, E

89 Mortar admix for tile
 A new liquid mixing agent, "Acrylic Mortar Admix" reportedly increases tensile and bond strength, water resistance and shock absorption when used to replace water with any Portland cement mortar. Custom Building Products, Bell, Calif.

90 Composite building panels
 Especially designed for refacing buildings, "Natural Stone Panels" are available in 4 textures and 9 colors. Standard sizes are 4 by 8, 10, or 12 ft, with substrates of APA Grade Marked plywood and 1/4-in. CAB to provide a U.L. Class 1 rating; other sizes on special request. Sanspray Corp., Santa Clara, Calif.

91 Marble veneer
 GL-Marble is a thin (1/4-in.), lightweight (3.7 psf) stone veneer with a reinforced fiberglass backing. It is available in 24-in. squares or 24- by 48-in. panels in a wide range of colors including both filled and unfilled travertines. For interior use only, installation is similar to tile or wood paneling. Marble Technics, Ltd., New York, N.Y.

92 Thin surfacing brick
 Designed as a surfacing material, *Mini-Brick* is only 1/16-in. thick, and reportedly has the "look and feel of full-sized brick at a greatly reduced cost." The brick units are available in 4 sizes, and 8 glazed and 9 unglazed finishes. Huntington/Pacific Ceramics, Inc., Corona, Calif.

93 Brick pavers
 The line of "Standard Floor Brick" is a kiln-dried masonry product available in standard 1 3/8-in. or heavy duty 2 1/4-in. thicknesses, with vertical fiber-wire cut faces for a non-slip swirl pattern. It is available in a variety of colors and 5 face sizes. Stark Ceramics, Inc., Canton, Ohio. *GB, ICR, E

94 Masonry cleaner
 Developed as an alternate to sandblasting or steam cleaning, *Sure Klean* "Restoration Cleaner" is said to provide great cleaning effectiveness without burning or discoloring clay, brick, brownstone, sandstone, unpolished marble or granite, and terra cotta. ProSoCo, Inc., Kansas City, Kansas.

95 Pre-faced concrete block
Spectra-Glaze II glazed concrete masonry units are now available in 12 new standard finishes developed for exterior use. Sixty standard colors, plus custom matches are available in regular, sculptured or scored faces. The Burns & Russell Co., Baltimore, Md. *GB, ICR

96 Graffiti remover
 In addition to its line of architectural maintenance products, including those for masonry cleaning, waterproofing and restoration, ProSoCo now offers "Defacer Eraser" graffiti remover which reportedly eliminates graffiti with little effort and little time. ProSoCo, Inc., Kansas City, Kansas.



Georgia Marble®...Versatility Backed by Performance



*Decatur Federal Savings & Loan Assn. Building, Atlanta, Ga.
 Architect: Thompson, Hancock & Witt Associates, Atlanta, Ga.
 Stone Setter: Williams Tile & Terrazzo Co., Smyrna, Ga.*

Whether the designer considers Georgia Marble® for a project reflecting today's styles, or to express a classical interpretation, he knows his selection is backed by performance. Performance expressed not only by the Georgia Marble®, but also expressed by the experience and reliability of the professionals representing The Georgia Marble Company.

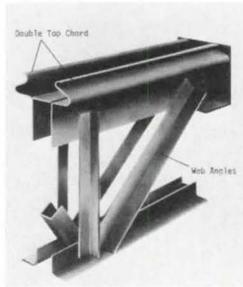
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 a Jim Walter company

5 Metals

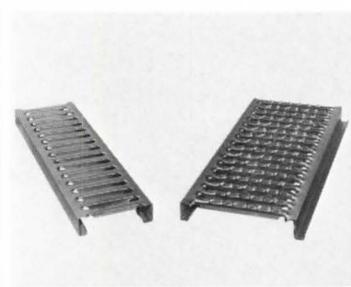
UCI 5, Metals:
 Expansion control
 Fasteners & supports
 Gratings
 Lightgauge metal framing
 Metal castings
 Metal decking
 Metal fabrications
 Metal joists
 Metal stairs
 Railings & handrails
 Structural metal framing



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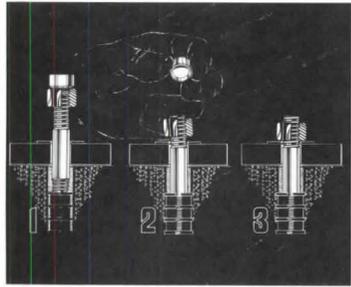
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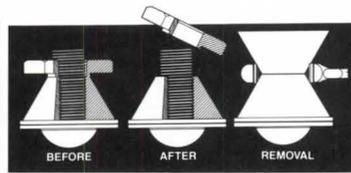
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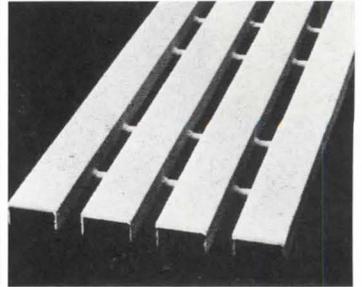
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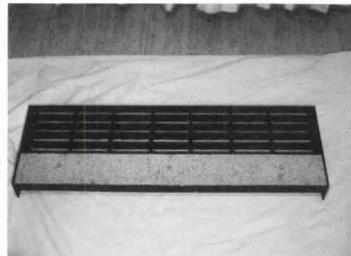
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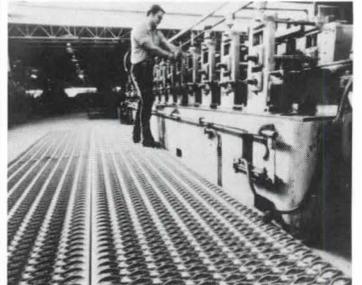
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109 Etched metals

Etched metal panels in brass or pewter are hand-etched before spraying with a protective coating. Available in virtually any size, the panels are suitable for walls, columns, countertops, door panels and decorative inserts. Harry Lunstead Designs, Inc., Kent, Wash.

110 Stud anchor nut

The pop-off head design of *Stud-Set* nuts eliminates stud anchor pull-out due to incorrect seating torque, ensuring accurate seating of the stud anchor and clamping of the joint. Nuts can be tailored to specific torque requirements. Guard-Nut Inc., Sonoma, Calif. *GB

111 Railing systems

Satin-finished stainless steel railings are available in both upright (Series 500) and wall-hung (Series 300) designs meeting ANSI standards for wheelchair ramps and stairways. Tubular Specialties Mfg., Inc., Los Angeles, Calif. *GB

112 Steel joist

Designed for use with the Hambro D-500 system of composite steel and concrete construction, the LH-Series steel joist features a double top chord and modified web configuration that make possible long-span applications for floors and roofs up to 65 ft. Canam Hambro Systems, Inc., Miami, Fla.

113 Corner molding

An extruded aluminum molding with a 90-deg angle eases installation of gypsum board, wood, or plaster walls while protecting exposed interior or exterior corners. PCM-1125-75 comes in anodized colors or painted. Fry Reglet, Alhambra, Calif.

114 Steel framing system

Steel framing systems offer high strength/weight ratio and manufacturer-applied color coding to facilitate on-site preassembly. Over-all savings are claimed by replacing conventional wood studs with steel studs spaced at 24 in. o.c. United States Gypsum Co., Chicago, Ill. *GB

115 Interlocking grating

Friction-interlocking grating with a 1½-in. leg is available in 6- and 9-in. planks of 12-, 14-, or 18-gauge galvanized steel in standard 20- and 24-ft lengths. Legs may be male/female or double male. United Interlock Grating, United McGill Corp., Columbus, Ohio. *ICR

116 Tamperproof fasteners

Conical nuts with a shear-off hex head prevent tampering but require no special tools for assembly or removal. Guard-Nut Inc., Sonoma, Calif. *GB

117 Slip-resistant nosings

"Mebac" slip-resistant permanent and replaceable nosings and tread repair covers are coated with aluminum grit to provide a durable fire-, corrosion-, and impact-resistant surface. IKG Industries, Nashville, Tenn. *GB

118 Steel framing

A typical application of Wheeling steel framing is the cage structural system used to fabricate modular mini-banks that are economical, transportable, and relocatable. Wheeling Corrugating Co., a Div. of Wheeling-Pittsburgh Steel Corp., Wheeling, W.Va.

119 Channel grating

A versatile channel grating provides a resilient slip-resistant walking surface in hazardous areas. This surface resists fire, weathering, sparking, and loss of traction. IKG Industries, Nashville, Tenn.

120 Safety grating

Grip Strut is a heavy-duty safety grating durable enough for corrosive applications. Heavy-gauge aluminum or 9-, 10-, or 11-gauge steel provide strength for long spans with heavy loads. Metal Products Div., United States Gypsum Co., Chicago, Ill. *ICR



McClure coal preparation plant in Virginia, owned by Clinchfield Coal Company, a division of Pittston Company. Designing engineers, Roberts and Schaefer Company.

ny protected metal on the market today.

Small wonder. It took our R&D team three years to develop the unique chemistry that fuses Corstan's two tough coatings into one dense surface bonded permanently to the metal.

But then we put it to the real test—the marketplace. And for 17 years Corstan has routinely replaced other protected metals. None have performed better in the field. And none have beaten it in independent tests. It's simply

the industry standard for combatting corrosion. And beating nature at her own game—economically.

That's because it's our nature to set the highest standards in research and development. Quality control. Craftsmanship. And service.

For more about Steelite and our products, write Steelite, Inc., 1010 Ohio River Boulevard, Pittsburgh, PA 15202. Or call (412) 734-2600.

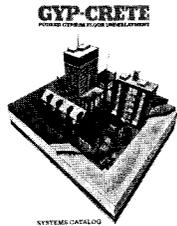
Circle 1022 on inquiry card



Product literature: Divisions 3, 4 & 5

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

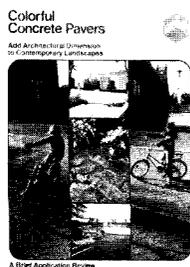
*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



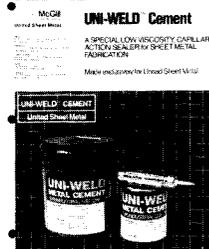
3024 Floor underlayment
An 8-page catalog describes the uses of *Gyp-crete*, a lightweight gypsum cement for wood-frame, precast, or renovation construction that provides fire and sound control. Specifications are included as well as photographs of installations. Gyp-Crete Corp., Hamel, Minn.



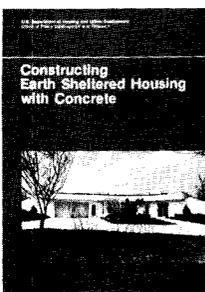
3030 Clay wall products
A 12-page color catalog details structural wall products. Information is included on the function and design flexibility of glazed facing tile, acoustical tile, high brick, utility brick and pavers. Stark Ceramics, Inc., Canton, Ohio *GB,ICR.



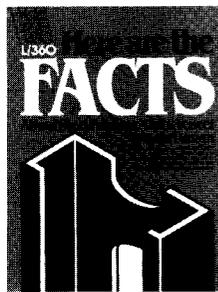
3025 Colored concrete pavers
A 10-page color brochure describes interlocking concrete pavers which may be installed without mortar. Color photographs illustrate typical installations and highlight the visual impact of the patterns which may be created. Mobay Chemical Corp., Pittsburgh, Pa.



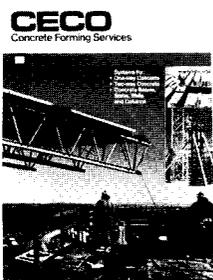
3031 Metal cement
A product sheet describes *Uni-Weld* metal cement. Information is provided on specifications and the use of this low viscosity, capillary action, neoprene-base sealant. This product is recommended for spot-welding and bonds well to galvanized steel surfaces. United McGill Corp., Westerville, Ohio.



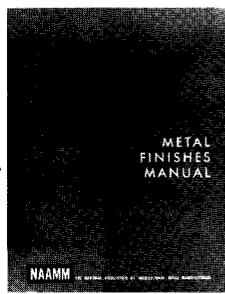
3026 Earth sheltered housing
"Constructing Earth Sheltered Housing with Concrete" is a book that examines the use of earth, passive solar effects and the structural capacity of concrete to minimize energy needs. *Cost is \$5.00. Mail checks to: Order Dept. Portland Cement Assoc., 5420 Old Orchard, Skokie, Ill. 60077.*



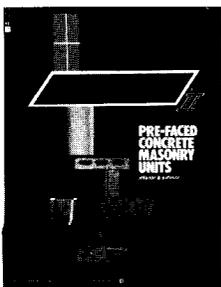
3032 Steel framing brick
A 4-page brochure about steel stud-brick veneer wall systems contains highlights of a test report which demonstrated that limited lateral load deflection of the backup stud alone to 1/360th of stud span is acceptable for brick facing. Brick Institute of America & Metal Lath/Steel Framing Association, Chicago, Ill.



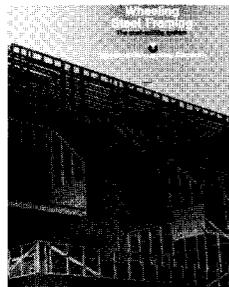
3027 Concrete forming
An illustrated catalog describes concrete forming services for poured-in-place reinforced concrete buildings. Flange forms, long forms and long domes for one-way joist construction are shown as well as two-way joist construction using steel domes and fiberglass domes. The Ceco Corp., Oak Brook, Ill.



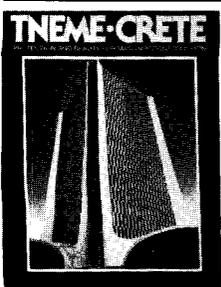
3033 Metal finishes
The "Metal Finishes Manual" covers finishes for aluminum, copper alloys, stainless steel and carbon steel and iron. One chapter is devoted to applied coatings. *Cost including mailing is \$17.50. Mail checks directly to: NAAMM Headquarters, 221 North LaSalle St., Suite 2026, Chicago, Ill. 60601.*



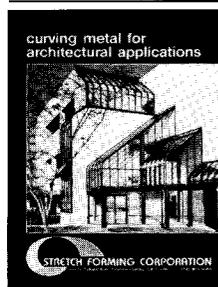
3028 Pre-faced masonry
A 12-page color brochure describes *Spectra-Glaze II* pre-faced concrete masonry units. Photographs illustrate installations while diagrams show standard shapes. A color chart is included as well as construction details and specifications. The Burns & Russell Co., Baltimore, Md. *ICR,GB.



3034 Steel framing
A 24-page illustrated catalog includes physical and structural properties, load tables, stud bridging information, and fire rating data. Also shown are architectural drawings and specifications for the system. Wheeling Corrugating Co., Div. of Wheeling-Pittsburgh Steel, Wheeling, W. Va.



3029 Epoxy
An 8-page color brochure describes and illustrates the performance and appearance of "Series 52 Tneme-Crete." Performance criteria on the sand-textured, modified epoxy is included as are product usage photographs. Tneme Co., Inc., Kansas City, Mo.



3035 Curving metal
"Curving Metal for Architectural Applications" is a brochure that describes the process of stretch-forming aluminum to avoid ripples as metal is stretched to the desired shape. The advantages of the process are covered as well as typical applications. Stretch Forming Corp., Fountain Valley, Calif.

6 Wood & Plastics

UCI 6, Wood & plastics:
 Architectural woodwork
 Connectors & supports
 Laminated & processed sheets
 Lumber
 Plastic fabrications
 Plastic laminates
 Prefabricated structural plastics
 Prefabricated structural wood
 Simulated wood
 Stock millwork
 Wood treatment



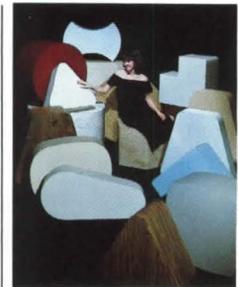
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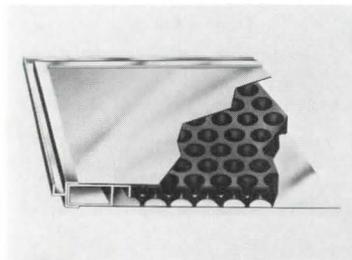
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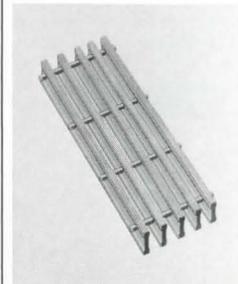
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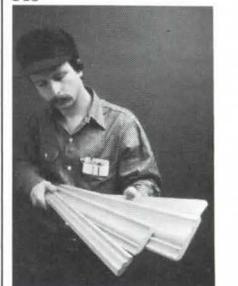
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133 Rustic redwood siding
 Tight knots and streaks of sapwood lend a rugged quality to rustic redwood siding available in bevel, channel, and tongue-and-groove patterns. California Redwood Assn., San Francisco, Calif.

134 Exterior panels
 Exterior construction panels composed of *NorCore* plastic honeycomb laminated with face sheets of aluminum, stainless steel, galvanized steel, or bronze are strong, lightweight, and resistant to warping. The panels can be custom-fabricated to specification. Norfield Corp., Danbury, Conn. *GB, E

135 Plastic laminates
 Imported from West Germany, the "Resopal" collection of special-surface high-pressure laminates includes vibrant enamel finish colors, soft-surfaced pastels and earth tones, and wood grains that simulate veneers. The Diller Corp., Morton Grove, Ill. *I

136 Stock millwork
 Fourteen new designs have been added to an expanded line of reproductions of Victorian millwork for interior and exterior use. Stock products are made from solid kiln-dried oak or poplar, with other hardwoods available on special order. Cumberland Woodcraft Co., Carlisle, Pa.

137 Glued laminated lumber
 Suitable for short-span bridges in residential or commercial construction, glued laminated timbers undergo less twisting, shrinkage, and splitting than solid sawn timbers and can be manufactured in a variety of sizes and shapes. American Institute of Timber Construction, Englewood, Colo. *GB, E

138 Floor joist
 An extra-dry laminated wood product, "Floor Lam" structural floor joists have special application for simple-span commercial or industrial floors. The joists are 2½-in. wide and are available in lengths from 18 to 32 ft with a broad range of depths. Standard Structures, Inc., Santa Rosa, Calif.

139 Plastic pipe fittings
 Molded PVC fittings—a 6-in. wye, a 6- by 4-in. reducing fitting, and a 6-in. 30-deg ell—are designed to smooth liquid flow, thus reducing friction loss and turbulence in plastic pressure piping systems for both distribution and drainage. Lasco Div., Philips Industries, Anaheim, Calif.

140 Metal web system
 Now available in 11¼-in. depth, the *Gang-Nail* GNW metal web system forms a composite truss with steel web and wood top and bottom chords. The web comes with positioning tabs for accurate fabrication, and its rib design allows finished trusses to be stacked for transport. Gang-Nail Systems, Inc., Miami, Fla. *GB

141 Pressure-treated wood
 Preservatives forced into the lumber under high pressure make pressure-treated wood resistant to termites and decay. Well-suited for outdoor structures, the treated lumber can be used in direct ground contact and requires no paint or stain. Western Wood Preservers Institute, Del Mar, Calif.

142 Decorative laminates
 The "Durabeauty" line of high-pressure laminates for decorative surfacing applications features contemporary solids, high-resolution wood grains, and marble patterns. Consoweld Corp., Wisconsin Rapids, Wis.

143 Fiberglass grating
 Stronger than steel for its weight, "Corgrate" fiberglass grating is light and easily moved and can be cut with a hand saw. The grating is available in fire-retardant isophthalic polyester resin or in vinyl ester with a slip-resistant surface. IKG Industries, Nashville, Tenn. *GB

144 Fir molding
 Kiln-dried and precision-milled high quality Douglas fir moldings are available in longer lengths, full sizes and evens only. This old-growth wood is kiln-dried and precision-milled only. Windsor Mill, Windsor, Calif.

Product literature: Division 6

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



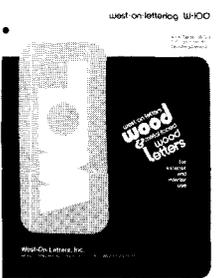
3048 Shutters

A 4-page brochure features color photographs of 1-, 2-, and 3-in. white pine, tilt-louver shutters. Shutters are custom made for any window and feature tongue-and-groove construction. Customwood Manufacturing Co., Albuquerque, N.M. *I



3054 Acrylic sheet

A page of literature describes Lucite "XL", a continuous-cast acrylic sheet. Typical applications are listed, such as whirlpool baths and swimming pools, while a chart displays the product's physical properties. E.I. DuPont de Nemours & Co., Inc., Wilmington, Del.



3049 Wood letters

A 6-page catalog features complete alphabets of capital and lower case letters and numerals. Both serif and sans serif faces are available in heights from 6 in. to 24 in. Nonstandard sizes and custom logos are also available. West-On-Lettering, Inc., Los Angeles.



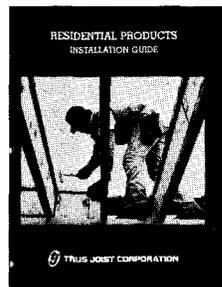
3055 Metal laminates

A color brochure describes metal-faced laminates for use where wood or plastic laminates are currently being used. Mettle laminates are available in brushed brass and aluminum and polished chrome. The October Co., Inc., Easthampton, Mass.



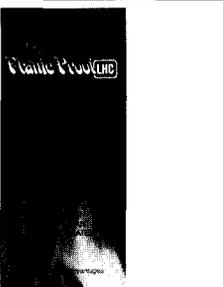
3050 Fiberglass shapes

A 12-page illustrated color brochure describes fiberglass structural shapes and fasteners. The "Extren Series 500" is corrosion resistant, and claimed to be stronger than steel and lighter than either aluminum or steel. Morrison Molded Fiber Glass Co., Bristol, Va.



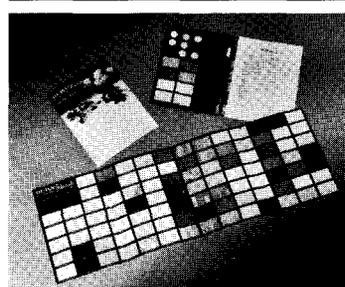
3056 Joists/headers/beams

A 16-page "Residential Products Installation Guide" features detail drawings, load tables and other performance data. Installation details are included for a variety of residential structural applications. Trus Joist Corp., Boise, Idaho.



3051 Flame-proof wood

A 4-page color pamphlet describes fire-retardant, pressure-treated wood with a flame spread rating of 25 or less. The formula used limits corrosion of metal fasteners and reduces hygroscopicity values. Osmose Wood Preserving Co., Buffalo, N.Y.



3057 Laminates

An 8-page color "Reference Folder" illustrates a line of solid, woodgrain, marble, pattern and dimensional laminates. Additions to the "DuraBeauty" line are featured along with complete product specifications. Consoweld Corp., Wisconsin Rapids, Wis.



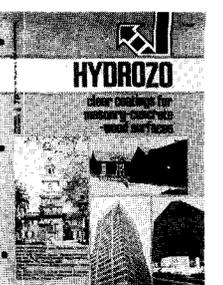
3052 Fire retardants

"Fireline" is a semi-annual publication which features architectural woodwork jobs that incorporate fire-retardant particleboard. New product information is also included. Duraflake Div., Willamette Industries, Albany, Ore.



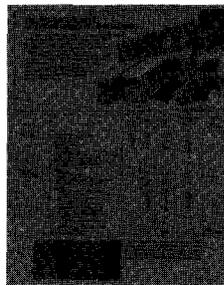
3058 Redwood

Photographs in an 8-page color brochure illustrates a variety of possible installations of redwood products from hot tubs to fences to furniture. Diagrams illustrate a number of possibilities for deck designs. Charts give timber dimensions and grades. Simpson Timber Co., Seattle, Wash.



3053 Masonry coatings

A 4-page, 2-color brochure describes clear, water-repellent coatings for use on exterior exposed masonry and concrete surfaces. Typical applications are shown and specifications are listed. Hydrozo Coatings Co., Lincoln, Neb.



3059 Shakes and shingles

In 10 separate pages a packet of material describes the characteristics of red cedar shingles and shakes from their insulative values to care and treatment to other available literature. Specifications and information on finishes are included. Red Cedar Shingle & Handsplit Shake Bureau, Bellevue, Wash.

7 Thermal & Moisture Protection

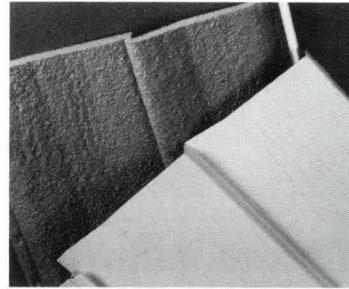
UCI 7, Thermal & moisture protection:
Cladding/siding
Composite building panels
Flashing
Insulation
Membrane roofing
Metal roofing
Roof accessories
Sealants
Shingles & roofing tiles
Waterproofing & dampproofing



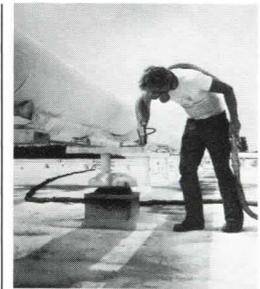
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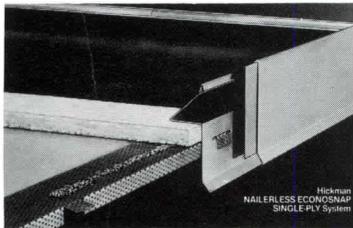
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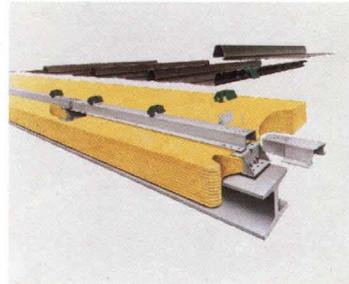
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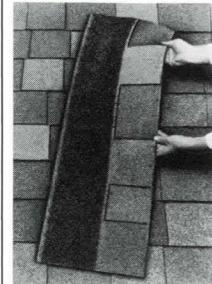
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156 Prepainted steel roofing
Developed in Sweden for use on new or existing roofs, *Stile* is a new metal roofing system with the look of tile, now available in the U.S. It is made of 26-gauge hot-dipped galvanized steel with a fluorocarbon paint in a choice of 5 colors. Metal Sales Manufacturing Corp., Louisville, Ky. *GB, LR

157 Nailerless roof edge
The Hickman "Nailerless Roof Edge System" is reportedly a simple, fast and economical system which eliminates need for treated-wood nailers, thus requiring fewer trades. It can be used with built-up roofing and single-ply roofing membrane. W.P. Hickman Co., Asheville, N.C. *GB, ICR

158 Preformed roof panels
Transitions in shape of metal panels—from roof to mansard to vertical fascia to final soffit stage—can be made in one continuous panel length, in various profiles and widths, of aluminum or steel, and with prefinished coatings, including *Weathering Copper*. Span Metals Corp., Dallas Tex.

159 Metal roofing finish
Weathering Copper is a "twenty-year finish" of copper particles suspended in acrylic resin applied to 24-gauge galvanized steel. It is available in several shades and in various standing seam and batten preformed panel profiles up to 24-in. wide. Span Metals Corp., Dallas, Tex.

160 Masonry weatherproofing
A new weatherproofing for concrete and masonry, "Chem-Trete" is a clear liquid that penetrates to a depth of $\frac{3}{16}$ in. and chemically bonds with the substrate to form a water-repellent barrier. It reportedly will not stain or discolor the surface. Dynamit Nobel of America, Rockleigh, N.J.

161 Roof Insulation panels
Exeltherm Xtra is a new lightweight, rigid insulation panel with a solid foam core sandwiched between corrugated kraft/aluminum skins. It comes in a standard 3- by 4-ft size and in 6 thicknesses. It reportedly offers good fire-resistance and heat-retention properties. Koppers Company, Inc., Pittsburgh, Pa.

162 Insulated siding
A prefinished aluminum siding, backed with a $\frac{1}{2}$ in. of polyurethane insulation foam, "Climatic Elite" has an embossed wood grain texture and a baked-on coating, which is available in a variety of colors. Hunter Douglas, Inc., Roxboro, N.C.

163 Roofing system
A new metal roofing, called "Total Performance Roofing System," uses a special hidden clip and sub-girt assembly to lock profiled "SR3" metal roof sections in place. The clip is thermally responsive to roof movements in both directions. The "SR3" sections have a *Versacor* protective coating. H.H. Robertson Co., Pittsburgh, Pa.

164 Flame-resistant siding
A new Class I rated, wood-based hardboard siding called "Flame Test" is offered with both textured and smooth surfaces, in panel and lap form. It has a U.L. fire-spread rating of 25, and a low smoke rating of 15. The siding is $\frac{7}{16}$ -in. thick and primed for on-site finishing. Masonite Corp., Chicago, Ill. *GB, LRC

165 Foam insulation
Installed over new or existing roofs and walls, spray-on urethane foam insulation is said to substantially boost the energy efficiency of commercial and institutional buildings, and create a seamless, water-resistant seal. Mobay Chemical Corp., Pittsburgh, Pa.

166 Laminated shingles
"Prestique 240" laminated fiberglass shingles are said to be competitively priced with 3-tab asphalt shingles, have a 25-year limited warranty, a U.L. Class A rating for fire resistance, and a 3-dimensional random-cut design. Elk Corp. of America, Dallas, Tex.

167 Membrane roofing
RubberGard is a complete system of membrane roofing said to give low installation cost, low maintenance, and a greater light-weight/high-strength ratio. It is also said to be highly stable against constant exposure to ultra-violet and ozone and temperature variations. Firestone Industrial Products Co., Noblesville, Ind.



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169 Wall coating

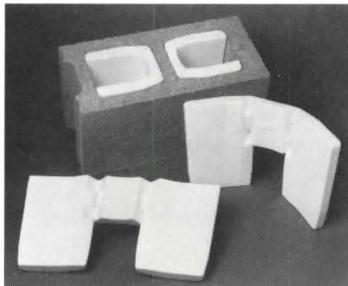
"Stoco" is a ready-mixed, synthetic resin plaster for exterior and interior uses. It is reportedly washable, shock-resistant, and highly flexible to resist or bridge cracks. It is available in a variety of earthtone colors. STO Energy Conservation, Inc., Rutland, Vt.

170 Silicone glazing

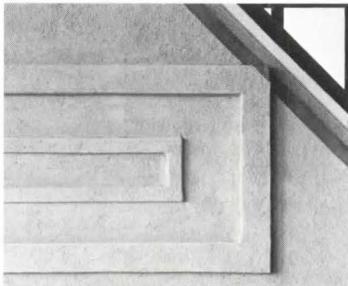
Silglaze N is a silicone translucent glazing sealant, characterized by primerless adhesion to most substrates, with about a 50 per cent joint movement capability, and a non-corrosive cure system. Silicone Products Division, General Electric Co., Waterford, N.Y.

171 Roof insulation board

Boards of *Styrofoam* insulation (2 by 4 ft) are produced specifically for use in the "Insulated Roof Membrane Assembly System," and can be used over any commonly specified roof deck with appropriate load capacity. Thicknesses range from 1½ in. to 3 in. Dow Chemical U.S.A., Midland, Mich.



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172 Foldable block insulation

A new, foldable version has been added to Korfil's existing line of molded-polystyrene concrete block insulation. Known as "Korfil AD," it reportedly provides all the thermal characteristics required as a cost efficient price. Inserts must be installed at the block plant. Korfil, Chicopee, Mass.

173 Exterior insulation

"SMI Wall System" is designed to provide insulation and finish coat for industrial, commercial and housing structures, new or old. It consists of polystyrene insulation board, plaster/cement mixture with embedded fiberglass fabric and synthetic plaster finish. SYenergy Methods, Inc., Cranston, R.I.

174 Cedar plywood panels

A new plywood panel, called *Cedar-Sawn Panel 4*, is faced with Western red cedar veneer strips to simulate individual 4-in. boards. Panels have a rough-sawn surface and can be used for exterior siding or interior paneling. Evans Products Co., Portland, Ore. *GB, LRC



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175 Fireproof roofing

Mineral-fiber shingles are available in a range of colors in six styles: Supra-Slate, Western-Shake, American Traditional (all with Class "A" UL fire rating), and Dutch Lap, Twin Lap, and Hexagonal (Class "B" rating). Supradur Manufacturing Corp., New York, N.Y.

176 One-ply roof membrane

Now available is a new *Celo-1* Ethylene Propylene Diene Monomer (EPDM) type, 45-mil single-ply roof membrane. The membrane is stocked in roll sizes of 40 by 100 ft, with other sizes available in rolls up to 50 by 200 ft. Larger roll sizes decrease field seams and reduce labor costs. The Celotex Corp., Tampa, Fla.

177 Rigid foam insulation

Foamular RI extruded polystyrene roof insulation, rigid foam board, has been introduced for use under single-ply membrane roofing systems for new and retrofit applications. It is said to offer moisture-resistance, high "R" values and excellent compressive strength. UC Industries, Chicago, Ill. *ICR



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178 House and trim paint

Olympic "Overcoat Satin Latex" house and trim paint is a new exterior finish—100 per cent acrylic, washable, durable and fade-resistant, and offering the convenience of water cleanup. Olympic Stain, Bellevue, Wash. *GB

179 Reflective white membrane

A new product in the area of factory-applied, weatherable, reflective surfaces for self-adhering composite roofing membranes, GRM 500 is topped with a white polyvinyl fluoride film. It is said to provide a uniform, reflective and chemical-resistant surface. W. R. Grace & Co., Cambridge, Mass. *GB, ICR

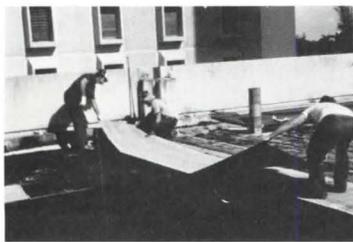
180 Blowing-wool insulation

For sidewall or attic insulation, *Insul-Safe II* is a fiberglass insulation for use with blowing machines. It is said to give improved thermal performance, and not to absorb moisture, rot or decay, or support mildew or fungus. It is non-combustible, non-corrosive. CertainTeed Corp., Valley Forge, Pa.

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



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181 Flat-deck roofing

A one-piece ballasted roof system for new and reroofing flat decks on commercial buildings, "Trocal SMA" is a 48-mil thick polyvinyl chloride membrane that uses a solvent weld technique to bond seam edges and attach to special metal flashing. Dynamit Nobel of America, Rockleigh, N.J.

182 Built-up roofing

The *BURmastic* cold process built-up roofing system is available with fiberglass ply sheets or organic felts, which it sets in intermittent courses of modified asphalt cold-process roofing mastic. It is for new or reroofing applications. Tremco, Inc., Cleveland, Ohio.

183 Redwood siding

Palco "Rustic" redwood siding has an extra-thick, saw-textured rabbeted pattern, with a heavy shadow line and is air-seasoned for stability. It also has a self-aligning feature to lower application costs and add insulation. The Pacific Lumber Co., San Francisco, Calif.



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184 Batt insulation

"Flame Spread-25" insulation provides thermal and sound control in areas where a low flame spread rating is required, an integral vapor barrier is desired, and the insulation is to be left exposed (as in air handling equipment areas). Owens-Corning Fiberglas Corp., Toledo, Ohio. *ICR

185 Rehab exterior insulation

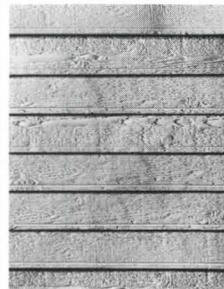
For exterior insulation The "Full Thermal System M" has been especially developed for brittle, non-bearing surfaces and other problematic substrates. The 2- by 2-ft polystyrene boards are mechanically fastened to special tracks. STO Energy Conservation Inc., Rutland, Vt.

186 Foundation insulation

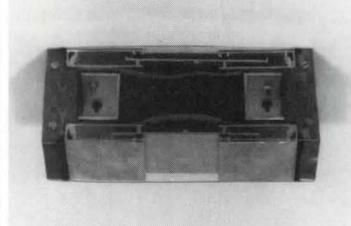
The application of *Styrofoam* insulation on exposed outside foundation walls reportedly can significantly help reduce a typical house's heat loss. Exposed boards of *Styrofoam* above ground must be covered with some protective/decorative covering. The Dow Chemical Co., Midland, Mich.



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187 Membrane roofing

"CoolTop 40" is a reflective white, 40-mil-thick, CPE (chlorinated polyethylene) extrusion-coated polyester sheet designed to be installed uncovered with mechanical fasteners over new or existing roofs. It is weather-, ultra-violet- and ozone-resistant. Cooley Roofing Systems, Inc., Pawtucket, R.I.

188 Hardboard siding

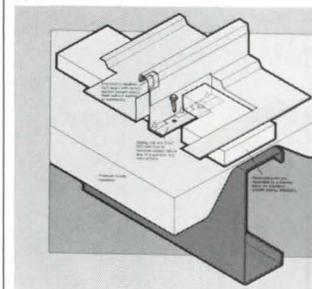
Two new lap patterns have been introduced by Temple-Eastex in its hardboard siding line. "Colony" has a narrow lap look in a conventional 12-in. by 16-ft size in smooth and cedar textured surfaces. "Accent" (shown) is an 8-in. lap siding in similar finishes, with an accent groove to provide shadow lines. Temple-Eastex, Inc., Diboll, Tex.

189 Expansion joints

WABO "Thermobarr Pyro Seal Joint System" comprises a strong, flexible, lightweight, flame retardant expansion joint seal. It is said to produce an efficient thermal insulator and to be highly resistant to thermal shock and form a smoke seal. Watson Bowman Associates, Inc., Getzville, N.Y. *GB



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190 Pipe insulation

New full-range 850F pipe insulation is available in sizes from 1/2- to 6-in. wall thickness, and 1/2- to 30-in. IPS for most wall thicknesses. No heat-up cycle is needed for pipe insulation with wall thickness of 4 1/2 in. or less, allowing installation on hot pipes. Knauf Fiber Glass, Shelbyville, Ind.

191 Self-seaming roofing

"Chief LTC" is a self-seaming, weathertight roofing design said to be easy to install and require little or no maintenance. An interlocking standing seam contains factory-applied sealant. Panels are attached at the eaves by universal interlocking clips. Chief Industries, Inc., Grand Island, Neb.

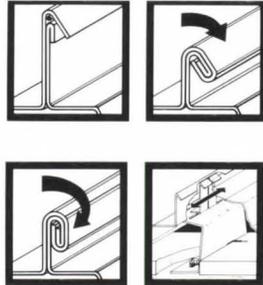
192 Shingle siding

The new "Colonial II" double-course shingle siding panels come in 8-ft lengths faced with Western Red Cedar shingles, and combine 2 courses of 7-in. each to cut application time. Color-matched nails and mitered corners are available. Shakertown Corp., Winlock, Wash. *GB, LRC

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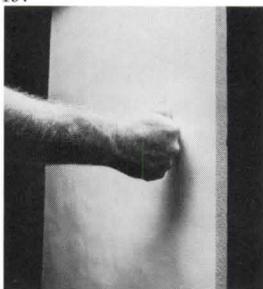
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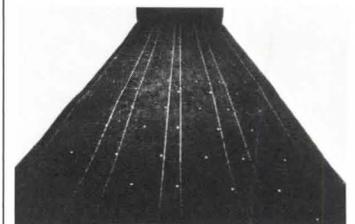
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193 Wood fiber roofing

This wood-fiber shingle comes in 12- by 48-in. panels, each requiring only 6 nails or staples to secure. It is offered in 2 designs—"Woodruf Traditional" in the West and "Woodruf Rustic" anywhere east of the Rockies. Class C fire-rated versions are available. Masonite Corp., Chicago, Ill.

194 EPDM roof membrane

The "SMI Rubber Roof Energy System" offers insulation and claimed superior durability, and is intended for both re-roofing and new construction of commercial and industrial buildings. SYenergy Methods, Inc., Cranston, R.I.

195 Single ply roofing

The TremPly "Ballasted Single Ply Roofing System" uses a polymeric formulation of Hypalon synthetic rubber for weatherability. It is sealable at all lap joints to ensure long-term performance. Can be used in re-roofing as well as new roofing applications. Tremco, Cleveland, Ohio.

196 Roof system

The MR-24 system is a continuous, standing-seam metal roof. It can cover an entire building without penetrating to the structural roof members by means of special sliding clips. The clips are formed into the seams, and permit up to 2 in. of expansion and contraction. Buildings Division, Butler Manufacturing Co., Kansas City, Mo.

197 Copper-bearing finish

Weathering Copper is a material made of copper particles suspended in 3 layers of acrylic resin which can be applied over a primer coat to galvanized steel. It weathers similar to pure copper. Cost is said to be half that of pure copper. AEP/Span Metals Corp., Dallas, Tex. *GB

198 Wall and ceiling liners

Thermax Plus liner panels can be used as impact-resistant walls and ceilings in agricultural, industrial or commercial buildings, without extra time and labor of installing a separate reinforcing liner. Said to be particularly useful where condensation could be a problem. Building Products Div., Celotex Corp., Tampa, Fla.

199 Vapor barrier facing

A facing material to protect insulation and metal buildings from deteriorating effects of water vapor transmission, VBP-3 is claimed to be competitively priced with conventional facing materials. It has a new permeance rating of .02. Stauffer Chemical Co., Westport, Conn.

200 Roofing shingles

"Chaparral" is a new inorganic glass fiber roofing shingle which offers a rustic, three-dimensional appearance. It is made with one shingle instead of 2 shingles laminated together for lighter weight; carries a U.L. Class A fire rating. Owens-Corning Fiberglas Corp., Toledo, Ohio.

201 Spray-on roof repair

Damaged urethane roofs with silicone coating can be repaired by using the "xz7 Primer," developed to be sprayed-on before application of this manufacturer's urethane coating. Garnite Systems, Inc., Chapman, Kan.

202 Insulation fastener

Glasfast is a plastic plate with self-tapping screws for fastening *Fiberglas* roof insulation to steel roof decks. The plate provides a thermal break, reducing heat loss through the fastener, as well as condensation. Owens-Corning Fiberglas Corp., Toledo, Ohio. *ICR

203 Built-up roofing

"Spec Ply" is a new glass fiber roofing felt that has 1/4-in. perforations to provide venting of vapors; these venting holes reduce the chances for membrane blistering. The Celotex Corp., Tampa, Fla.

204 Roofing system

Perma Plus-2 is an alternative to conventional three-and four-ply systems as it requires less asphalt, no aggregate, and fewer hours to install. It is made of two units—a porous top sheet to vent gases and vapor, and a bottom ply of heavy asphalt coating. Owens-Corning Fiberglas Corp., Toledo, Ohio. *ICR

Product literature: Division 7

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

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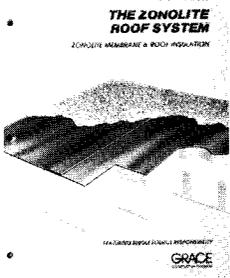
3072 Waterproofing

A 12-page color brochure provides information on sealants and coatings. Product applications and properties are listed along with a reference of ratings, surface types and available colors. Technical data are included. V.I.P. Enterprises, Inc., Miami, Fla.



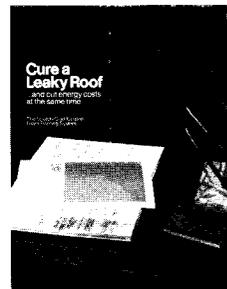
3078 Roofing systems/services

A 12-page color brochure describes a line of roofing systems from infrared analysis to preventive maintenance. Photographs illustrate both a cold-applied built-up systems and a fully-adhered or single-ply roofing system. Roof restoration is also discussed. Tremco, Inc., Cleveland, Ohio.



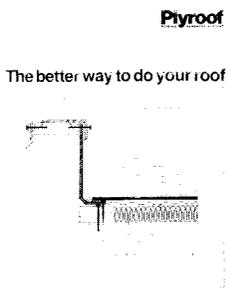
3073 Roof system

A 3-hole punched brochure describes the *Zonolite* roof system—an integrated design of roof membrane and low U-value roof insulation. The product insulation may be sloped-to-drain and is suggested for new construction and re-roofing. W.R. Grace & Co., Cambridge, Mass. *GB



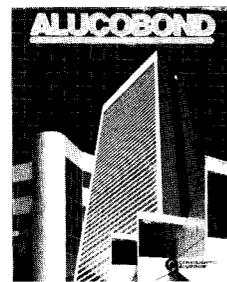
3079 Foam roofing system

An 8-page color brochure describes the *Scotch-Clad* coated foam roofing system. Sections illustrate moisture content control while photographs illustrate installation procedures. A question-and-answer format details information on applications. 3M Co., St. Paul, Minn. *GB,ICR



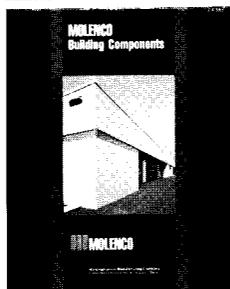
3074 Single-ply membrane

A 32-page booklet is designed to assist specifiers by giving details on penetrations in either loose or smooth systems. Curbs, drains, gravel stops and gutters are covered as well as high to low flashing. All terms are defined. Plymouth Rubber Co., Canton, Mass.



3080 Aluminum composite

A color brochure illustrates the adaptability of *Alucobond* aluminum composite material. Pictures show applications for exteriors, interiors, retrofits and signage. Data are provided for strength, windload and sound transmission, while sizes and finishes are listed. Consolidated Aluminum, St. Louis, Mo. *GB,ICR,I



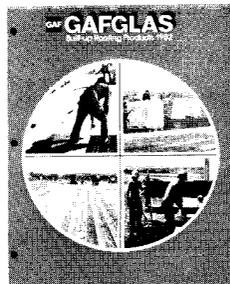
3075 Building components

A 4-page catalog highlights Molenco's line of panels and accessories. Diagrams show factory- and field-assembled insulated systems, exterior profiles and structural members. Specifications for aluminum, copper, stainless steel and steel panels are listed. Building Components Div., Molenco, Houston, Tex.



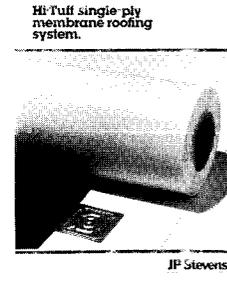
3081 Total roofing

A brochure describes the *Sure-Seal* total roofing system. Included are insulation panels, a fastening system for decks, molded pipe flashings and fastening bars, all in conjunction with a single-ply membrane. Carlisle Tire & Rubber Co., Carlisle, Pa. *ICR,GB



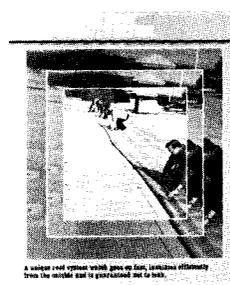
3076 Built-up roofing

A 28-page booklet illustrates *Gafglas* roofing products in pictures and diagrams. Warranties and specifications are listed along with recommended applications. Nailable, non-nailable and insulated decks are shown with construction and flashing details. GAF, New York City. *ICR



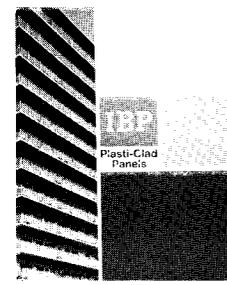
3082 Unballasted membrane

A color brochure describes the *Hi-Tuff* single-ply membrane roofing system which features a rubber membrane reinforced with an encapsulated polyester scrim, pigmented white. Specifications are included. J.P. Stevens & Co., Inc., Easthampton, Mass. *GB,ICR



3077 Rubber roof system

An 8-page color brochure describes the design features and technical specifications of this rubber roof system. Sections detail installation options. A chart on the watertight membrane and a description of the system's insulating qualities is included. SYenergy Methods, Inc., Cranston, R.I.



3083 Ashes to panels

A color brochure describes and illustrates non-combustible cement-bound asbestos panels. Available colors are shown and physical properties are listed, along with illustrated applications. International Building Products, New Orleans, La.

8 Doors & Windows

UCI 8, Doors & windows:
Entrances & storefronts
Glazing
Hardware & specialties
Metal doors & frames
Metal windows
Skylights
Special doors
Special windows
Windows/curtain walls
Wood & plastic doors
Wood & plastic windows



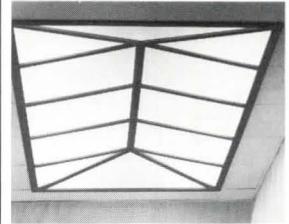
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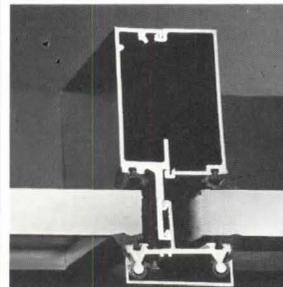
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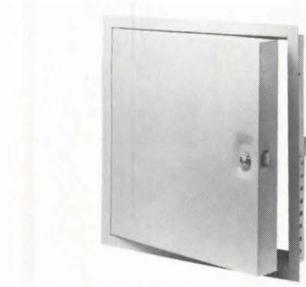
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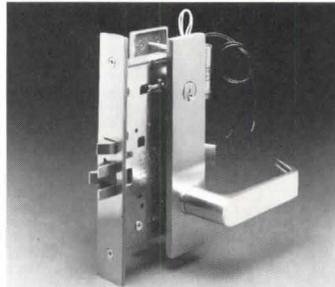
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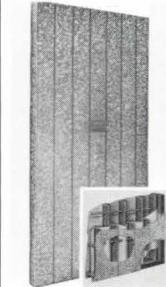
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217 Glass block

A group of glass block designs, suitable for exterior walls and interior partitions, includes both plain and patterned surfaces, transparent and translucent varieties. Options in light direction, solar reflection and color are also offered. Forms & Surfaces, Santa Barbara, Calif. *GB, I

218 Window frames

Visuline framing system equalizes exterior appearance of fixed and operable glazing. Options include top-hung, hopper and in-swinging casement sash up to 24 sq ft with standard or thermal-barrier framing. Wausau Metals Corp., Wausau, Wis.

219 Fire-rated panels

Model FD steel panels, designed to give access to utilities behind fire-rated walls, carry UL B rating. They are available in sizes varying from 8 by 8 in. to 36 by 48 in. J. L. Industries, Bloomington, Minn.

220 Insulated doors

Designed for residential use, "Avanti" steel doors have an insulating polyurethane core to produce a thermal resistance of R-14.9, six times as great, the manufacturer claims, as that produced by solid wood doors. Peachtree Doors, Inc., Norcross, Ga. *GB, LR

221 Door components

A Scandinavian system of complementary components includes doors (1 1/8-in. solid core with pine or oak finish), frames (oak, pine or PVC-clad pine) and metal and PVC accessories. Scandinavian Components, Incorporated, Hamilton, Mass. *GB

222 Electrified lock

Mortise single-point lock, with UL listing, is controlled electrically. Schlage Lock Company, San Francisco, Calif.

223 Fire door

Surface of "3700 Series" fire door bonds 20-gauge cold-rolled steel to a honeycomb core, and has no projecting pulls or fasteners. Construction uses splice column to eliminate bolts and screws and speed installation. American Metal Door Company, Inc. Richmond, Ind. *GB, ICR

224 Structural mullion

"Intermediate Pressure Wall System," intended for low-rise buildings, can be erected and glazed from the inside. The system may have a variety of glazing thicknesses and of finishes. Howmet Aluminum Corporation, Terrell, Tex.

225 Folding doors

"Spacesaver Wood Folding Doors" have solid hemlock tones with furniture-finish veneer. Installation requires no framing down, jambs or extra fittings. Wood Specialty Products, Div. of Shakertown Corp., Mountlake Terrace, Wash. *GB, LR

226 Skylight

"The Big Sky," intended for residential use, frames milk-white acrylic light diffusers with prefinished or natural hardwoods. Frames are pre-cut and doweled, ranging in over all size from 4 by 4 ft to 8 by 8 ft. United Lighting & Ceiling Corporation, Oakland, Calif.

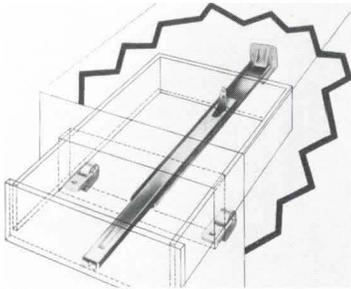
227 Window greenhouse

Aluminum-framed window greenhouse has 1/2-in. insulated glazing, a vinyl weatherstrip and sliding ventilation panel. It can be ordered in a variety of sizes to accommodate existing windows. Lord & Burnham, Irvington, N. Y.

228 Fire door

The smooth-surfaced #647 *FyeR-Ward* door sandwiches a glass fiber insulating blanket between sheets of 22-gauge galvanized steel. It is listed by UL for Class A-E openings. Richards-Wilcox Mfg. Co., Aurora, Ill. *GB

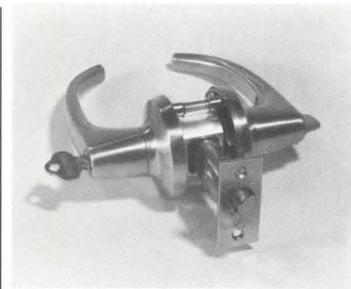
*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



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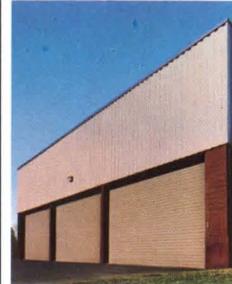
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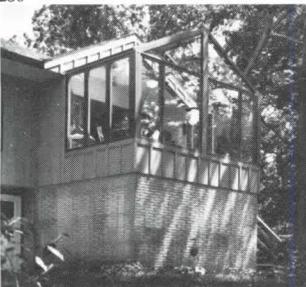
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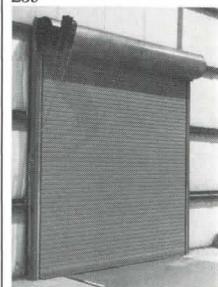
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229 Drawer slide

"Velvet Touch" undercarriage drawer slides come in 2 configurations: #508, for volume users, has a tab stop at the back of the drawer, while #509, for distributors, has a series of mounting holes to allow various lengths. Grant Hardware Co., West Nyack, N.Y. *I

230 Acoustical partition

"Sonicwall" acoustical folding partitions can now be surfaced with soft textured nonwoven fabric having a Class A fire rating. It is available in 22 colors. Panelfold, Inc., Miami, Fla. *GB

231 A-frame sunroom

The Pella "A-Frame Sunroom" has an interior of wood and an exterior of aluminum cladding with white or dark brown baked enamel finish. Casement windows provide ventilation. Rolscreen Company, Pella, Iowa.

232 Folding door

Translucent acrylic panels in Pella's "Woodlite Designer Folding Door" can be either clear or amber. Wood frame can be unfinished, clear-finished or dark stained oak or mahogany veneer. Rolscreen Company, Pella, Iowa. *GB, LR, I

233 Thermal casement

New casement window in the manufacturer's "Focus Series" has double glazing and weatherstripping. "Celuka" interior trim comes in a variety of wood-grain patterns of solid colors. Howmet Aluminum Corporation, Commercial Remodeling Division, Dallas, Tex. *GB

234 Electric exit bar

An electrically actuated exit bar, powered by a 24V DC motor, controls entrance and precludes the need for a continuous-duty strike. It is available with all types of the manufacturer's exit devices. Adams Rite Manufacturing Co., City of Industry, Calif. *GB

235 Lever locksets

Lockwood "Series 930 Key 'N' Lever Locksets" have lever handles and are equipped with either spring latches or dead latches. The unit is finished with satin or bright chrome, Florentine bronze or bright brass. Lloyd Matheson Inc., Charlestown, N. H.

236 Rolling door

Energymaster metal rolling doors are insulated with foamed polyurethane; a thermal break at the end of each slat further prevents metal-to-metal contact. Weatherstripping seals all four sides of the closure. Atlas Door Corporation, Edison, N. J. *GB, ICR

237 Tilting sash

"E-Z Tilt Pac" was designed to replace double-hung windows with pine-framed insulating glass that can tilt to the inside for cleaning. The manufacturer offers 90 standard sizes and accepts custom orders. Marvin Windows, Warroad, Minn. *GB

238 Mirrored doors

"Classic Mirror" bifold door has flush-mounted mirror panels with special safety backing and rails. The series also includes molded, birch veneer and Colonial bifold doors. Ledco, Inc., Shelbyville, Ky.

239 Skylights

"Outlook Skylighting Systems" include 1-in. tempered insulating glass framed in extruded heat-strengthened aluminum with a redwood interior finish. Lights are available in clear, tinted or reflective glass. Circle Redmont Corporation, Darien, Conn.

240 Rolling door

Rigid polystyrene foam insulation separates "Insul-Tite" door's 24-gauge galvanized steel panel and rigid PVC panel. The unit provides neoprene weatherseals at lintel and sill, as well as a seal at the jambs. Kinnear Division of Harsco Corp., Columbus, Ohio.



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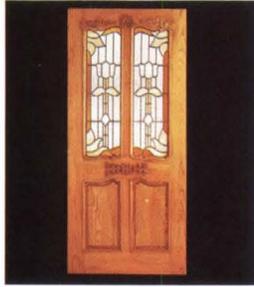
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241 Insulated door

"Stormtite" rolling doors have polyurethane insulation between inside and outside panels of 24-gauge galvanized steel, with endlocks and, as needed, windlocks. Overhead Door Corporation, Dallas, Tex. *GB, ICR

242 French doors

Because it swings shut for a tight seal, the manufacturer says, the *Castlegate* French patio replacement door is three times more energy efficient than a double-glazed sliding door. The double-glazed French door is available with one or 15 lights. United States Gypsum Company, Chicago, Ill. *LR

243 Door-pulls

The "HD8000 Series" includes door pulls constructed of aluminum with dark bronze-colored nylon finish. Other metals and finishes can be ordered specially. The series is part of the manufacturer's "affordable" "Omni Hardware Group." Forms & Surfaces, Santa Barbara, Calif.

244 Lockset

Best 8K cylindrical lockset has an interchangeable core that can be quickly rekeyed with a corporated control key that removes and inserts a new or recombined core. Best Lock Corporation, Indianapolis, Ind.

245 Stained glass doors

Decorative entry doors are handcarved of oak and mahogany. Lights have colored, etched, and leaded glass. The maker offers a variety of designs and patterns. International Wood Products, San Diego, Calif.

246 Industrial door

Insulated industrial sliding doors are designed to move in against frame and down against floor for tight closing. Fire resistance, automatic closure and sound reduction up to 55 dB are available. The McGuire Co., Inc., Hudson, N. Y. *GB

247 Insolation film

"Weather Shield" windows, says the manufacturer, increase winter energy efficiency two ways: double glazing reduces heat loss, and *SunGain* film—one or two clear sheets inserted between glass panes—increases heat penetration from insolation. Industrial and Consumer Section, 3M, St. Paul, Minn.

248 Decorative windows

The "American Renaissance Series" offers two designs in double-glazed windows: "Cathedral" (shown here) and "Diamond." The imitation leaded glass windows are available in either wood or aluminum casements. Norco Windows, Inc., Hawkins, Wis.

249 Door opener

"Windsor Power-Trak 600" automatic garage door opener has an enclosed, sprocketless drive track that allows movement only in a "pull-push" straight line. Windsor Door Company, a Division of The Ceco Corporation, Little Rock, Ark.

250 Terrace doors

Swinging doors have sills of *Lexan*, a durable material with insulating qualities equal to those of wood, the manufacturer says. Lights may be either double- or triple-glazed. Marvin Windows, Warroad, Minn. *GB

251 Aluminum windows

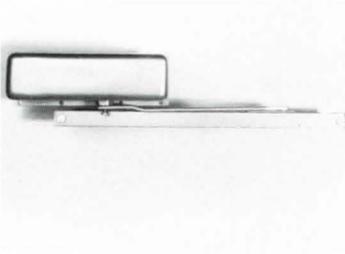
The "Sunview System" includes both aluminum windows and doors and was designed specifically for the Sunbelt climate. The system includes single-hung, glider and awning windows, and sliding glass and aluminum doors. Alcan Building Products, Warren, Ohio.

252 Adjustable door frame

An adjustable aluminum door frame can fit over a variety of interior wall thicknesses and will accept either left-handed or right-handed doors. It is available in 3 throat adjustment sizes and in 2 finishes. Masonite Corp., Commercial Div., Dover, Ohio.

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

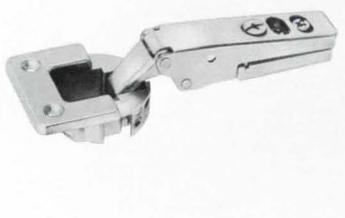
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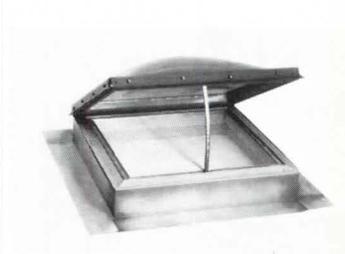


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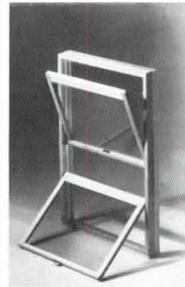
253 Automatic door closer
The Reading Protector door closer is meant for hospitals, nursing homes and other buildings that require automatic door closing in case of fire. Actuated by fire alarm or smoke detector, the unit releases air pressure to shut doors. Units are connected to master by 1/4-in. plastic tubing. Reading-Dorma Closer Corp., Reamstown, Pa.

254 Laser carving
Panels with designs carved by laser fit the manufacturer's "Voyager" door. Patterns include Art Nouveau, Windjammer, Lucky Home, Thunderbird, Rose Garden, Art Deco Deer and Timberline (shown). E. A. Nord Company, Everett, Wash.

255 Concealed hinge
Designed for use in casework construction, the "1560 Series" metal hinge can be adjusted vertically or horizontally for correct door-to-cabinet alignment. It is available in 95-deg opening, self-closing and free-swing models. Stanley Hardware Division, The Stanley Works, New Britain, Conn.



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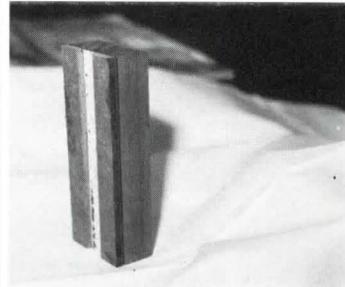


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256 Skylight hatch
The "Skymaster Hatch" sets a skylight on a wood curb. The light can be opened or shut with a crank. Tub-Master Corp., Orlando, Fla.

257 Aluminum-clad window
Wood-frame double-hung windows have exterior cladding of heavy extruded aluminum, available in either Satin White or Autumn Bronze. Interior surface is natural wood. Panes are double-glazed. Hurd Millwork Company, Medford, Wis. *GB, LR.

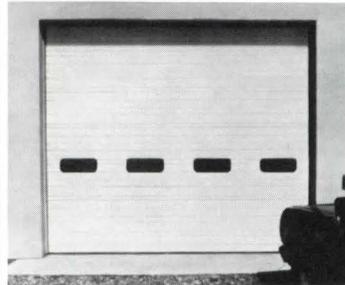
258 Reflective glass
Two new colors have been introduced in the Solarban series of reflective clear glass: Solarban 570 (at left in photo) looks blue, Solarban 560 (second from left) bright silver. Other products include copper-colored Solarban 575 (third from left) and neutral silver Solarban 550 (far right). Glass Div., PPG Industries, Pittsburgh, Pa. *GB, E



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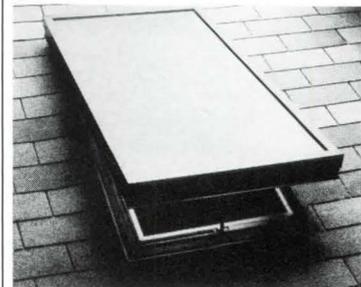
259 Fire-door stile
Triple-Ply stile combines fire retardant wood on the outside, a plastic layer below, and hardboard on the inside. The manufacturer now requires use of the stile on its own 90-min fire doors. Weyerhaeuser Co., Marshfield, Wis.

260 Double window
Tilt and Turn Tandem Window contains an aluminum Venetian blind between two PVC sashes. Sashes can swing open for cleaning. The unit comes in eight colors. Trocal Division, Dynamit Nobel of America, Rockleigh, N. J.

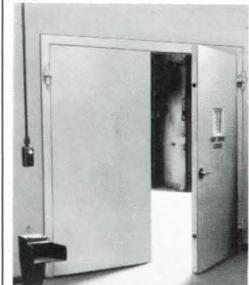
261 Sectional door
"The Competitor" is a 24-gauge steel overhead sectional door with 20-gauge T-shaped end stiles, recessed for easy handling during installation. Polystyrene insulation can be installed in either the field or the factory. Wayne-Dalton Corp. Mt. Hope, Ohio.



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262 Glazing tape
Tremco SST-800 tape, preformed of hybrid butyl, was designed for compression glazing of curtainwall systems and "rain screen" walls. The manufacturer says it is highly adhesive, elastic and resistant to flow when exposed to heat. Tremco Inc., Cleveland, Ohio

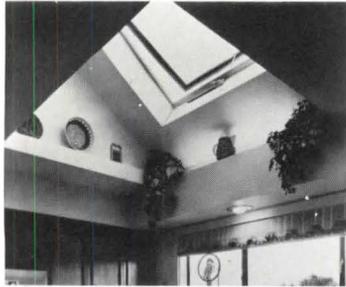
263 Insulated skylight
Intended chiefly for residential use, these units have thermal glass skylights in either clear or tinted bronze, and are framed with dark bronze-colored baked enamel. Three models include self-flashing, venting and thermal skylights. Naturalite, Inc., Garland, Tex.

264 Blast doors
DB10 Series of blast doors can resist a maximum pressure of 10 psi. They are fire rated for up to 3 hours, and sound rated to 40 STC. Protective Door Industries, Div. of Richards-Wilcox, Aurora, Ill. *GB, E

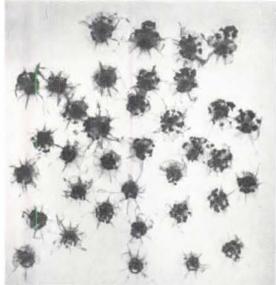
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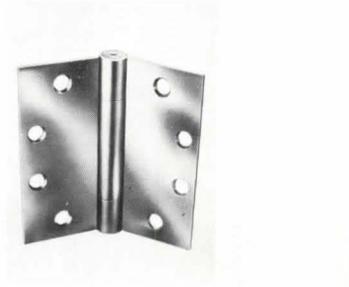
265 Insulated skylight
Skylight in "CW" Solartron unit has colorless outside light and a white inner skin, both of fiberglass-reinforced acrylic-polyester. The two are laminated to nonconductive cellulose fiberboard grid producing 1 3/4- by 6- by 6-in. pockets of insulating dead air. Solartron, San Mateo, Calif.

266 Domed skylight
Inner and outer plastic skylights have rubber gaskets and plywood liner equipped with screen, moldings and operator. The skylight includes a one-piece copper flashing unit. Ventarama Skylight Corporation, Port Washington, N.Y. *GB

267 Bullet-resisting panel
"Lexgard MP750" at 3/4-in. thickness is thin enough to fit into many existing walls and partitions and, according to the manufacturer, is the thinnest bullet-resisting laminate listed by UL for Medium Small Arms Protection. General Electric Company, Plastics Operations, Pittsfield, Mass.



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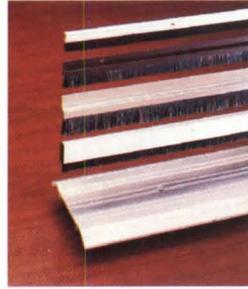


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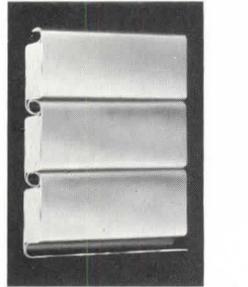
268 Glazing spacer
Designed to retrofit old buildings with double glazing, "Retroseal System" uses a fluted aluminum strip to separate old and new glass panes. The spacer strip, says the manufacturer, is surrounded by an adhesive sealant compounded with a blend of elastomers and desiccants. Retro Technology Inc., Cleveland, Ohio.

269 Spring hinge
Designed for use in apartments, offices and other locations where self-closing doors are needed, the "2060" spring hinge is concealed and non-handed. Stanley Hardware Division, The Stanley Works, New Britain, Conn.

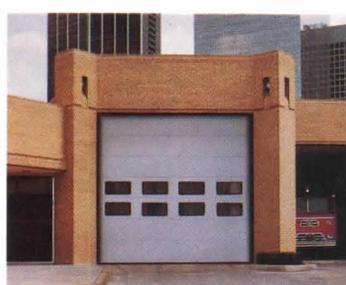
270 Casement windows
"Nor-Guard" thermal aluminum casement windows have double vinyl weather stripping around double or, optionally, triple glazing. Wide opening allows cleaning from the inside. Noranda Building Products Company, Bedford, Ohio. *LR



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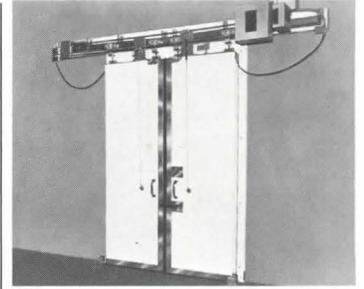


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271 Weatherstripping
"Therm-L-Brush" weatherstripping for hollow metal fire doors has a UL rating of three hours. Flexible nylon bristles can be held in extrusions of varying shapes. Sealeze Corp., Richmond, Va. *GB,

272 Steel door
Insulated rolling door has 3/4-in. solid polyurethane material sandwiched between steel slats. The Cookson Company, San Francisco, Calif. *GB, ICR

273 Sectional door
"Sup-UR-Shield" door has galvanized steel sections with baked-on acrylic exterior coat, polyester interior primer coat and insulating core of polyurethane. Double glazed lights with rubber seal are optional. Overhead Door Corporation, Dallas, Tex. *GB, ICR



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274 Hydraulic opener
Hydraulic opener for cold storage door is driven by 1/2 hp motor. The opener has printed circuit control, self-lubricating hydraulic pump and motor, and aircraft quality hydraulic tubing. Jamison Door Company, Hagerstown, Md.

275 Door pulls
The manufacturer offers a number of plate and grip combinations in its series of door pulls, including 10-, 16- and 18-gauge plate, aluminum, brass, bronze, chrome and stainless steel finish, and a variety of different shapes. Hiawatha, Inc., Bloomington, Minn.

276 Insulated window
A sheet of "Heat Mirror" film suspended and sealed between panes of insulating glass produces an R rating of 4.3. The wood window is aluminum clad. Hurd Millwork Company, Medford, Wis. *GB, LR



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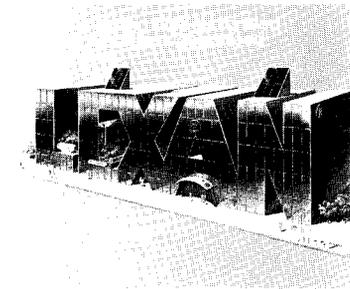
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3096 Glazing

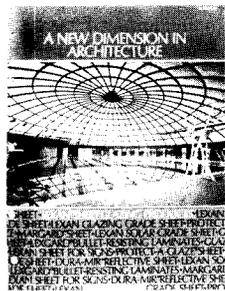
Two *Lexan* products are described in a 4-page color brochure. "Solar Grade" sheet with an ultraviolet screen is claimed to lower energy costs, while "Margard" has 30 times the impact strength of acrylic. Test results, suggested applications and warranties are included. General Electric Co., Pittsfield, Mass.



Panelfold

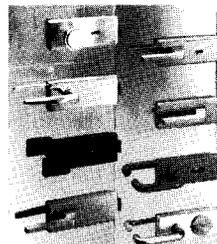
3102 Panels

A 24-page color booklet covers folding partitions, operable and relocatable walls. Sections and photographs illustrate a number of applications while diagrams illustrate installation details. Technical data are included with charts of materials, finishes, coatings and surfaces. Panelfold, Inc., Miami, Fla. *GB



3097 Sheet glazing

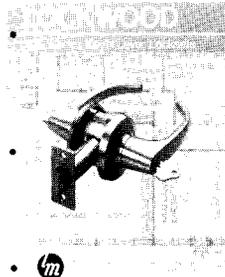
A 15-page color brochure emphasizes long-term savings and design freedom in the use of its 14 sheet-plastic glazing products. Properties, standards and installation guidelines are included along with photographs of a variety of applications. General Electric Co., Pittsfield, Mass.



3103 Locks, levers, hinges

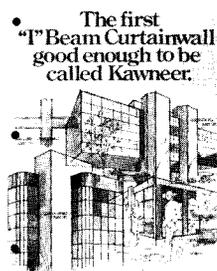
An illustrated color brochure describes *Dorma Glass* locks, levers and hinges for tempered glass doors. As shown on the cover of the brochure, the devices come in a wide variety of finishes and designs. Reading-Dorma Closer Corp., Reamstown, Pa.

Locks, Door Levers and Hinges for Tempered Glass Doors



3098 Locksets

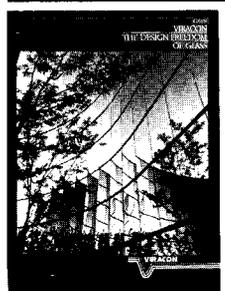
Several kinds of deadlatch and springlatch locksets are described in a 4-page brochure. Diagrams show typical dimensions while pictures show available finishes. Specifications, fire ratings and ordering procedures are listed. Lloyd Matheson, Inc., Charlestown, N.H.



The first "I" Beam Curtain wall good enough to be called Kawneer.

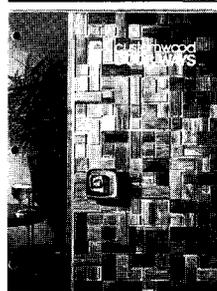
3104 Curtain wall

A 4-page brochure describes the "I" beam curtain wall. Charts give test results of thermal performance, minimum recommended condensation resistance factors, and maximum recommended humidity levels. A diagram illustrates construction details. Kawneer Co., Inc., Niles, Mich.



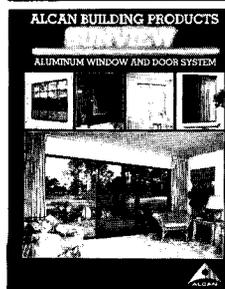
3099 Glass

A color brochure discusses a complete line of fabricated glass products. Photographs illustrate a number of recently completed projects; charts provide technical data on each product line as well as on glazing in general. Viracon, Inc., Owatonna, Minn. *GB



3105 Exterior doors

Solid wood doors for residential and contract use are described and illustrated in a 14-page color brochure. Photographs show installations while diagrams give construction details. Finishes and specifications are listed. Customwood Manufacturing Co., Albuquerque, N.M. *GB,I



3100 Windows and doors

A 16-page color brochure describes the *Sunview* aluminum window and door system which includes single-hung, glider and awning windows as well as sliding glass and aluminum entrance doors. The system is adaptable for either wood or masonry construction. Alcan Building Products, Warren, Ohio.



IDEAS-PRODUCTS-SOLUTIONS TROCAL

WINDOWS DOORS PATIO DOORS

3106 Windows and doors

A 32-page color booklet covers products which conserve energy and control noise. Photographs show a wide variety of installations; charts illustrate cost savings over the long term and diagrams detail the interlocking of structural components. Dynamit Nobel of America, Inc., Montvale, N.J.



3101 Door controls

A 16-page brochure covers the function and performance of door closers, magnetic door holders and pivot sets. Line drawings show typical installations and the mechanics of various components. Technical data are included. Rixson-Firemark, Franklin Park, Ill.

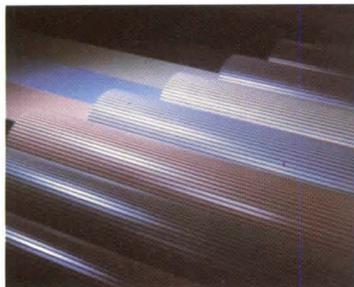


3107 Replacement door unit

A 4-page brochure describes replacement door unit with a 1½-hour UL "B" label. It comes pre-hung in a steel adapter frame which is suitable for both rehab and retrofit. Sections detail construction. Specifications are included. Steelcraft, Cincinnati, Ohio.

9 Finishes

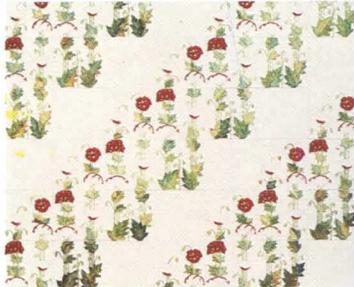
UCI 9, Finishes:
Acoustical treatment
Carpeting
Ceiling suspension systems
Painting materials
Prefinished panels
Resilient flooring
Special flooring
Terrazzo
Tile
Wall covering
Wood flooring



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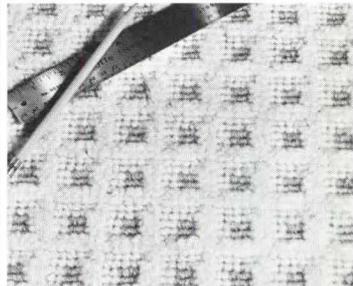
289 Color-coordinated tambour
Plastic laminates from any major U.S. manufacturer can be converted into flexible tambours, enabling architects to match curved walls, columns, and counters to flat laminate surfaces. Forms & Surfaces, Santa Barbara, Calif.

290 Tracery-patterned tile
Colored glazes are applied to square-edged ceramic tiles to produce the variegated effect of dark tracery on a light ground. Franciscan Ceramics, Inc., Los Angeles, Calif. *GB, I

291 Hand-painted tiles
The interchangeable patterns of seven ceramic tile designs (all adapted from botanical themes) are coordinated with a variety of bathroom fixtures and accessories, including washbasins, faucets, and towel bars. Sherle Wagner International, New York, N.Y.



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292 Period wall coverings
The "Styles Nobles" collection, manufactured in Europe by Salubra Tekko, comprises over 30 patterns of period wall coverings designed for commercial interiors. Finishes include embossed damask and brocade. Scalmandré, New York, N.Y.

293 Broadloom carpet
A cut and loop-patterned wool Wilton-type carpet, "Kalahari II" is intended to withstand commercial traffic. Twelve-foot widths are available in three geometric motifs. Couristan, New York, N.Y.

294 Acoustic wall paneling
Custom-sized upholstered wall panels offer the acoustic advantage of sound-absorbing polyurethane foam covered with suede fabric. Brejtfus Environmental Concepts, Inc., Tempe, Ariz.



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295 Interior latex wall paint
"Wonderspeed" flat wall paint dries in less than an hour. It is equally suitable for application to plaster, brick, wallboard, acoustic materials, masonry block, stucco, cement, and oil-based coatings. Ameritone Paint Corp., Long Beach, Calif.

296 Monet-inspired fabric
The six textile patterns in the hand-painted "Giverny Collection" are based on the Impressionist painter's evocative images of his water garden at Giverny, in France. Groundworks, New York, N.Y.

297 Pre-finished parquet
Seven patterns are produced in domestic and imported hardwoods. Shipped in pre-assembled squares, flooring units are fabricated with an eased edge or tongue-and-groove edging that permits them to be laid like tile. Robbins Inc., Louisville, Ky.



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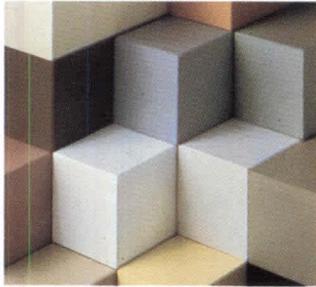


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298 Fabric wall covering
"Traffic Jam" (shown) and "Christmas in New York" are new patterns in the "Rhythms" line of warp wall coverings. A third polyester blend, "Huckleberry Hash," is backed with paper for use on walls, or acrylic for furniture. Gilford Inc., New York, N.Y.

299 Glazed ceramic tile
Dimensions of 6 by 6 in. make "Tapestry" tiles appropriate for residential floors and walls as well as counter tops. The matte-glazed ceramic squares are manufactured in six colors. American Olean Tile Co., Lansdale, Pa.

300 Tiles for commercial use
Fabricated in 8-in squares, "Canyonstone" ceramic tiles are slip- and wear-resistant. Three colors have been added to the four earth tones currently available. Marazzi USA, Inc., Dallas, Tex. *GB



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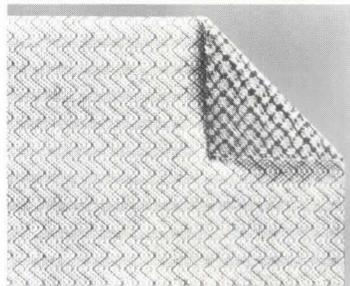
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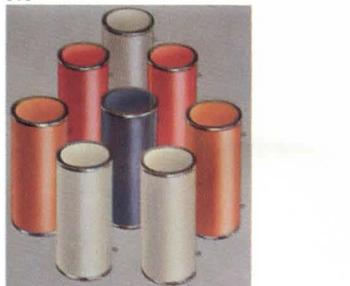
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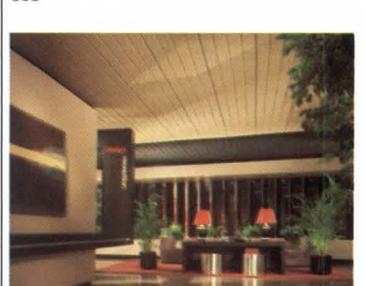
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301 Integral-color laminate

Owing to a solid-color core, "ColorCore" does not expose the dark edge characteristic of most surface laminates. Integral color eliminates the need for mitered or beveled joints to create uniform effects. Formica Corp., Wayne, N.J.

302 Urethane floor coating

The high reflectivity of light-colored urethane paints has proven especially useful in amplifying the illumination in aircraft maintenance shops and other mechanical work areas. Mobay Chemical Corp., Pittsburgh, Pa.

303 Water-base epoxy coating

"Pitt-Glaze II" is a low-odor acrylic-epoxy coating for interior use. Paint can be thinned with water and equipment washes clean in a soapy solution. PPG Industries, Pittsburgh, Pa. *GB, ICR

304 Carpet tile

The plying of "Zeftron" space-dyed nylon and wool-like stock-dyed nylon contrasts bright flecks of color against a subdued ground in the "Chroma Flec" carpet tile. A mexphalte backing gives dimensional stability. Heuga USA Inc., Kenilworth, N.J.

305 Heavy-duty carpet

By weaving patterns through the back of carpets, the "Kara-Grid" process combines design precision and structural integrity. "Antron III" nylon yarns produce a dense cut-pile surface. Karastan Rug Mills, New York, N.Y.

306 Sound-absorber

Designed for ceiling suspension, "Noisemaster" resonator sound-absorbers can now be specified in a variety of colors. The units are suitable for installation in commercial and institutional facilities. The Proudfoot Co., Inc., Greenwich, Conn. *GB

307 Sealants

Silglaze N translucent glazing sealant offers neutral cure for low corrosion, fast cure (tack-free in one hour), and approximately 50 per cent joint movement. General Electric Co., Silicone Products Div., Waterford, N.Y.

308 Fir ceiling/paneling

With an edge- and center-bead profile on one side and an edge- and center-vee on the other, the "Palco-Loc" Douglas fir panel is equally adaptable for ceiling or wall applications. The Pacific Lumber Co., San Francisco, Calif.

309 Ceiling cleaning process

The "Coustic-Glo" system chemically cleans acoustical ceiling tiles without impairing their sound-absorption. Coustic-Glo International, Inc., Minneapolis, Minn. *ICR

310 Bordered carpet

Coordinated 8 $\frac{3}{4}$ -in. borders and 12-ft. center fields in a variety of patterns can be used separately as broadloom carpeting or combined to form unusual rugs. Patterson, Flynn & Martin, New York City.

311 Suspended ceiling

"Adapt-A-Grid" speeds installation and lowers cost by using an existing lay-in ceiling T-bar grid as a mounting platform. No mechanical fasteners or crimping tools are required. Alcan Building Products, Warren, Ohio.

312 Acoustical ceiling

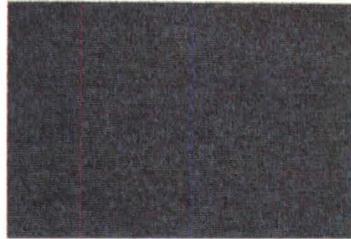
"Crossgate," a 2- by 2-ft. mineral-fiber panel is precision-cut and cross-scored to create the appearance of a continuous linear ceiling. Armstrong World Industries, Inc., Lancaster, Pa.

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

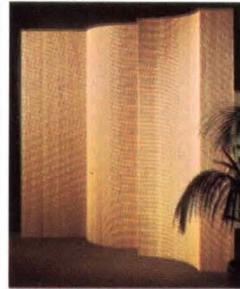
*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



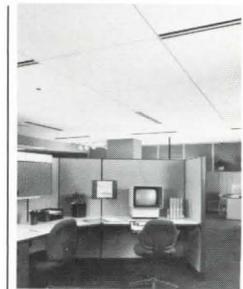
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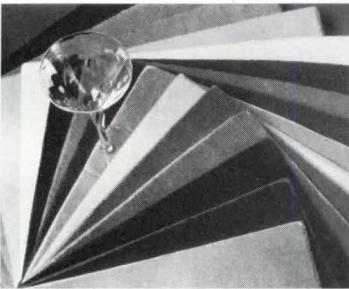
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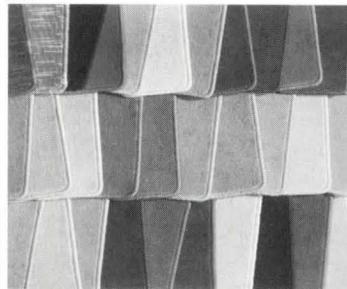
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313 Linear metal ceiling

The "Willard" metal panel system can be used for walls and soffits as well as ceilings. Both round- and square-edge profiles are available, for application to flat or curved surfaces. Nichols-Homeshield, Inc., Chicago, Ill. *GB, ICR, I

314 Wool carpet

A velvet pile and pin-point finish distinguish the all-wall "Primavera" carpet, a recent addition to the *Eligère* line. The palette of 15 shades is dominated by soft pastels. Collins & Aikman, New York City.

315 Colored ceiling T-bar

Made of heavy-gauge steel with an aluminum face, the "Color Grid" is an exposed T-bar for suspended ceiling systems. This component can be ordered in more than 100 colors. Levolor Lorentzen, Inc., Lyndhurst, N.J.

316 Broadloom carpet

A fluorocarbon stain-repellent and anti-microbial protection are built into the yarn used in "Bolton" carpets. The 1/10-gauge, 24-oz. fabric comes in 16 heather colors. Stratton Industries, Inc., Cartersville, Ga.

317 Marble-like vinyl tile

Designed for heavily trafficked commercial spaces, "Random Marbles" reinforced vinyl tile simulates the varied veining of genuine marble. The 12- by 12-in. tiles are 1/8-in. gauge. Kentile Floors Inc., Brooklyn, N.Y.

318 Resilient rubber tiles

Available in round or square stud patterns (for slip resistance), or in a smooth texture, these synthetic rubber tiles contain soil-releasing agents and integral waxes. Endura Flooring Division, The Biltrite Corp., Chelsea, Mass.

319 Flexible wood paneling

Solid wood "Customwood Tambour" conforms to any wall profile, or can stand on its own to create a freestanding interior divider. Hardwood paneling is offered in 12 designs. Customwood Manufacturing Co., Albuquerque, N.M. *GB, I

320 Imported broadloom

The 100 per cent wool "Prestige" line of broadloom carpet is manufactured in France and imported by the Stark Carpet Corp., sole distributor in the U.S. A range of 32 colors is offered. Stark Carpet Corp., New York City.

321 Cut-pile velvet carpet

"Chatsfield" carpet has a wool face and jute backing. Custom colors may be specified, in addition to the 12 standard hues currently offered. The carpet's flame-spread rating is 65. Weave-Tuft Carpet Corp., New York, N.Y.

322 Reveal-edge ceiling panels

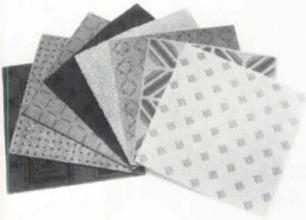
Molded to exact grid tolerances, "Softscape" ceiling panels are available in sizes as large as 5-ft.-square. Class I Dacron color fabric and Nubby glass cloth are the standard finishes. Capaul Division, Acoustiflex Corp., Plainfield, Ill. *GB

323 Green carpets

Saxony Carpet Co. has introduced a broad range of floor coverings in a spectrum of greens, which the firm considers this year's most fashionable colors. Saxony Carpet Co., Inc., New York City.

324 Berber-style carpet

Inspired by Berber rugs, "tempo" carpet has a face of 70 per cent wool and 30 per cent acrylic. The 13-ft., 2-in.-width is suitable for contract or residential interiors. Weave-Tuft Carpet Corp., New York City.



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325 Patterned carpet tiles
"Performance Patterns" have been produced in 8 designs and 52 color combinations to afford a wide range of choices for non-residential projects. Interface Flooring Systems, LaGrange, Ga.

326 Reflective ceiling panels
An inverted T-bar grid with tension springs supports modular reflective steel panels in the *MirraPlank* system. Standard finishes are mirror chrome, mirror brass, brushed chrome, and brushed brass. Integrated Ceilings, Inc., Los Angeles, Calif.

327 Durable broadloom
A checkerboard motif enlivens the "CW-2SD1" fabric produced with Badische's *Zeftron 500* nylon. The 47-oz. carpet, intended for extra-heavy traffic, is part of the "Creative Designer Series." Bigelow Sanford, Inc., Greenville, S.C.



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328 Wood stains and sealants
"StainWax" (which stains, waxes, and seals), "Danish Oil Finish," and "Cabothane," (a clear polyurethane finish) satisfy interior staining needs. Cabot "Decking Stains" protect exterior surfaces. Samuel Cabot Inc., Boston, Mass.

329 Dappled vinyl wallpaper
The "Spatterware" line of wall coverings, designed as an all-over background pattern, is available in 11 colors. Brunschwig & Fils, New York, N.Y.

330 Vinyl-faced gypsum panels
A new low-gloss texture, "Pumice," new patterns, and neutral colors have been added to the *Textone* line of wall panels. Designers may specify a non-combustible gypsum board core. United States Gypsum Co., Chicago, Ill. *GB



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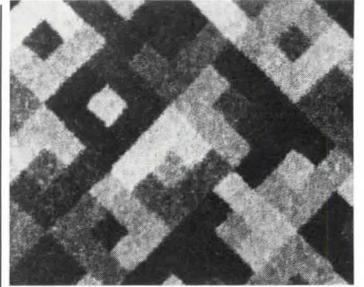


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331 Lay-in ceiling panels
Any standard 2- by 2-ft. exposed ceiling module can be fitted with "Classique" metal panels, now available with a 3/8-in. reveal edge. Suspension systems are coordinated with the 13 panel colors and finishes. Chicago Metallic Corp., Chicago, Ill. *GB

332 Impregnated parquet
A light-colored oak square called "Cambridge" has been added to the Hartco line of flooring, which is impregnated with liquid acrylic and stain. Parquet may be ordered with a foam back, as a sound and moisture barrier. Hartco, Inc., Oneida, Tenn. *GB, I, LR

333 Transparent fabric motif
A chemical process creates transparent multicolored patterns in white polyester-cotton casement fabric. The washable "Silhouette" textile combines luminosity with privacy. DesignTex Fabrics, Inc., Woodside, N.Y.



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334 Corridor carpets
Produced in special widths for hotel, motel, and office hallways, "Beauvais Corridor Coordinates" offers small geometric patterns with a custom-made appearance. Bigelow-Sanford, Inc., Greenville, S.C.

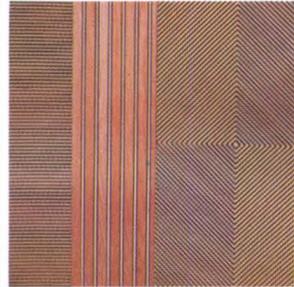
335 Fabric-like wall covering
"Ferrara," a recent addition to the *Vicrtex* series of vinyl wall coverings, simulates the texture of hand-loomed fabric. A delustered resin coating is applied for easy cleaning in public interiors. L.E. Carpenter and Co., Wharton, N.J. *GB

336 Embossed vinyl wall system
"Forbo trimural," a textured vinyl on a dense foam cushion, can be applied without preliminary wall preparation. A fiberglass backing seals irregular surfaces while the embossed covering helps mask imperfections. Forbo North America, Inc., Lancaster, Pa.

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



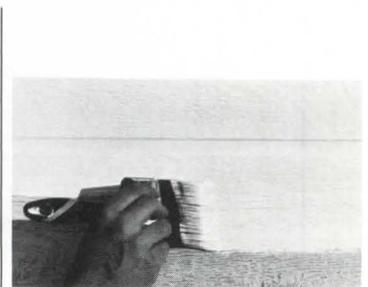
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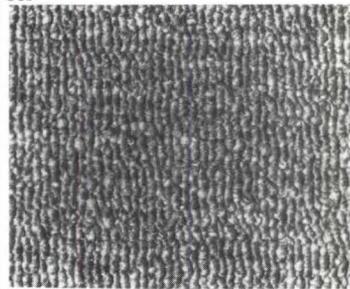
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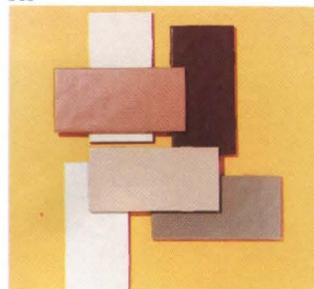
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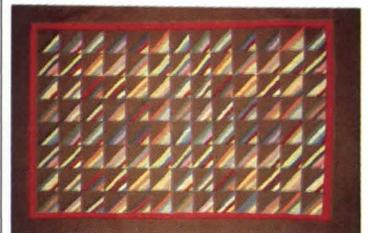
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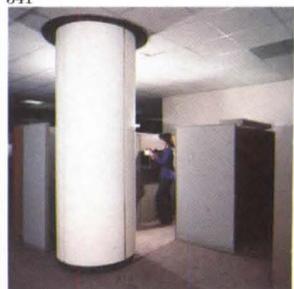
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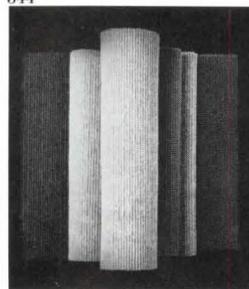
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337 Textured wall coating
A variety of textures and colors can be applied to interior walls through the use of "Stolan" acrylic-base wall coating. When dry, the finish is impact- and chip-resistant. STO Energy Conservation, Inc., Rutland, Vt.

338 Ceiling light unit
Conwed's "Board Vault 60/30 Light" is designed for use with standard suspension systems. Special features include wraparound acrylic prismatic lenses and mineral trapezoidal panels for acoustical control. Conwed Corp., St. Paul, Minn. *GB

339 Durable vinyl flooring
Hard particles of mineral aggregate are incorporated into the raised disks on "Crosswalk," a commercial sheet flooring intended for severe-traffic areas. Armstrong World Industries, Inc., Lancaster, Pa.

340 Custom tambours
Custom tambour patterns can now be specified in solid woods, wood veneers, metals, cork, and combinations of wood and metal. Panels may be flexible or rigid. National Products, Inc., Div. of Potter Ind. Group, Louisville, Ky.

341 Loop-pile carpet squares
Yarn-dyed *Antron III* nylon is worked into a tight 1/10-in. gauge to form "Landscape" carpet squares. "Mexphalt" backing ensures slip-free installation in office interiors. Heuga USA Inc., Kenilworth, N.J.

342 Custom sheet-metal panels
Interior architectural sheetmetal panels and enclosures are custom-made for commercial projects. Installed by the manufacturer, these special elements are supplemented by prefinished metal covers for fixtures and trim. Linear-Flo Systems Co., Skokie, Ill.

343 Fine-gauge velvet carpets
"Trianon," the first carpeting produced by Knoll, has the fine texture of 16th-gauge velvet construction. The fabric is intended for contract use and is available in 35 colors. Knoll International, New York, N.Y.

344 Pastel ceramic tile
The 3- by 6-in. "Celebrity" tile may be ordered in a range of subtle pastel tones. Drypressed for precise dimensioning, the tile is also frostproof, enabling it to be used on vertical exterior surfaces. Gail Int., Tustin, Calif. *GB, I, ICR, LR

345 Wall carpeting
The vertical ribs in "Furrows" carpeting conceal seams when the material is applied to walls in multiple widths. The fabric is "Trevira" polyester fiber. Knoll International, New York City.

346 Hardboard primer
"Hardboard Primer-Sealer" is designed specifically for hardboard and particle board siding. A binder prevents wax blotches and bleed-through in new or repainted siding. PPG Industries, Inc., Pittsburgh, Pa.

347 Indian carpet
All-wool "Les Triangles" carpets are hand-woven in India. The geometric motif incorporates a full color spectrum. Manuel Canovas, New York City.

348 Open cellular ceiling
The aluminum "Magnagrid" ceiling system is available in 9 enameled colors, brass, and bright aluminum. Designers can choose from 4 cell sizes and 3 cell depths. Intalite Louvers and Ceilings, Inc., Northbrook, Ill.



Lees defines the future in modular carpet systems

The office of the future will be finished in a carpet tile that marries form, function, and esthetics. That carpet tile is here today, made by Lees.

Access to power. Tiles lift free for quick, easy access to telephone, CRT, and electric power lines in flat cable or laid in subfloor ductwork.

Coordinates. The system includes plain and patterned modular carpet with broadloom coordinates in identical construction. Visual flow is continuous, uninterrupted by breaks in surface texture.

Advanced generation. As long ago as 1967, Lees made rubber backed carpet tile for the educational market. Later versions used a hard vinyl back. Today's Unibond® construction bonds face yarn and backing into a single component that fits a vastly improved carpet system.

Guaranteed. Lees backs all its carpet tile products with a comprehensive warranty, written in plain English. No manufacturer goes as far to guarantee performance satisfaction.

Installation. A clean pressure sensitive release adhesive holds tiles in place and prevents shifting even under wheeled traffic and at pivot points.

Test data. Lees tests its modular carpets for smoke generation and flame spread. This important data is published and readily available for review.

Appearance. Antron®III nylon pile yarns by DuPont are dirt-resistant and static-protected. Superior appearance retention reduces maintenance costs.

Call toll-free. For test data, specification information, call 800/523-5647. From within Pennsylvania, call collect 215/666-9426 or write for illustrated brochure.

Lees. The Contract Carpet Company.
Live the life of Lees at work and at home.

LEES carpets

Made better by Burlington
King of Prussia, PA 19406

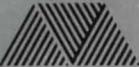
Announcing Millitex™ from Milliken.

A totally new dimension in modular carpet technology, for tonal texture that you've never had before.

Milliken Research takes another giant step forward, with the development of the exclusive Millitex machine for tonal texturing of modular carpet.

Using a patented technique, the computer-driven Millitex machine works together with the Milliken Design Computer to create an outstanding array of unique tonal textures that offer unprecedented beauty and durability in contract installations. Textures so necessary to the design requirements of today's contract professionals—but never possible until now.

For new dimensions in carpet technology, contract America looks to Milliken first.


MILLIKEN
CONTRACT CARPETS

The TextureMates™ Collection. The first modular carpet with tonal texture... designed for beauty, constructed for durability.

Using the unique capabilities of the Millitex machine, Milliken has created TextureMates—the first modular carpet line with tonal texture.

Their sophisticated patterns and contemporary colors make TextureMates outstanding design additions to any interior. Their textures are as durable as they are beautiful, because the base carpet is Milliken's proven performer—Corporate Square®/Nova fusion-bonded modular. High-performance Du Pont Antron® XL nylon assures long life, even in heavy-traffic installations. And

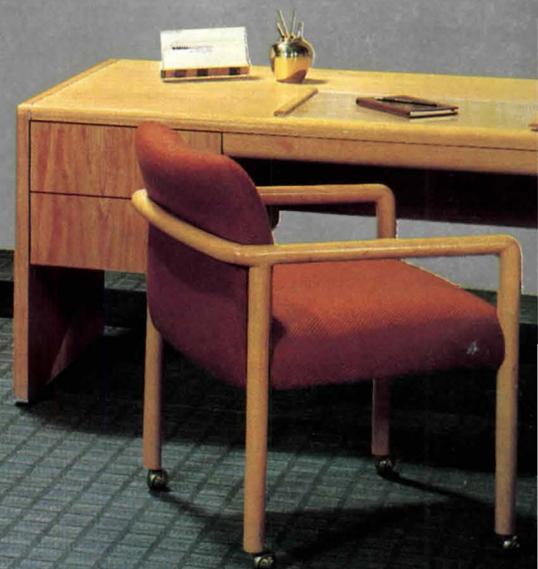
because they are available in both vinyl hardback and MilliBack™, TextureMates make beautiful economic sense as well.

Discover the simply beautiful things we can do for you with our new Millitex machine.

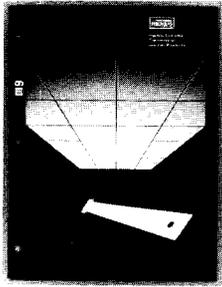
The possibilities for tonal texture in your next installation are virtually unlimited. For further information on Millitex and the TextureMates Collection, contact your Milliken Carpet Dealer or Milliken Contract Carpets, P.O. Box 2956, LaGrange, GA 30241.

DU PONT
ANTRON® XL

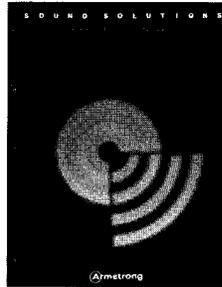
Circle 1066 on inquiry card



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3120 Commercial ceilings
Sound and thermal control are emphasized in a 16-page color brochure. A selection chart gives sound absorption coefficients and figures on light reflectance and flame spread. Dimensions and R-Values are included. Owens-Corning Fiberglas Corp., Toledo, Ohio.



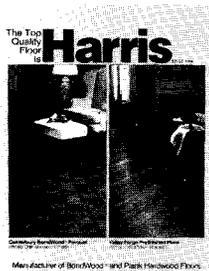
3126 Open plan acoustics
An 8-page folder called "Sound Solutions" assists in designing acoustics for open plan offices. Topics covered include speech privacy levels, client needs and design decisions. Products are shown with their performance characteristics. Armstrong World Industries, Inc., Lancaster, Pa.



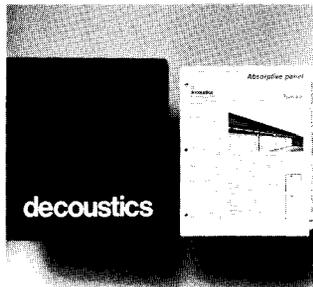
3121 Wallcoverings
A sample catalog contains a collection of imported wallcoverings from Belgium. Eighty linen woven textures and vertical yarns are included. Widths vary from 24 in. to 59 in., and all fabrics have a Class A flame spread rating. Hamilton Adams Imports, Ltd., New York City.



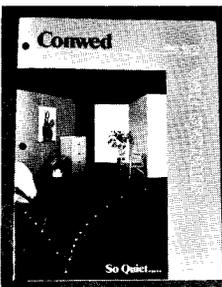
3127 Tile
A 4-page color brochure features photographs of installations of Franciscan "Terra Grande" ceramic tile. Tile colors are shown as well as details, sizes, trim shapes, specifications and installation procedures. Franciscan Ceramics, Inc., Los Angeles, Calif. *GB



3122 Wood floors
A 12-page color brochure features teak, oak, walnut and maple parquet and plank flooring. Photographs illustrate installations and specifications include diagrams and dimensions of every pattern. Harris Manufacturing Co., Johnson City, Tenn.



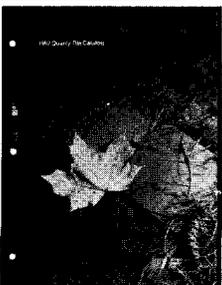
3128 Acoustical products
A data binder contains more than 50 product descriptions. Information is provided on panels, wall and ceiling systems and accessories along with flammability test data and sample finishes. Decoustics, Rexdale, Ontario, Canada.



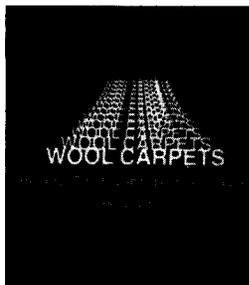
3123 Acoustical wall systems
A 6-page color brochure describes two types of wall panels for different noise levels. Diagrams show panel construction while specifications include dimensions and technical data. A color chart is also included. Conwed Corp., St. Paul, Minn.



3129 Carpet tiles
A color brochure illustrates a standard pattern program for carpet tiles; patterns are available in 8 designs and 52 color combinations. Suggested applications are open offices, hotels, restaurants and hospitals. Interface Flooring Systems, LaGrange, Ga.



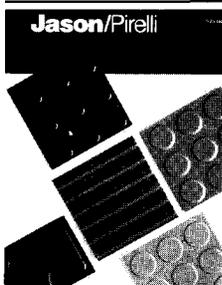
3124 Quarry tile
An 8-page color brochure features a textured quarry tile in 9 earth-tone blends plus 7 earth colors. Photographs show installations and trim shapes, applications, sizes and specifications are indicated. American Olean Tile Co., Lansdale, Pa. *GB



3130 Wool carpets
Over 600 wool broadloom carpets are arranged by construction and texture in a 32-page directory. Charts list specifications including flammability ratings, minimum yardage, colors and prices. Two pages are devoted to custom carpet programs. The Wool Bureau, Inc., New York City.



3125 Ceramic tiles
A 24-page color booklet features photographs of a wide variety of installations of ceramic tiles from Italy. Glazed, unglazed and monocottura (single-fired) tiles are included in the collection shown. Italian Tile Center, New York City.



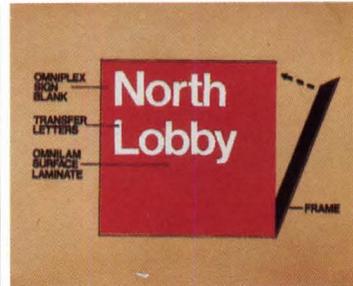
3131 Rubber flooring
A 4-page color brochure discusses adhesives, applications and the composition of Jason/Pirelli "Radial Rubber Flooring." Several models and colors are illustrated. Specifications are listed for rubber flooring, modular tiles and one-piece stair treads. Jason Industrial, Inc., Fairfield, N.J.

10 Specialties

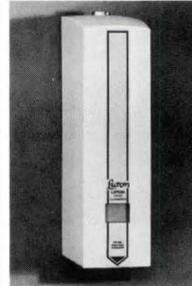
UCI 10, Specialties:
 Access flooring
 Fireplaces
 Flagpoles
 Identifying devices
 Lockers
 Partitions
 Pest control
 Storage shelving
 Sun control devices
 Toilet & bath accessories
 Wardrobe specialties



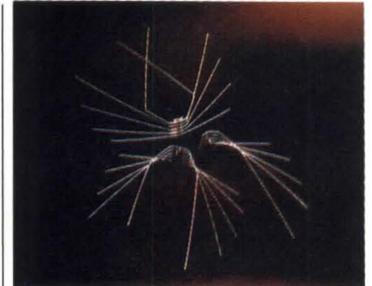
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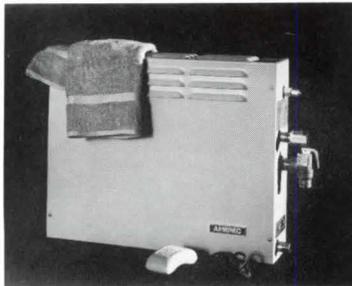
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373 Heat-circulating fireplace
 This new model, called *The Advantage*, has a low profile and flush hearth due to entry of air at the sides. It is said to permit installation as a supplemental heat source anywhere in new or remodeled houses. Heatilator, Inc., Mt. Pleasant, Iowa.

374 Steam bath generator
 Called "The Amerec Steamer," this unit can be installed in conversions for existing tubs or showers as well as new steam rooms. Available in 8 models from 5 to 11 kw, it can be located up to 20 ft from the steam bath enclosure. Amerec Corp., Bellevue, Wash.

375 Access floor
 Said to provide a solid, concrete-like surface that eliminates vibrations, these panels, called the *S-Floor*, are formed of non-combustible silicate, with steel reinforcement. The supporting structure consists of steel connectors, pedestals and spring-tensioned fasteners. Innocrete Systems, Inc., Cranford, N.J.

376 Signs
 Featuring deep impregnation of letters and numbers, matte finish and contemporary appearance, the *Omigraf II* series is said to be vandal-proof, with a surface laminate of tough polycarbonate films which permanently seals the message within the sign. Scott Machine Development Corp., Walton, N.Y.

377 Protective covers
 These covers are designed for walkways, entrances, loading docks, storefronts and parking facilities, and are available in a wide selection of colors, supports and trim. Construction is preformed aluminum or steel. Span Metals Corp., Dallas, Tex.

378 Shower enclosure
 Intended for on-site fabrication in custom applications, the new "StikStall" shower enclosure is designed to permit very thin metal trim around glass panels. Adjustable pivot doors are available in a frameless design. Trim colors are silver, gold or bronze. Howmet Aluminum Corp., Terrell, Tex.

379 Soap dispensers
 Available in several models, these soap dispensers are either plastic or stainless steel. Models 21 and 321 hold a liter soap bottle and have a clear glass slot to show the level. Models 40 and 341 are designed for recessed installation. United States Borax and Chemical Corp., Los Angeles, Calif.,

380 Relocatable walls
 Featuring the same tax advantages as open-plan components, these full-height gypsum walls have slotted hangers spaced on a 24-in. module to receive components from parent-company Herman Miller's *Action Office* furniture system. Vaughan Walls, Inc., Irving, Tex.

381 Storage/shelf supports
 Available in widths from 60 to 96 in., each section of these 16- or 18-ga. steel supports holds loads up to 2400 lb. Assembly requires no tools. Colors are cream or tan. Aurora Steel Products, Aurora, Ill.

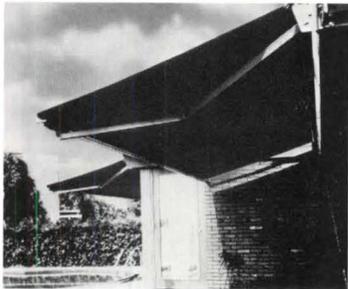
382 Bird control device
 These stainless steel bird barriers are intended to blend harmoniously with new or existing constructions and will not harm birds. Models are available for large and small birds. Nixalite of America, Moline, Ill.

383 Toilet paper dispenser
 Constructed of satin-finish stainless steel, these units are meant to be mounted on partitions from 3/4- to 1 1/2-in. thick. Made with 2 compartments, one roll is dispensed, while the other is held in reserve for automatic replacement. The Charles Parker Co., Meriden, Conn.

384 Access flooring
 Available in 14 colors and patterns, these *Perma-Kleen* floor tiles are said to offer high resistance to cigarette burns and heel marks, and require minimal maintenance. Ralph Wilson Plastics Co., Temple, Tex.

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



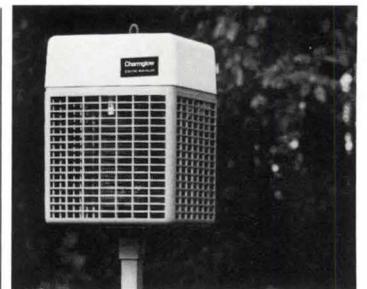
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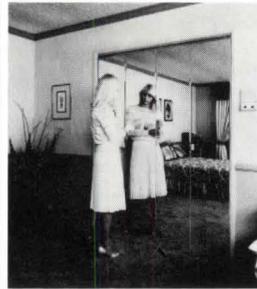
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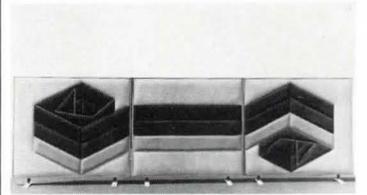
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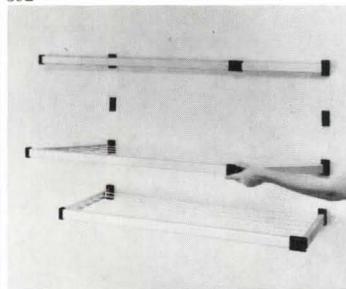
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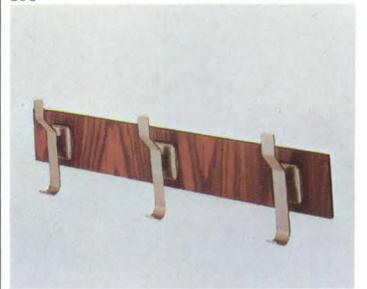
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385 Awning

Made from acrylic in a variety of solid colors and stripes and said to be exceptionally durable, these 4200 Series awnings can be retracted into a protective housing mounted on the building. Recommended for residences and stores. Levolor Lorentzen, Inc. *GB

386 Whirlpool

Two new acrylic models, the square "Orion" and the round "Corona" (shown) are manufactured without an integral heating element to allow for alternate fuel sources. Both are suitable for outdoor installation. Jacuzzi Whirlpool Bath, Walnut Creek, Calif.

387 Movable partitions

As a non-load bearing wall made of gypsum panels, the *Ultrawall* system has components said to be completely reusable. The system is not classified as structure, is therefore eligible for investment tax credit. United States Gypsum Co., Chicago, Ill.

388 Lateral files

Manufactured in two series to meet U.L. standards for record protection, these sturdy files come in two-, three- and four-drawer models. The units are finished so that the four-drawer model can be used as a partition. Diebold, Inc., Canton, Ohio. *I

389 Plastic netting

This plastic netting protects buildings from roosting pigeons and other pests without using chemicals. After application, the durable, lightweight netting usually lasts 5 to 8 years. Conwed Corp., St. Paul, Minn. *GB

390 Bathtub/shower seat

The new model 717 has a stainless steel frame, teakwood slats and a detachable *Naugahyde* cushion. The unit can be folded out of the way when not in use. Tubular Specialties Manufacturing, Inc., Los Angeles, Calif. *GB

391 Wired panel base

Designed as acoustic panel dividers for offices, each base can receive wiring for one to four outlets, one circuit or two. Pop-off side covers provide access. Conwed Corp., St. Paul Minn.

392 Folding mirrored doors

These doors are now available without frames; the glass has either beveled or polished edges. Open panels give good access to wardrobes. Monarch Mirror Door Co., Inc., Chatsworth, Calif.

393 Folding clothesline

Designed to fold flat against the wall when not in use, this *Foldline* offers 21 ft of vinyl coated line, and can be used inside or out. The frame is gold- or silver-colored anodized aluminum. Tub-Master Corp., Orlando, Fla.

394 Insect control device

Three models of these devices are designed for various sizes of yards. For 1/2- to a full-acre area, U-shaped fluorescent lamps have sockets protected from the weather. All models operate on standard 100-volt current. Charmglow Products, Bristol, Wis.

395 Fabric-covered partitions

Both silk screened and upholstered panels are offered for office areas requiring decorative impact. The panels are rated for noise reduction at 95, and incorporate electrical raceways. Breytffus Environmental Concepts, Inc., Tempe, Ariz.

396 Coat and hat rack

Offered in 14 standard colors and lengths from 24 to 60 in., Model 994 is constructed of a synthetic laminate bonded to a phenolic core. Bradley Corp., Menomonee Falls, Wis.

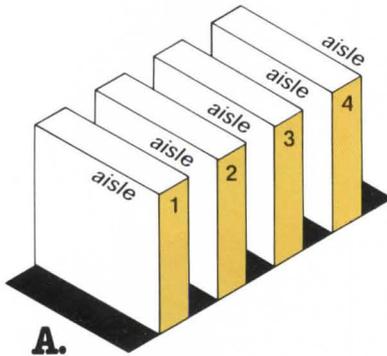
SPACESAVER SYSTEMS:

any

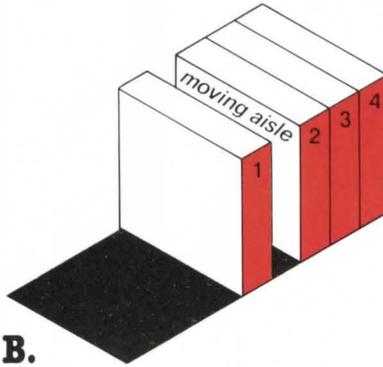
the intelligent alternative to storage.

Doubles Storage Capacity without Doubling Interior Space...

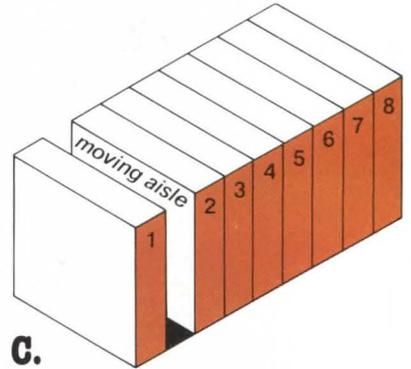
or Saves 50% of Space for other functions.



A.
CONVENTIONAL STORAGE
Wasted Aisle Space



B.
SPACESAVER SYSTEM
Converts Aisles to Storage

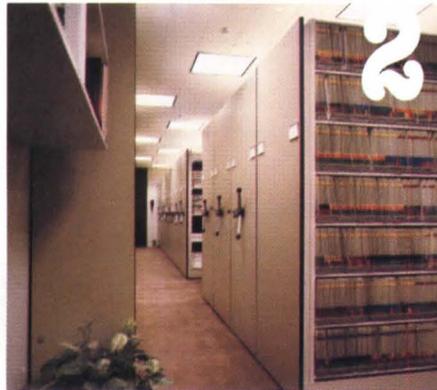


C.
SPACESAVER SYSTEM
Doubles Storage Capacity

Case Studies



1. Fort Savings & Loan Association
Edgerton, Wisconsin



2. Arthur Andersen & Associates
Chicago, Illinois



3. First National-Southern Natural Gas Company
Birmingham, Alabama

THE CASE FOR HIGH-TECH HIGH-DENSITY MOBILE STORAGE SYSTEMS FROM SPACESAVER.

The basic concept is simple. By eliminating non-productive aisles that occur in conventional storage, Spacesaver fills those wasted aisles with 100% more material storage... using only a single, optional "moving" aisle. Mobile storage units carrying tons of payload per unit traverse on a system of rails... effortlessly and quietly. It's the high-tech way, the smart way to fully utilize all the available interior space for storage areas. And Spacesaver offers the Designer back-up planning assistance with a comprehensive Kinetic Space Analysis study for each of your client's projects. Spacesaver. The intelligent storage concept that just makes sense... for you and your clients.

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Yes, Spacesaver makes sense to me.

- Please have your storage specialist contact me for my complimentary copy of the Architectural Planning Book.
- I would like to review your entire Designer's File.

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Organization _____ Address _____

City _____ State _____

Zip _____ Telephone _____

A. Rec. 12/82

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Available to qualified professionals. Includes Design Manual, Architectural Planning Book and Floor-Loading Technical Guidebook.

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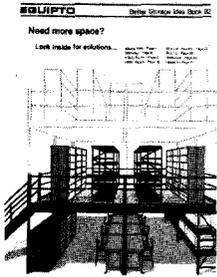


Spacesaver
high-density mobile storage systems

Product literature: Division 10

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



3144 Storage

A catalog provides selection of over 3,000 coordinated products for efficient use of storage and work space. Photographs show details of products and applications. Among the items covered are drawers, cabinets, shelves, work benches and data processing furniture. Equipto, Aurora, Ill.



3150 Metal flagpole manual

A guide to the design, fabrication and installation of metal flagpoles features a section on windload test data. Construction details and specifications are included. Total cost is \$14.50. Mail checks directly to: NAAMM Headquarters, 221 North LaSalle St., Suite 2026, Chicago, Ill. 60601.

Colorline® Partitions Pay Off.

UNISTRUT Interior Building Systems

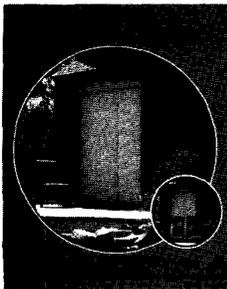
3145 Partitions

An 8-page pamphlet describes the advantages of partitions over drywall construction. Topics covered are installation costs, depreciation, tax credit, after-tax cost and lower cash outlay. Charts and schedules illustrate claims of cost benefits. Unistrut Interior Building Systems, Kansas City, Mo.



3151 Blinds

An 8-page brochure describes Vision Control window unit with aluminum blinds sealed between panes of glass. A diagram shows how the unit controls thermal heat gain by simple adjustment of the louvers. Specifications are included. Unicef, Inc., Boucherville, Quebec, Canada.



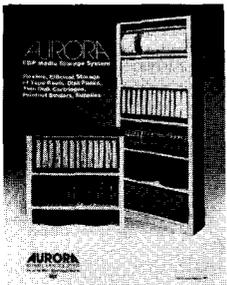
3146 Rolling shutters

The advantages of weather protection, security and energy efficiency are highlighted in a 4-page color brochure on rolling shutters. Photographs illustrate a number of installations. Available in white or beige, shutters are custom designed. Pease Industries, Inc., Fairfield, Ohio.



3152 Screens

A 4-page color brochure illustrates the Sunscreen, an electrostatically-coated exterior screen designed for maximum shading. Photographs show the effect of the screen in typical installations; and specifications are given. Phifer Wire Products, Inc., Tuscaloosa, Ala. *GB,LR



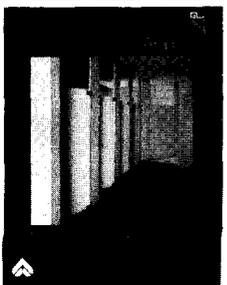
3147 Media storage

A 4-page color brochure illustrates and describes a storage system for EDP media including tape reels, disk packs, thin disk cartridges and printout binders. Photographs show installations, and diagrams illustrate options in storage accessories. Aurora Steel Products, Aurora, Ill. *GB,I



3153 Graphics

An 8-page brochure describes both interior and exterior graphics systems. Drawings illustrate processes and mountings; a chart shows several type faces, and specifications are listed. Mohawk Engraving Co., Inc., Schenectady, N.Y.



3148 Restroom partitions

Baked enamel and stainless steel partitions are described and illustrated in a 4-page color brochure. Specification details are included. The metal line is available in floor mounted, ceiling hung and overhead braced construction styles. Ampco Products, Inc., Hialeah, Fla.



3154 Floor system

An elevated flooring system of modular slabs is designed to solve the problem of utilities distribution in an open plan office. The 8-page color brochure shows installations and includes diagrams of system components. Specifications are included. Innocrete Systems, Inc., Cranford, N.J.



3149 Shower stalls

Designed for a corner application, the StikStall angled shower stall is described and pictured in a brochure. Two styles are available—a framed and a frameless pivot door. Aluminum framing assemblies are used around the glass with overlapping joinery. Howmet Aluminum Corp., Terrell, Tex.



3155 Solar control

Three different lines of adjustable, retractable, automatic Exsotrol blinds are detailed in an 8-page color brochure. Cost advantages are described while photographs and sections illustrate installations and components. A color chart and specifications are included. Baumann, Inc., Wauconda, Ill. *GB

11 Equipment

UCI 11, Equipment:
 Bank & vault equipment
 Darkroom equipment
 Food service equipment
 Laboratory equipment
 Laundry equipment
 Library equipment
 Loading dock equipment
 Medical equipment
 Parking equipment
 Residential equipment
 Waste handling equipment



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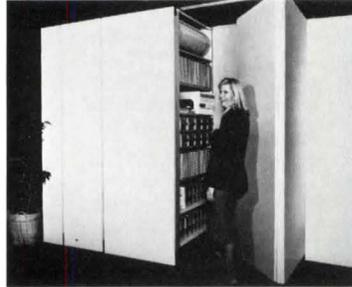
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409 Wood lockers

Offered with five standard door configurations, these *MultiSpace* lockers are laminated with vinyl sheet and edge moldings and plastic laminate on wiring surfaces. Heavy metal hinges, locks and laminates are available in a variety of finishes. P.S. Hurlbut, Inc., Santa Clara, Calif.

410 Remote teller

Designed for drive-in banks, the "VAT 9" (visual auto teller) features minimal depths to allow narrow islands and a simple low-voltage rail-drive transfer of materials. Diebold, Inc., Canton, Ohio.

411 Life-support unit

Designed to allow more flexibility in hospital planning for critical care, this freestanding unit includes electrical supply, two adjustable spotlights and an adjustable bracket for monitor equipment. Electro/Systems Div. of Sci-Med Environmental Systems, Inc., Edin Prairie, Minn.*GB

412 Iced tea brewer

A rear faucet option is now available for the "TL6R" unit to facilitate use on serving lines. The ice tea brewer can hold 3 or 6 gal. Bunn-O-Matic Corp., Springfield, Ill.

413 Pharmacy refrigerator

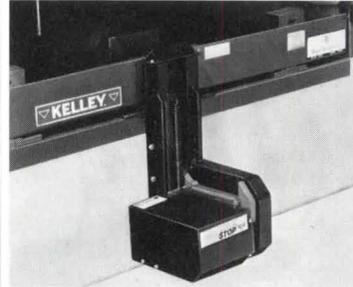
Including both a refrigerator and freezer with separate doors, model PHRF 37B has a 37-cu. ft. capacity. There is an automatic defrost, and units have interchangeable drawers and shelves. The Jewett Refrigerator Co., Inc., Buffalo, N.Y.*GB

414 Movable storage cabinets

Designed to save space and disappear into walls, three cabinets of various depths move on a floor-mounted track, and require only one aisle for access. The new system is called "the Designer Series Conserv-n-aisle". Supreme Equipment and Systems Corp., Brooklyn, N.Y.



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415 Color graphic camera

Designed to record images from raster-scan computer screens, the "Model 4007" produces 4- by 5-in., and 8- by 10-in. instant-print-film images. The machine is said to produce images at very low cost. Matrix Instruments, Inc., Northvale, N.J.

416 Truck restraint

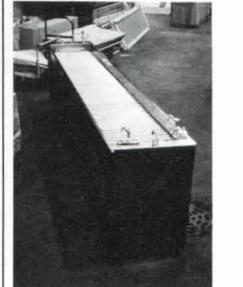
This device mounts on loading docks, and engages truck bumpers to prevent "unexpected departures" (including theft) during loading and unloading operations. If a bumper does not engage, a tone reminds driver to chock wheels. Kelley Company, Inc. Milwaukee, Wis.*GB

417 Laboratory steamwasher

Offering 27 possible variations of cycles, this "SteamWasher" introduces steam with each cycle to ensure maximum cleanliness at temperatures up to 174 F. Labconco Corporation, Kansas City, Mo.



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418 Self-contained kitchen

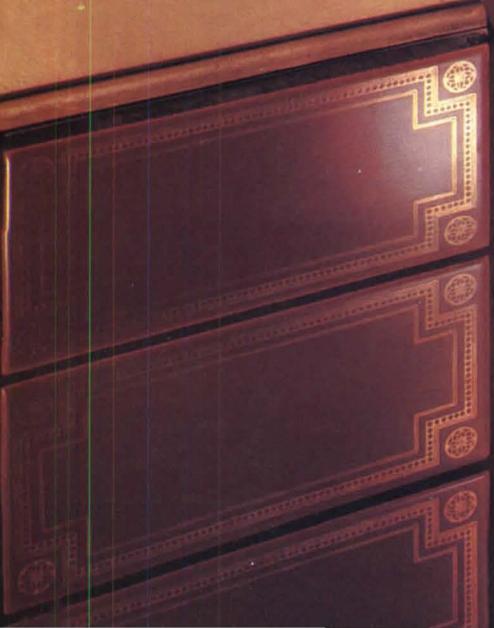
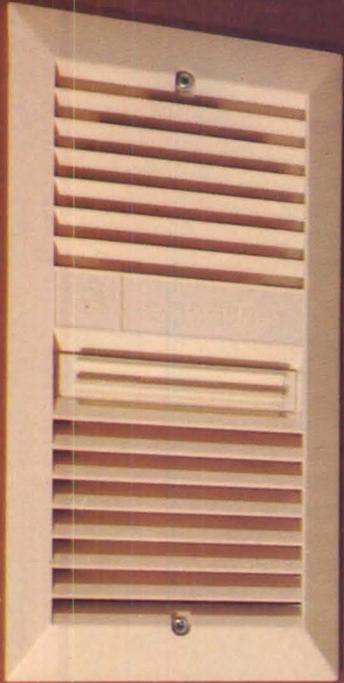
Including a 50 lb ice maker, a coffee maker, a 7.8 cu ft refrigerator, range and full-size sink, the "Quick-Prep" kitchen facility is designed for offices, hospitals, employee lounges and any other commercial or institutional space. Acme National Sales, Hudson, N.Y.*GB

419 Darkroom sink

Said to be particularly designed for schools and newspapers and to make the most of available floor space, this stainless steel "type A-WR Island Sink" is available in sizes from 2 by 3 ft. to 4 by 10 ft. Options include splashes and plumbing ledges. Leedal, Inc., Chicago, Ill.*GB, E

420 Laboratory cabinets

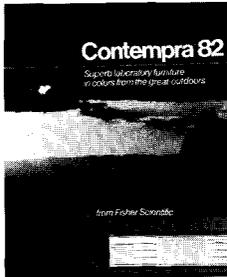
Available in five colors, these cabinets are built of steel and finished in acrylic. The manufacturers emphasize design as a desirable feature, and state that the cabinets are durable and easy to clean. Fisher Scientific Company, Indiana, Pa.



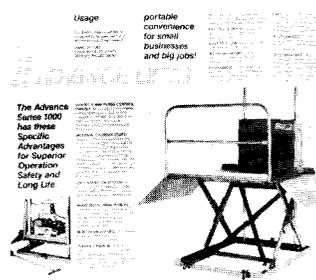
Product literature: Division 11

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

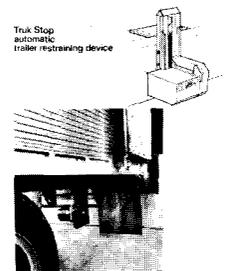
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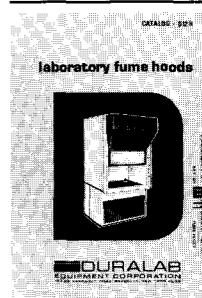
3168 Laboratory furniture
Contempra Chromatic furniture is available in 5 color families which are illustrated in a 12-page color brochure. Photographs show installations of the furniture which is made of heavy gauge steel and finished in acrylic. Fisher Scientific Co., Indiana, Pa.



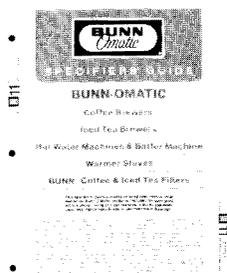
3174 Portable dock lift
A 4-page color brochure describes the uses and features of this product. Photographs show the variety of models available. Specifications are listed and the warranty is described in detail. Advance Lifts, Inc., St. Charles, Ill.



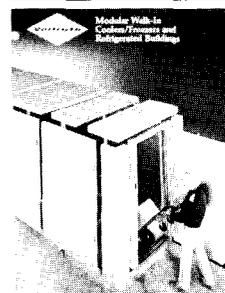
3169 Loading docks
Literature describes the *Truk Stop*, a safety system for installation in loading docks. The system is designed to hold the ICC bumper of a truck during loading to prevent the truck from moving away from the dock. A control box and signal lights are included. Kelley Co., Inc., Milwaukee, Wis. *GB



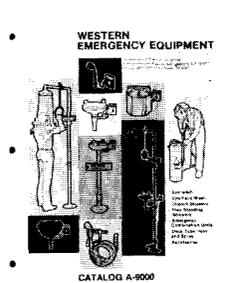
3175 Fume hood
A color catalog covers a selection of standard, induced air and specialized fume hoods. All are illustrated and accompanied by detailed specifications. Also included are base cabinets, counter tops, linings, blowers and plumbing and electrical fixtures. Duralab Equipment Corp., Brooklyn, New York.



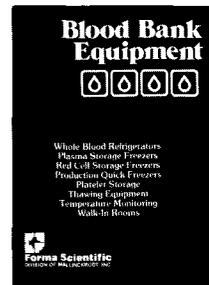
3170 Brewers
A 10-page specifier's guide describes coffee and iced tea brewers and hot water machines. Product features are detailed and industry approvals, brewing capacities and dimensions are listed. Electric warmer stoves are also shown. Bunn-O-Matic Corp., Springfield, Ill.



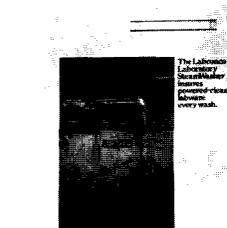
3176 Refrigeration
A 12-page color brochure illustrates the ease with which Vollrath modular walk-in coolers, freezers and refrigerated buildings may be assembled. Also shown are options in installation. Vollrath Refrigeration, Inc., Sheboygan, Wis. *GB,E



3171 Emergency lab equipment
A 48-page catalog describes and illustrates more than 125 models of eyewashes, drench showers, laboratory sprays and decontamination stations. Emphasis is on drench shower/eyewash combinations where shower heads, valves and piping are interchangeable. Western Drinking Fountains, Sunroc Corp. San Leandro, Calif.



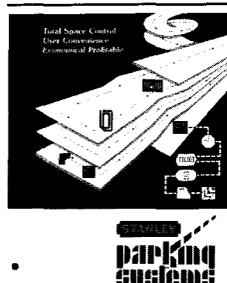
3177 Blood bank storage
A 36-page booklet features products for blood storage and processing. Included are storage refrigerators, plasma freezers, red cell freezers, thawing baths and walk-in rooms. All equipment includes over-temperature alarms and meets with AABB, ANRC and FDA requirements. Forma Scientific, Marietta, Ohio.



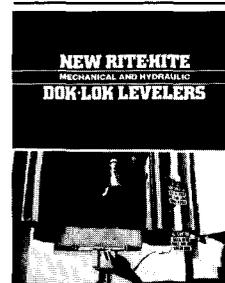
3172 Laboratory steam washer
A 6-page color brochure describes a steam washing machine for laboratory utensils and dishes. A photograph of the *Steam Washer's* front panel details the cycle options. Specifications, diagrams with dimensions and ordering information are included. Labconco Corp., Kansas City, Mo.



3178 Laundries
A 4-page color brochure describes the "Central" laundry room concept for multiple housing. A typical installation is shown and cost advantages are described. The Maytag Co., Newton, Iowa.



3173 Parking
A plastic binder contains photographs of products and installations and descriptions of accessories of parking systems. Gates, signs, ticket dispensers and more are shown. Sections include detail drawings, layouts and specifications. Stanley Parking Systems, Madison Heights, Mich.



3179 Dock leveler
A 28-page color brochure describes mechanical and hydraulic dock levelers and safety equipment. Photographs and sketches illustrate hazardous areas and ways to cut risks with vehicle restraint hooks, lights and supervisor controls. Rite Hite Corp., Milwaukee, Wis.

12 Furnishings

UCI 12, Furnishings:
 Artwork
 Cabinets & storage
 Fabrics
 Floor mats
 Furnishing accessories
 Furniture
 Rugs
 Seating
 Window treatment



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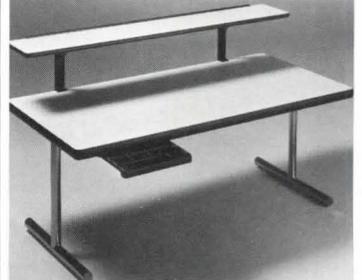
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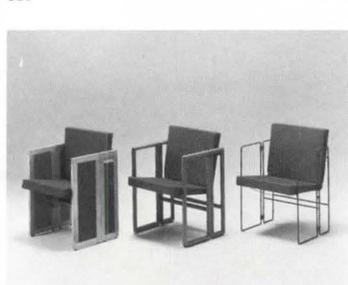
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433 Reception desk

Angled stainless steel corners complement a range of available woods—from Japanese Tamo to natural oak. File drawers and stationery insets are standard, return optional, and typewriter heights can be custom made to order. The Pace Collection, Inc., Long Island City, N.Y.

434 Drafting furniture

Mayline's "Naturalists" series of drafting furniture includes plan files, drafting tables, and taborets. The solid oak construction features clear lacquer varnish, wood handles, and black accent hardware. Mayline Co., Sheboygan, Wis.

435 Contract fabric

This subtle 73 per cent wool, 27 per cent mohair herringbone can be used for walls and drapery as well as for seating. The 54-in.-wide fabric passes heavy-duty abrasion tests, and is available in 9 "jewel-toned" colors. Donghia Textiles, New York City.

436 Modular seating

The "Moulage" seating system features a structurally tailored frame supporting a supple down-filled cushion. The Robin Jacobsen-designed collection includes an armless, corner, chaise, and ottoman, and may be upholstered in COM leathers or COM fabrics. Les Prismatiques, New York City.

437 Kitchen cabinets

The "Opus One" kitchen system is available with either laminate or rift cut oak doors: carousel corner shelves, wire-sided roll-out drawers, and self-opening and self-closing wastebasket are among the standard convenience features. Crystal Cabinet Works, Inc., Princeton, Minn.

438 Contract seating

Industrial designer Friso Kramer's "AKD Series" features self-skinned urethane arms, five-leg polished aluminum base, and "optimum" adjustability; available in secretarial, operational, conference/guest, and executive models. Cramer, Inc., Kansas City, Kansas.

439 Leather table and chairs

Designed by Tito Agnoli, the "Saddler's" chairs and table/desk is "a translation of the ancient saddler's art into modern chairmaking." Chairs are available with or without arms, in a bar stool and sled-base version, and in a choice of 9 leathers. ICF, Inc., New York City.

440 Lounge seating

Michael Graves' lounge chair and settee (shown) are available in either a semi-exotic wood veneer (bird's-eye maple) or lacquered. The ebony corner beads at the feet match the decorative embellishments of the spandrel fascia. Velvet or gros point fabric is suggested. Sunar, Norwalk, Conn.

441 Folding armchair

The collapsible "Jolly" chair is available with natural, stained or lacquered beechwood (or epoxy-coated steel rod) frame, and with set and back in injection-molded flame-retardant polyurethane foam covered with Artemide fabrics. Artemide, Inc., New York City.

442 Pull-up chair

Designed by dePolo/Dunbar, the "S/4 Series" pull-up chair features either a beige, burgundy, or black epoxy-coated frame, with COM or Dunbar S/4 fabrics program. Dunbar Furniture, Berne, Ind.

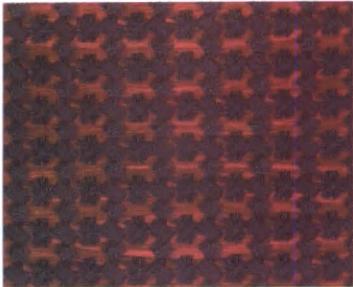
443 Terminal/printer tables

Howe's "Information Management System" includes a terminal table with casters, a work table with pencil drawer and overself (shown), a work table with flexible arm task light, and a printer table with paper feed slot and legway wire manager and printout shelf. Howe Furniture Mfg., New York City.

444 Child's chair

The "Lambda" child's chair can be ordered with either natural oak (clear) catalyst lacquer or stained frame. Seat is polyurethane foam bonded to contoured plywood, upholstered in fabric or vinyl. Two heights—ages 4 to 9, or 9 to 12. Tuohy Furniture Corp., Minneapolis, Minn.

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445 Fabric

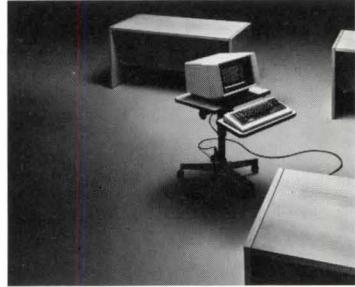
The new "Crossweave" collection of hand-printed patterns features both natural fiber fabrics and vinyl wallcoverings: "inspired by the Far East," with colors "derived from semi-precious stones." Karl Mann Associates, New York City.

446 Wood cabinets

A complete range of wall cabinets, base cabinets, full cabinets, and vanities is included in Kitchen Kompact's product line. Frames are constructed of solid 3/4-in. kiln-dried rails; wall cabinets feature adjustable shelves. Kitchen Kompact, Inc., Jeffersonville, Ind. *LR

447 Carpet

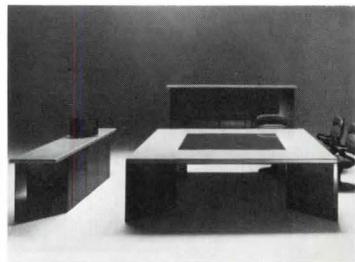
Appropriate for contract or residential applications, the "Plainline" carpet line is 80 per cent wool, 20 per cent nylon, and comes in 12-ft widths and soft colors. Stark Carpet Corp., New York City.



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448 Mobile terminal table

A "terminal sharing device" intended to reduce the number of terminals required features adjustable screen height, screen tilt, keyboard height, and keyboard tilt, and locking casters to ensure stationary position during use. Laminate or wood veneer. JG Furniture Systems, Quakertown, Pa.

449 Seating

Operational, managerial and executive pedestal chair models of the "Vertebra" seating system are now offered with self-skinning urethane auxiliary armrests and 5-blade base. Chairs feature a pneumatic height-adjustment option. Designed by Ambasz and Piretti. Krueger, Green Bay, Wis.

450 Managerial furnishings

The "Dolmen" system includes desk, conference table, bookcase, and credenza. The pieces are "unified in design" by 45-degree angles in the supporting structure of the tables and desks, and at the sides of bookcases and credenzas. Castelli Furniture, Inc., Bohemia, N.Y.



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451 Office chair

The "No-Nonsense Chair" is available in 6 models, and features contoured polyurethane seat cushion, 5-prong base, wide track dial wheel casters, 4-in. seat height adjustment, and tilt swivel mechanism. Cole Business Furniture/LBF, York, Penn.

452 Operator chair

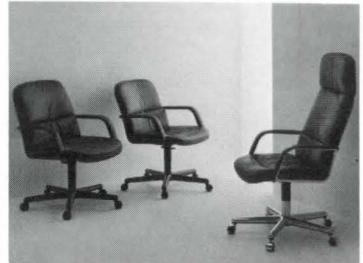
The "Wilkahn FS Seating" system features thermoset finishes in 16 colors. Shown is an operator chair in burgundy finish. Vecta Contract, Grand Prairie, Tex.

453 Table/desk and credenza

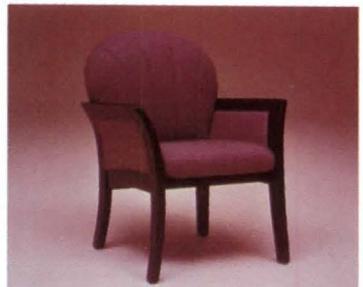
Contemporary and traditional models are available (in 6 different finishes) in the "Option Two" table/desk and credenza line. Center drawers and side rout pulls are standard. Available in oak or mahogany. Hiebert Inc., Los Angeles, Calif.



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454 Electronic workstations

The modular design of this new series of electronic equipment support furniture makes it easy to build 2-, 3-, or 4-station clusters. A full complement of data carts, reel carts, printing stands, and tilting turntables are available. Cole Business Furniture/LBF, York, Pa.

455 Ergonomic seating

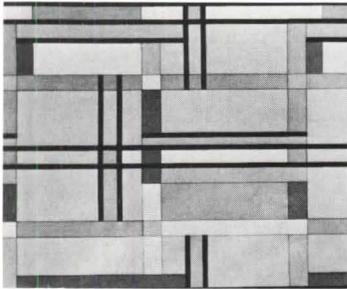
The "Linea Collection" consists of 7 versions—either highback or lowback—of the ergonomically designed chair. Standard features include impact-absorbing spring system, tilt-locking system, and height adjuster. Brayton International Collection, High Point, N.C.

456 Chair

Intended for both residential and contract applications, the "Stellans collection" chairs are available with channeled back or smooth back, with walnut or mahogany frames, and in a wide selection of upholstery options. Kimball Office Furniture Co., Jasper, Ind.



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457 Bathroom cabinets

This bathroom in light oak features storage space behind the mirrored door and rounded contour door, a pull-out cabinet with removable laundry basket, and small revolving storage compartments above the sink. Poggenpohl, Teaneck, N.J.

458 Plaid fabric

"Deco Plaid" is a geometric design intended to be reminiscent of Frank Lloyd Wright's stained glass windows. The 100 per cent cotton velvet repeat (V: 24 1/4 in., H: 24 in., W: 48 in) fabric is "Krollenized" with Teflon, and hand screened. Boris Kroll, New York City.

459 Systems analyst station

A corner work surface allows for periodic intensive use of the video display terminal; work surfaces and storage components are adjacent. A machine support tray with swivel base and tilt adjustment, and a keyboard tilt tray, allow for comfortable operation. Herman Miller, Inc., Zeeland, Mich.



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460 Pastel fabrics

Pastille is the newest addition to Bellinger's *Cross-Clime* fabric collection; custom woven in France of 62 per cent cotton and 36 per cent spun rayon, the 50-in. wide fabric is intended for architectural panels and upholstery applications. Gretchen Bellinger, Inc., New York City.

461 CRT stand

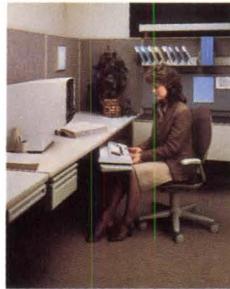
A new CRT terminal stand, designed by Bill Stephens, consists of two separate surface supports—one for the screen, one for the keyboard—both fixed to a five-leg base. Surface is available in 10 finishes. Knoll International, New York City.

462 Traditional table desk

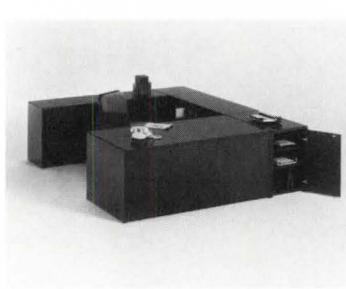
The latest addition to Alma's "Devonshire Series" is a new traditional table desk, available in matched walnut veneers (in either a lacquer or oil finish), and in either a 72- by 36-in. or 60- by 30-in. model. Alma Desk Company, High Point, N.C.



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463 Grid chair

Ward Bennett's latest addition to the Brickell Collection is a small-scale pull-up chair, appropriate for dining, conference, and executive suites. Available in kiln-dried solid ash wood, black wax, English oak on ash, and mahogany finishes. Brickell Associates, Inc., New York City.

464 Keyboard pad

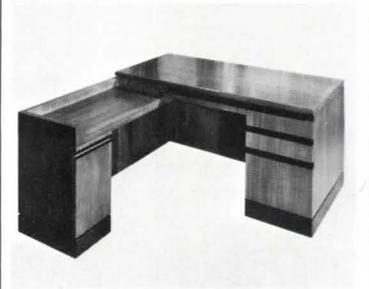
Haworth's adjustable keyboard pad can be fitted to all *UniGroup* and most *UniTek* electronic support work surfaces; features a 16-in. in-out adjustment range, moves 11 in. side to side (vertically within a 6-in. range), and swivels a full 30 degrees. Haworth, Inc., Holland, Mich.

465 Executive desk group

Designer Paul Mayen's "Executive Desk Group" includes a full pedestal desk, a filler storage unit, and a filler cube. L-shaped and U-shaped configurations can be made using these and other Intrex file and/or storage units. Available in lacquer colors or woods. Intrex, Inc., New York City.



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466 Office automation series

The "Whisper Hood" is designed to house the printer unit of word processing systems while effectively deadening noise; coordinates with entire solid oak Adden "Office Automation Series" (shown). Adden Furniture, Inc., Lowell, Mass.

467 Mahogany desk with return

From the contract division of Donghia Furniture, the "Bond Desk" series is available in straight grain mahogany with ebonized base, with machine return and matching credenza, and with a double pedestal option. Donghia Furniture Company, Ltd., New York City.

468 Wood office furniture

The "Hightower" group is a fully integrated office system, for the executive suite, secretarial pool, conference, open plan, and reception areas. Constructed in oak veneer and finished with a hand rubbed oil of natural or walnut color. R-Way, Sheboygan, Wis.

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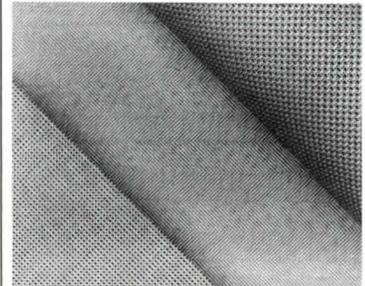
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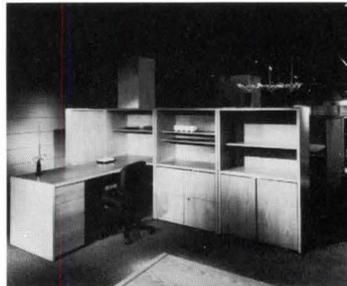
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469 Conference tables

The Agati collection includes conference tables (shown) in three sizes, and occasional tables in four sizes; all are constructed of red oak, with a standard natural or medium oil finish. Options include laminate inserts for the table top. Agati Designs, Inc., Chicago, Ill.

470 Beechwood chair

Beylerian's version of architect Otto Wagner's classic chair is constructed of molded beechwood, lacquered in black. The back of the chair is curved with pierced holes; an upholstered seat pad, and arms and feet with brass trim and sockets are optional. Beylerian, New York City.

471 Office seating

The Harter/Stoll "N," "S," and "H" series of ergonomic seating includes 20 models in the three series, including swivel and side chairs. Harter Corp., Sturgis, Mich.

472 Sled base chair

The sled base "BioChair" offers ergonomic comfort in a guest or pull-up chair. The "BioSled" is available with or without arms, in dark neutral, light neutral, and brown-tone finish, and with a range of upholstery options. American Seating Company, Grand Rapids, Mich.

473 Armchairs

Modeled after chairs designed by Gio Ponti in the early 1950s, the Ernst Dettinger collection includes an open armchair, "Klassik" (right in photo) and a fully upholstered version, "Klasse." Light in weight and scale, the chairs are constructed of hardwoods. Jack Lenor Larsen, New York City

474 Wood office systems

"Plus Environment 1, 2, 3, and 4, 5, 6" offers six versatile, modular office systems with a range of complementary components. Available in light oak, medium oak, dark oak, and walnut, all the series have solid wood pulls and base edging. Litton Business Furniture/LBF, York, Pa.

475 Bentwood and steel chairs

Michael Kirkpatrick's "X Frame Chair" features an arm/back section made of a solid piece of steam bentwood; the frame is tubular steel, and the seat frame combines solid and steamed bentwood construction. Available upholstered or with a cane seat. Thonet, York, Pa.

476 Chaise

Designed by Kenneth Bergenblad, "Spider" is a new seating design utilizing the Dux upholstery technique, incorporating spiral springs on a black steel frame. Series also includes easy chair and table with black carrera top. Dux, New York City.

477 Kitchen doors

Available in light oak, mahogany, and a walnut color, the "Aera Program" features a redesign of a square edge door. Its character is created by shallow grooves that run vertically on the sides and in a 45 deg angle in the center panel. Tielsa-Contemporary Systems, Inc. Woburn, Mass.

478 Architectural silks

Available in pink, blue, green, and beige, the distinguishing characteristic of this contract fabric collection is that it is color-coordinated both vertically and horizontally (i.e. all fabrics of same weight and texture can be color related throughout the whole spectrum). Scalandre, New York City.

479 Wallcoverings

"Xorel" fabric wallcoverings are woven with warp and weft yarns produced from dyed fibers; will not support mildew, bacteria, or staph germs, and qualifies for Class A and Class I installations. They are stocked paperbacked in 33 color combinations. Carnegie Fabrics, Rockville Center, N.Y.

480 Desk and cabinet group

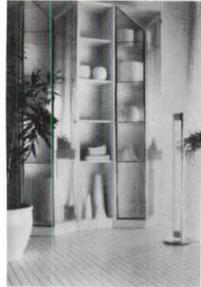
The "Kane Desk Group" includes a management desk in two widths, and cabinets in two widths, two depths, and two heights. All side and back panels and pedestal/storage fronts are of high-gloss polyester resin; tops available in a variety of materials. Metropolitan Furniture, South San Francisco, Calif.



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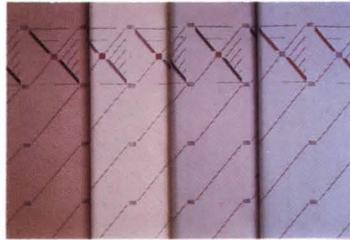


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481 Worsted wool fabric
"Caravan" venetian worsted is custom woven in Great Britain of 100 per cent worsted wool. "Caravan" meets the ASTM D 3597 abrasions requirements for heavy duty upholstery fabric: woven in a 54-in. width; available in 7 primary hues. Gretchen Bellinger, Inc., New York City.

482 Three seating collections
The "Lignas," "Polytrop," and "Monty" seating collections include a range of task-oriented models—executive chairs, guest chairs, and multiple seating configurations. Fingertip seat-height adjustment mechanisms, activated by a gas cylinder, are standard. GF Business Equipment, Youngstown, Ohio.

483 Wall system
A new wall system offers a three-dimensional door that is angled for display and storage purposes. The entire unit comes in 7 standard polyurethane lacquer colors and 4 wood finishes; the door features beveled glass inserts and metal trim. Cy Mann Designs Ltd., New York City.



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484 Michael Graves fabrics
Decorative pattern and architectural sensibilities are combined to reinforce the idea of window and wall with its metaphoric possibilities in 3 casement prints designed by Michael Graves—"Scroll," "Tracery," and "Fret" (shown)—54-in. wide, and 100 per cent cotton. Sunar, Norwalk, Conn.

485 Wood-framed armchair
The "Quorum" chair, by Bob Becker, features a soft seat and loosely-upholstered fabric back to engineer comfort into this wood-framed armchair for conference and meeting-room use. The ribboned frame is available in mahogany, walnut, or ash. Helikon, Taftville, Conn.

486 Machine tufted wool carpet
Machine tufting to custom size ensures a seamless carpet free from excess yardage. To the contract market in particular, machine tufting offers an economical alternative. V'Soske, New York City.



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487 Seating group
The "Lord" seating group includes ottoman, armchair, and 2- and 3-seat sofa. The upholstery technique emphasizes the contrast between the firm frame and soft stitched-in-place cushions. The leather upholstery is from De Sede of Switzerland. Intrex, New York City.

488 Hardwood desk line
The "Triad" facet edge desk line includes single, double pedestal, and secretarial desks, and credenzas, returns, and lateral files in mahogany (light or dark), walnut or oak finishes are offered in 8 shades). The Gunlocke Company, Wayland, N.Y.

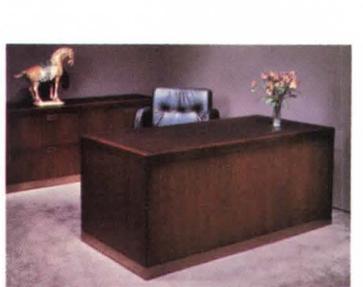
489 Bi-level VDT workstation
The bi-level workstation allows tilt, distance, and heights of screen to be adjusted; keyboard is lowered for comfort and efficiency. The "Ergo" turntable adapts existing work surfaces for VDT use. TAB Products Company, Palo Alto, Calif.



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490 Tubular armchair
The oval tubular arm chair features foam padded spring seat and foam padded back, 14 gauge oval tubular frame, and polished chrome standard finish. Shelby Williams Industries, Inc., Morristown, Tenn.

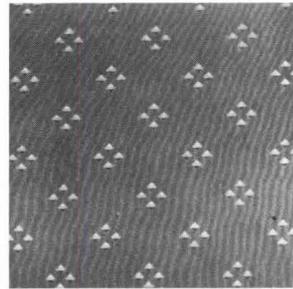
491 Wood office systems
The "Plexus" office furniture system features interchangeable work surfaces and pedestals so that every workstation can be custom designed for each use. Matched wood veneers and solid oak or walnut moldings are standard. Corry Jamestown Corp., Corry, Pa.

492 Banker's system
A system of mahogany desks and workstations—developed specifically for financial institutions—consists of single and double pedestal desks, credenzas with file and open shelf storage, executive and secretarial returns, and freestanding enclosures. Harvey Propper, Inc., Fall River, Mass.

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493 Kitchen and bath cabinetry
The "Columbia" line of cabinets and vanities features contemporary styling with almond-colored laminated overlay doors and drawer fronts trimmed with solid oak full-width pulls that eliminate the need to specify right or left hinging. AristOKraft, Jasper, Ind.

494 Folding wall bed
Easily installed and operated wall beds come with factory-assembled frames in single, double, queen, and extra-long sizes. When lowered, the bed swings entirely out of the 2-ft-deep recess cabinet and releases a slanted headboard. Sico Inc., Minneapolis, Minn. *GB, LRC

495 Furniture system
System 2 open office furniture has been streamlined by eliminating bases on both panels and furniture and recessing drawer and door pulls. Fabric-wrapped acoustical panels with a 0.60 or 0.90 NRC are available as are see-through wood-framed panels. Conwed Corp., St. Paul, Minn.

496 Fabrics
Newly introduced upholstery fabrics include "Anna/Sable" (shown), a jacquard in five color ways, and "Les Naturels 11," three richly textured weaves in natural cotton and cotton blends. Manuel Canovas, New York City.

497 Table/desk seating system
The Series 2R table/desk system designed by Danish architects Eric Rasmussen and Henrik Rolff offers elements that can be extended in both length and width and turned 45 or 90 deg by adding drop panels and interleaves. Tables come in four sizes, and several finishes. Domore Corp., Elkhart, Ind.

498 Armchair
Designed by Bernd Makulik, the "190 Gina" armchair has a low arm height that makes it suitable for a dining chair as well as an occasional chair. The beech frame is finished in natural, black, or red lacquer; upholstery is in fabric or leather. Stendig, New York City.

499 Computer furniture
Modular furniture components include curved and corner work surfaces as well as straight panels in 36-, 48-, 60-, and 72-in. lengths and depths of 20, 24, and 30 in. Computer surfaces, offered in straight and corner configurations, feature a stepdown keyboard platform. Panel Concepts, Inc., Santa Ana, Calif.

500 Desk chair
"The Moving Chair" designed by Richard Schultz provides adjustment for comfort without complex hardware: the arms and back move with the seated person while the seat remains stationary. The chair comes with a frame of chromed or black-epoxied steel and walnut, oak, maple, or upholstered arms. Stow/Davis, Grand Rapids, Mich.

501 Armchair
Designed by Warren Platner, the "Magic Office 84" bentwood armchair is available in white oak, walnut, or stained finishes with curved seat and back of upholstered molded foam. The chair will stack when required. C.I. Designs, Medford, Mass.

502 Dining chair
With just a few component parts the "UniChair" can be assembled in 7 models and 98 variations. The versatile chair was designed by Werther Ioffoloni. Atelier International Ltd., New York, N.Y.

503 Electronic workstation
The "WES-TECH Series" of "user-friendly" components for electronic workstations includes freestanding, linkable desks and cluster tops; a tilt carousel CRT base; a foot-controlled electric easel; and a multi-access cable manager. Westinghouse Electric Corp., Grand Rapids, Mich.

504 Side chair
The "Achillea chair," designed by Tito Agnoli, is available with tubular aluminum frames in black, white, natural, red, or green. The curved back and cane seat trim are matte-finished natural or black ash. Design Selections International, New York City.

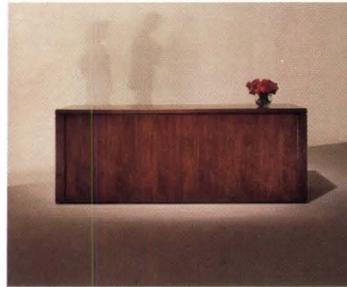
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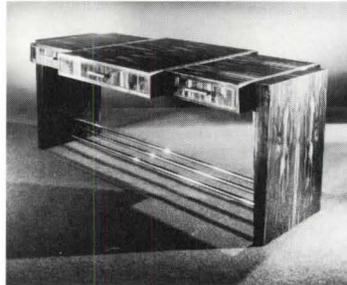
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505 Barstool/footstool

Barstools and stacking footstools by designer Bruno Rey join seat and back to frame with a metal bracket that gives enough strength to allow slender beech form and legs. Monel Contract Furniture Inc., Oakland Gardens, N.Y.

506 Health-care fabrics

Designed for use as cubicle curtains, draperies, and bedspreads in health-care facilities, "Matrix" plaid and striped fabrics in matching tones are 72-in. wide, flame-resistant, and washable to 160F. Frankel Associates, New York City.

507 Executive chair

One of 14 chairs in the "600 Series," the executive model features contoured upholstery, tilt and swivel capacity, and gas cylinder height adjuster. All "600 Series" chairs are available in a variety of fabrics with color-coordinated trim. All-Steel Inc, Aurora, Ill.

508 Seating group

A seating group designed by Norman Cherner comes with several arm and back configurations, including a full-paneled side and open and closed arms. Woods and finishes include cherry, white oak, and black walnut. Modern Mode Inc., Oakland, Calif.

509 Silk oriented rugs

Italian-made reproductions of antique Oriental rugs are woven in silk on cotton backing. Four designs are available: Heriz (shown), Kirman, Chiordes, and Ispahan, each in a dominant color of blue, cream, majolica, or silver and gold. Fringed size approximately 4 by 6½ ft. Couristan, New York City.

510 Office seating

Swivel-tilt and swivel chairs in the "Pantera Collection" of office seating have a spring-lift height adjustment mechanism as a standard feature. Models with open or closed arms and armless models are offered in oak, walnut, and mahogany with a selection of upholstery textiles, Artec, Jasper, Ind.

511 Executive desk

The "Bloc" series of executive and secretarial desk, credenzas, and occasional tables are simple geometric cubes softened by eased edges and 3/16-in. reveals. Table desks and single- or double-pedestal desks, with secretarial or executive returns, are available in white oak or walnut solids or veneers. Lehigh-Leopold LBF, Burlington, Iowa.

512 Desk

The Lucerne desk designed by Stanley Jay Friedman features tapered side panels supporting a shaped top that comes in matching veneer or leather. Brueton Industries, Springfield Gardens, N.Y.

513 Ergonomic workstations

A universally adjustable VDT workstation is the centerpiece of the ETS 2000 line of video terminal workstations and accessories. Its double-tiered main surface has video screen and keyboard at different levels which are adjustable for comfort and glare avoidance. Wright Line, Inc., Worcester, Mass.

514 Marble table

The hand-worked GBT table of solid bronze and marble features a sculpted bronze rail and leg, whose profile is repeated to exact scale in the bull-nose edge of the Paradiso marble. Scope Furniture Ltd., New York City.

515 Office furniture

The "Profile 30" collection of executive office furniture is rendered in hand-rubbed oak veneers and solids with hand-tailored leather tops and bases. Brass-fitted desk-top wiring access openings are optional. Myrtle Desk Co., High Point, N.C.

516 Custom wall system

The "Quadrant" wall system includes a center bar unit with pull-out surface, built-in TV platform, and stereo component storage. "Plainor" pinstriped door insert panels come in a choice of finishes. Quaker Maid, Leesport, Pa. *LR, GB, I.

Product literature: Division 12

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



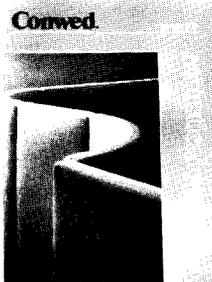
3192 Kitchens

A 12-page color brochure describes and illustrates Poggenpohl kitchen cabinetry. Photographs illustrate installations featuring a variety of color combinations in sinks, cabinets and appliances. Combination possibilities are outlined on a chart. Poggenpohl USA Corp., Teaneck, N.J.



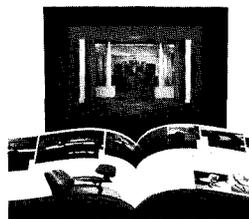
3198 Technical environment

A system designed to merge the office with the technical environment is illustrated in a 4-page color brochure. A typical installation features steel panels with interchangeable inserts, work surfaces for shared machines and ergonomic seating. American Seating Co., Grand Rapids, Mich.



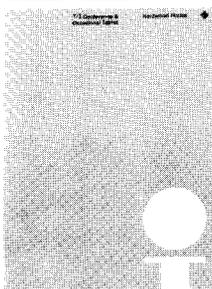
3193 Acoustical panels

A 4-page color brochure illustrates the "Series 695" and the "Series 660" panels which are available in 18 sizes and 22 standard fabric colors. Photographs show installations and configurations of curved, straight and see-through models. Acoustical data are listed. Conwed Corp., St. Paul, Minn.



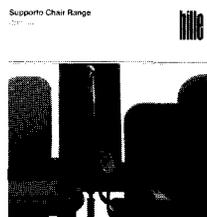
3199 Furniture designs

Race tables designed by Douglas Ball, three series by the Vignellis, Diffrient's Helena chair, a collection by Don Pettit and more are shown in an 11- by 8½-in. book from Sunar. Cost is \$15.00. Mail checks directly to: Sunar, 18 Marshall St., Norwalk, Conn. 06854.



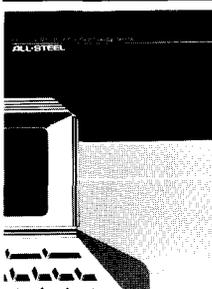
3194 Tables

A 12-page color brochure features pictures and descriptions of conference and occasional tables. All tables are made of wood and have bull-nosed edges; all conference tables up to 48 in. have 6-in. radius corners. Dimensions are listed for every model. Hardwood House, Rochester, N.Y.



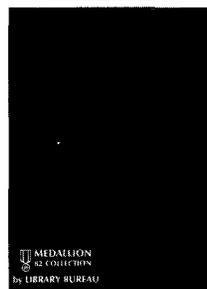
3200 Chairs

Bright colors are combined in the Supporto line of chairs and stools featured in a 20-page color booklet. Photographs show a variety of color combinations for the chairs. A selection chart includes line drawings of all models complete with model numbers. Hille International, London.



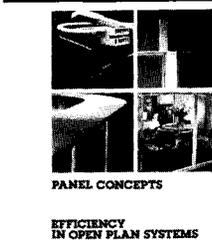
3195 Computer furniture

A 10-page color brochure shows typical installations of office furniture designed to accommodate computers and the people using them. An insert in the brochure features tables, desks, CRT work surfaces and pass-throughs. All-Steel, Inc., Aurora, Ill.



3201 Library furniture

The "Medallion 82" collection is featured in an 8-page color brochure. Included are specifications and photographs of the furniture which has radius corners, rounded aprons and a recessed reveal strip. Pieces include card catalogs, reading tables and carrels. Library Bureau, Inc., Herkimer, N.Y. *GB



3196 Panels and furniture

Colorful combinations of panels are shown in photographs of installations featured in an 8-page color brochure. Work surfaces, shelves and storage drawers are included. Specifications for each of 3 systems are listed. Panel Concepts, Inc., Santa Ana, Calif.



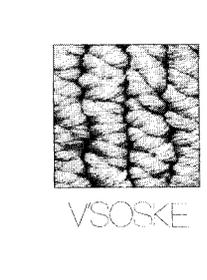
3202 Rugs

The "Kashimar" collection of Oriental design rugs is featured in a 64-page color catalog. More than 50 different designs are available in 13 sizes of runners, rounds, octagons and broadlooms. Cost is \$5.00. Mail checks directly to: Couristan, 919 Third Ave., N.Y. 10022.



3197 Furniture collection

A 3-ring binder contains 200 color pages illustrating seating, wall systems, tables and finishes. Diagrams give dimensions and sample configurations, and specifications are listed. Cost is \$25.00. Mail checks directly to: Cy Mann Designs, 979 3rd Ave., New York City 10022.

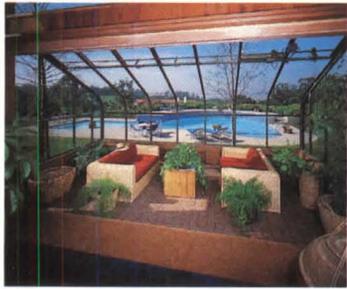


3203 Hand-tufted wool rugs

V'Soske rugs are featured in a 12-page color brochure. Photographs illustrate the method by which they are made, and the patterns available. Rugs by Stuart Davis, Stanislav V'Soske and Michael Graves are shown. V'Soske, New York City.

13 Special Construction

UCI 13, Special construction:
 Air & tension support structures
 Integrated assemblies
 Integrated ceilings
 Prefabricated buildings
 Radiation protection
 Radio-frequency shielding
 Sound & vibration control
 Special purpose rooms & buildings
 Swimming pools
 Total energy systems



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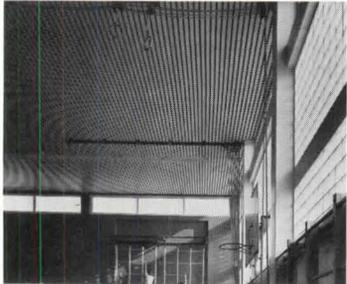
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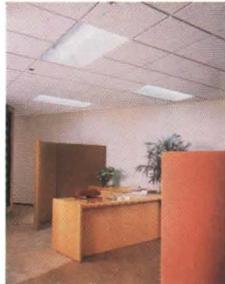
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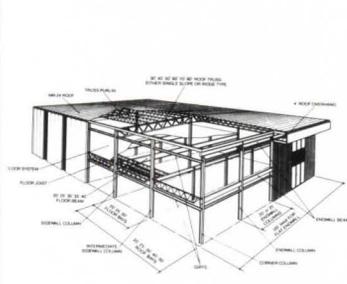
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529 Insulated greenhouse
 Six models in mill finish, white or bronze, are available in the new *Orlyt Imperial* greenhouse constructed with insulated glass and thermal breaks in the framing members. An insulated sliding glass door is optional. Lord & Burnham, Irvington, N. Y. *GB

530 Linear metal ceiling
 The "70U Luxalon ceiling system" is engineered to withstand impact from sports balls, and, with pads behind for sound absorption, provide beneficial acoustical values. The gymnasium panels are in steel; aluminum panels can be used for swimming pools. Hunter Douglas, Inc. Roxboro, N.C. *GB

531 Pool-starting platform
 A new version of the *Paraflyte* competitive starting platform, called "Long Reach," is to be used for rim-flow and deck-level swimming pools where anchorage has to be farther back from the edge than the standard platform. KDI Paragon, Inc., Pleasantville, N. Y. *GB

532 Tensioned membrane
 Tension structure provides weather protection for recreation. The structure is designed for wind loads and may be demounted. Membrane is vinyl-coated polyester which is self-cleaning in rain, and has an expected 12-year life. Helios Industries, Inc., Hayward, Calif. *GB

533 Acoustical ceiling panel
 Mineral-based "Premier" panels are designed specifically for speech privacy in open-plan offices. The panels were developed to absorb sound where speech is most intelligible. They come in 2-by 2-ft tiles, 2-by 4-ft panels, and 20-by 60-in. panels. Conwed Corp., St. Paul, Minn. *GB

534 Energy management system
 A wireless system, called "Current Courier," features demand-limit control duty cycling, time-of-day programming, data logging, and remote monitoring/programming. Equipment responds to a signal sent over power lines. American Air Filter, Louisville, Ky. *GB, ICR

535 Prefabricated coolers
 Insulated panels for walk-in coolers, freezers, and refrigerated buildings have a finish of white polyester over an epoxy primer for durability. A rolling process gives the galvanized steel skin an especially smooth surface. Bally Case & Cooler, Inc., Bally, Pa.

536 Fabric structures
Fiberglas fabric roofs, familiar in sports stadiums, more recently have been used for a tension roof at Boston's Franklin Park Zoo, for a shopping mall in Miami, and for two large "tents" at the Knoxville World's Fair (shown). Owens-Corning Fiberglas Corp., Toledo, Ohio *GB

537 Pre-engineered building
 Butler's two-story building system includes a computer-designed structure and companion systems—roof, fascias, overhangs, doors, windows, partitions and lighting. The single-sun *MR-24* roof features "locked" standing seams. Butler Manufacturing Co., Kansas City, Mo.

538 Swimming-pool component
Uniwall stainless steel wall and perimeter recirculation systems are designed to save costs for new and renovated pools. The company also makes filtration equipment and deck accessories. Recreonics Corp., Indianapolis, Ind.

539 Wood hot tub
Indian conical hot tubs feature 9 deg. slanted sides and vertical-grain Western red cedar. The 6-ft-dia. top unit (595 gal.) accommodates up to 6 adults, and the 5-ft-dia. top unit (395 gal.) up to 4 adults. Indian Spa Manufacturing Co., San Rafael, Calif.

540 Mobile shelter
 The *Mobiflex* shelter has a collapsible, aluminum-tube frame and a polyester-cotton poplin fabric for easy erection and demountability. A fly protects against wind and rain; a separate outer skin protects against hard rain and snow. Kellwood Co., St. Louis, Mo.

Product literature: Divisions 13 & 14

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

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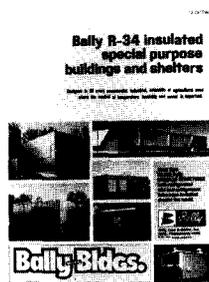
3216 Swimming pools

A buyers' guide and operations handbook features over 112 pages with color illustrations, technical drawings and applications data. The guide was designed for the institutional, public or commercial swimming pool facility to serve as a reference. Recreoneics Corp., Indianapolis, Ind.



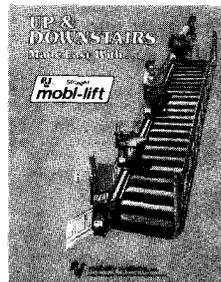
3222 Integrated ceilings

A 28-page color brochure describes two series of ceiling systems. Photographs illustrate installations while diagrams show the components of each system. Each series provides air delivery, lighting, acoustical control and ceiling suspension. Owens-Corning Fiberglas Corp., Toledo, Ohio



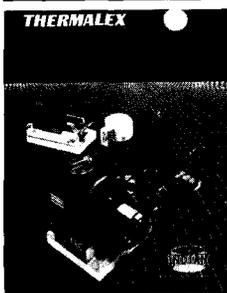
3217 Special purpose building

An 8-page color brochure describes prefabricated special purpose buildings for commercial, industrial and scientific needs. Building panels consist of 4 in. of urethane between sheets of heavy-gauge metal. A locking system eases assembly. Bally Case & Cooler, Inc., Bally, Pa. *ICR, GB, E



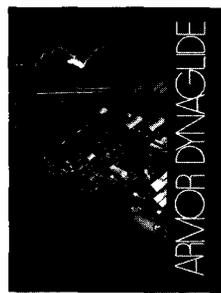
3223 Chair lift

A 4-page color brochure details the features of a stair-climbing chair-lift. Diagrams illustrate straight, curved, platform and vertical lifts. Specifications and details are included. R.J. Mobility Systems, Inc., Maywood, Ill.



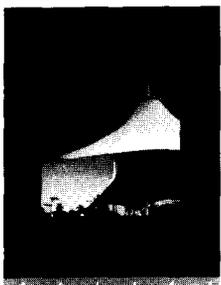
3218 Solar spas

Thermoalex solar assisted hydrotherapy systems for hot tubs and spas are shown in photographs and diagrams in a 4-page brochure. The insulated skid packs use a 2-speed pump, cartridge filter and programmable clock. Specifications are listed. Indian Spa Mfg. Co., Inc., San Rafael, Calif.



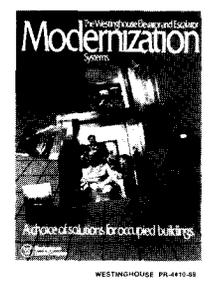
3224 Elevators

A color brochure features a solid-state elevator control system. Technical information and performance data are included as well as a detailed description of how the Dynaglide works. Photographs show typical installations. Armor Elevator Co., Inc., Louisville, Ky.



3219 Soft shell structures

An 8-page color brochure illustrates the applications for tension- and air-supported structures from stadiums and conference areas to dining terraces. Emphasis is placed on the design freedom they offer. Helios Industries, Inc., Hayward, Calif. *GB



3225 Elevators and escalators

A 12-page color brochure outlines three types of modernization systems which can be tailored to the specific requirements of occupied buildings. Work from overhauls to the addition of accessories is discussed. Photographs show typical installations. Westinghouse Elevator Co., Short Hills, N.J. *GB



3220 Greenhouses

A 24-page color catalog illustrates a variety of applications of greenhouses. Included is information on solariums, equipment and accessories. Technical data and prices are also listed. Cost is \$2.00. Mail checks directly to: Lord & Burnham, Box 255, Irvington, N.Y. 10533, Attn: M. Lee.



3226 Elevator controls

A color brochure describes how microprocessor controls and a silicon control rectifier drive system may cut 15 per cent or more from an elevator's energy bill. The drive system is designed to use energy only when the elevator is in motion. U.S. Elevator, Spring Valley, Calif.



3221 Radiant floor heat

A system of radiant tubes carrying heated water is described in an 8-page brochure. Photographs and diagrams illustrate gypsum cement underlayment which becomes the heat mass for radiant tubes. Statistics are included. Gyp-Crete Corp., Hamel, Minn.

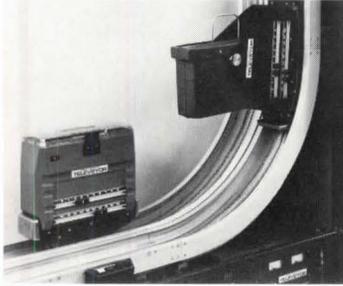


3227 People movers

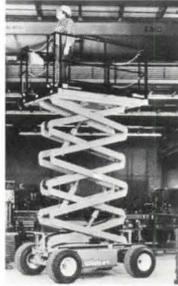
Photographs illustrate a wide variety of elevators, escalators, power walks and ramps in installations throughout the U.S. and in Canada. Also shown in the 12-page color brochure are microprocessor controls and a solid state elevator power control system. Montgomery Elevator Co., Moline, Ill.

14 Conveying Systems

UCI 14, Conveying systems:
 Conveyors & chutes
 Dumbwaiters
 Elevators
 Hoists & cranes
 Lifts
 Moving stairs & walks
 Pneumatic tube systems
 Powered scaffolding
 Turntables



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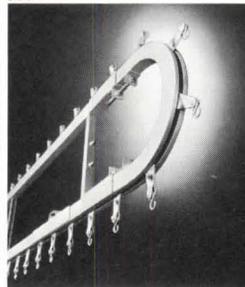
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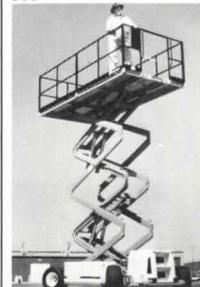
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553 Conveyor system

Individual electric cars travel vertically and horizontally on extruded aluminum tracks in the "Televeyor" automatic messenger system. The payload of up to 20 lb and 1 cu ft in size can vary from pharmaceuticals to books. Lamson Corp., Syracuse, N. Y.

554 Work platform

A small, gas-powered scissors lift is intended for job sites where electrical power is unavailable, or where cold temperatures shorten battery life. It can be converted, however, to battery power, but normally runs on gasoline or propane. Economy Engineering Co., Bensenville, Ill.

555 Flexible assembly system

The *ToteStacker* vehicle provides a flexible assembly system that integrates storage, retrieval, delivery, and workplace functions into an operation for increased efficiencies. A crane supplies workers and removes, stores, and retrieves sub-assemblies. Litton UHS, Florence, Ky.

556 Work platforms

Self-propelled battery-powered scissor work platform climbs 20 per cent grades and is outfitted with puncture-proof tires for travel over rough terrain and rubble. The "Wildcat" is only 62-in. wide for maneuvering in factory aisles. Economy Engineering Co., Bensenville, Ill.

557 Conveyor system

The *CAS III* computer-controlled pneumatic-tube system can handle up to 220 stations in a building, and each station can communicate with any other station. The system will not accept a dispatch unless the destination has been selected. Lamson Corp., Syracuse, N. Y.

558 Guided vehicle

Automatic guided vehicles distribute materials such as totes, kits, parts and sub-assemblies—unmanned and self-propelled—through the use of a patented optical guidance system. The system is based on an invisible fluorescent guidepath. Bell & Howell, Zeeland, Mich.

559 Elevators

A solid-state elevator control system, "Dynaglide," is designed to cut energy costs, save machine-room space, and make installation and maintenance easier. Armor Elevator Co., Inc., Louisville, Ky.

560 Information control center

A new "Information Control Center" combines traditional features of a traffic-director's station with the visual display of a CRT monitor. The system includes a monitor, a switch panel, and an optional communications module. Westinghouse Elevator Co., Short Hills, N. J.

561 Gravity conveyor

Features of "The Organizer" gravity loop conveyor include: parts loaded easily, stored safely, unloaded and shuttled to production areas. Product hooks, pendants, support brackets, and rods are available, standard or custom. Richards-Wilcox Mfg. Co., Aurora, Ill.

562 Work platform

Electro-hydraulic "Hi-Jacker" work platforms have push-button consoles for fingertip control of lift or lowering. The unit reaches a height of 25 ft in 10 sec. Economy Engineering Co., Bensenville, Ill.

563 Dock lifts

Hydraulic "Superdok" lifts provide height variations from ground level to 58 in. Series 1000 is portable and used for light loads. Series 2000 has a capacity of 6,000 lb. Series 3000 goes up to 10,000 lb; and Series 4000 up to 20,000 lb. Advance Lifts, Inc., St. Charles, Ill.

564 Work platform

The gas-powered G-series "Wildcat" scissors units can be shifted into "crab steer" and driven obliquely to right or left. Four-wheel steering reduces turning radius to 5 ft for the 13-ft-long units. They have front- or four-wheel drive. Economy Engineering Co., Bensenville, Ill.

15 Mechanical

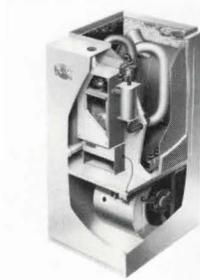
UCI 15, Mechanical:
 Air distribution equipment
 Fire protection equipment
 Heat generation
 Heat pumps
 Hvac equipment
 Mechanical devices
 Plumbing fixtures & trim
 Pumps & compressors
 Refrigeration equipment
 Solar
 Water supply & treatment



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577 Showerheads

These showers, showerheads and accessories come in 3 finishes: polished brass, antique brass or chrome. Among the showerheads are a pulsating massage and a control lever head to save water. Included in the accessories are a shower arm and flexible hose. Ondine Division of Interbath, Inc., City of Industry, Calif.

578 Hallway accessories

A "Modular Accessory System"—an all-in-one wall unit—coordinates such hallway features as fire extinguisher, drinking fountain, cup dispenser and trash bin. Comes in laminated plastic colors and several widths. Bobrick Int., Hollywood, Calif.

579 Gas furnace

The "G14 Pulse" furnace ignites minute quantities of gas at a rate of 60 to 70 times per second within a closed combustion chamber. The furnace is available in 5 capacities from 40,000 to 130,000 Btu/h. Exhaust may be vented through plastic piping. Lennox Industries, Inc., Dallas, Tex.



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580 Barrier-free cooler

A fully recessed water cooler features a *Flexi-Guard* safety bubbler with a pliable guard to prevent mouth injuries. Included in the unit are a cup dispenser and waste receptacle. Both cup dispenser and receptacle bin are removable for cleaning. Elkay Manufacturing Co., Oak Brook, Ill. *GB, E

581 Fire alarm system

Multiple ionization smoke detectors incorporate custom integrated circuits containing complete communications transmitters and receivers. If a detector has been set-off its number is displayed on the control panel. Pyrotronics, Cedar Knolls, N.J.

582 Water closet

Called the "Red Head," this water closet has recently been added to Delta's series of low-silhouette, one-piece water closets. The color is made by a process which is claimed to produce a consistently true match with other fixtures of the same color. Delta Faucet Co., Indianapolis, Ind.



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583 Sprinklers

A U.L. tested residential sprinkler covers a maximum area of 144 sq ft. The system requires 18 gal/min for 1 head and 26 gal/min for 2 heads. It is designed to use domestic water supplies. Grinnell Fire Protection Systems Co., Inc., Providence, R.I.

584 Faucet

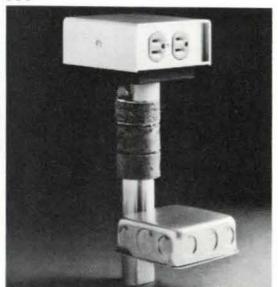
The "Cadet" line of faucets features wear-resistant valve and contoured acrylic handles and is available in an antique bronze finish. A ceramic disc cartridge controls water flow. All fittings are washerless. American Standard, New Brunswick, N.J.

585 Accessible fountain

A wall-mounted fountain which can support 350 lb features a self-closing "feather-touch" push bar valve which may be reached with a minimum of positioning. Designed to be accessible by wheelchair, the system bolts to the floor behind the wall. Haws Drinking Faucet Co., Berkeley, Calif.*GB



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586 Duct

The *Uni-Rib* spiral lockseam duct features an external stiffening rib and a smooth internal wall for minimum friction loss. Available in round and flat oval shapes, the duct is made of light-gauge material. United McGill Corp., Westerville, Ohio

587 Raceways and outlets

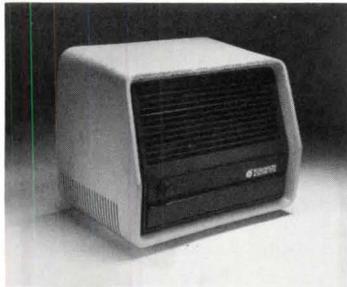
The smaller hole required for the installation of the "Poke-Thru" service fitting offers cost savings in labor and tools. The insert adapts to floor thicknesses from 2½ in. to 7 in. and the junction box is adjustable with a single-screw mounting strap. Midland-Ross Corp., Pittsburgh, Pa.

588 Water treatment

The *Ecologizer* water treatment system removes up to 95 per cent of the chlorine from water and reduces levels of dirt, PCB, chloroform, benzene and carbon tetrachloride. The filter has a lifetime of approximately 1 year. Rush-Hampton Industries, Inc., Longwood, Fla.



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589 Water cooler

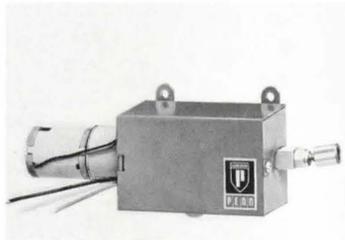
The model BFC-7 water cooler meets ANSI standards for both wheelchair-confined and visually handicapped people. Push-bar actuators have raised letters for the blind. Eight different finish and color options available. Halsey Taylor Division, King Seeley Thermos Co., Freeport, Ill.

590 Air treatment

The *Ecologizer* series 4000 air treatment system is designed to deodorize indoor air in areas up to 4000 cu ft. Filtering agents absorb odors, hydrogen sulfide, acetic acid, organic acids, ammonia, formaldehyde and other harmful gases, as well as smoke, dust and pollen. Rush Hampton Industries, Longwood, Fla.

591 Solar energy

These "photovoltaic concentrating arrays," on a site in Denver, are able to handle all dc to ac power conversions and are capable of completely automatic operation. Claimed to have a 20-year life in dusty desert environments. Martin Marietta Corp., Denver, Colo.



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592 Damper actuator

Type "M20AGA" light-duty damper actuator operates small dampers in residential and light commercial applications. It is expressly designed for room thermostat control where the actuator duty cycle is normally 10 per cent or less. Control Products Division, Johnson Controls, Inc., Oak Brook, Ill.

593 Cooling tower

The *Permalite* modular cooling tower has a fiberglass-reinforced polyester resin structure for strength, long life, corrosion resistance, high temperature capability, modular construction and low maintenance. Ceramic Cooling Tower Co., Fort Worth, Tex.

594 Metering faucet

The "Mark II 90-75" metering faucet combines all working parts and flow cycle timing adjustment in one easily replaceable cartridge. The flow of tempered water can be adjusted from 5-30 sec. by a timing screw in the cartridge. Bradley Corp., Menomonee Falls, Wis.



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595 Solar energy collectors

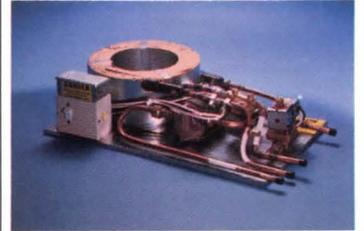
Called *Solarpave*, these coils are imbedded in concrete paving, and utilize the heat absorptive properties of concrete to heat water. Intended first for use in swimming pool decks to heat pool water. Bomanite Corp., Palo Alto, Calif. *GB, LRC, E

596 Fire barrier material

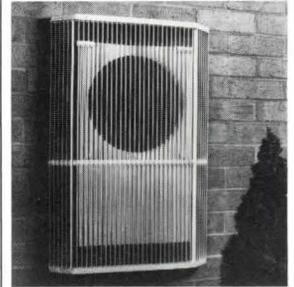
Intumescent materials that expand at critical temperatures to form a barrier against flames, smoke, fumes and water pressure in or around openings are available in three forms—caulk (shown), putty, and precut aluminum-faced sheets. The caulk No. CP 25 is a fire-stopping sealant that bonds to a variety of materials. Electro-Products Div, 3M, St. Paul, Minn. *GB, E

597 Gas furnace

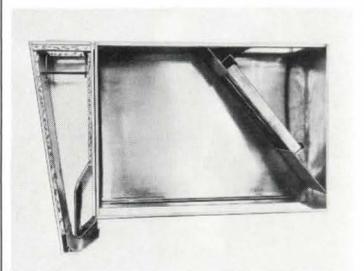
A redesigned line of "Lowboy" gas furnaces are intended for new construction and rehabilitation. Two changes—multi-speed direct drive blowers, and use of sheet metal internal filter racks—provide speed control. Climate Control, a unit of Snyder General Corp., Red Bud, Ill.



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598 Heat recovery system

The *Energy-Extender* re-heats water with heat normally wasted by refrigeration or air conditioning systems. U.L. classified, the system reduces energy costs for large-volume users of hot water, such as restaurants, hotels, and hospitals. Energy Products Div., Schneider Metal Manufacturing Co., Inc., Mason City, Iowa.

599 Heat pump

Called "Breakthrough," this through-the-wall package heat pump is claimed to cost far less to install than other such systems. The 200-lb unit, 29 in. wide and 45 in. high, does not need to be enclosed. Carrier Corp., United Technologies, Syracuse, N.Y.

600 Retrofit exhaust system

This retrofit kitchen-exhaust ventilation system is designed to convert an energy-wasting conventional hood into a more efficient one. It is claimed to have a low initial cost, less downtime during installation and energy savings during operation. Econovent Systems, Inc. Mayville, Wis. *GB

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



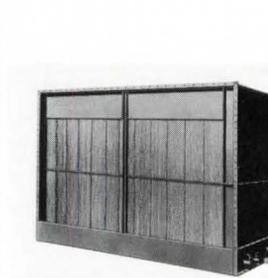
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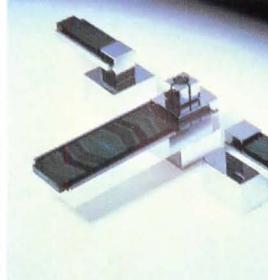
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601 Baths

The "Aurora" tub is double-sized to provide a spa-like tub for residential use. It features designer handles, safety-ribbed bottom and molded lumbar backrest. Offered in marble, onyx and custom solid colors. The Lippert Corp., Menomonee Falls, Wisc.

602 Sprinkler head

The model PH-1 head is hidden behind a cover plate installed flush with ceiling tile. Cover plate finishes include chrome, copper, metallic black, and painted white or black. Sprinkler has 1/2-in. orifice with K factor of 5.6, or 1 1/2-in. orifice with K factor of 7.5. Grunau Sprinkler Manufacturing Co., Inc., Milwaukee, Wisc.

603 Liquid-waste system

The *LiquiFire* compact liquid-waste feeding system (control unit shown) provides disposal for hazardous and non-hazardous liquids. Using the pyrolysis process, the incinerator burns liquids along with, or independent of, solids. Kelley Co., Inc., Milwaukee, Wisc.

604 Furnace

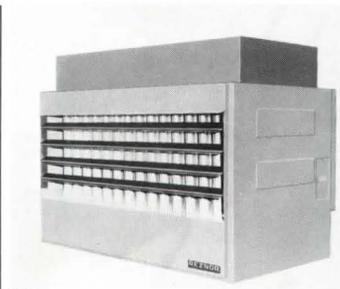
The four-pass heat exchanger (shown) used in *Formula 1000* furnaces is a key part to the unit's ability to be common vented with other gas appliances. BDP Co., Indianapolis, Ind.

605 Evaporative cooler

The *AMER-kool II* evaporative cooler provides cooling and humidification at a claimed 1/3 the cost of other units. Available in two configurations: non-recirculating and recirculating water. Intended for commercial and industrial applications. American Air Filter Co., Louisville, Ky. *ICR

606 Sculptured faucet set

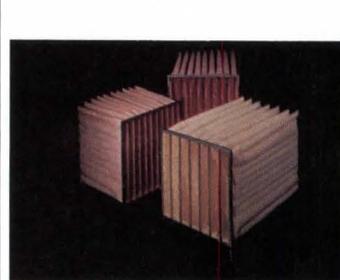
Malachite is set into these stainless steel faucet and handles, enhancing their design. Other semi-precious stones are available in the same setting. Sherle Wagner International, Inc., New York City.



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607 Heater

The *Venurion* model EEXL is a power vented, gas-fired, fan type unit heater for commercial and industrial applications. It is designed to provide an annual fuel use improvement up to 25 per cent over conventional gravity-vented unit heater systems. ITT Reznor, Mercer, Pa. *GB, ICR

608 Washroom unit

"Omni-Lav" is a modular, interlocking assembly providing mirror, sink, trash receptacle, paper holder and a shelf for personal belongings in one unit. Molded of fiberglass for single or multiple installation. The Charles Parker Co., Meriden, Conn.

609 Air filters

Dri-Pak III is an extended surface pocket air filter which uses a new design to increase dust holding capacity. Each unit provides uniformly-shaped channel construction, space between pockets, special stitching, and wide entrance into each channel. American Air Filter Co., Louisville, Ky. *GB, ICR



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610 Gas furnace

The *Energy Command* gas furnace has 80,000 and 100,000 bth/h heating input, and 18,000 to 36,000 Btu/h add-on cooling—and claims to save 24 to 40 per cent on heating costs compared to standard gas furnaces. It uses a high efficiency combustion heat transfer module. Amana Refrigeration, Inc., Amana, Iowa.

611 Lavatory

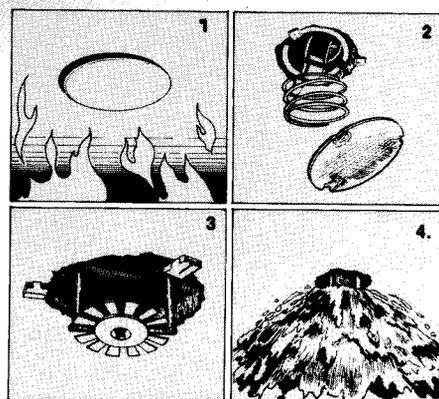
This self-rimming lavatory is a new rectangular model #221. It is 22 by 19 in., and features top mounting, front overflow, molded bowl, and is available in six colors. Norris Plumbing Fixtures, Walnut, Calif.

612 Sculpted faucet

The "Orchidea" series, developed by Zazzeri in Italy, includes this sculptured single lever faucet for bathroom, kitchen and bar sink. Available in enamel colors of white, dark blue, red, brown, beige and black. Distributed by Watercolors Inc., Garrison on Hudson, N.Y.

THE PHANTOM

THE NEW "NON-LOOK" IN FIRE SPRINKLER SYSTEMS



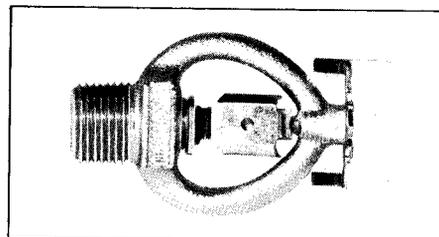
1. FLAMES STRIKE 2. COVER RELEASES
3. HEAD DROPS 4. WATER FLOWS

The PHANTOM I* — Ready when you need it for high rise buildings, large condos, hospitals, offices, and hotels.

The sprinkler head that strikes fast when called upon. Easily installed, with a built-in installation tolerance, and a specially designed silhouette — the slimmest in the industry. It's hardly noticeable behind a flush cover plate, until heat activates it, and then — WHOCKO! It pops free and releases its effective pattern of water. Custom color finishes available (on suitably sized orders) to match ANY particular ceiling treatment.

One look — one demonstration, and the PHANTOM I will sell itself. Write or call Grunau Sprinkler Manufacturing now!

*PHANTOM I is UL listed for metallic finishes only. FM approved.



Liquidator 1/2" and 17/32" Horizontal Sidewall Sprinklers

The Liquidator Horizontal Sidewall Sprinkler is ideally suited for use in hotels, motels, nursing homes, hospitals; plus condominiums and apartments. A single small head allows 16' x 18' coverage without special attachments for maximum economy. Piping can be confined to corridors, closets or service areas which limit exposed piping to an absolute minimum. Available in standard finishes and temperature ratings. UL listed for extended coverage application at 135° F., and for standard application from 135° F. to 280° F.



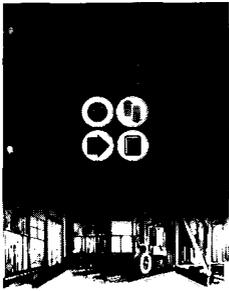
GRUNAU SPRINKLER MANUFACTURING COMPANY

P.O. Box 220 / South Milwaukee, WI 53172 / (414) 769-5500

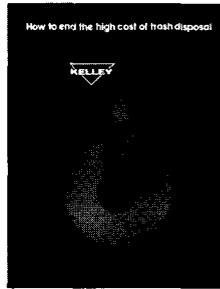
Product literature: Division 15

For more information, write item numbers on Reader Service Card, pages 9-10, 219-220

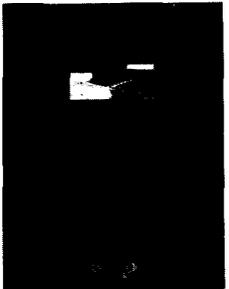
*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



3240 Refrigerated warehouses
An 8-page brochure includes discussions on computer simulation, equipment selection, and accessories. Featured is a step-by-step process of selecting a system for a particular need. Condensing units and heat reclaim systems are also described. Climate Control, Red Bud, Ill.



3246 Trash disposal
Diagrams illustrate the components of *Kelley* pyrolytic waste disposal systems in an 8-page color brochure. Charts give models, capacities and options while photographs show a number of typical installations. Kelley Co., Inc., Milwaukee, Wis.



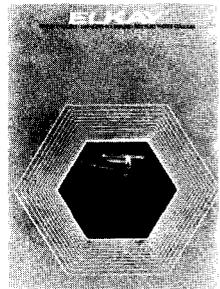
3241 Wood cooling tower
The *Permatower II* factory-assembled wood cooling tower is described and illustrated in a 12-page color brochure. Diagrams with dimensions, steel support data, piping arrangements, engineering data and specifications are included. The Marley Cooling Tower Co., Mission, Kansas *GB, ICR



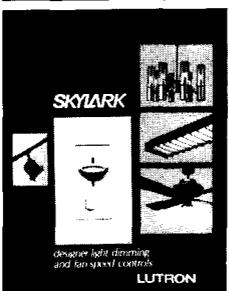
3247 Finned-tube radiation
A catalog covers the *Versa-Line* selection of finned-tube elements and enclosures. Design data and heating capacities for all commercial and institutional applications are listed. Sterling Radiator, Westfield, Mass.



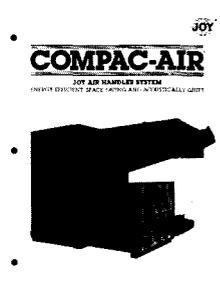
3242 Filter lighting system
A page of literature describes the *Reflecto Light* which is designed specifically for clean room installations. The design features a gloss-white louvered grill between the filter element and fluorescent lamps, and provides laminar flow air filtering. Electro/Systems, Eden Prairie, Minn. *GB



3248 Water coolers
A color catalog includes photographs and specifications of a line of water coolers, drinking fountains and bottled coolers. Wall compacts, floor units and 1- and 2-level units are featured as well as refrigerated storage coolers and accessories. Elkay Manufacturing Co., Oak Brook, Ill. *GB,E



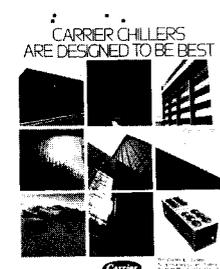
3243 Light and fan controls
Drawings illustrate the *Skylark* line of dimmers and fan speed control sliders. Dimming controls may be applied to incandescent, fluorescent, incandescent low-voltage and HID lighting. Specifications and a selection guide are included. Lutron Electronics Co., Inc., Coopersburg, Pa.



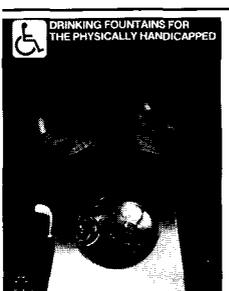
3249 Air handling
Graphs, charts and diagrams illustrate the performance of the Joy air handler system in a 6-page foldout brochure. Typical specifications and dimensions are included as well. Joy Manufacturing Co., New Philadelphia, Ohio.



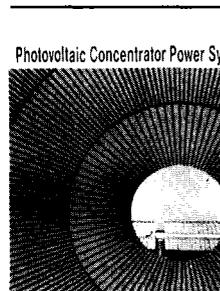
3244 Solar structures
A 6-page color foldout features photographs of installations of *Sun/Fun* modular building systems with retractable roofs. All framing members are aluminum. Specifications and design options are listed. Solar Structures, Wheeling, Ill.



3250 Chillers
"Air cooled reciprocating liquid chilling" is the subject of a 4-page color brochure from Carrier. The model described provides protection from over-temperature, overload and lack of proper lubrication. All units are factory wired, assembled and charged. Carrier Corp., Syracuse, N.Y.



3245 Fountains
Drinking fountains for the handicapped are illustrated and described in an 8-page color brochure. Installations of 9 fountains and water coolers are shown with specifications including cooling capacities, weights, finishes and mounting requirements. Sunroc Corp., Glen Riddle, Pa.



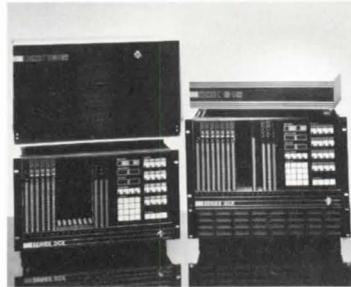
3251 Solar power
Photovoltaic concentrator power systems are described and illustrated in a 12-page color brochure. Photographs show an installation for solar villages in Saudi Arabia while a map charts world solar insolation levels. Hardware components and applications are listed. Martin Marietta Corp., Denver, Colo.

16 Electrical

UCI 16, Electrical:
 Communications
 Electrical heating-cooling
 Lighting
 Power generation
 Protective systems
 Raceways
 Wiring devices



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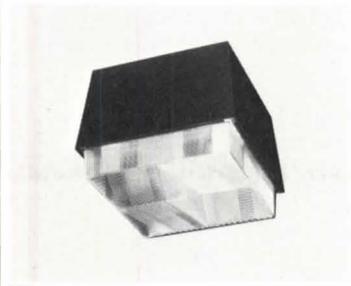
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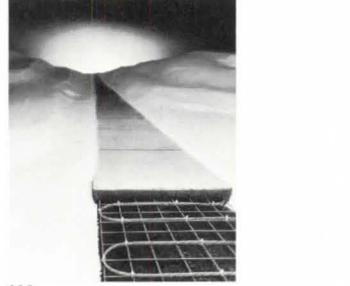
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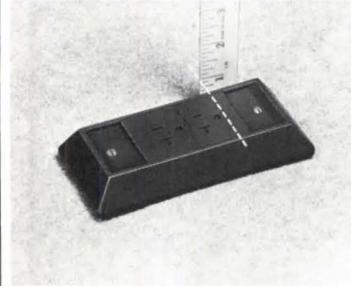
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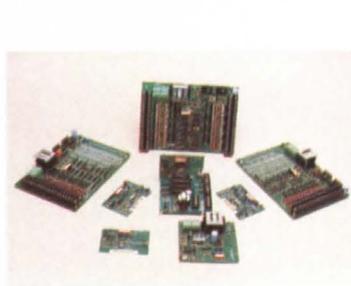
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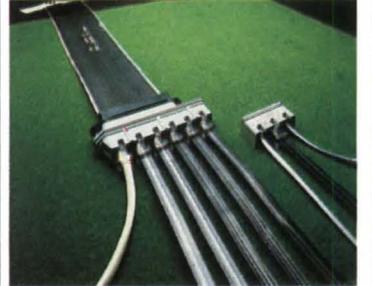
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625 Management system

A low-end energy management system, the "Power/Perfect 4500," is designed to be cost-effective for buildings in the range of 20,000 sq ft. The system can save energy through programmed start/stop, load cycling, demand limiting, etc. Johnson Controls, Inc., Milwaukee, Wis.

626 Outdoor lighting

An injection-molded, prismatic lens of polycarbonate gives an oval-patterned light distribution for applications such as garages, loading docks, and covered walkways. The housing is extruded aluminum, and the reflector is specular Alzak. Guth Lighting, St. Louis, Mo.

627 Undercarpet cable

"System III" features a new line of pedestals in neutral colors for power, telephone and data transmission. For power the system has a direct-connect receptacle which provides proper connection and grounding. AMP Special Industries, Paoli, Pa.

628 Data multiplexer

The "Data Concentrating Exchange Series" multiplexers provide data links for connecting terminals and computers with a minimum number of communication lines. Four DCX models have capacities of from 4 to 240 terminals. Paradyne Corp., Largo, Fla.

629 Load supervisor system

The *Load Supervisor II* system communicates with both load managers (model 1664 shown) and load programmers made by the company for time-saving energy management and collection of environmental information. The system uses English commands. Pacific Technology, Kirkland, Wash.

630 Management system

Module interconnections in the *Simtrol* "8200 Series" replace individual wires running long distances from controller to controlled points for industrial control/monitoring and energy management, reducing wiring costs. Control Junctions, Inc., Schaumburg, Ill.

631 Task light

Conwed's "System 2" work station incorporates the company's patented task light, engineered to reduce wattage while reducing glare and eliminating shadows. The light provides 100 footcandles on the work surface. Conwed Corp., St. Paul, Minn.

632 Electric snow melter

Self-regulating heater features corrosion-resistant double jackets and mechanical shield around its heating element for longer-life use. The *Electromelt* heater can be cut to length at the site. Raychem Corp., Redwood City, Calif.

633 Pendant lighting fixture

With Pandalume, parabolic baffles control direct light while minimizing glare. The fixture reflects indirect light in a wide pattern to reduce ceiling contrast. Columbia Lighting, Inc., Spokane, Wash.

634 High-bay fixture

The open-air design of this "Highbay" HID fixture by Stonco exposes the core and capacitor to cool the unit and extend component and lamp life. Reflectors are anodized aluminum arranged for optimum light distribution. Keene Corporation, Union, N.J.

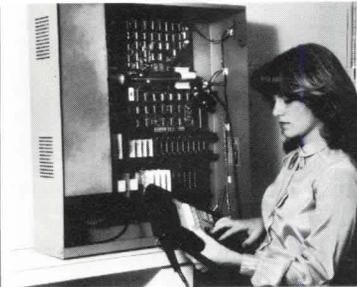
635 Track light

Intended primarily for display lighting, the "MR-16 Trac" lampholder offers an energy-efficient light source which is compatible with the "Halo Power-Trac" system. The lampholder is fitted with a dichroic projection lamp. McGraw-Edison Co., Elk Grove Village, Ill.

636 Undercarpet cable

A new undercarpet telephone cable system, *Teletape* has four-pair conductors preterminated with 8-contact modular plugs, which serve as extensions to individual telephone sets. They connect to 25-pair flat cable or round-cable connectors. Brand-Rex Co., Willimantic, Conn.

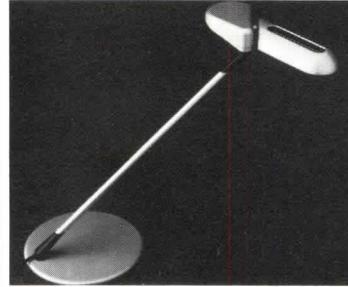
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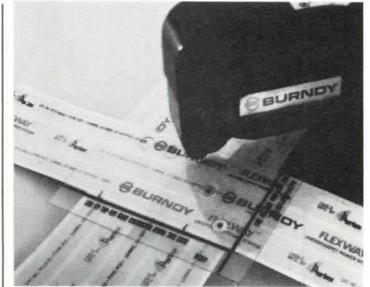
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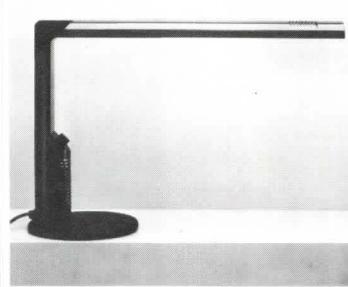
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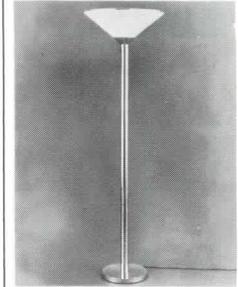
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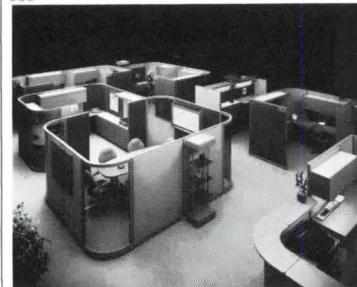
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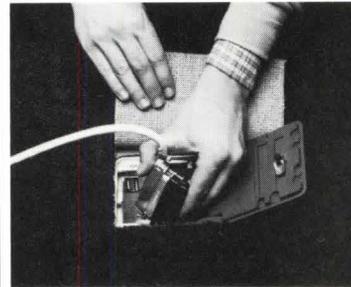
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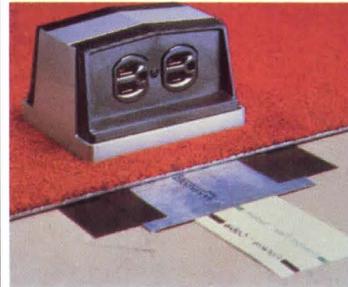
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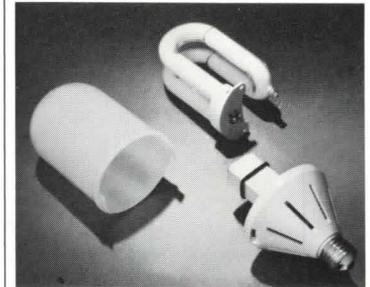
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637 Energy management system

The computer-based, integrated system monitors and/or controls heating, cooling, ventilation and temperature controls. Each controller has its own microprocessor. Building Automation, United Technologies, Farmington, Conn.

638 Indirect lighting

TriAmbient lighting utilizes a 400-W, freestanding HID fixture with optional downlighting capability and tinted display shelves. The fixture is intended for use where panel support is not available. Haworth, Inc., Holland, Mich.

639 Prewired panel system

TriCircuit ERA-1 panel system features three separate 20-A circuits built into panel-base raceways which are accessed by up to four duplex, 15A plug-in receptacles on each panel. Circuits can be dedicated, via a switch. Haworth, Inc., Holland, Mich.

640 Electric thermal storage

"Heatbank" systems comprise heating cables enmeshed in fiberglass mats that can be used in exterior walls to supplement solar systems, or in floors of buildings for off-peak heating at night. Wirekraft, New Carlisle, Ind.

641 Decorative lighting

"Series 60" utilizes a 6-in. extruded aluminum housing for a clean, continuous lighting system that can be pendant- or wall-mounted, direct or indirect. Polished and satin gold or chrome are available, along with designer colors. Neo-Ray Products, Inc., Brooklyn, N.Y.

642 Preset electrical outlet

An adaptation of the *Q-Floor-Taproute System* for in-floor distribution of electricity and communications offers physical separation of electrical power, information systems and telephone lines for shielding, security and increased capacity. H. H. Robertson Co., Pittsburgh, Pa.

643 Halogen task lamp

A "Ring" lamp designed by Bruno Gecchelin has a 100-W halogen lamp in an oblong reflector support that can be rotated 180 deg. The cast-aluminum lamp comes in charcoal gray or red. Atelier International, Ltd., New York City.

644 Table lamps

Designed by Gianfranco Frattini, the "Abele" table lamp made of aluminum comes in white, black, red or gray, and has a black rubber-covered cast-iron base. Lamp uses a 50-W halogen bulb. Stendig Inc., New York City.

645 Undercarpet wiring

A new entry to the market is the *Fantom Flex* system for open-plan offices or for renovated spaces. *Flatwire* cable is only 0.031-in. thick and makes a 90-deg turn with a single fold. The U.L. listed wire is installed under carpet squares. The Wiremold Co., West Hartford, Conn.

646 Undercarpet wiring

Flexway undercarpet power system utilizes a one-tool, one-connector system for fast connection of taps, splices, transitions and ground shields. In one operation, the tool/connector punches, expands, pierces and clinches the conductor for firm connection. Burndy Corp., Norwalk, Conn.

647 Floor lamp

The classic "Dynasty" torch lamp is touch controlled for low-medium-high-off settings. The 300-W bulb works like a three-way bulb. The lamp comes in polished brass or chrome. Koch + Lowy, Inc., New York City.

648 Compact fluorescent lamp

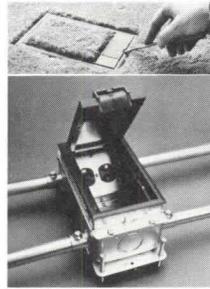
A compact fluorescent lamp for incandescent sockets, called *Econ-Nova*, is only 25 watts, but is equivalent to a 75-W incandescent bulb. The system's base holds the ballast. The fluorescent tube is covered by a translucent globe. Westinghouse Electric Corp., Bloomfield, N. J.



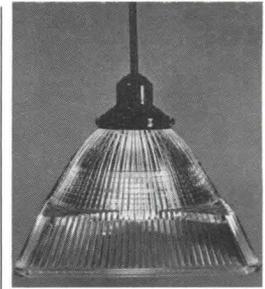
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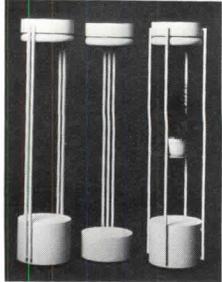
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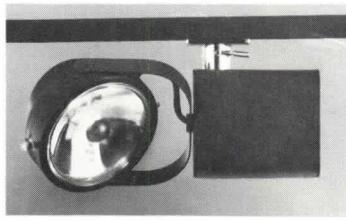
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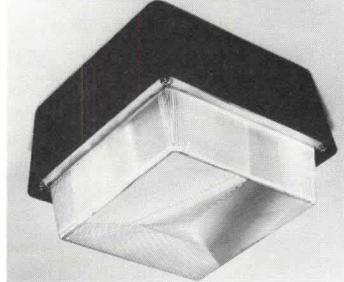
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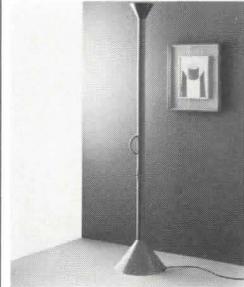
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649 High-efficiency luminaire
A 6-in. tubular fluorescent fixture with top lens offers the efficiency of an open fixture along with the hint of "brightness." Tests show that an open fixture needs 13 per cent more watts for the same illumination. Peerless Electric Co., Berkeley, Calif.

650 HID luminaires
High energy efficiency and dramatic design are main features of the "Focus Ten" line of HID luminaires. The fixtures can be either freestanding or pendant-mounted, and have two optical systems for task and ambient lighting. Gardco Lighting, San Leandro, Calif.

651 Energy management system
Heart of the "Programmable Lighting Control" is a microprocessor controller that holds interactive conversations with local transceivers to switch low-voltage relays on or off. Program overrides are possible. General Electric Co., Warwick, R.I.

652 Variable-intensity light
The "Lutronic 9000" task light has a rotatable plastic tube covered by a specially-engineered pattern of lines to control the amount and direction of light reaching the working surface. Steelcase Inc., Grand Rapids, Mich.

653 Low-voltage light
A compact, low-voltage unit, "Beacon" provides dramatic lighting effects with energy savings because of greater optical control from low-voltage lamps, and can be track-mounted or portable. The light's transformer provides 12 or 5.5 volts. Lightolier, Jersey City, N. J.

654 Exit light
The *Egresser* exceeds NFPA codes for illumination pertaining to visibility. In the normal ac mode, the sign is twice as bright as code required in the dc (emergency) mode; it is seven times as bright. The sign uses only five watts. Crouse-Hinds Co., Syracuse, N. Y.

655 Concealed service box
This new 14-ga. steel floor box is designed for concrete floors with electrical and communication wires in standard conduit. Leveling screws on corners provide an adjustment of 2½ in. to bring the box to the level of the concrete pour. Midland-Ross Corp., Pittsburgh, Pa.

656 Area light
The "Parkpak" luminaire has an asymmetric refractor of polycarbonate plastic to provide an elongated pattern especially suitable for vandal-prone areas. The luminaire is heavy-duty cast steel and has a die-formed steel reflector. Manville Corp., Denver, Colo.

657 Fire-rated afterset
"Fire-Rated Afterset" reduces or eliminates costly fire-protective material on steel decks. With series 900 steel deck no spray-on fireproofing is required; with series 700 and 800 decks it is reduced substantially. Raceway Components, Nutley, N. J.

658 Decorative light
Ribbed-glass units offer an ambience of both direct and indirect illumination. They are available in clear or etched domes, and the stems and fittings come in brass, antique copper, and red, black and white. The American Glass Light Co., New York City.

659 Security system
The "VOCA 2000-C" offers two independent security zones, one for doors and windows and a second for inside detectors. Smoke and heat detectors connect to an independent circuit. The intrusion alarm has delays up to 60 sec. Caribbean Security Systems, North Miami Beach, Fla.

660 Halogen floor lamp
Designed by Ettore Sottsass, "Callimaco" has a post-modern appearance and comes in multi-colored lacquered metal. The unit uses a 500-Watt tubular halogen lamp. Artemide Inc, New York, N. Y.

*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



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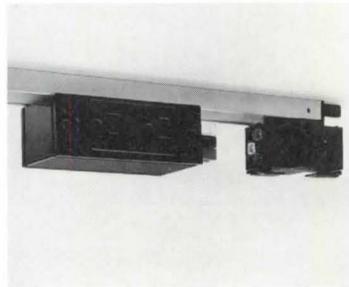


663

661 Telecommunications cable
To enable an installer to use the exact amount of cable needed, the manufacturer of the *VERSA-TRAK* system has introduced 3- and 4-part telecommunications cable with field installable connectors. With cable in a spreader, the connector snaps on. Thomas & Betts Corp., Raritan, N. J. *ICR

662 Designer lamps
A collection of contemporary brass lamps from Augusti of Barcelona has been added to the Nessen line. The line comprises 25 lamps, each with a different reflector. All lamps are solid brass. Nessen Lamps, Inc., New York City.

663 Nurse call system
The "Responder III" is a computerized communications system designed specifically for hospitals. The integrated system is readily customized for the needs of each hospital. It shows patient calls, patient status, records, etc. Rauland-Borg Corp., Chicago, Ill.



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664 System furniture raceway
The snap in/snap out power element of *Powerwall III* can easily be moved from one "HarterWall" panel to another, providing power where needed without any rewiring. The product is part of the Harter line of system furniture. Harter Corp., Sturgis, Mich.

665 Landscape lights
The "Concept 500" line of burial and well lights can be used to illuminate trees, signs, walkways, as well as interiors. Kim Lighting, Inc., City of Industry, Calif.

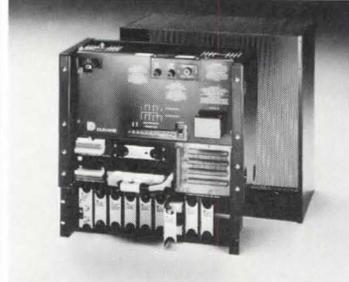
666 Transfer switches
A line of transfer switches has been expanded to include single-coil solenoid actuating mechanisms in models ranging from 30 to 4,000 amperes. The full line offers more than 75 different options, a number including solid-state circuitry. Kohler Co., Kohler, Wis. *E



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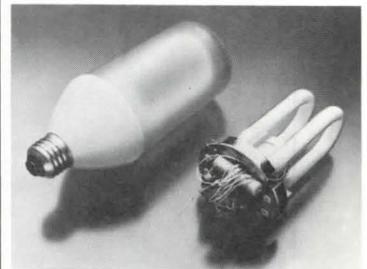


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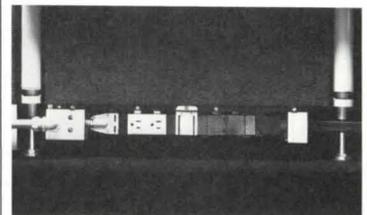
667 System furniture raceway
The "Midline" raceway is integrated into a furniture panel 30 in. above the floor to deliver power and communications at work surface level. The clip-on raceway delivers 3-circuit, 6-wire services with isolated third-circuit capability. Panel Concepts, Santa Ana, Calif.

668 Sodium-vapor floodlights
Low-wattage sodium-vapor lamps come with die-cast housings and tempered-glass lenses. The "HPS Micro Watt Flood" is for 35- or 70-Watt high-pressure sodium lamps, and the "LPS Micro Watt" (shown) is for an 18-W low-pressure sodium lamp. ITT Outdoor Lighting, Southaven, Miss.

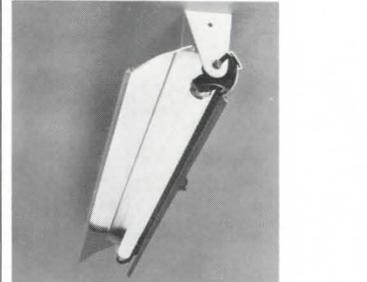
669 Paging system
The "Select-A-Page" telephone-access voice paging system is modular to reduce costs of paging and background music systems. The system contains all amplification, control, and termination facilities required between telephone system and speakers. Dukane Corp., St. Charles, Ill.



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670 Compact fluorescent lamp
A bent U-shaped lamp fits within a 4 $\frac{1}{16}$ -in. prismatic polycarbonate housing to provide an energy-saving 18-W lamp equivalent in light output to a 75-Watt incandescent. An electronic ballast fits in an opaque housing at the bottom. North American Philips Lighting Corp., Hightstown, N. J. *E

671 Open-plan wiring system
A three-circuit electrical package for application with the maker's open-plan system provides power for convenience uses, power for task/ambient lights, and dedicated circuits for information systems. GF Business Equipment, Inc., Youngstown, Ohio.

672 Asymmetric fluorescent
The asymmetric distribution of this *Elliptipar* fixture illuminates walls for a wash effect, or ceilings for indirect lighting. It can be installed in a cove or slot for concealed treatment and is designed for lamps from 36 in. to 96 in. Elliptipar Inc., West Haven, Conn.

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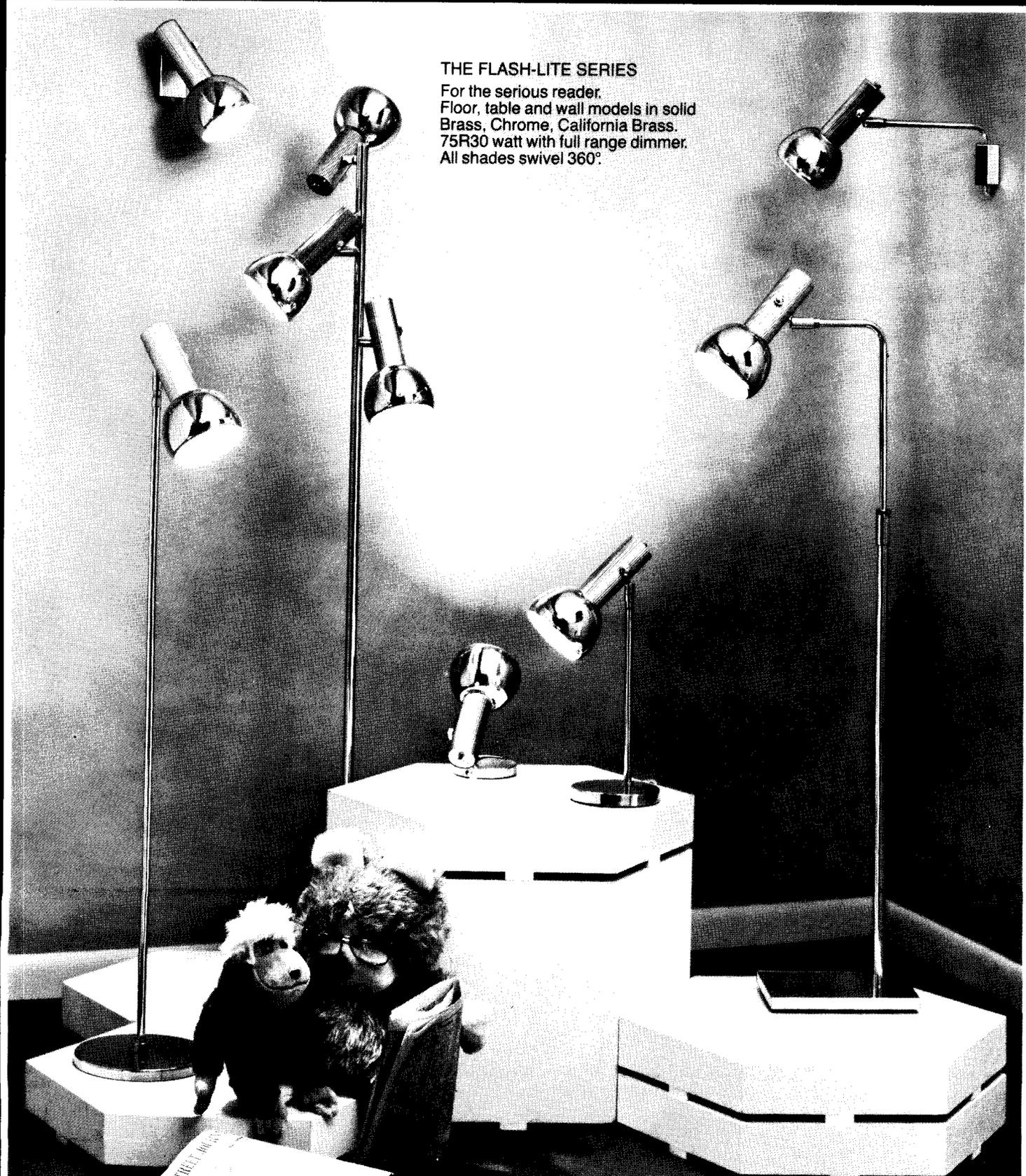
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Pacific Design Center, 8687 Melrose Ave., Los Angeles, Calif. 90069
10044 World Trade Center, Dallas, Texas 75258

1245 Merchandise Mart, Chicago, Illinois 60654
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In addition, these lamps come in 175W, 250W and 400W sizes for horizontal operation in low profile H.I.D. luminaires—so there's plenty to cheer about.

For more information see your IED Independent Electrical Distributor, or write or call GTE Products Corp., Sylvania Lighting Center, Danvers, MA 01923 (617) 777-1900, Ext. 2650.



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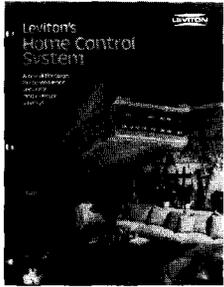
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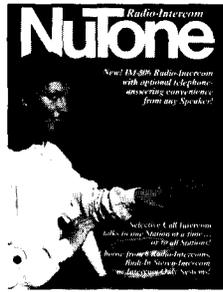
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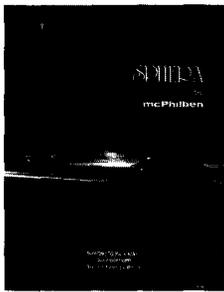
*In 1982 Sweet's Catalog(s): General Building (GB), Light Residential Construction (LRC), Engineering (E), Interiors (I), Industrial Construction & Renovation (ICR)



3264 Programmable control
A 16-page color foldout describes and illustrates a central control which may be programmed to turn lights and appliances in the home on and off at predesignated times. The system uses standard wiring and is suggested for security and energy savings. Leviton Manufacturing Co., Inc., Little Neck, N.Y. *LR



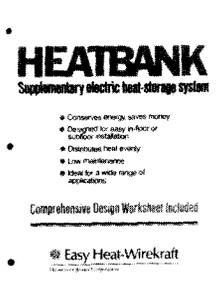
3270 Intercom and radio
A color catalog describes and illustrates a communications system which answers the phone from a master station on any remote speaker. A 6-wire system accommodates up to 20 remote speakers and each has its own radio and intercom volume controls. NuTone Division, Scovill, Cincinnati, Ohio



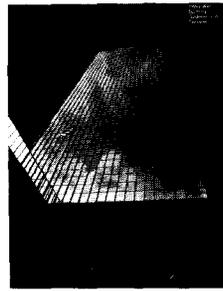
3265 Area lighting
Photographs show typical installations of *Sphera* cut-off luminaires in a 12-page color brochure. Sections and charts give dimensions, and detail pictures feature the components of the lamps. Specifications, photometric data and luminaire ratings are listed. McPhilben, Melville, N.Y.



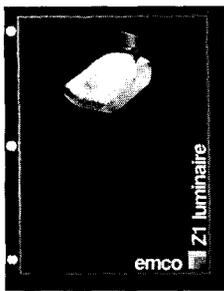
3271 Fluorescent lamp
A 4-page bulletin describes the *Sylvania Optron* lamp and lists features including energy savings of up to 25 per cent and reduced air conditioning requirements. The 4-ft lamp is rated at 32 watts and 2900 lumens. GTE Lighting Products, Danvers, Mass.



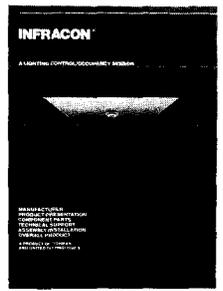
3266 Supplementary heat
The *Heatbank* in-floor or sub-floor heat reservoir is described in an 8-page design manual. The electric system, suggested for contract or residential use, stores heat during lower demand periods and radiates the stored heat throughout the day. Easy HeatWirekraft, New Carlisle, Ind.



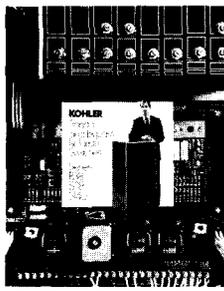
3272 Integrated systems
A 4-page glossy color brochure diagrams and describes a concept and system for building automation. Among the components of the system are hvac, security, telephone, data processing and fire alarms. United Technologies Building Automation, Farmington, Conn.



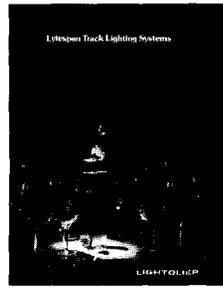
3267 Roadway lighting
A 4-page color brochure features wall-mounted and pole-mounted luminaires. Photographs show many of the mounting options. Both high- and low-pressure sodium or mercury vapor lamps. Specifications and dimensions are listed. EMCO Environmental Lighting, Inc., Milan, Ill.



3273 Occupancy sensor lights
A passive electronic device that senses body movement and temperature and automatically turns lights on and off is described in a 4-page brochure. Line drawings illustrate the *Infracon* installation assembly and technical data are listed. Tishman Research Co., New York City.



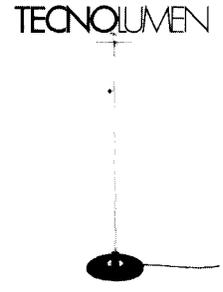
3268 Switches
A 20-page color brochure contains dimension, weight, accessory and ordering information for 3 series of single coil solenoid-actuated transfer switches. Series divisions are based on the type of intelligence circuitry used. Specifications are included. Kohler Co., Kohler, Wis. *E



3274 Track lighting collection
A reference guide helps to determine the proper *Lytespan* track unit, placement and spacing for a desired effect. Brass, chrome, and black and white matte finishes are available. Also available is a fluorescent model for energy efficiency. Lightolier, Inc., Jersey City, N.J.



3269 Trac lampholders
An 8-page color brochure features low-voltage *Halo* "Power-Trac" lampholders which use MR-16 and PAR-36 lamps. Photographs illustrate a variety of models. Illumination data and specifications are included. McGraw-Edison, Elk Grove Village, Ill.



3275 Lamps
A 40-page booklet illustrates the *Tecnolumen* collection of Bauhaus reproduction fixtures assembled by Walter Schnepel. Each lamp is shown in a full-size photograph with its respective data. Cost is \$2.00. Mail checks directly to: Lighting Assoc. Inc., 305 East 63rd, New York, N.Y. 10021.

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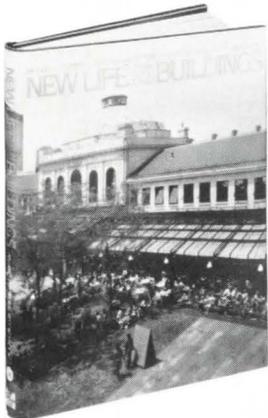
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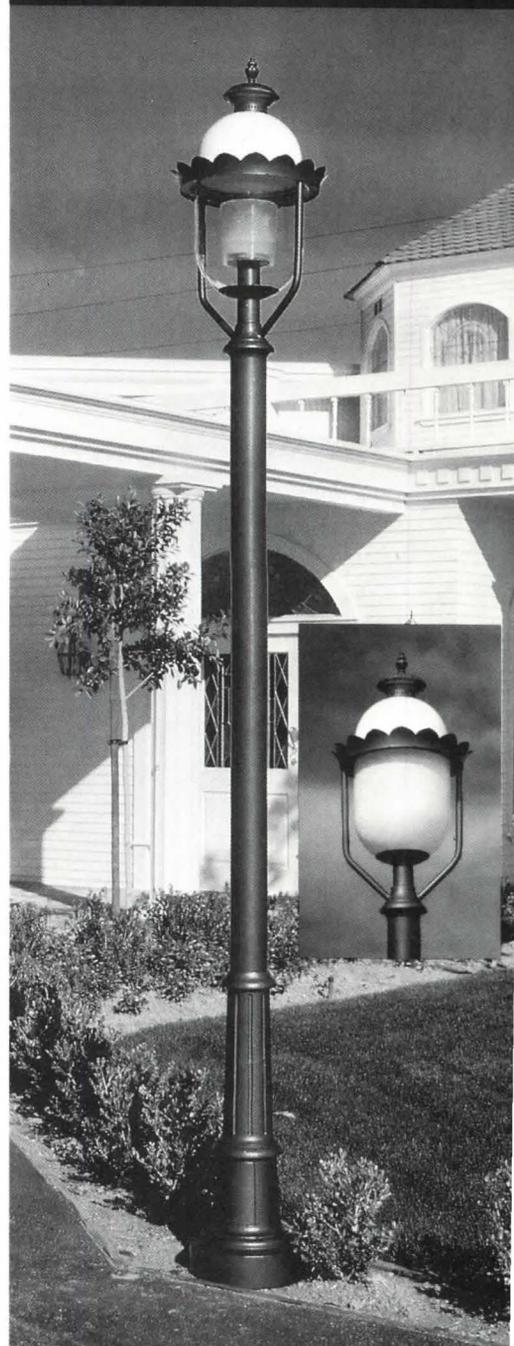
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