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AT&T
The right choice.
Sales reps or service reps: what do architects need from them?

By William F. Koelling

"Sales" rep may be a misnomer. We don't really want to be "sold" anything by the rep. We want "service" reps. What we want is information. When it comes to new products, we want technical expertise. Tell us how we can use the product. Even with products that have been on the market for a long time, we still want that technical information—even though we may know the product well through previous use, or through advertising.

The information we need can be expedited in two ways. One, the rep can be sufficiently knowledgeable about his product to tell us first hand how we can use the product. Preferably, he can pull the information out of his briefcase as an immediate response to our questions. Second, it's too late to do that, then let him go back to his company and get the information.

The first case demands a well-trained, technically knowledgeable rep. It's known our experience, however, that at best only about 25 percent of reps calling on us have the necessary technical expertise. This situation isn't helped by the rapid turnover among reps: their average "life" seems to be about three years.

The second case involves the organization of information within the rep's company. We would like to see the product-producing firm be so organized that even the newest rep can go back to his firm and get the necessary information to us quickly and efficiently. He has to know either whom he has to consult within his own firm to get the necessary facts, or whom we should be referred to. As things now stand, there is usually an unconscionably long lapse between the time the rep gives us a sample, and the time he is able to return with the information and technical backup we need.

We would like to see firms hire technically qualified reps, or else institute a training period for those newly hired to make them thoroughly familiar with their product. Train them to understand, for instance, the laws (such as those governing flammability) that concern what we do. But it's equally important to enable the rep to be a true "service" rep by backing him up with fast access to information, and training him in how to get it from his company.

The rep also needs to be aware from the beginning that most architects/interior firms seldom place the actual order. We specify. Many reps do not seem to fully understand this. The materials are ordered as part of a contract, through a contractor. So the emphasis on "selling" to us needs to be modified. The emphasis should be on giving us the right technical information so we can specify intelligently.

Without question, the salesmen who can really help you is more likely to be considered because of that helpfulness. Companies make a big investment in their sales reps. If they don't, they should. They need to provide them with good catalogs, good samples, quick, easy use of mockup samples, and a good compatible with another product that was going to sell well.

In architecture, the cooperation of manufacturers and designers happens all the time, and it is often the designers who are stretching the industry. Right now we're designing those new office buildings in mid-Manhattan. For one of them, we're in the middle of obtaining curtain-wall bids. We have a certain design in mind, and sometimes the costs may be so great, and the return so unlikely, that the manufacturer will decide it's not feasible. But the rep should be willing to try hard.

It's a matter of trying to find a way to bring together two different areas—what is involved in new-product development for the sake of a particular project; the manufacturer gets involved for the sake of developing a market.

Recently, Swanke Hayden Connell Architects held an in-house round table with seven of their staff, to discuss their relations with, and expectations of, manufacturers' representatives. William Koelling, of SHCA, presents here a compilation of the various opinions expressed.

Robin Moore, specification writer for Swanke Hayden Connell Architects, suggests, "We must do more than update catalogs.

showroom. They need to train the reps to provide technical service, which we find to be a rare and special commodity.

Reps should understand the unpredictable process of new-product development.

We're constantly involved in product design. Within most projects, we modify, customize, create new solutions to address particular functional requirements. We influence the refinement and further development of existing products, and even of new additions to existing lines. It's important for the rep to know this—and to be helpfully involved in it.

A 2-million-square-foot headquarters building that SHCA designed is a good case in point. We worked with many manufacturers to develop products. Some were in the process of development already. For example, the systems furniture was not a complete product when we began. We worked with their research department to come up with the final product.

Because of the color palette of that project, we worked with another manufacturer to develop a fabric. By combining one filament of each of 12 different colors, we created a fabric that could be applied throughout the project. We worked with a lamp manufacturer to develop a lamp that would allow us to use one of his lamps in the furniture system. This is a good example of a manufacturer being ready and willing to put the R&D time into making his product work with the manufacturers to recognize the economics of their particular manufacturing processes. A minor modification in appearance may realize significant economic benefits. We will also use a curtain-wall consultant during this process to ensure performance.

When we work together with manufacturers in this way, we're always looking for technical information which will confirm that our ideas are workable. When we "stretch the frontiers" of what is being done with a product, we're creating a need for new tests, new measures. And the sales rep who can guide us through this process is the one who is most valued.

We want to know that reps are willing to go to bat for us.

Many companies are reluctant to get involved in a "new testing" situation. It's an expensive process. Of course, they're more likely to make the investment of time and money if the project in question is a very big one. If the manufacturer believes there will be no market for the item, after our request is fulfilled, he may be reluctant to take on the expense. Often a manufacturer doesn't guess right about the future of a new use for his product. But when new development is used again and again, then we've helped to open up a new market for the manufacturer who took a chance.

It's very important for all concerned that the rep should be willing to go through the difficulty, back at the home office, to justify doing what we need done.

Kathryn Noles, interior design director and SHCA associate, says, "To help stretch frontiers, it's wonderful to find that sales reps who finds the research exciting."

Specifying interior designers and architects have to realize that the chances are minimal that the manufacturer will go through expensive testing processes for a small project. If the manufacturer is presented with a project consisting of 2 million square feet, you've got a little muscle. Then you may have the opportunity to try new things.

We're talking about what we're supposed to get from the sales reps—but they get benefits from us: an education, new ideas.

When our architects and interior designers ask a manufacturer if a new-product development is feasible, it's because we don't know. And often, the manufacturer doesn't know. It's only through persistence that we find out. There is always the problem of liability, too. With an established product, the manufacturer has already gone through product testing. Sometimes he's not anxious to get into a whole new world.

SHCA's experience with the restoration of the Statue of Liberty was full of problems in terms of finding appropriate materials: for the spiral staircase, for the stair treads, railings, pats, SHCA helped develop materials that never existed before. For the stair treads, stainless-steel casting with a non-slip aggregate was developed. It may seem obvious, but nobody had done that before. Until this new development, it was either cast iron or it was aluminum or bronze with this non-slip aggregate cast in it.

What we were looking for didn't
existing. We contacted the research laboratory of a large manufacturer after calling around the industry. Now, if a sales rep from one of the companies we initially contacted had said, "We don't have that product, but we're working on it and we'll do it," he would have gotten the job, and it would have made our life a lot easier. But it didn't happen that way. He went back to his home office, and they said, "We're not interested."

But finally we found somebody who said, "Maybe we'll give it a try. It's for the Statue of Liberty, we can get about $10 million worth of publicity, and in Swed's Catalog we'll have The Lady holding up the cast treads."
The salesman worked in reverse here. Seeing the possibilities, he sold the architect's need to his company instead of selling his product to SHCA.

Architectural reps and interiors reps have different sales problems

As of now, architectural products tend to sell themselves just by being there. Generally the rep is called in after the product has been specified by the designer. Architectural products are properly organized for researching and specifying, and the reps tend to be technically oriented, but they may have a much wider regional territory. Therefore, they are not available to meet with a designer as quickly as may be needed to discuss the technical information, and samples are not as readily available for project use.

Interior design reps are constantly knocking at the door. Our designers are sometimes "turned off" by interior reps because they tend to "sell" too aggressively, even when it's apparent that a sale is not being made.

Interior design products are not as well indexed for researching and specifying, and the reps are not technically oriented to our needs; and there is a better chance of meeting that rep more quickly, and it's easier to obtain interiors samples for project use.

The length of time it takes for a product to get improved or changed is very different in architecture from what it is in interior design. The state-of-the-art interior systems of 15 or 20 years ago are antique today. And the liability exposure in developing new materials in the interiors world is much less than it is in the architectural world. Many interior systems are usable and consumable, and if they don't work within a piece of upholstery fabric lasts not five years but two— they're replaced. You learn from that.

In architecture, the liability exposure involved in going to new materials is enormous. The curtain wall is a good example. For hundreds of years architects had been dealing with stone of a certain thickness. Suddenly somebody came up with a new way to slice it, and cut stone an inch and a-quarter thick instead of four inches. Now it was lightweight and cheaper. A metal truss system was developed to support the stone. Everybody rushed to take advantage of this new development.

In interiors it's often the final product they're selling; in architecture it's more of a case of products to be integrated.

Our architectural specifier says that sometimes the rep is visited by reps of architectural building products, saying "We've got something new." But it would be better if the rep saw the designers. Because all he specifies is what is chosen by the designers, the information he gets on a new product may be put away, and may not see the light of day. A technical sales rep will sell more effectively if he sees the designer, the architect, or the firm's librarian.

Our library is a product information center

We like to think that our library is an information center not only for our interior designers and architects, but indirectly and most importantly, for our clients. We become an impartial source of information, a service for the client, as we are in touch with the vendors. We analyze the different products and research the technical expertise so we can recommend a product as the best for the client's use. It is the total residual knowledge developed through long experience which provides that service.

As a result, the SHCA library serves as a central clearing-house for sales representatives and has a special appreciation for those who are most helpful technically.

The library staff maintains a check list of questions and answers. They don't leave the interview process up to the representatives. The rep tells them the depth of work that a firm as large as ours produces—the volume and the pace. As a result, it is often necessary for our librarians to talk to other personnel at the manufacturer's to gather more information. They make appointments with someone in production. They try to make sure that they understand the manufacturer's capabilities and production, and its best applications.

We're in a field where there's always a continuing development of materials, of technical application, of sources. New marketing people, new sales approaches. We need to be aware of these developments as they occur. The ideal situation would be more reliable than "catch as catch can." If there were a central training location so all designers could become aware of trends and developments, that would be ideal; as of now, our library is the closest thing to that.

The thrust of this year's product presentation schedule has been to focus on educational, generic presentations by architectural manufacturers. For example, the architectural company that markets stone will discuss all categories of stone and their various strengths and weaknesses, their best application and maintenance, so we all acquire common information. Architectural reps have always tended to do this anyway—whereas furniture or fabric reps tend to see their product in terms of having to make a sale. Actually, education is the best selling tool.

Our library is in the process of developing the same kind of organization of architectural samples and references that we already have with interiors materials. Our architects point out that they miss 101 Park Avenue in Manhattan, where there used to be showrooms where reps had their architectural samples. Now they use Swed's Catalog, and it gives the right companies to call, but it's not the same as having reps all in one place. In interior design, we New Yorkers have such a center. Developing "Colorland," City. Not all firms are large enough to support a library like ours. There is a great asset to us and to our clients in having this technical resource. All we need now are more qualified technical representatives to make the picture perfect.
Pigments of imagination

Calling themselves “survivors of the Age of Gypsum” and their firm “Art In Construction,” Steve and Shelby Balser have formed a rare combination of artistic expression and technical know-how. Although the husband-and-wife team built the plaster company’s reputation on expert restoration work, they have based its long-term agenda on adapting 16th-century *buon fresco* skills to decidedly up-to-date applications. The Balzers opened their Brooklyn, New York, studio in 1979, with a troupe of craftsmen and manual laborers producing replicas of antique cornices and moldings in classic patterns such as egg-and-dart, lamb’s tongue, and banded leaf. Meanwhile, the duo also satisfied their Cinquecento longings by experimenting with tinted plaster on the side. In 1982, the Balzers brought Renaissance craft and modern techniques together when they executed their first integral-colored plaster walls, in a designer’s bathroom. Since that humble beginning, Art In Construction has completed over a dozen more ambitious tinted-plaster projects, including entire apartments, office interiors, and a trendy East Village boutique (RECORD, mid-September 1986, pages 90-93).

Whereas Renaissance fresco painters brushed pigment onto a wet lime-and-sand-coated surface, the Balzers create their esthetic effects by adding color to a lime, water, and plaster-of-paris mixture, which is then troweled onto a dry 3/4- to 1-inch-thick base of gypsum and sand. To achieve the desired hue, Art In Construction derives its own palette from earth pigments, fine-arts paints, and a variety of lime-compatible chemical compounds. Individual colors are mixed in large tubs off-site, using a secret additive that the Balzers claim allows them to maintain consistent color from batch to batch. In forming the barely 1/8-inch-thick finish coat, Art In Construction will often apply several different colors simultaneously—a process that gives the unplastered surface a mysteriously mottled, three-dimensional look. Although the Balzers continue to expand the range of their palette—there are currently testing ferrous sulphate (rust), copper and bronze powder, scraps of hemp and sisal, and bits of glass and rock in their increasingly unusual finish-coat mixtures—they are more eager to explore the sculptural capabilities of the material.

A reception room recently completed for the U.S. headquarters of the Banca della Svizzera Italiana in Manhattan (opposite), provided just such an opportunity, and offers an illuminating case-study of Art In Construction at work. Guided by the Phillips Janson Group, interior designers whose partner-in-charge was Dennis Janson, Art In Construction juxtaposed designer-specified marble trim with a cool, brownish-gray plaster—applied to the walls, light cove, and desk—and a bleached version of the same compound inside the dome. The concave ceiling presented a particular challenge to Steve Balser, who constructs all of the company’s speciality hardware. In addition to standard tools of the trade—hawks (squares that hold plaster) and flat or curved trowels (opposite, top and middle left)—this job required special extrusions. Choosing to hand-form the shape instead of casting it in sections, Mr. Balser made a giant compass, which was attached to a cut-out mold half the size of the intended dome. To create the finish coat, both Balzers choreographed an unusually frenetic pace: some members of their team threw plaster up onto the ceiling as others pivoted the compass, rotating the mold 360 degrees and smoothing plaster over the entire surface. A custom-made curved knife (opposite, bottom left) was also rotated on the compass to hollow out the light coves. In order to avoid inconsistencies in the finish, there could be no touch-ups once the plaster began to set (opposite, top right); an acidic-based retardant was added to the finish-coat mixture to retain moisture (when fresh out of their standard brand, the Balzers have been known to pour in Coca-Cola to delay drying). Unorthodox though some of Art In Construction’s methods may be, the resulting seamless surfaces (opposite, bottom right) are, Dennis Janson asserts, “as close to perfect as possible.”

Karen D. Stein
The designer-artisans of Art In Construction adapt 16th-century fresco techniques to tinted-plaster finishes in a wide range of modern installations.
Changing the shape of things to come

Not too long ago, concrete masonry figured among the most prosaic materials at the architect's disposal. Its strictly workhorse image owed much to the standard 8- by 8- by 16-in. cinder block. Times, however, have changed. More than 1,200 standard block shapes are now manufactured in the U.S., ranging from a variety of esthetically pleasing split-face block in a broad range of color to recently introduced interlocking paving systems whose popularity is experiencing a rapid ascent. Part of the growth in the use of concrete masonry materials has been stimulated by the commendable efforts of the National Concrete Masonry Association (NCMA). Founded in the early 1930s as a nonprofit corporation, the NCMA represents the concrete block manufacturing industry through a network of professional activities and services aimed at, among others, the engineering, design, and specifying community. Headquartered in Herndon, Va., the NCMA is eager to work with architects through its Technical Services and Research and Development departments. The engineers and technicians in these departments are qualified to address concerns related to concrete masonry-code requirements and specification requirements, and to evaluate new construction products and techniques.

Arguably, the most intriguing division of the NCMA is its Innovative Design and Research department. Formed just three years ago, its mission is to develop new concrete products that expand the traditional use of concrete masonry, thus penetrating new markets for block producers. The NCMA will hold patents to all new products developed in its facility, and license their manufacture to producers. Four of the most exciting new products to emerge from the department's efforts are briefly described below. The Biaxial Block, Heatsoak Block, Footer Block, and Roofcap Paver are the names given to these products, all of which were designed as systems to improve building performance or speed construction.

Biaxial Block

Heading the NCMA's list of potential high-growth products is the Biaxial Block (four photo illustrations, below left). The block comprises a system designed to create a network of vertical and horizontal cavities, which permits an easy integration of services within a single wythe of block. Although electrical power networks and supply and process piping are likely to be the most common services threading through the blocks, the cavities are equally appropriate for communications wiring, thermal ventilation, heat exchange, anchorage inserts, acoustical inserts, and structural reinforcement. Each block is faced with a circular access opening that can easily be tapped out, thus allowing great flexibility in the disposition of outlets.

Due to its lighter weight, Biaxial Block reduces the costs of foundations, spandrel beams, and other building elements without compromising the strength of the masonry assemblies. The ergonomically located aperture in the center web allows for easier handling by masons during construction. This, coupled with weight savings, results in higher productivity for masons both in the field and in the plant when prefabricating panels.

Heatsoak Block

Heatsoak units, manufactured of high-thermal-capacity concrete, have been designed for easy integration into most types of construction. As a system, this new block substantially upgrades the thermal and acoustical characteristics of common steel or wood stud walls without interfering with electrical wiring, bracing, and other wall inserts (cutaway photograph below). Independent testing of equally insulated buildings has shown that those with walls of higher thermal mass use significantly less heating and cooling energy than buildings constructed with hollow stud walls. This is due to the ability of the walls with higher mass to store and release heat in counterphase with temperature.

Photo courtesy NCMA, except as noted

Biaxial Block

Heatsoak Block
In an attempt to foster new uses for one of architecture's most common materials—concrete masonry—the National Concrete Masonry Association has developed an innovative group of products that perform in ways cinder blocks never could.

changes. Heatsoak installations reduce temperature variations by about 65 percent compared to standard wall construction, with corresponding decreases on the heating and cooling loads.

One of the most annoying problems in modern construction is the lack of sound privacy, a characteristic of hollow separation walls. Although sound-attenuation bats help to stop high frequencies, the low-frequency spectrum easily penetrates low-mass assemblies. As concluded by tests conducted by Riverbank Laboratories, Heatsoak walls acoustically gain more than 41 percent in sound-transmission-loss capability versus hollow construction.

Heatsoak is dry stacked. As a result, it can be quickly installed by nonskilled labor, adding solidity, sound privacy, and heat storage for both new constructions and existing buildings.

Footer Block
The Footer Block system was created by Innovative Design Research Division (IDR) of the NCMA to reduce foundation costs for low- and mid-rise buildings, and to make it easier for do-it-yourself homebuilders to erect their own block walls from the ground up. As there is no need to build formwork or set up access for ready-mix concrete trucks, footings can be assembled quickly. According to IDR, even an unskilled laborer can construct the mortarless footing in about half the time of a cast-in-place footing. Because no curing time is needed, the laying of foundation walls can begin immediately (photographs, below left).

The system goes together dry. All that is required is a solid soil base, which can be roughly leveled off with gravel, mortar, or lean concrete. Once the excavation is prepared, level corner points need to be established. Working from the corner units, interlocking stretchers complete the leveling process as they are laid. Final leveling is accomplished with the mortar bed receiving the first foundation wall course over the Footer Block keys (bottom photo below).

Similar footing systems have been used for decades in Europe, Canada, and Japan. The IDR's system is innovative for its two-way interlocks, shear keys, and integral corner units, which can be put together to form column piers and footings. The IDR Footer Block system also provides for horizontal reinforcing and dowels if required.

Roofcap Pavers
Roofcap Pavers are an interlocking roof ballast system (far right photograph below) appropriate for loose-laid single-ply membranes and inverted membrane roofing compositions. They were designed to replace gravel ballasting over insulated flat roofing. The Roofcap system possesses a number of characteristics that recommend it over conventional ballasting. It provides complete protection of the roofing membrane against solar radiation (UV and infrared) and against thermal shock. Roofcap prevents mechanical damage of the roof membrane from traffic, burning embers, and flying objects, and forms an incombusible barrier protecting the entire roof surface.

Impetus to develop the pavers came from an expressed need among architects, builders, and building owners in coastal and other high-risk hurricane areas where dependable ballast systems are critical. The interlocking feature of Roofcap has been tested successfully at wind speeds of up to 120 mph. As the designer of the block, Jorge Pardo, points out, "that means its unidirectional strength and integrity will prevent the damaging effects of flying debris and protect the underlying roof membrane in all known conditions.'

Other features of Roofcap include quick installation without the need for adhesives or mechanical fastening, ease of design because of the modular concept, and enhanced drainage in storm conditions due to the system's integral grooving profile. Roofcap units are available in a variety of colors that have been successfully installed in geometric patterns, which bring visual interest to flat roofs. D. R.
GOOD

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What is a new product and how does it get to be one? And how “new” does new have to be to qualify? Well, it depends. A new chair or upholstery fabric introduced this month may have become an old familiar before the next major trade show—Westweek, NEOCON or Designer’s Saturday—has come and gone. And the newest of the new chairs and sofas are often introduced in prototype form, to be manufactured later, if the design is deemed successful and marketable. Remaining in the “new” category somewhat longer are architectural building products or systems currently completing development. A glazing assembly or a membrane roof, for example, may have been introduced anytime in the past two years or so. It will have undergone an extensive period of testing, been installed in carefully monitored projects, and been revised to correct flaws, earning the necessary Underwriters Laboratories or Factory Mutual ratings for fire, abrasion, wind uplift, and other factors. By the time the product or system gets to the marketplace, readily available and test-approved, it will still be “new” if only to professionals who do not yet have direct knowledge of the product and what it can do.

“New” can also mean “improved”; a different model of an existing light fixture line, larger color selection, a product recently approved for an upgraded UL or FM category. The new-product designation itself can also encompass unique fabrication methods or a particular custom capability.

Choosing 700 product and literature items from the more than 3,000 submitted was the task of new products editor Joan F. Blatterman, who has discerned the following trends: “A lot of historic renovation and replica items such as cast-iron lampposts and Corinthian columns, fiberglass architectural ornamentation, paints in Colonial and Victorian colors, masonry restoration compounds, linoleum (or vinyl) patterns that recall one’s grandmother’s kitchen, wood-framed windows made to look like 1897 originals (with energy-efficient glazing of course), aluminum siding in Dutch ship-lap patterns and more. Whatever the preservation movement needs, the manufacturers seem to be making. And more computer-compatible products; static-dissipative or conductive flooring, new types of access floors, low-glare lighting; fire-suppression systems for computer or telecommunications rooms, PC-compatible workstations with wire-management devices and ergonomic chairs to fit.”

Product Reports 1988 is, like its predecessors, a compendium of new products that includes product-related articles in the fields of business, design, and engineering. Beginning on page 16, William F. Koelling of Swanke Hayden Connell Architects discusses his firm’s relations with and expectations of manufacturers’ representatives. RECORD editor Karen Stein reports on designer-artisans Steve and Shelby Balser, whose ornamental plaster company produces tinted plaster replicas of Classical and Cinquecento decorative motifs. And attention is paid by RECORD engineering editor Darl Rastorfer to the National Concrete Masonry Association’s new concrete-block systems designed to improve building performance as well as speed construction. The blocks have plain names—Biaxial, Heatsoak, Footer—and are descendants of the prosaic standard 8 by 8 by 16 in. cinderblock. Despite their familiar appearance, their technological sophistication makes them outstanding new products in this year’s outstanding collection. M. F. S.
General Data

1 Workstation upgrade
The CADDStation 34S, introduced both as original equipment and an upgrade package for existing 2-MIPS workstations, is a UNIX-based system that runs all new CADD 4X software. These include CVNC 2-axis numerical control and Tech Pubs II for engineering documentation. Computervision Corp., Bedford, Mass.

2 PC-based CAD
Advance 2.0, described as a major update, includes a 32-bit database, greatly increasing the size and complexity of graphics creation. Drawing files are compatible with both Prisma and existing System 25 systems; there is a direct link to dBase III Plus, with variable instance attribute capabilities for integrating graphic and nongraphic data. ISICAD, Inc., Anaheim, Calif.

3 Design transfers
LNT Custom Transfers allow the draftsman to rub down dry transfers of unique construction details, title blocks, and logos as needed, reproducing consistent graphics easily. Transfers can be created from original drawings on mylar, vellum, or CAD output, and are offered in white, black, and colors. Letraset USA, Paramus, N.J.

4 Portable drafting table
The Strongy folding table has braces for stability, tilts adjust from horizontal to 45 deg, and the height goes from 29 to 45 in. Tops are basswood, or white melamine as shown. An optional kit rule has a laminate base with transparent edges for see-through registration. Mayline Co., Inc., Sheboygan, Wis.

5 High-performance CAD
Marketed as a bundled workstation, Prisma is said to offer multi-discipline software and powerful hardware at a reduced per-seat cost. Package includes joystick, graphics screen, interactive applications processor, alphanumeric terminal with keyboard, digitizing tablet, and integrated A/E/FM software. ISICAD, Inc., Anaheim, Calif.

6 PC-based CAD
AutoCAD Release 9, running on the IBM PC/XT-AT and full compatibles, features an advanced user interface with programmable pull-down and icon menus, and dialogue boxes for an additional means of entering commands. Files created by AutoCAD are portable: drawings can be transferred directly between different makes of computers. Autodesk, Inc., Sausalito, Calif.

7 Large-format pen plotter
A servo-driven plotter for micro-based CAD, the LP4000 draws on any size of bond, vellum, double-matte mylar, and acetate film up to 37-in.-wide roll stock. It outputs at an axial speed of 20-in.-per-second with a line resolution of .001; an automatic pen changer option holds up to 20 HP-compatible pens in 4-beren trays. Joline Corp., Lynnwood, Wash.

8 UNIX-based CAD
A new release of CAD Solutions AEC software, 5.5 under the ABRIS logo has product enhancements aimed at architects and building-design professionals. An object-oriented user interface is said to be easy to learn, yet powerful enough for complex design. PC-priced software runs on hardware ranging from PCs to 32-bit workstations. Sigma Design, Inc., Englewood, Colo.

9 Cost-management software
A payroll module has been added to the SEMA4 automated financial management package written for design firms. Described as cost-effective and user-friendly, SEMA4 can generate detailed reports on time and expense billing; project cost and budget; and productivity. Semaphore, Inc., New York City.

10 Lighting analysis
Lumen-Micro 4.1 interfaces with a variety of color graphics cards, allowing the lighting designer to generate perspective graphic images with the dimension and realism of full color. These synthetic images show the effects of alternative lighting systems without the cost of models or mock-ups. Lighting Technologies, Boulder, Colo.

11 Digitizers
Space-saving B- and C-size tablets are described as offering high performance at a low cost. DrawingBoard digitizers include a power supply, cursor, and plug-compatible cable, and are supported by most major CAD and graphics software packages. CalComp, Anaheim, Calif.

12 3-D database
Drawbase 3D version 104 lets architects view drawings from any angle, at any elevation, and design on horizontal, vertical, or oblique planes. Shapes can be created, rotated, flown around, or walked-through interactively, without predefining a view. All drawings created in previous Drawbase releases can be used. SKOK Systems, Inc., Cambridge, Mass.
13 Drafting plotter
The Zetadraft 900, an 8-pen, 36-in. plotter, operates with most CAD systems, from mainframe to PC. Integral look-ahead vector analysis optimizes pen velocity when plotting circles and arcs, achieving speeds of 45-in.-per-second. Bruning Computer Graphics, Martinez, Calif.

14 Project management
Designed to handle the most complex project-management functions, Promis runs on the IBM PC/XT/AT producing full-color reports and graphics on-screen, plotted, or printed-out. Program is said to facilitate user interaction and responsiveness, using a true database architecture. Strategic Software Planning Corp., Cambridge, Mass.

15 3-D design
Version 3V2.09 adds features to the Design Board Professional PC-based 3-D CADD program, including automatic walk-throughs, and the ability to associate colors with each item created within the 3-D model. Up to 50 layers of data can be supported in the database. Mega CADD, Inc., Seattle, Wash.

16 2-D/3-D software
CADMAX Version 3.0 is said to provide high-speed performance to match the capabilities of the 80386 microprocessor, with an interface that allows up to 75 different English menu options to be displayed at one time. Virtual memory management holds the entire drawing for immediate, direct access. Vector Automation, Inc., Baltimore.

17 Architectural artwork
This rendering, of the Humana Building by Michael Graves, is an example of the custom illustrations produced for architects, developers, and preservation groups. Capabilities include presentation graphics, signage programs, and custom logos. Power Architectural Arts, Inc., Louisville, Ky.

18 Electric eraser
Battery-operated Peerless cordless eraser has a desk-top charging console/holding stand. Made of thermoplastic, tool is lightweight (6 oz) and balanced for comfortable use. Pierce Business Products, Inc., St. Paul, Minn.

19 Plotting software
Tarpa software, for use with Versatec electrostatic and thermal-transfer color plotters, is said to provide the fastest hard-copy output available: within 60 seconds for A-size pages. Tarpa is described as a low-cost alternative to a hardware raster board. Versatec, a Xerox Co., Santa Clara, Calif.

20 Plotter/printers
JDL-850 EWS/GL+ plotter/printer, compatible with A- to E-size Hewlett-Packard plotters, performs internal management tasks that improve the performance of the host computer in CAD functions. An optional sheetfeed automatically handles C-size media. Japan Digital Laboratory, Westlake Village, Calif.

21 Color rendering
AutoShade/3D is a color-rendering program that turns 3-D AutoCAD drawings into realistic, shaded images, permitting project evaluation before the design phase is completed. Features include perspective, specular reflection, and full-color hard-copy output. Autodesk, Inc., Sausalito, Calif.

22 Drafting table
A single lever controls precise height and angle adjustments to the all-steel drawing board on the 3010 table, without limiting use of the tool drawer. Modular furniture includes a freestanding bookcase and a reference table with book storage. The Huey Company, Franklin Park, Ill.

23 Object-oriented design
Described as affordable, Master Architect for Integraph 32C series workstations links graphics and nongraphical data. 2-D and 3-D views can be displayed simultaneously, with objects programmed to display differently in each view. Integraph Corp., Huntsville, Ala.

24 Presentation graphics
Said to be as easy to use as a typewriter, the StyleWriter provides 131 type sizes, art, and border graphics for creating in-house reports and presentations. It can also prepare overhead transparencies. GBC, Northbrook, Ill.
25 Drafting plotters
DMP-60 series plotters operate at axial pen speeds of up to 32-in.-per-second, with a resolution of 0.0005/in., and are adjustable to take media of various sizes and formats. Add-ons include a multipen accessory and a one-meg buffer board. Houston Instrument/Ametek, Austin, Tex.

26 PC-based CAD
A simplified, faster MACRO language, with new commands such as an "oops" undo button and increased power to create and edit advanced geometry, are features of HICAD-GM:1000, Version 6.0, for 2-D PC-based CAD design. Hitachi America, Ltd., San Bruno, Calif.

27 Sonic tape measure
An ultrasonic distance-measuring device from Sonin has built-in controls that compensate for variations in the speed of sound caused by temperature or humidity. It computes area and volume from readings accurate up to 250 ft. Sonin Inc., Scarsdale, N.Y.

28 Project review
For use with the Graphicon 700 display controller and MicroVAX II-based Dimension III systems, the G700 Project Review Terminal displays complex, solid-shaded 3-D images up to 100 times faster than other systems. It allows designers to "walk through" 3-D computer models in real time. Calma Co., Santa Clara, Calif.

29 Whiteprinter
A full-size whiteprinter, the SL-40/20 accepts drawings of any length, up to 42-in.-wide. A new developer system produces crisp blue lines, blacklines, epss, and diazo films in one pass. Printer is described as self-cleaning, with minimal required maintenance. Toleda RotoLite, Warren, N.J.

30 Color monitor
A compact monitor with a 14-in. nonglare screen, the CM-143S produces sharp color display graphics at a 1024-by-768-pixel resolution. It is described as a cost-effective unit for the complex imaging requirements of CAD applications. Seiko Instruments USA, Inc., San Jose, Calif.

31 Engineering calculator
Said to have the most complete set of solutions available in a handheld calculator, the HP-28C can solve algebra and calculus problems conceptually using symbols or variables. It has a four-line, 32-by-137-dot matrix display. Hewlett-Packard Co., Corvallis, Ore.

32 Color guide

33 Blueprinter
The six fluorescent lamps used in the ExecuTrac blueprinter provide performance equal to a 3000-watt mercury vapor lamp, with instant-on operation. The ammonia-control system needs no outside venting to completely remove and neutralize ammonia fumes. DiAZIT Co., Inc., Youngsville, N.C.

34 Scanner
The Sigma-Scan measurement system can digitize, measure, and statistically analyze 2-D material. The digitizing tablet is available opaque, translucent, and transparent, and is compatible with AutoCAD software. Jandel Scientific, Sausalito, Calif.

35 Macintosh 2-D
VersaCAD/Macintosh Edition is described as a new program compatible to the Macintosh user interface, with full support of the clipboard. Geometric construction features include extend and trim, fillets, freehand sketching, and Bezier curves. Object information can be displayed at any time. Versacad Corp., Huntington Beach, Calif.

36 Hospital design
A facility-specific expansion of the Graph/Net architectural CADD system, MediCADD contains a symbol library of over 1,000 medical equipment and furniture and configured hospital spaces. An optional expert system alerts the designer when existing life-safety codes have been violated. Graphic Horizons, Inc., Woburn, Mass.
37 Drafting table
The Double Dial A Torque table comes in three sizes, with tops either 96- or 120-in. long. This model has a vinyl drafting surface over a Stratastyle table. A counterbalanced torsion bar provides control over board angle from horizontal to almost vertical; there are height adjustment pedals at both ends of the pedestal. Hamilton Industries, Two Rivers, Wis.

38 Management software
An extension of the Metallion Collection of architecture-specific management and accounting software, AEasy is described as an affordable (under $1,400) PC-based program designed to give small-to-medium-sized firms better control over expenses, project tracking, billing, and report generation. Timberline Software Corp., Beaverton, Ore.

39 Whiteprinter
The 43 Seavenger Plus whiteprinter delivers virtually ammonia-free materials at speeds up to 20 ft/min. Components are easy to reach for service; a stand with a print stacker is optional. Blu-Ray, Inc., Essex, Conn.

40 UNIX-based workstation
Unburdened Bravos application software, offered with a 32-bit UNIX operating system, is said to provide faster processing with more memory at a price just above typical PC-based systems. Workstations integrate with higher-level solids-modeling, finite analysis, and 3-D systems. Appleion/Schlumberger, Ann Arbor, Mich.

41 3-D CAD
Cadkey Version 3.0 uses x, y, and z coordinate data to construct true 3-D geometric models on 640K microcomputers; programming language is built into the software for complete management of all 3-D geometry and commands. Cadkey Div., Micro Control Systems, Inc., Vernon, Conn.

42 PC monitors
Eight models of medium- and high-resolution PC color monitors are offered for specific application requirements, including presentation graphics, computer-aided design, and image processing. Compact unit is set on a tilt-and-swivel base. Mitsubishi Electronics America, Inc., Torrance, Calif.

43 Graphic transfer film
Stikybak appliqué material is compatible with over 75 plain-paper office copiers, letting the draftsman place title blocks, standard notes, and repetitive details on the original and produce high-quality copies as needed. Saga Division of Dude, Inc., Minneapolis, Minn.

44 Fine-line pen
The MP205 Micro Perma Roller writes with permanent blue, black, or red ink on paper, and will not fade or wash out. The fine-line pen is suggested for archival copies of important drawings, documents, and contracts. Pentel of America, Ltd., Torrance, Calif.

45 VAX-based design software
Advanced graphics software is offered for use with Digital Equipment Corp.'s VAXstation 2500 desktop workstation, a combination said to provide VAX power with interactive graphics at an attractive price. Specific applications include the industrial plant layout shown here. Auto-trol Technology, Denver.

46 Concrete building design
A PC-based version of a widely used mainframe program, STMFR II analyzes building frames and shearwalls under vertical loads, lateral loads, or both. Interactive input and output is in ordinary building terms, works with buildings up to 60 stories. Portland Cement Assn., Skokie, Ill.

47 PC-based 2-D design
Marketed to provide substantial additional capacity within the Prime 50 Series minicomputer environment, IBM PC/AT-based Medium/pe software is described as a powerful, cost-effective 2-D program. Features include variational geometry, super syntax customizing language, and a preliminary design sketcher. Prime Computer, Inc., Natick, Mass.

48 Computer graphics
A 24-bit frame buffer and a 8088-based processor are said to improve both performance and speed of PictureMaker/60 3-D modeling and imaging software. New features include reflectance mapping for a more realistic representation of objects. Cubicomp Corp., Hayward, Calif.
The cardinal rules

Douglas Cardinal explains how an AEC design system from Holguin turned his architectural vision into reality.

"Initially, we were given four large volumes, about the size of New York telephone books, listing requirements for the museum," Cardinal explains.

The project involved the coordination of countless parties, including two Prime Ministers and their cabinets, government agencies by the score, and an army of structural, electrical, civil, and mechanical engineers and landscape architects.

It was more than an architectural challenge — it was a logistical challenge as well.

To turn his 1,000,000 square-foot dream of curvilinear stone and copper into reality, Cardinal turned to Holguin and Hewlett-Packard for an integrated AEC system and the support he needed for fast results.

"The free form of the geometry and the corresponding offset calculations and layout requirements in the field could not have been achieved with the technology of yesterday," says Cardinal. "Normal drawing boards could not do the job. All of our sweeping curves and forms would require a compass point in the next room or province."

Cardinal used the system computerized database to control all of his design and reporting activities. The system also offered precise control of each design element and its geometric position, properties and relationships.

"All design and drafting work was processed by our Holguin system, from preliminary sketches and schematics to the development of designs and final contract documents."

"I'm totally unreasonable," says Douglas Cardinal, architect of the Canadian Museum of Civilization near Ottawa in Hull, Quebec.

Given the scope and complexity of this $200 million undertaking, one can understand why the celebrated Canadian architect might say so.

Above: Architect Douglas Cardinal, renowned designer of the Canadian Museum of Civilization. At right: his masterwork and the Holguin and Hewlett-Packard AEC system used to create it.

* The Holguin Corporation of El Paso, Texas is a value-added reseller of Hewlett-Packard.
1 General Data
Product literature

49 Sonic digitizers
A full-color brochure focuses on sonic digitizers, which are based on the characteristics of sound, and how the units measure sound waves generated by the stylus or cursor. Included are diagrams, photographs, typical applications for the 2-D and 3-D models, and specific product information. Science Accessories Corporation, Southport, Conn.

50 Professional products
The 76-page color Mars Design Group Catalog features over 1,100 professional products for artists, drafters, architects, and engineers. Included are templates, disposable plotter pens, and cassette fine-line pencils. The catalog divides 144 product groups into 8 color-coded sections. J. S. Staedtler, Inc., Canoga Park, Calif.

51 Digital-ploter materials
An expanded selection of film, vellum, and bond digital-ploter materials for computer-aided design are highlighted in a full-color brochure. Descriptions of the Diplomat and Permascale media, data on pen/media compatibility, and an applications guide on media characteristics are included. Dietzgen Corp., Des Plaines, Ill.

52 Pens and inks
The full-color illustrated catalog describes the Koh-I-Noor and Rotring lines. Products include technical pens, sets, replacement points, black and colored inks, 2-mm leads and holders, fine-line leads and mechanical pencils, graphite and ink erasers, and other cleaning and care accessories. Koh-I-Noor Rapidograph, Inc., Bloomsbury, N. J.

53 Financial management

54 Modular design
A 4-page color brochure describes an editing workstation that provides a drawing-processor system compatible with other leading components. Modular in design, the system converts hard copy and aperture card drawings into digital image format. A full CAD has been added to complement the system's image editing. Impell Corporation, Berkeley, Calif.

55 Remote visual inspection
A new 68-page, full-color reference booklet entitled A-Z is available on the subject of remote visual inspection with borescopes and fiberscopes of plants, equipment, components, machinery, and structures. Illustrated applications are listed in alphabetical order. Olympus Corporation, Lake Success, N.Y.

56 Portable drafting equipment
Over 400 items of portable drafting/drawing equipment are featured in a catalog designed for drafters, engineers, and designers. Included are a full line of portable drafting/drawing tables and instruments from inexpensive to deluxe; drafting kits and hard-to-find products. Draftette Div. of PMC Ind., Inc., San Diego, Calif.

57 Project sheets
A package describing production of promotional project or product sheets for building and design professionals is offered by Profile Press. Color, duotone, and black and white sheets are available. Service includes typesetting, layout, mechanical art, color separation, proofs, printing, and shipping. Profile Press, Madison, Wis.

58 Drafting and plotter supplies
Dataprint offers a 64-page catalog on in-stock brand-name drafting, print, and plotter supplies. Featured are a complete line of Kroy lettering systems, Xerographic copy products for the 250's, Tungsten carbide disposable plotter points, plotter media, pens, and inks. Ordering information is included in the literature. Dataprint Corp., San Mateo, Calif.

59 Reference books
A full line of architectural-professional reference books is listed in a 64-page catalog. Topics cover professional practice in architecture, esthetics and theory in architecture, urban planning, landscape architecture, general graphics, illustration in design, color in design, typography, and typesetting. Van Nostrand Reinhold, New York, N. Y.

60 Energy-economics software
EEDO offers an energy-economics-of-design-options software package. Among its features are energy analysis of new-residence designs, energy audits and retrofit analysis, active solar simulations based on the F-Chart method, and passive solar simulations based on the Solar Load Ratio method. EEDO, Butler, Pa.
61 Retaining walls
Closed-faced Armco galvanized or aluminized steel bins used in the construction of permanent, gravity-type retaining walls can be ordered with fronts already finished with concrete panels. These panels can accommodate a variety of designs and patterns, including aggregate faces. Contech Construction Products, Inc., Middletown, Ohio.

62 Landscape seating
A modified version of the Olympia steel- and wire-mesh design created for the Munich Olympics in 1972, heavy-duty, weather-resistant seating conforms to sharp angles and uneven topography. Tube, wire, and grid gauges and dimensions are offered for specific site requirements. Koenig Inc., Cambridge, Mass.

63 Concrete pavers
Made in five shapes and a number of colors, Classic concrete paving stones exceed ASTM durability standards. Pavers can be taken up and re-layered to accommodate landscaping changes or utility repairs. Uni-Group, U.S.A., Palm Beach Gardens, Fla.

64 Cast-granite pavers
Polymer Granite is manufactured of 95 percent granite, in standard 1- and 2-m. thicknesses and three finishes. Pavers are as impermeable as glass, and extremely resistant to freeze/thaw damage, salt, chemicals, and abrasion. PBI/Lone Star Industries, Inc., Greenwich, Conn.

65 Fountain display
Based on the ancient concept of water running down bamboo shoots or chains, the custom Rain Curtain fountain is particularly suitable for high interior atriums where floor space for the pool is limited. Displays over 50 ft tall fall into a 2- or 3-ft-wide basin, with no splash or overspray. Roman Fountains, Albuquerque, N.M.

66 Tower clocks
Display timespieces are custom-made to architectural specifications for large public spaces. The installation pictured, at Boston's South Station, has a 16-ft-dia clock set in a 140-ft-tall tower. Electric Time Co., Inc., Medfield, Mass.

67 Patterned brick paving
A mortargress paving method in the tradition of the della Robbia masons, the Renaissance system uses nine different pre-cut shapes of fired-clay brick to create a virtually unlimited number of patterns. Higgins Brick Co., Redondo Beach, Calif.

68 Retrofit tree grate
A new style of one-piece grate is intended for installation in existing landscaping, where the area already has been paved. Grate comes in over 100 square, round, and octagonal shapes and sizes, and may be custom-ordered. Neenah Foundry Co., Neenah, Wis.

69 Redwood benches
Custom circular bench seating, constructed of California redwood with internal steel rods, allows a number of mounting options: surface, slab, embedded, or wall-mounted as shown. Furniture is shipped fully assembled; custom woods and finishes are also available. Sitecraft, Inc., Long Island City, N.Y.

70 Perforated metal seating
Contemporary-style seating molded from perforated steel sheet is now included in the Ultrasite furniture line. The galvanized metal bench comes in nine standard powder-coat colors, including the red pictured; custom colors and designs are available. GameTime, Port Payne, Ala.

71 Pedestal tables
A group of tables and pedestals for outdoor and indoor sites, the AE/200 series come with marble, fiberglass, perforated metal, and melamine tops in a range of colors. Coordinating bases are of marble, metal, and concrete, and may be permanently mounted. Forms + Surfaces, Inc., Santa Barbara, Calif.

72 Gate operators
Suggested for condominium, residential, and industrial sites with wide threshold entrances, two-gate installation opens and closes electrically as a matched pair. Solenoid locks that prevent squeeze-through entry are available. McKinney Electronics, Santa Ana, Calif.
With Ultrum it's easy to create a lasting impression.

From beautiful hand-rubbed wood finishes to the contemporary lines of our new perforated metal series, Ultrum offers today's most exciting and versatile site amenities collection.

Stylish seating, planters, trash receptacles, ash urns, Ultrum has everything to create a lasting impression.

In wood, Ultrum continues to blend distinctive styling with meticulous craftsmanship. Every piece is selected with exacting care and hand-finished for use indoors or out.

Ultrum's perforated metal series offers exciting shapes and colors.

Our all-welded construction features heavy gauge perforated steel sheet and tubular steel frame. Each piece is finished with a durable powder coating that protects against heavy wear and weather.

Write for your free copy of the all new Ultrum catalog. Without it, it will be hard to create a lasting impression.

For information, contact your GameTime representative. Or write GameTime, Inc., Box 121, Fort Payne, AL 35967. Or call 205/845-5610, telex 782-534.
2 Sitework Product literature

73 Deck-drainage system
The technical specifications and physical properties of a prefabricated deck-drainage system for plaza decks and planters are described in a color folder. Made of high-strength woven geotextile fabric bonded to a 3-D drainage polymeric core, Miradrain 3000 has a compressive strength of 18,000 psi. Mirafi Inc., Charlotte, N. C.

74 Site furnishings
Wood and fiberglass site furnishings for malls, restaurants, lobbies, retail stores, and other public areas are highlighted in a 4-page color brochure. Products shown include benches, tables, trash receptacles, and planters. Also featured are specifications, ordering information, and color charts. Kadec Industries, Inc., Bedford, Ohio.

75 Drainage concept
Slatted Drain, an inlet for the removal of surface water on streets, highways, parking lots, and other areas, is the subject of a 12-page catalog. Product details and hydraulics are described. Photos and drawings also illustrate applications and installation practices. Contech Construction Products, Inc., Middletown, Ohio.

76 All-purpose outdoor aid
A 4-page brochure outlines various landscaping, yard, and garden uses for Earth Blanket, a needle-punched nonwoven, porous polyester fabric. Among the applications are mulching, drainage, weed control, soil separation and stabilization, frost protection, and pool-liner protection. Hoechst Celanese Corp., Greenville, S. C.

77 Drainage board
A 4-page document presents overall information on the Geotech insulated drainage board. Designed to reduce water and energy leaks in below-grade space, the board will protect the waterproofing membrane during backfill operations. A design guide is also available for individual applications. Geotech Systems Corp., Sterling, Va.

78 Erosion control
An organic-fiber protective mat that is said to eliminate erosion-control and seeding problems is covered in a 4-page, full-color brochure. EROMAT is composed of a half-inch layer of chopped straw knitted to a photodegradable net. Also included are data on installation practices, product size and description. Contech Construction Products Inc., Middletown, Ohio.

79 Concrete paving system
Photographs illustrate a brochure of Romanite's new paving patterns and color combinations. The concrete paving system is a cast-in-place concrete slab that is colored and imprinted with texture and pattern. Installation is done by company-trained professional contractors. Romanite Corp., Palo Alto, Calif.

80 Concrete pavers
Industrial, residential, and commercial applications of concrete pavers are shown in a full-color brochure. Special features, assembly, and installation of the continuous paving and grid or core-pave paving are described. National Concrete Masonry Assn., Herndon, Va.

81 Pond and fountain equipment
Equipment and supplies necessary for decorative fountains, waterfalls, ponds, and fountains are illustrated in a 30-page catalog. Included are details about pumps, fountain heads and rings, filters, fountain bowls, lights, chemicals, valves, and fittings needed to build any type of water feature. Aquanetics Systems, Inc., San Diego, Calif.

82 Wall system
A full-color technical guide offers data on the Concrete GeoWall Package, which is provided as a complete unit containing all wall system material components needed to construct a full-height concrete panel retaining wall. The concrete panels used in the package come in a wide variety of architectural finishes. The Tensar Corp., Morrow, Ga.

83 Pressure-treated wood
Photos featuring applications of pressure-treated wood on walkways, bulkheads, fences, and planter beds are displayed in a color brochure. Also included is information on the wood's characteristics, durability, preservative types, storage, and environmental considerations. Western Wood Preservers Institute, San Diego, Calif.

84 Custom concrete
Examples of precast-concrete uses are illustrated in a full-color brochure. The applications encompass indoor, outdoor, municipal building, commercial site, mall and street furniture. Pictures shown include planters, benches, bollards, waste containers with custom logos, and tables. Form Products, Wausau, Wis.
Concrete

85 Seismic joint filler
Used to create deep expansion joints from 1 to 6 in. wide in concrete, the reusable Zipout filler meets requirements that gaps be left open and clear of flammable material. Made of compressible foam slats hinged onto plastic tape, Zipout stacks horizontally during the pour, and pulls out easily when the concrete is set. Progress Unlimited Inc., New York City.

86 Self-leveling cement
Ardex cementitious, self-leveling underlayment can meet an architectural floor tolerance of 1/8 in. in 10 ft., or the super-flat surface required for hospitals and industrial processes. The product is used over a rough-screeded slab, eliminating the cost of troweling the subfloor concrete to obtain an even finish. Ardex, Inc., Coralopolis, Pa.

87 Deck cement
A low-shrinkage portland cement product, Deck C'ment is designed for exterior decks and balconies, as well as interior loadings or other areas subject to water ponding. Poured into place and floated smooth, Deck C'ment can be sloped and shaped for rainwater drainage. Gyp-Crete Corp., Hamel, Minn.

88 Leak-resistant forms
The Hydro Seal edge supplied on Red-Flex form liners will prevent leakage of cement water at form joints, eliminating sandspooning in the finished surface and site-applied caulking of the form joints. The elastomeric joint formed by the sections of liner will maintain the gasket even under the vibration required for mass walls. The Scott System, Inc., Denver.

89 Curved wall forming
The Flex Form, described as an easy-to-assemble system of panels with flexible-steel-skin plate backed by stiffeners, can produce a true radius effect in poured concrete, constructing smooth, curved walls at any radius over 5 ft. Symons Corp., Des Plaines, Ill.

90 Textured concrete
All of the over 35 form-liner patterns and textures for architectural concrete are now offered in three use ranges for different job requirements: Uni-CAST for one-time jobs; Multi-CAST for up to 10 pours; and the Du-ra-CAST high-use liner. The architect selects the pattern, allowing the contractor to choose the most economical form liner for the job. Greenstreak, Inc., St. Louis, Mo.

91 Interior structural tile
The 20 hues in the Rhapsody Color Collection combine the esthetic and emotional appeal of cool and warm tones with the performance characteristics of structural glazed facing tile. Research on color and its effects on human behavior influenced selection of the new line. Stark Ceramics, Inc., Canton, Ohio.

92 Marble panels
A full-height (8 ft. 6-in.) wall panel, ISO Marble uses large sheets of 1/4-in.-thick GL natural marble as a facing on a steel-backed, vermiculite-core panel. ISO Marble can be hung on new or existing walls like wood panels with metal panel clips, or dry-mounted in applications. Marble Technics, Ltd., New York City.

93 Composite granite
A polymer-bound composite of crushed natural stone made into 48- by 96-in. panels, DuraStone is said to provide the appearance of granite for exterior and interior wall and floor surfaces. The 3/8-in.-thick material comes in five colors: flannel, pink, red, embers, and ash. DuraStone Corp., Florence, Ala.

Masonry

94 Pre-glazed masonry
Glazed colors in a range from bright to subdued are offered by Spectra-Glaze in smooth-face concrete masonry units. Both standard and custom Signature colors are available in conventional masonry shapes for interior and exterior walls, as well as scored-face and acoustical block. The Burns & Russell Co., Baltimore.

95 Cast stone
Architectural details in brick, terra cotta, and such natural stone types as sandstone, granite, and slate can be color-matched exactly in cast stone. The roof coping shown here is cast stone specified to match the brickwork (building by Costanza Spector Assoc., architects). W. N. Russell and Co., Westmont, N. J.

96 Curved cut stone
A new process, using a computer-controlled contour generating saw, can cut sandstone, limestone, granite, and marble to any molding section that can be described by a series of straight lines and/or circular arcs. This allows the use of curved stone for building cladding and landscape projects at a cost substantially lower than that of manually cut stone. Briar Hill Stone Co., Glenmont, Ohio.

Architectural Record December 1987
3  Concrete Product literature

97 Craftsmanship
Published by the Architectural Precast Assn, to help building designers understand concrete’s capabilities, full-color 24-page booklet suggests standards that clearly define recommended procedures for working with the product. Precast details, connections, and spec guide included. Cast-Crete Corp. of America, Kissimmee, Fla.

98 Multistory construction
Cost savings possible with use of precast decking in multistory projects are highlighted in a 12-page booklet, "Flexicore Facts No. 124." Booklet analyzes 6 projects (including a 290,000-sq-ft retirement community) that benefited through faster construction and energy-savings. The Flexicore Co., Dayton, Ohio.

99 Concrete form material
Structuraform, a family of three panel materials (available in nonskid, premium, and regular varieties) that can be used to construct concrete forms, is discussed and illustrated in a full-color booklet. Detailed are the panels’ physical properties, layout flexibility, and reuse capability. Weyerhaeuser Co., Engineered Strand Div., Winston-Salem, N. C.

100 Concrete performance
Newly released full-color 8-page technical brochure explains how concrete cures, and illustrates the way Fibermesh, an alternative to conventional wire-mesh reinforcement, functions to help prevent concrete and mortar shrinkage-cracking, reduce water permeability, and add shatter resistance. Fibermesh Co., Chattanooga, Tenn.

101 Cast-in-place concrete
Focusing on the savings that can be realized with cast-in-place concrete, this construction planner suggests ways to control building materials, startup/overall construction, and labor expenses with cast-in-place concrete. Each cost element is accompanied by an hourly chart or graph. Concrete Reinforcing Institute, Schaumberg, Ill.

102 Shotcrete construction
The advantages of lightweight, cut-to-specification expanded polystyrene in self-supporting concrete shells is the subject of a 4-page brochure, which shows how material can be used to form integral sidewall beams, columns, roof elements, and endwalls. Then, 2-in.-thick concrete is pneumatically applied to exterior walls. Portland Cement Assn., Skokie, Ill.

103 Stone-anchor products
Load-bearing support anchors, to carry and transfer the weight of cladding, and restraint anchors are the subjects of 8-page catalog, 5A 1185. In addition to presenting a complete line of anchoring products and accessories, literature contains pertinent stress and wind-loading tables for reference. Dur-O-Wal Inc., Arlington Heights, Ill.

104 Dimensional stone
Loose-leaf bound Volume III of stone-design manual has technical data, installation details, and suggested specs for interior and exterior specialty-marble applications. ASTM standards for granite, limestone, sandstone, and slate are included. Cost: $38.50 with updates furnished on an assessed basis. Marble Institute of America, Farmington, Mich.

105 Building restoration
File folder elaborates on several cost-effective techniques for restoration and preservation of older buildings. Literature details some methods used to resolve complicated structural problems as successfully practiced by a leading specialty contractor. Extensive waterproofing information is included. The Western Group, St. Louis.

106 Marble products
An 8-page booklet gives the history of Georgia Marble Co., its product line, and its products’ applicability to marble veneering in a wide variety of commercial structures, but is primarily intended to familiarize architects, designers, and contractors with marble technical information. The Georgia Marble Co., Structural Div., Jim Walter Corp., Nelson, Ga.

107 Exterior, interior brick
Theme of this brochure is the new versatility of one of the world’s oldest building materials, and it presents its story in the form of 10 Southwestern structures that made use of double-wall brick. General information on wall details and how brick helps reduce energy and other building operating costs is included. Acme Brick Co., Ft. Worth, Tex.

108 Special bricks
Custom-designed bricks that add personality and drama to a building are the subject of a 16-page black-and-white technical booklet. While literature concentrates on brick-manufacturing process, it begins with initial architect’s drawing, through shop drawing, brickmaking, packaging, and installation. The Belden Brick Co., Canton, Ohio.
109 Safety grating
Cold-formed steel grating and flooring in the Tread-Grip pattern provides over 100 perforated gripping buttons per sq ft for slip-resistant ramps, stairs, loading docks, and platforms. The design will not blunt or wear down in normal use; grating is safe for high heels as well as work boots. Morton Manufacturing Co., Libertyville, Ill.

110 Expansion joint
Designed to accommodate structural movement caused by high winds or earthquakes, as well as normal thermal expansion and contraction, Wabo seismic floor expansion joints are made of heavy-duty aluminum in sizes for openings up to 12 in. wide. Frames have aluminum or stainless-steel cover plates. Watson Bowman Acme Corp., Amherst, N. Y.

111 Brass coating
Described as a durable, baked-on transparent finish for architectural metals, ClearCoat should significantly reduce the maintenance costs of brass used in railing systems. Brass Smith, Inc., Denver.

112 Cast iron
Architectural cast iron is available to meet custom-design requirements, as well as the authentic pattern work needed for historic restoration projects. Shown here are cast-iron capitals and Greek Revival railing panels made for the Knox House in Montgomery, Ala. Robinson Iron, Alexander City, Ala.

113 Structural-steel framing
Said to be easier to use and less costly than wood systems, Thermosteel open-web framing members are fully compatible with conventional building techniques and materials, and permit installation of mechanicals through the studs. Thermosteel Corp., Strafford, Mo.

114 Long-span joists
For use with concrete or masonry wall systems and the MR-24 standing-seam roof, the Delta Joist spans from 12 to 26 ft, with a uniform 2-ft depth. The joist's geometrical configuration provides diaphragm bracing for the structure without changing wall or foundation designs. Butler Manufacturing Co., Kansas City, Mo.

115 Profiled metal curves
A precise method of curving prepainted steel or aluminum panels up to 80 ft long into various shapes, Crimp-Curving produces economical architectural profiles for fascias, canopies, mansards, etc. Curved flashings and mitered corners are also available. Curveline, Inc., Ontario, Calif.

116 Nylon-on-steel railings
Custom-configured HEWI rail systems are made of solid, colored nylon over a corrosion-free steel core. Installations meet BOCA code requirements, and are sanitary and pleasant to the touch. W & W Glass Products, Ltd., West Nyack, N. Y.

117 Colored stainless steel
Prismatic stainless steel has an integral chrome oxide film in colors ranging from black through bronze, green, gold, red, and champagne. The roof shown here, on a medical building by architect Steve Helmy, is blue mirrored Prismatic steel. B & M Finishers, Inc., Kenilworth, N. J.

118 Architectural grating
The close (1/8-in.) spacing of the SSS Clean Tread stainless-steel grating prevents high heels from getting stuck. The grate is shown here as an entrance walk-off mat; it is also suitable for hvac vents. A 1 1/8-in.-deep version can be used for sidewalk gratings or trench covers. Kadée Industries, Inc., Solon, Ohio.

119 Etched metal
Abuse-resistant metal panels for interior walls, doors, and elevator cabs may be specified with standard or custom-etched designs. Finish treatments include oxidized, relieved, and anodic colors. Forms + Surfaces, Inc., Santa Barbara, Calif.

120 Spiral stairs
Spiral and architectural stairs constructed from steel and wood open-riser components are offered with an expanded number of solid-oak rail and tread options. The most economical models are supplied as adjustable, knock-down stairs for residential use. Mylen Industries, Peekskill, N. Y.
185' 4" and 166' 8" super long span joists, both 120' deep, reach across the Lund Center sports complex.
SPANS GO THE DISTANCE.

To build a sports complex as large and expansive as the Lund Center at Gustavus Adolphus College in St. Peter, Minnesota required a structural system that could go the distance. Vulcraft super long span joists were clearly the front runner.

As a result of careful analysis, Vulcraft super long span joists were selected over the other two alternatives: conventional trusses and rigid frame construction. The open configuration of Vulcraft super long spans provided a number of advantages. While long enough to span a basketball court, indoor tennis courts, and a running track as well as spectator seating, Vulcraft super long spans provided a strong, lightweight, and easy to install system. The open configuration of the Vulcraft joists also permitted the heating and ventilation ducts and electrical systems to be run through the spans. This created an uninterrupted ceiling line for the automated divider screens which separated the different sections of this vast sports complex.

Since the college is dependent on private funding, the savings afforded by using Vulcraft joists helped make it possible for the college to initiate the project. Also, by using Vulcraft's economical 3" N 20 gage deck, joists could be spaced farther apart. So, fewer joists were needed and construction costs were further reduced.

When your job has to go the distance, let Vulcraft put you out front. For more information concerning Vulcraft steel joists, joist girders and steel deck; or, for copies of our joist and steel deck catalogs, contact the nearest Vulcraft plant listed below. Or, see Sweet's 5.2/Vu and 5.5/Vu.

P.O. Box 637, Brigham City, UT 84302-921/734-9433
P.O. Box F-2, Florence, SC 29502-803/962-0381
P.O. Box 169, Fort Payne, AL 35967-205/945-2460
P.O. Box 186, Grapeland, TX 77859-409/687-4665
P.O. Box 99, Norfolk, NE 68701-402/644-8500
P.O. Box 1000, St. Joe, IN 46785-219/337-5111

VULCFRAIf
A Division of Nucor Corporation


Construction Company.

Circle 1012 on inquiry card
121 Expansion joints
Company's complete line of interior expansion-joint systems is described and illustrated in a 12-page brochure. 3-D drawings and typical applications for the various systems are accompanied by specifications. For complete details, a technical manual is offered. Architectural Art Mfg., Inc., Wichita, Kan.

122 Structural systems
A capabilities brochure describes aluminum or steel space frames and shell structures, and suggests some of the geometric configurations possible using the self-spanning modules. Finish options include chrome, stainless steel, and buffed and anodized aluminum, as well as powdercoat, enamel, or acrylic paints. Triodetic Space Frames, Inc., Syracuse, N. Y.

123 Decking systems

124 Polymer coatings
Company's line of Duranar architectural coatings is described and illustrated in a 14-page, color brochure. Film characteristics and properties of the fluoro polymer coatings for metal cladding are detailed, including a fold-out color chart. Project applications are pictured. PPG Ind., Delaware, Ohio.

125 Steel joists, girders
The 1988 catalog, Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders, is a 64-page compilation that features open-web joists (K-Series), longspan joists (LH-Series), deep longspan joists (DLH-Series) and joists girders (G-Series). Steel Joist Institute, Myrtle Beach, S. C.

126 Brass railing
A 16-page, color brochure describes and illustrates the Broadway Collection of brass railing and component parts, including ball and flush fittings, brackets, and flanges. Specifications and installation instructions for both wood and concrete floors are provided. The Broadway Collection, Olathe, Kan.

127 Roof walkways
Company's line of Roofwalk walkway systems, designed for metal standing-seam, built-up, and prefabricated membrane roofs, are described in a 20-page illustrated brochure that also provides load deflection curves and allowable-load comparisons for various gratings used in systems. United Metal Corp., Columbus, Ohio.

128 Powder coating
Thermosetting powder coatings for architectural products that contain no solvents and therefore release no volatile compounds or toxic fumes to the atmosphere during application are explained in an 8-page, color brochure. Smooth and textured finishes are available in more than 172 colors. Lead Architectural Products, Inc./Tiger Drylac USA, Inc., Hamden, Conn.

129 Traffic control
A 64-page, color catalog No. 88 illustrates and describes complete metal products line, including portable posts, ropes, and accessories for pedestrian traffic control, lobby accessories, utility and decorative rail systems, and specialty items such as glass racks, service-bar rails, and sneeze guards. Lawrence Metal Products, Inc., Bay Shore, N. Y.

130 Railing systems
Brass, chrome, KolorTube, New Designer Tube and Onyx railing systems and products are illustrated and detailed in a 30-page catalog. Applications, ranging from crowd control to bar railings and coat racks, are provided, along with a listing of the company's other custom products. Ship'n Out Co., Pawling, N. Y.

131 Composite floor systems
The Hambro composite concrete and steel floor construction system is explained and illustrated in an 8-page, color brochure. Cutaway drawings show how reusable ribbars and reusable plywood forms support the wire mesh and continuous concrete slab that form the composite section. Canam Steel Corp., Needham Heights, Mass.

132 Space-frame systems
A 16-page, color brochure describes the three different Unistrut space-frame systems that are said to fulfill any requirement for span, geometry, and structural support. The company's Perm-Cooler topcoating is also explained, and detailed specifications and erection procedures for the three systems are provided. Unistrut Corp., Wayne, Mich.
Crown American builds shopping malls better and at lower cost with K-Series steel joists... whatever the weather.

Crown American Corp.'s, Senior Vice President, Nicholas Pasquerilla, credits K-Series steel joists and G-Series joist girders for saving over 6% of combined joist and girder costs.

He points out that the two products are ideally suited to the wide bays and deep roofs favored by Crown American in shopping mall construction. Also, they allow the contractor to pour the footers and erect joists and girders in spite of adverse weather.

Crown American locates H.V.A.C. and other mechanicals in the interstitial space provided by joists and girders. A suggestion by engineers and architectural staff to change the joist girders on Great Northern Mall in Syracuse, N.Y. from 30” to 60” deep, resulted in the cost savings.

Also the quick erection helped keep construction time to a minimum. The resulting wide bays were particularly pleasing to the retail tenants because of the extra roominess.

Send the coupon for your copy of New Specifications, Load Tables and Weight Tables.
Wood & Plastics

133 Structural FRP
Described as the first fiberglass-reinforced plastic beams engineered specifically for use as roof purlins and wall girts, Tuff-Span structural members have long-span capability, are nonconductive, and resist the corrosive atmospheres of many industrial process applications. Composite Technology, Inc., Fort Worth, Tex.

134 Architectural moldings
Manufactured in Holland of Class A polyurethane foam with the density of pine, interior decorative details include wall niches, ceiling rosettes, panel and crown moldings, and corbels. Supplied preprimed, Architectural Accents can be finished with almost any paint technique, such as marbling, lacquer, faux, and metal finishes. Westgate, Grand Prairie, Tex.

135 Laminated wood
Manufactured from thin layers of veneer bonded into a solid wood product, Mattewood can be drilled, sown, and stained like natural wood. It can be specified in a wide range of dimensions for use in flooring, casework, and furniture. Trus Joist Corp., Boise, Idaho.

136 Double-shear connector
A double-shear, angled-fastener connector combines toe nailing with joist hanger support, reducing installation time and greatly increasing the load values of the connector. Nails are directed by angled slots through both the joist and the header. Simpson Strong-Tie Co., Inc., San Leandro, Calif.

137 Polymer sheet
A matte-finish surfacing material, Fountainhead is made of homogeneous, thermoset polymer in three thicknesses for interior vertical and horizontal applications such as countertops, paneling, and bath enclosures. It is currently offered on a limited basis in white, gray, beige, and black shades. Nevamar Corp., Odenton, Md.

138 Hand-painted laminate
The DEPARTURES laminate program offers hand-painted art in any of over a dozen signed designs, pressed into 4- by 8-ft sheets. Each specific design is compatible with but different from the next; custom designs are available on a minimum-order basis. Advanced Technology, Inc., Greensboro, N. C.

139 Stone-look laminate
American Granite is one of six patterns introduced to coordinate with both Color Grid and Color Trends solid color laminates. The gloss-finish stone-look pattern is available in beige, pink, Folkstone, a gray, and Nile green. Formica Corp., Wayne, N. J.

140 Solid surface
A dense, homogeneous polymer offered in both sheet and shaped product, Corian has added two granite-looks, Sierra Dusk and Sierra Midnight, to the current beige, gray, white, and almond color range. For vertical and surface use, Corian has a Class A rating and NSF approval; it works like hardwood and takes a variety of edge treatment and infills. Du Pont Co., Wilmington, Del.

141 Labeled strand board
Fire-retardant Structurewood underlayment, a phenolic-bonded board treated with fire-resistant chemicals prior to manufacture, is classified FR-S by UL as per ASTM E-84, and may be used in rated systems. It is an Exposure 1 panel, and will resist moisture during long construction delays. Weyerhaeuser Co., Winston-Salem, N. C.

142 Stone-pattern design
Blackstar Granite and Alaskan Marble are part of Wilsonart's Quarry Group of faux stone designs in high-pressure laminate. It is suggested as an authentic-appearing, warm-to-the-touch alternative to natural stone in furniture and countertops. Ralph Wilson Plastics Co., Temple, Tex.

143 Silk-screened design
A range of in-house customer services now offered by this laminate manufacturer includes silk-screening, inlays, and 3-D sandblasting and etching, as shown here. The Pionite laminate line contains over 160 solid colors, patterns, and woodgrains. Sterling Engineered Products, Maumee, Ohio.

144 Fiberglass ornamentation
A recreation of the 1870 original, this detailed cornice was cast from fiberglass-reinforced plastic to maintain the authentic appearance of St. Louis's first department store, now an office building. FRP architectural ornamentation may be specified in any style, and is lightweight and fade-resistant. Fibertech Corp., Pendleton, S. C.
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Wood & Plastics
Product literature

145 Molded fiberglass
Die-cut 16-page brochure illustrates the versatility of FRP, showcasing a number of picturesque densils and millwork effects that have been obtained for fast-food-type outlets. Accompanying text gives information on durability, strength-to-weight ratio, and ease of installation. Molded Fiber Glass of Union City, Union City, Pa.

146 Wood trusses
The advantages of factory-made roof trusses over field framing are discussed in this booklet, which emphasizes the economics of reduced material waste, fewer weather delays, and reduced errors on the job. A number of relevant evaluation reports are referenced and seven truss configurations pictured. Wood Truss Council of America, Chicago.

147 Red cedar
Latest addition to the “Concepts” series of architectural applications for red cedar is a 6-page gatefold brochure (Form 672) demonstrating the wood’s usefulness in paneling, fascia, trim, finish, and outdoor uses. Other publications that enlarge on creative uses for red cedar are listed on last page. Western Red Cedar Lumber Assn., Portland, Ore.

148 Wood moldings
A 32-page molding guide for interior designers can simplify the process of selecting standard and custom wood moldings. The guide features numerous full-size molding profiles, depictions of built-up moldings, and data on radius moldings. $7 to architects, $4 to AWI members, $12 to nonmembers. Architectural Woodworking Institute, Arlington, Va.

149 Rated wood walls
Illustrated folder explains how two types of wood-framed, wood-sided exterior construction meet codes requiring one-hour fire resistance. Test procedures and results under ASTM E119 are explained, along with the increased potential for wood walls in commercial buildings. National Forest Products Assn., Washington, D. C.

150 Design guide
Form E50 covers construction applications of plywood structural panels and gives information on flooring, roof, and wall panels. Diagrams and tables treat a number of popular commercial and residential applications. Wind resistance, noise control, and energy conservation factors are discussed. American Plywood Assn., Tacoma, Wash.

151 Redwood applications
The stability, beauty, and durability of redwood are the subjects of this booklet. Color illustrations show obtainable architectural effects. A comprehensive listing of common board-pattern dimensions is given. Special section at rear supplies finish and hardware recommendations. California Redwood Assn., Mill Valley, Calif.

152 Pitched, curved beams
Booklet explains and illustrates process of designing 40- to 80-ft (and longer) pitched and curved members using glue-laminated constant-cross-section members as simple beams, eliminating horizontal thrust inherent in arch systems, and sidestepping the need for complex computations. American Inst. of Timber Construction, Englewood, Colo.

153 Laminated lumber
Gang-Lam, a laminated veneer lumber with considerably more load-carrying capacity than ordinary structural wood, is the subject of a new publication showing how product is produced, and explaining how it resists warping and twisting. Gang-Lam is said to have product advantages as a truss chord material. Gang-Nail Systems Inc., Miami.

154 Wall paneling
Brochure tells how custom architectural-grade wood paneling can be readily designed into building interiors. Offering depicts a range of matched-panel effects available in 80 species and in several thicknesses. Provides examples of how veneer-matching can be carried through walls, doors, even built-in office furniture. Algoma Hardwoods, Algoma, Wis.

155 Surfacing material
Bulletin provides data on physical properties of stone-look Aconite, a building and surfacing material. The material’s chemical and stain resistance, fire rating, color stability, and weatherability are discussed. Accompanying data sheet can assist installers in selecting, polishing, patching, and packaging. Aconite, Sylmar, Calif.

156 Construction hardware
Fully indexed Kant-Sag catalog K100 contains over 50 pages of standard truss hangers, braces, and wood-to-concrete anchors, plus a variety of miscellaneous functional and ornamental brackets. Generously illustrated with line drawings that show exactly how each product is used. United States Steel Products, Montgomery, Minn.
**Thermal & Moisture Protection**

**157 Exterior insulation**
The Insul/Crete exterior wall insulation and finish system is now offered in prefabricated panel form, in lengths of up to 40 ft. Panels, said to speed installation time, can be applied in all kinds of weather, and are particularly suitable for high-rise structures. Insul/Crete Co., Inc., McFarland, Wis.

**158 Roofing batten bar**
Predrilled to take most fasteners, field attachment bar of rigid plastic is completely noncorrosive, and meets FM Class I and I-90 wind uplift standards. A screw-head channel prevents fasteners from puncturing the roof membrane. Greenstreak, St. Louis.

**159 Aluminum siding**
Embodied in a saw-kerf design found on Colonial-era Pennsylvania homes, 106 Dutch Lap pattern is offered as part of a Historical aluminum siding line. Panels come in a double 5-in. width, in seven deeper-toned colors. Alsice, Inc., Akron, Ohio.

**160 Elastomeric roofing**
The addition of stainless steel mechanical fasteners to the Hi-Tuff membrane system extends warranty coverage for the entire roof, including all components and workmanship, to 15 years. Extruded aluminum fascia comes in the colors shown. J. P. Stevens & Co., Inc., Northampton, Mass.

**161 Ceramic panel facade**
The Vilbofa wall consists of glazed ceramic panels mechanically attached to an aluminum substructure, creating an insulating air space between the facade and the structural wall. Ceramic tiles come in a range of standard and custom colors, and can incorporate special designs and logos. Villeroy & Boch (USA) Inc., Pinebrook, N. J.

**162 Panelized cedar shingles**
Offered as an option on single- and double-course plywood-backed cedar shingle panels, a Key-way provides up to an 1/8-in. space between each shingle for vertical definition and a hand-installed appearance. Shakertown Corp., Winlock, Wash.

**163 Ridge vent**
Made of molded polyethylene, the Ridge Filter Shinglevent has an integral baffle that deflects wind over the ridge, efficiently ventilating attic space. A weather filter prevents rain infiltration, even at 100 mph. Cap shingles are installed directly over the low-profile vent. Air Vent, Inc., A CertainTeed Co., Peoria Heights, Ill.

**164 Fiberglass roofing mat**
A wet-process fiberglass mat coated with weathering asphalt, Tam-Glass Premium roofing sheet exceeds the tensile strength requirements of ASTM D-2178-86a, Type IV, by 40 percent. The mat is perforated to control asphalt bleed-through and release air and vapor during application. Tamko Asphalt Products, Inc., Joplin, Mo.

**165 Insulating wall finish**
The R-wall EPS foam-insulated exterior system is offered in more than 100 standard colors and six textures of acrylic finish. Various shapes, forms, and details can be designed into the system. Ispo, Inc., Mansfield, Mass.

**166 EPDM rubber roofing**
The Perma-Lok disc fastener does not penetrate the EPDM membrane, eliminating a major source of roofing failures. The nonballasted roof is available in white and black; commercial and industrial installations carry a 10-year warranty. North American Roofing Systems, Inc., Carmel, Ind.

**167 Hard-finish system**
A rigid, mechanically attached exterior treatment, Senerthic has a portland cement-based sand and acrylic polymer coating said to provide excellent hard-finish durability. Senerthic comes ready-mixed, or in prefabricated panels. Senergy Inc., Cranston, R. I.

**168 Vinyl siding**
To replicate the appearance of shiplapped drop siding used on Victorian homes, DutchLap vinyl panels are offered in woodgrain texture (painted), and a sand-finish for the smoother look of painted siding. Gold Bond Building Products, Charlotte, N. C.
169 Interlocking ballast system
Designed as a primary ballast for single-ply membrane systems, Roofblok installations consist of interlocked lightweight concrete units held in place at the roof perimeter. Roofblok systems have passed wind uplift tests of over 200 mph, and are FM Class A rated for exterior fire resistance. Available in colors and decorative patterns. Roofblok Ltd., Fitchburg, Mass.

170 Cement mortar panel
The edges of each Durock tile backer board have been reinforced with fiberglass mesh for better handling and installation, with less damage to the board edge. Durock cement mortar panels provide a long-lasting, stable, water-resistant base for tile, slate and other stone. USG Industries, Inc., Chicago.

171 Modified bitumen roofing
Reinforced with glass fiber mat and scrim between its top and bottom layers, Derbiqum MR-200 modified bitumen membrane can be applied using more-productive multiburner torching wagons. The scrim improves the membrane’s puncture resistance, durability, and tear strength. Owens-Corning Fiberglas Corp., Toledo.

172 Mechanically attached EPDM
The Sure-Seal .045-inch reinforced membrane is secured through the insulation to the deck with plates and fasteners placed inside the adhesive seam area. Attachment method achieves FM I-60 and I-90 wind uplift ratings. Carlisle SynTec Systems, Carlisle, Pa.

173 Roofing accessories
Cool Top white uncured elastomeric membrane is said to allow easy fabrication and flashing of irregular details in the field, such as the skylights on this mall roof. The expanded system includes Omega stainless-steel fasteners, universal corners and prefab boots, and protective walk pads. Cooley Roofing Systems, Inc., Pawtucket, R. I.

174 Prefabricated vent covers
MVENTS, made of four layers of modified bitumen membrane, are prefabricated and prefleshed vent covers for most roof deck protrusions. Vents are installed with a welding tool or torch, not mechanically attached, so they expand and contract along with the modified bitumen roof assembly. MWeld, Inc., Div. U. S. Intec Inc., Port Arthur, Tex.

175 Penetrating sealer
A clear, nonfilm-forming product, TES-983 is intended to achieve maximum surface penetration of unfinished concrete surfaces, to protect structural members from damage from water and chloride salts. Sealer can be applied at temperatures between 50- and 100-deg F, by roller or low-pressure spray equipment. Tremco, Inc., Cleveland.

176 Insulated concrete wall
The Thermomas sandwich panel uses noncorrosive, nonconductive plastic rods to position an extruded polystyrene insulation board between 4-in. wythes of concrete. Said to improve the R-value of the concrete by as much as 80 percent, Thermomas panels have the same structural strength as a solid 8-in. reinforced concrete wall. Amoco Foam Products Co., Atlanta.

177 Smoke vents
Roof hatches can be custom-made to meet specific client, architectural, and fire-code requirements. The project pictured incorporated both fire-code standards for its application on the roof of a theater, as well as the acoustical specifications of the stage design. Milcor, Inc., Lima, Ohio.

178 Rain-carrying system
Applicable to residential and multifamily construction, the Omni Facade incorporates large-capacity rain gutters into the fascia. Made of prepainted aluminum, the Facade attaches directly to rafter tails; a ventilated soffit is slid in to complete the eave. Omni Products, Div. of ZMC, Inc., Addison, Ill.

179 Insulated finish system
The Esulation exterior wall insulation and finish system combines Glas-Lath mesh-surfaced insulation board with Genesis acryle-polymer base coat, forming a thermally efficient substrate for colored Dryvit finishes. Self-supporting Glas-Lath boards are attached directly to open framing members. Dryvit System, Inc., West Warwick, R. I.

180 Metal roofing
A 24-gauge galvanized steel panel, the Stile roof is formed to resemble clay tile. For residential and commercial construction, panels come in lengths from 3- to 16-ft, finished in five Fluoron resin-based colors. Metal Sales Mfg. Corp., Louisville.
181 Insulated skylight
The Model VG metal-framed skylight provides tempered over low-emissivity-coated laminated glass units. The skylight can be opened fully, or just an inch for weatherproof venting of hot air. A two-part gasket seals against air infiltration. Ventarama Skylight Corp., Hicksville, N. Y.

182 Aluminum cladding
The edge design of Tek Wall aluminum cladding panels is said to ensure a perfectly flat wall; joint seals keep out water while a drainage system leads condensation to the outside. A matched clear anodized panel was used on the INTELSAT building, John Andrews Int'l., Architect. Other finishes include duranodic, Kynar 500 and C/S Tri-X metallic. Conspec Systems, Inc., Cranford, N. J.

183 Deck insulation
For use as a thermal barrier or top surface in commercial roofing systems, Dens-Deck gypsum board has a unique water-resistant core, surfaced with fiberglass mat to improve adhesion in single-ply systems. It meets FM Class I-90 for use as a thermal barrier in built-up and modified bitumen roofs. Georgia-Pacific Corp., Atlanta.

184 Fixed skylight
The Model FSP fixed skylight features a weatherproof vent flap operated by pull-cord or optional control rod. The economical unit prevents the build-up of hot, stale air and possible staining from condensation. Double-insulated tempered glass is standard; glazing options include low emissivity, tinted, or laminated-glass in the clad-wood frame. Velux-America, Inc., Greenwood, S. C.

185 Half-barrel canopy
Aluminum-framed, acrylic-glazed canopy is hung from the building wall, and projects 3, 4, or 5 ft without supports. Described as economical and easy to install on store fronts and entries, Solar Deck shelters can be used singly or in series. Various frame finishes and acrylic colors are offered. Mapes Industries, Inc., Lincoln, Neb.

186 Roof window
The Highlight fixed roof window comes in four sizes up to 46 in. long, for less-accessible interior spaces. Unit is framed in Douglas fir; clear or tinted double-pane low-emissivity tempered glazing is standard. Sunscreens are available as an option. Roto Frank of America, Inc., Chester, Conn.

187 Residential skylight
Specifically for residential installations, the Natural PVC-framed venting skylight shown here has acrylic double-domed glazing; clear or tinted insulating glass is also available. The low-profile frame has a woodhue finish said to blend with any new or existing roof. Naturalite, Inc., Garland, Tex.

188 Reinforced membrane roofing
A mechanically fastened system with hot-air-welded seams, the Bond Cote thermoplastic roof membrane has improved performance characteristics to meet 1988 specifications. Bond Cote is said to resist punctures, ultraviolet radiation, fire, and chemical attack. WestPoint Pepperell, Bond Cote Roofing Systems, West Point, Ga.

189 Roof deck sheathing
Easy-Ply decking provides a structural nailing base for roofing and thermal insulation; and a finished, decorative vapor-retardant ceiling for exposed beam construction. It is offered with a prefinished white fitter vinyl surface, or with a natural surface to take texturing, paint, or stain. Homasote Co., West Trenton, N. J.

190 Stationary roof window
Available in eight sizes, with a Terratone cladding to match other Andersen products, roof window offers two types of high-performance glazing. The clear product blocks radiant heat, saving fuel costs; High Performance Sun has a tinted outer pane to reduce heat gain. Andersen Corp., Bayport, Minn.

191 Fire-resistant cap sheet
An elastomeric, asphalt-blend cap sheet made with fire-resistant additives, DynaKap FR achieves a UL Class A rating without special coatings or gravel. Supplied in roll form for hot-mop application, DynaKap FR is compatible with all Manville insulations used in modified bitumen roofing systems. Manville, Denver.

192 Waterproofing system
Polyken 630 building wrap, a polybacked, synthetic rubber-based adhesive membrane, is part of a total moisture-barrier system. Polyken 600 components include seam sealing tapes for gypsum and insulation board; standard and foil-faced flashings; ice-tam protective membranes; and vapor barrier and waterproofing membranes. The Kendall Company, Boston.
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Richmond 804/526-3375

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193 Restoration vinyl siding
A full-color brochure features applications of the manufacturer’s Restoration collection for residential construction. The vinyl siding comes in in 3- and 4 1/2-in. exposures. Available as an option is Flotrac, an application system which has a rigid, factory-mounted nailing hem. Wolverine Technologies, Inc., Dearborn, Mich.

194 Building panels

195 Commercial skylighting
Product information on Wasco’s commercial skylighting is provided in a 20-page full-color catalog illustrated with photos and line drawings. Also detailed are guidelines for calculating skylight requirements for desired daylighting levels, and the use of smoke and heat vents in fire-safety design. Wasco Products, Inc., Chicago.

196 Phenolic insulation board
The manufacturer’s brochure describes Rx” Phenolic Insulation, a phenolic foam-board insulation that carries a 20-year guarantee. Developed for application in conjunction with built-up and single-ply roof membranes, the system has an aged “R” value of 8.3 per in., said to provide long-term thermal insulating value. Koppers Co., Inc., Pittsburgh.

197 Fire-safety system
What you Should Know About the Dow Corning Fire Stop System offers information on fire-stop sealants and foams for a variety of applications. The sealant is used for simple fire-rated wall and floor penetrations; the foam is used for complex fire-rated floor penetrations. Dow Corning Corp., Midland, Mich.

198 Skylights

199 Fire protection
Fire & Explosion Protection Easy as APC, an 8-page catalog, offers data on automatic fire vents, explosion-relief vents, and industrial skylights. The products are available for all industrial and commercial buildings, as well as Underwriters’ Laboratories and FM-approved fire vents. APC Corp., Hawthorne, N.J.

200 Waterproofing system
A color brochure highlights Liquid Membrane 6125, a self-healing, waterproofing membrane used for decks and foundations. A hot-applied rubberized asphalt, the product is spread at an average thickness of 180 mils. It can be applied in one application in temperatures down to zero degrees F. American Hydrotech, Inc., Chicago.

201 Roofing materials guide
Subscriptions are invited for the current Roofs Materials Guide, the roofing industry’s informational aid on commercial, industrial, institutional, low-slope membranes, insulation board products, and manufacturers’ warranties. National Roofing Contractors Assn., Rosemont, Ill.

202 Roofing fastener
A brochure introduces Omega, a fused bi-metallic stainless roofing fastener. The product provides self-drilling features and is “rust-free” corrosion-resistant. Omega is approved for wood- and steel-deck applications. Construction Fasteners Inc., DeKrast Product Group, Wyomissing, Pa.

203 Roofing systems
A loose-leaf, full-color foldout describes Synergy’s single-ply roofing systems for industrial and commercial buildings. The literature covers the plate-bonded roofing system, the loose-laid ballasted EPDM roof, and the fully adhered roof. Also included are data on technical service and warranties. Synergy Methods Inc., Danieston, Conn.

204 Waterproofing system
A folder outlining waterproofing systems is provided from Gates. Technical descriptions are offered of membranes, liquid coatings, and liquid membranes for decks and bridge decks. Performance data are also included. Additional literature for individual systems is available. Gates Engineering Co., Inc., Wilmington, Del.
206 Cedar paneling
An 8-page brochure explains advantages of Cedarply, exterior paneling that is said to combine the many qualities of cedar with the structural and labor-saving advantages of plywood. Panels are available in a combination of grades, lengths, thicknesses, surfaces, edges, and groove patterns. Peninsula Plywood Div., ITT Rayonier Inc., Port Angeles, Wash.

206 Curtain-wall systems
Aluminum systems featuring Foamwall, a 2-in.-thick panel using urethane foam insulation as the spandrel material, are described in a 16-page, color booklet. A lap-joint system eliminates air and water infiltration. Other systems, including metal, glass, and stone spandrel panels, are also described. E. G. Smith Construction Products, Inc., Pittsburgh.

207 Wall/fascia system
The design versatility of Floclad, a wall/fascia system with contoured panels that permits design elements such as vertical and horizontal ribs, rounded, molded, or mitered corners, or positive or negative curves, is described in a 2-page bulletin. The panels are preformed and pre-cut for fast, easy erection, the maker says. Binkley Co. St. Louis, Mo.

208 Fire protection
Firestops, smoke seals, and Trench-Shield Brand fireproofing products for structural steel are explained and illustrated in a 4-page, color brochure. Cutaway drawings show product features, applications, and benefits when used in various types of construction. Services provided to designers in selection and installation of systems are detailed. Bio Fireshield, Inc., Concord, Mass.

209 Roof panels
Company’s Standard Reference Manual for Architects and Engineers contains details for a variety of roof panels under different building conditions, a glossary of terms, and charts on product applications, finishes, fasteners, and other design information. Metal Building Components, Inc. (MBC), Houston.

210 Curtain walls
A 20-page brochure describes and illustrates Formwall metal/glass curtain-wall systems. Designers can choose either insulated foam-core panels or paper or aluminum honeycomb-core panels. Available in custom or standard colors and several corrosion-resistant coatings, the 2-in.-thick panels are easily shaped, curved, or cut. H. H. Robertson Co., Pittsburgh.

211 Firestop systems
Described in a 4-page brochure, this line of five firestop systems includes reusable modules that allow frequent cable changes, an adhesive, one-component silicone sealant, a permanently pliable, intumescent putty, a low-cost but high-performance material for large openings, and a firestop pillow, primarily intended for temporary seals. Nelson Electric, Tulsa.

212 Roof, wall systems
A brochure describes the Granco Thermlok line of insulated roof and wall panel systems, with information necessary for specification of Thermlok Correroof and Thermwall panel systems. A continuous liner foaming manufacturing process is used to assure uniform quality. Alumax Building Specialties Div. of Alumax Inc., Mesquite, Tex.

213 Structural fireproofing
A 4-page catalog contains general and technical information describing spray-applied CAFCO Blaze-Shield and Deck-Shield structural fireproofing systems. Products contain no vermiculite, are asbestos-free, and application methods are said to eliminate most scaffolding requirements. United States Mineral Products Co., Stanhope, N. J.

214 Roofing system
Modified bitumen roofing material, Ruberoid MB, is described. The new torch-applied version has a resilient spunbond polyester mat at its core and is coated with white mineral granules for protection against ultraviolet rays. Asphalt modified with thermoplastic polymers improves weather resistance. GAF Building Materials Corp., Wayne, N. J.

215 Cedar roofing
Details on roof application of cedar shakes and shingles are contained in a 20-page design and application manual, which specifically covers mansard, low-slope, hip and ridge roofs, roof juncture, flashing, ventilation, vapor barrier, and quality-control treatment. Red Cedar Shingle & Hand-split Shake Bureau, Bellevue, Wash.

216 Waterproof coatings
The Super Flex line of elastomeric exterior waterproofing systems are described. The materials can be used for new construction, renovation or maintenance, and applied over properly cured and prepared concrete, masonry, stucco, brick, and even properly prepared exterior-grade plywood or metal. Proko Ind., Inc., Mesquite, Tex.
217 Exposed aggregate panels
Mini brochure contains data on cement panel Stonecast-on-plywood, Stonecast fire-rated, and Granex, plus information on Minerlite-NC. Besides providing comprehensive product data, several examples of buildings utilizing aggregate-type, asbestos-free panels are shown. Sanspray Corp., Santa Clara, Calif.

218 Bonded facing material
Fabricated from two thin sheets of aluminum with a thermoplastic core, Alucobond's high strength, low weight, and resistance to buckling, rippling, and oil-sanding is discussed in a new brochure that illustrates typical signage and interior installations and maintenance procedures. Alucobond Technologies, St. Louis.

219 Skylights
Skylight and wall/window systems that utilize an aluminum-alloy grid for attaching horizontal and vertical members is the subject of new literature that describes how machine-lancing process allows perpendicular members to precisely interlock, producing structural systems in their own right. Extech/Exterior Technologies Inc., Pittsburgh.

220 Roofing system
Polymer membrane-type roof-coating system that allows vapor to permeate while preventing wind-driven water intrusion, is held in place with mechanical fasteners. New booklet tells how contractors can use the membrane material to reduce on-site labor requirements. Seal-Dry Inc., Pontiac, Mich.

221 Fascia panels
Asbestos-free fascia panels, soffits, spandrels, interior, and dry-built walls are described in a 24-page full-color brochure outlining design considerations for panel attachment, plus installation details. Special attention is given to use of each type of panel in new construction and renovation of existing structures. Manville Mineral Panels Div., Denver.

222 Ballast pavers
The Terra Paver line of lightweight ballast pavers, which feature interlocking joints on all four sides to prevent wind uplift, is featured in a new 4-page foldout. Literature also describes Terra System One, which can be utilized in a number of different roofing and walkway applications. Wausau Tile, Wausau, Wis.

223 Exterior coating systems
Mineralite, a site-applied simulated-marble exterior finish, is discussed in a 4-page, 4-color catalog insert. The product, available in a wide range of colors, surfaces and textures, is expressly designed for use with Insul/Crete exterior insulation system, which is fully described in the catalog. Insul/Crete, McFarland, Wis.

224 Waterproofing system
HydroSlur elastomeric waterproofing systems for commercial, industrial, and institutional structures are featured in new catalog. The ability of Hydrofilm, Hydroelastic, and Hydroflex to prevent water intrusion in above-grade masonry, poured and precast concrete structures is discussed. Devoe & Raynolds, Louisville.

225 Roofing fasteners, sealants
Publication No. 6074 is a 4-page brochure discussing construction fasteners, a newly introduced line of silicone- and butyl-based sealants, and caulking guns designed to meet roofers' needs. Tapdek and Tapdek SP fasteners are highlighted, as is the company's Tapco line of masonry fasteners. Elco Industries Inc., Rockford, Ill.

226 Roofing system
A full-color 8-page brochure discusses physical characteristics, applications, and benefits of EPDM roofing with an easy-to-follow system-selector guide for fast referencing and product comparison among the five Rubbeguard systems. Each system described on an individual data sheet. Firestone Building Products Co., Indianapolis.

227 Roofing tile
"Above all, real clay tile" emphasizes the low moisture-absorbing and fast water-runoff qualities of genuine fired-clay roofing tile over copy-cat products made of inferior materials. Three styles of vitrified clay tile are described and illustrated: 2-piece mission, S-style, and flat shingle. United States Tile Co., Corona, Calif.

228 Building wrap
Barricade building wrap is featured in a 4-page installation brochure that describes—a 5-step procedure—how the product should be fitted, and fastened in place to produce leak-free seals and overlaps and preserve R value of wall insulation. Simplex Products Div., Adrian, Mich.
229 Air spacer
Black anodized aluminum has been added to the metallic range offered in welded air spacers for insulating glass units, permitting color matching of spacer, gasket, sealant, and weatherstrip. Allmetal, Inc., Itasca, Ill.

230 Energy-efficient glazing

231 Triple-glazed slider
The 3000 Series horizontal sliding window, available in both residential and commercial models, is glazed with 1/2-in. insulating units in the prime sash, and a single-pane interior storm sash. The thermally broken frame provides a U-value of 0.31. Acorn Building Components, Inc., Detroit.

229 RF-shielded door
Constructed of cadmium-plated steel, Barshield radio-frequency-shielded personnel-access doors have an electrically operated automatic latch that draws the door into its final RF seal position. Insulated with fiberglass, the doors may be surfaced with laminate, metal paneling, or sound-soak material. Access, equipment, and industrial doors are available in standard and custom sizes. Barlow's, Inc., Falls Church, Va.

232 Glass entrance system
Interior and exterior architectural glass entrance systems may be specified with patch fittings, giving the appearance of an all-glass opening while keeping the door itself to an efficient passage size. Arm-R-Clad entrances are offered with either tempered or heat-strengthened clear, tinted, reflective, or patterned glass. Hordis Brothers, Inc., Pennsauken, N. J.

233 Passage hardware
Lever handles are UL-listed for commercial applications, and come in two styles and 13 colors. The steel and brass passage latch has a nylon cover plate that matches the handles. HEWI, Inc., Allendale, N. J.

234 Operable windows
Designed for horizontal ribbon installations requiring equal sightlines, Series 890 Equa-Vu units provide in-swinging casements indistinguishable from adjacent fixed lites. Thermally broken frame accepts 1-in. insulated or 1/4-in. monolithic glass. Efco Corp., Monett, Mo.

235 Rolling door
Made of flat or crown-profile galvanized steel slats, the 900 Series commercial rolling door comes in both insulated and uninsulated versions, for openings up to 27 ft wide by 20 ft high. Chain hoist operated, the doors are rated to withstand winds of over 85 mph. Wayne Dalton Corp., North American Rolling Door, Mount Hope, Ohio.

236 Fire-rated window
For installation in rated wall construction, in high-traffic hallways, a 76 in. wide by 52 in. high single-light wired-glass system carries a 20-min fire label. A 45-min rating is offered by a millioned, multiple-light view window that measures 110 1/2 in. wide by 58 1/2 in. high. The Ceco Corp., Oak Brook, Ill.

237 Architectural glass
Handcrafted glass sheets, jewels, and prisms are set in wood or metal frames to create unique doors, windows, skylights, and decorative architectural elements. Functional works of art may be commissioned for residential, office, and institutional projects; the entrance to a law firm is pictured. Jurs Architectural Glass, Oakland, Calif.

238 Vandal-resistant screen
Heavy, stainless-steel wire mesh set into extruded rails provides vandal-resistance for this maker's line of commercial aluminum replacement windows. The weather-stripped frame is available in painted, anodized, or duranodic finishes. Season-all Industries, Inc., Indiana, Pa.
241 Veneer-finish doors
The PermaClad commercial interior door is now offered with a wood veneer surface. Wood species include book-matched red oak and rotary-cut birch, as well as custom-order mahogany, cherry, walnut, and maple. Doors are furnished with matching hardwood edges, ready for on-site finishing. VT Industries, Inc., Holstein, Iowa.

242 Safety-tempered glass
All Traco metal-framed windows are now available with proprietary ViewSafe glass. Tempered at 1280 F, the glass withstands bending, impact, and rapid temperature changes. When exposed to the significant impact required to break it, ViewSafe crumbles into blunt-edged particles, not sharp shards. Traco, A Three Rivers Aluminum Co., Warrendale, Pa.

243 Three-dimensional coating
For application to flat aluminum spandrel panels, the Graphicolad process uses Kynar 500 coatings to produce exterior graphics with a 3-D appearance. Graphicolad is said to be an economical method of applying custom design to large-scale architectural panels. Cupples Products Div., H. H. Robertson Co., St. Louis.

244 Electromagnetic holders
Sentronic UL-listed controls hold fire- and smoke-barrier doors open until the alarm system triggers a power cut. The fail-safe electromagnetic operation releases the doors and the standard door closer takes over, shutting the doors. The holder can be surface-mounted on wall or floor, or recessed in the wall. LCN Closers, Princeton, Ill.

245 Glass entrance
Tempered-glass entrances for commercial interiors can be installed in existing openings with minimal modification to the door frame. Entrance offers 11 types of glass and 23 colors, patch fittings, and a range of hardware and locksets. Pictured is the Nova V in gray glass, which opens with a light press of a button. Colonial Mirror & Glass Corp., Brooklyn, N. Y.

246 Perforated service door
Designed for the food and beverage industry, a rolling service door made with perforated slat steel or aluminum provides a screened area of almost 50 percent, for insect- and pest-resistant ventilation as well as security for perishable supplies. Kimmeir Div., Harsecro Corp., Columbus, Ohio.

247 Secure fire door
The Tough Hide 12-gauge steel detention door, with a 20-minute fire label, offers a vision light with clear instead of wired security glass. Availability of the clear product in a rated door is said to offer improved visibility through the glass and a less-severe appearance to the inmate. Grand Metal Products Corp., Portland, Ore.

248 Curved slope glazing
Described as the first true commercial grade of curved slope glazing systems, the 1500 C.S. is a thermally broken, projected-bay structure designed for the low-rise building market. The system uses structural silicone glazing at the horizontals and purins, and 1-in. insulating glass. Framing is built to take cloth sun-control shades. Kawneer Co., Inc., Norcross, Ga.

249 Historic replacement windows
Single-hung, wood-framed HR 175 windows are said to provide superior performance in projects requiring the duplication of existing windows to preserve historical integrity. The interior glazing bevel and exterior casing can be customized to match the architecture. Weather Shield Manufacturing, Inc., Medford, Wis.

250 Woodgrain-finish doors
Steel entrance and interior doors are offered finished with a woodgrained-pattern vinyl bonded to the 24-gauge metal. The laminated surface is said to improve the acoustic and appearance characteristics of the door. When hung in the Adjesta-Fit steel frame, laminated doors have a 90-min fire rating. Benchmark Doors Div., General Products Co., Inc., Fredericksburg, Va.

251 Round-top wood window
Offered in 8 standard as well as custom sizes, round-top windows with sunburst grilles are designed to muil to the top of Caradoc cladwood casement, double-hung, and patio door units. Extension jambs are available to accommodate walls up to 7 1/2 in. thick. Caradoc, Inc., Korea, Inc., Champaign, Ill.

252 Lead-glass octagon
Fine-framed octagonal windows come in a variety of patterns in clear, multicolored, frosted, stained, beveled, jeweled, and antique glass. Both fixed and operating windows are available; options include insulating glass and insect screens. Monarch Mirror Door Co., Inc., Chatsworth, Calif.
253 Window systems
Zero Line architectural window systems provide units with no observable distinction between sightlines of operating and fixed sash. Standard and custom units are offered for most building fenestration requirements. Profile Systems, Inc., St. Louis.

254 Electronic keying system
For multifamily facilities, the Gibraltar 2000 keying system uses an electronic lock package that retrofits around most U.S. mortise locks, and operates with reusable plastic or metal keys. A stand-alone device, the lock trim contains a 9-volt battery and microprocessor; locks can be programmed for up to 79 levels of access. Falcon Lock, Huntington Beach, Calif.

255 Card-lock system
The addition of a front-desk computer to System 65 hotel lock equipment provides 16 card levels of wireless security and full entry analysis, including exact date, time, and card number. Features include mechanized feed encoding, automatic expiration of cards by data and time, and room-type memory. Sargent, New Haven, Conn.

256 Low-reflectivity glass
Solarban 565-20 coated glass offers energy-efficient curtain-wall glazing without objectionable reflectivity. Pictured here are four shades of vision glass (large lights) and spandrel glass: Sunstone with gray substrate, Citrine Quartz with clear substrate, Honey Opal with bronze substrate; and Verdelette with Solar green substrate. PPG Industries, Pittsburgh.

257 Segmented skylight
The Solarview 2500 system provides a unique hinged joining purlin, which adjusts to any angle of segmented joint intersection. This insures glazing platforms that are parallel to the glass, regardless of angle, and simplifies design of barrel-vault skylight structures. Regal Manufacturing Co., Div. Arcorp, Inc., Portland, Ore.

258 Fire/life safety closer
The DC 140, described as technically advanced, is a surface-applied closer that incorporates an integral photoelectric smoke detector. It can stand alone or interface with fire/alarm-control systems; closer works on up to five single or double doors. Dorma Door Controls, Inc., Reamstown, Pa.

259 Glass tile
A hand-made Murano glass tile that both transmits and refracts light, Formelle comes in a number of shapes, sizes, colors, and patterns for interior and exterior glazing of doors, windows, and skylights. Designed by Roberto Parno for Leucos, Formelle is available in insulated, shatter- and bullet resistant tile. IPI Architectural Products, Long Island City, N.Y.

260 French door
The Chateau entry or patio door with removable wood grilles on both sides of the insulating glass light for an authentic appearance. An astragal locking system provides bolts at top and bottom of the steel-framed door; frame and door are insulated. Peachtree Doors, Inc., Norcross, Ga.

261 Hand-beveled glass
The residential bow unit shown here is glazed with American Renaissance decorative beveled glass, offered on many of this manufacturer's bow, angle bay, and casement windows. The beveled product is installed as a 3/4-in. sealed insulating unit, and comes in Gothic Cathedral and Victorian Diamond patterns. Norco Windows, Inc., Hawkins, Wis.

262 Extruded window
The 400 Series tilt-turn window is an extension of the Procal line of rigid PVC commercial and residential windows. The profile's chambered design creates air pockets that provide additional insulation within the frame itself. Solid vinyl windows never need painting, and will not rot, rust, pit, or chip. Dynamit Nobel of America, Inc., Rockleigh, N.J.

263 Wood-framed slider
The Singi-Glide residential window has one fixed and one sliding sash, providing a substantial barrier to air infiltration. The Singi-Glide is available in single and double units, and as a triple-light picture window. Marvin Windows, Warroad, Minn.

264 Transparent mirror
An improved version of this manufacturer's observation-mirror, Mirropane E.P. has a durable reflective coating applied to a gray glass substrate, producing an installation with a definite mirror-like appearance on the subject side, while allowing clear viewing from the observer side. It may be cut, tempered, and laminated like ordinary glass. Libbey-Owens-Ford Co., Toledo.
265 Geometric windows
Stationary windows can be custom-assembled from vinyl-clad, wood Flexiframe components to create pentagons, octagons, right-angle triangles, trapezoids, and other shapes in sizes up to 72 by 96 in. Clear, tinted, and reflective glazing is available with metallic, high-performance coatings. Andersen Corp., Bayport, Minn.

266 Horizontal slider

267 Sliding walls
Have movable walls from Switzerland are based on sliding-track hardware capable of carrying wood, metal, or glass (shown) ceiling-hung panels of up to 1,760 lb each, with no vertical frame members. Runners set into the floor guide the panels, which can stack at 90-deg or parallel with the closing plane for an unrestricted flow of space and traffic. Hafele America Co., High Point, N. C.

268 Custom glass structures
The installation pictured is a custom barrel vault measuring 12 by 40 ft, an example of custom structural skylight construction using glass, acrylic, or Lexan Thermoclear polycarbonate glazing. Several color options are offered for both glazing components and aluminum framing. Bristol Fiberlite Ind., Santa Ana, Calif.

269 Exit device
New trims for use with 99 Series exit devices include a 2 1/2-deg up or down adjustment feature, an easier-to-operate gear/yoke assembly for knob units (pictured), and solid brass escutcheon plates for a rivet-free, smooth appearance. Von Duprin, Inc., Indianapolis, Ind.

270 Acoustical windows
Cutaway view highlights the sound-control components of Milco acoustical windows, designed to reduce transmissions in the frequency range where most objectionable environmental noise occurs: between 125 and 4,000 hertz. With laminated glass, the aluminum-framed windows achieve an STC of 50. Milco, Wausau, Wis.

271 Exit devices
Series 3000 exit hardware is said to provide a clean, architectural appearance as well as a UL-A label. Full-width bars work with four mounting options: surface rod, mortise, concealed rod, and rim mounting. Metal-cladding choices include bright- and satin-finish brass, bronze, and stainless steel. Adams Rite Mfg. Co., City of Industry, Calif.

272 Rated glass wall
Glassprotec fire wall and door assemblies provide vision and light in occupancies requiring 60- and 90-min B-label protection, while having the appearance of a standard glass and metal storefront. Glass units are filled with Contraflam clear, heat-absorbing gel. O'Keefe's Inc., San Francisco.

273 Imported glass block
Wolfe is from the Studio series of hollow architectural glass block, one of several product lines made by Saint-Gobain. Nonload-bearing block allows light transmission of up to 85 percent; many different patterns are offered in both European and American dimensions. Euroglass Glasrep Corp., White Plains, N. Y.

274 Exit device
A new design, 17 Series ANSI-rated exit and panic devices will fit a wide range of applications, with particular emphasis on narrow-stile doors. A-labeled products come in a number of finish options, from bright brass to brushed aluminum. Monarch Hardware, Shepherdsville, Ky.

275 Three-panel door
A new size scaled for smaller residential spaces, this Atrium Door has three panels, instead of two, within a 6-ft-wide frame. The end panel is the operating door. Constructed of solid wood with insulating glass and brass hardware, door is furnished ready to install. The Atrium Door & Window Corp., Dallas.

276 Aluminum windows
Projected, casement, and matching fixed windows have a rigid polyurethane thermal barrier and double weatherstrips. 2700 Series windows are inside-glazed for 1/4-in. or 1-in. glass/panel thicknesses, with a 2 1/4-in. frame depth. Finish options include custom paint or anodized. Tubelite Div., Indal Inc., Reed City, Mich.
277 Pyramid skylights
Pyramid-style skylights are available in 5 standard sizes: 8, 12, 16, 20, and 24 ft, all with a 30-deg pitch. Offered in a choice of glazing options, the standard pyramids are said to provide cost savings over custom designs. Super Sky Products, Inc., Mequon, Wis.

278 Insulated windows
Superior insulating performance is claimed for the iPLUS® window line, which uses argon gas instead of air between the two panes of glass. The inboard surface of the exterior pane has a clear silver coating, to reflect interior heat in cold weather and reduce heat build-up in summer. Crestline, Wausau, Wis.

279 Rated door frames
Made with wood veneers bonded to steel, Steeltree frames are said to combine the visual appeal of solid wood with the fire rating of a metal frame. Veneered frames have received a 90-min, B label fire rating from UL. Integral Engineering Corp., Pompano Beach, Fla.

280 Intensive-care doors
The aluminum-framed Stanley Magic-Door for hospital intensive-care units has a narrower profile for improved visibility. Manually operated sliding doors come in 2-, 3-, or 4-panel configurations; frame may be specified in dark bronze or custom paint finishes. The Stanley Works, Farmington, Conn.

281 Thin-line glazing system
V2Line framing for sloped structures offers the minimal appearance of thin-line eaves for either 1/4- or 1-in. glass, as well as the even-thinner, butt-glazed eave. V2Line components are available in stock lengths, for custom fabrication to fit specific project requirements. Vastawall Architectural Products, Terrell, Tex.

282 Wood entrance
All-wood residential doors, a new Pella product line, are offered in both contemporary and traditional styles, such as the Cumberland, a six-panel entrance shown here with custom side-lights. The door’s Worryguard construction is said to ensure excellent long-term performance and appearance characteristics. Rolscreen Co., Pella, Iowa.

283 Revolving entrance system
Equipped with motion sensors, the Cirkel-Line entrance is designed to handle complex traffic demands, meet government standards for handicap access, be energy-efficient, and solve stack-draft and wind problems. Installations can stand alone, without support from conventional doors. Haven-Busch Co., Grandville, Mich.

284 Double-cylinder deadlock
The 586 Safe-T-Lok deadlock facilitates egress in an emergency: when locked from the inside, the key remains in the cylinder and cannot be removed until the deadbolt is fully retracted in an unlocked position. Kwikset, Div. Embart Indus., Inc., Anaheim, Calif.

285 Replacement windows
Said to duplicate the look of handcrafted installations, simulated leaded glass can be specified in energy-efficient custom replacement windows that maintain the architectural character of historic buildings. Project pictured is St. Thomas Monastery at Villanova University. Wausau Metals Corp., Wausau, Wis.

286 Insulated industrial door
The 585 Thermacore sectional door provides the insulation values and security characteristics of heavier doors in a more economical, 20-gauge configuration. Door features include an optional thermally-glazed panel, rain channels for drip-free opening, and polyester finish. Overhead Door Corp., Dallas.

287 Glass protection film
Developed in Holland and used extensively in Europe, Profilon Plus is a clear, multilayered polyester film professionally applied to the inboard side of glass panes of any size. It makes already-installed glass extremely resistant to penetration by high-caliber bullets, explosives, and hurricane-force winds. American Armatura Co., Inc., Danbury, Conn.

288 Functional handles
Adaptations of the Desipro K156R lever designed by Attilio Marcolli, handles meet the specific functional requirements of various handicaps, such as a dystonic or spastic hand, but work as well for normally mobile hands. Made of nikral alloy and rubber, handles meet all codes and come in a wide range of bright colors. Valli & Colombo, Duarte, Calif.
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Norco’s performance on the original construction phase was so impressive that Opryland Hotel brought Norco back for an encore.

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Opryland Hotel

Architects:
Earl Swensson Associates
Nashville, TN

Windows:
Norco Windows, Inc.
Hawkins, WI

Masterpieces in wood windows and doors.
8 Doors & Windows
Product literature

289 Coated glass

290 Windows
An information packet from the manufacturer contains a shoppers' guide listing the availability of window sizes, styles, and configurations. The choice of styles includes horizontal sliders, single-hung, sliding-glass doors, picture, casement, radius and round, bay and bow, skylight and dual windows. Milgard Manufacturing, Inc., Tacoma, Wash.

291 Sloped glazing system
The manufacturer offers an illustrated brochure that describes its sloped glazing system. Apart from controlling water, all joints and interfaces are air- and vapor-sealed, making the system an integral part of the building's air and vapor system. Also available is a complete *Design Guide Portfolio*. Lord & Burnham Co., Ltd., St. Cutharines, Ontario, Canada.

292 Skylights
A 4-page color brochure on skylights and residential sunspaces contains data on heat and light characteristics of laminated glass. Also included are wind-load data, and information on the products use in commercial and residential skylights. Laminators Safety Glass Assn., Topeka, Kan.

293 Glass bending
Color photos of projects using bent glass are displayed in a 4-page folder. Glass bending can be applied to exterior and interior surfaces, laminated safety and insulated glass, and spandrel panels. Technical support and specification data are also included. California Glass Bending Corp., Wilmington, Calif.

294 Door hardware and controls
Floor closers, door pivots, overhead concealer, surface-mounted closers, door holders, and stops are illustrated in a product brochure from Rixson-Firemark. The products are shown in applied use, as well as in close-up detail. Combination life-safety controls and electro-magnetic door releases are also covered. Rixson-Firemark, Franklin Park, III.

295 Double-pane windows
Details about Comfort-E glass are available in an information kit. According to the manufacturer, the double-pane glass retains inside heat in the winter, reflects outside heat in the summer, and allows energy-saving sunlight to pass through while prohibiting the entry of ultraviolet rays into the home. AFG Indus., Kingsport, Tenn.

296 Sliding door hardware
A 4-page color brochure presents hardware and latches for interior and exterior sliding doors. Latches have reversible, turn-button privacy and passage functions; hardware may be ordered in two brass finishes as well as chrome. Schlage Lock Co., San Francisco.

297 Windows, shutters, doors
An 8-page color brochure presents Eurotech's line of custom-designed solid wood and PVC windows, wood and aluminum doors, and Euroslide's security system. Windows are steel-reinforced and maintenance-free. Doors come in a variety of colors. The security system comes in PVC or aluminum. Eurotech, Plainview, N. Y.

298 Glass units
Fal-Seal insulating glass units are comprised of two or more sheets of glass separated by a hollow metal air spacer. Other features of the units are the subject of a 4-page illustrated brochure. The glass units are available for commercial, residential, industrial, and institutional use. Downey Glass Co., Los Angeles.

299 Automatic doors

300 Skylights
A number of applications of skylights are illustrated in a 34-page full-color brochure. Structural-steel detail drawings are included for each project. Also included is general information, and data on operation, maintenance, and installation. Naturalite Inc., Garland, Tex.
301 Wood doors
A 16-page brochure describes and illustrates in color the company’s complete line, ranging from elegant wood-panel entry doors with a full range of designer glazing, including leaded glass, to interior/exterior French doors, thermal and fire doors, and bi-fold closet doors. Vital statistics are provided for all models, including glazing details. E. A. Nord Co., Everett, Wash.

302 Acoustical glazing
An acoustical-glazing design guide presents easy-to-follow methods for estimating the minimum required sound-transmission loss for exterior glazing exposed to the most common sources of environmental noise, such as aircraft, highway traffic, and rail transportation. Also available on diskette as an interactive computer program.
Monsanto Chemical Co., St. Louis.

303 Glazing products
A 24-page brochure describes and illustrates a complete line of glass products, including float glass, heat-treated glass, insulating glass and specialty products such as Acoustical-Glaze, a noise-prevention glazing system for applications such as airport sites. Special designs are available for extreme high-noise applications. Guardian Industries Corp., Carleton, Mich.

304 Spaceframe systems
A 12-page brochure illustrates in color the various spaceframe systems used on major projects throughout the world, and provides technical details and specifications for the company’s six basic systems, including engineering drawings. Its computer-aided design program is briefly explained. Mero Structures, Inc., Germantown, Wis.

305 Impact-resistant glazing
A 20-page brochure describes the use of Lexan polycarbonate sheet and laminate for architectural glazing. Performance comparisons, code compliance, technical and product data, installation guidelines, and specifications and warranties for vertical, overhead, thermal, and bullet-resistant materials are provided. GE Plastics, Pittsfield, Mass.

306 Glass block structures
A 6-page, color brochure illustrates and explains a variety of applications of glass block windows, walls, and partitions. The security, privacy, and energy-saving aspects of the installations are discussed, as is the ease-of-maintenance derived, since they do not rot, rust, or corrode, and need not be painted. Pittsburgh Corning Corp., Pittsburgh.

307 Sliding hardware
Sliding hardware for residential and contract furniture and cabinetry is described and illustrated in a 5-section binder, which includes technical drawings and specifications for flipper doors and pull-out slides for such applications as entertainment centers, overhead filing systems, and kitchen cabinets.
Accord, Santa Fe Springs, Calif.

308 Storefront systems
Billed as the first standard, four-sided structural silicone-glazed entrance and storefront framing system, the Crystalline is described in an 8-page, color brochure. The system includes a door, door frame, and framing system that offers a glass-smooth exterior with sculpted interior framing members that look as if they have no vertical stiles.

309 Access doors
A 24-page catalog is a reference guide for designers involved with facilities using horizontal access doors such as roof skylights, automatic fire vents, ceiling doors, and pit, floor, and sidewalk doors, to mention a few types. Color illustrations show the products, and technical data describe the designs and features of the complete line.
The Biko Co., New Haven, Conn.

310 Half-round windows
The Vic-LArc line of half-round vinyl-clad wood windows is described in a 16-page catalog. The insulated-glass units are also available in redwood instead of vinyl clad, and a line of octagonal redwood units with art-glass inserts is described. Full-round redwood windows and louvers are also offered. American Woodwork Specialty Co., Inc., Dayton, Ohio.

311 Door hardware
An 8-page, color catalog illustrates and provides specifications for a line of door pulls and push/pull bar combinations, including spherical units. Fastening details for many products are shown with drawings. Push and pull plates, government hardware, and kick, mop, and armor plates are also covered. Hiawatha, Inc., Bloomington, Minn.

312 Glass, glazing
A 16-page catalog presents basic selection data on Venti-Frame solar-control glass, Thermopane insulation glass, Tuffner heat-treated glass, and Vitralux ceramic-coated spandrel glass. Also presented: Jalousie low-emissivity coated glass and Mirrorvue a transparent mirror glass. Spectrum Glass Products, Clinton, N. C.
Finishes

313 Suspended ceiling
A system of 2- by 4-ft metal-backed fabric panels, the Sculptures ceiling fits into a colored-to-match T-bar suspension system. Standard bas-relief patterns are Ribbed and Pleated, Starburst, and Stripes and Squares; the manufacturing process is said to facilitate custom design. Ceiling is Class A rated. Integrated Ceilings, USG Interiors, Inc., Riverside, Calif.

314 Thin stone tiles
Cut in 3/8- and 1/2-in. thicknesses for commercial and residential interiors, natural granite and marble tiles are available in 13 additional stone types. All stones are offered from stock, in sizes ranging from 12 by 12 in. to 24 by 24 in. International Granite & Marble Co., Inc., North Bergen, N.J.

315 Tile stair treads
From Argentina, ceramic tile stair treads have a raised, slip-resistant edge. Treads come in six colors to match the Super Star line of 12-in.-square Class 4 commercial and residential floor tiles. Ceramica San Lorenzo, Houston.

316 Non-woven carpet tiles
Pin-dot patterns, coordinating with solid color tiles in clarat, sienna, slate, charcoal, ocean green, and oak, are part of an expanded Lobofor carpet tile collection. Said to wear like vinyl while providing the appearance and feel of carpet, stain-resistant Lobofor is made of electrostatically flocked nylon fibers on a reinforced PVC base. Bonar & Flotex, Dallas.

317 Rubber flooring
A resilient rubber compound in a low-profile stud pattern, Low Vibration Square commercial flooring is said to absorb the clutter generated by shopping carts, gurneys, and other wheeled traffic for improved acoustical performance in heavy-use interiors. Flooring comes in 11 solid and 5 Beachstone colors. Endura, Bitrite Corp., Waltham, Mass.

318 Deep-relief panels
FS3 large-scale panels for interior walls and doors have a high-tech, ribbed pattern. Made of a combination of inert materials, lightweight FS3 panels are noncombustible, and come in an extensive range of bright colors. Forms + Surfaces, Inc., Santa Barbara, Calif.

319 Drywall shapes
Contours is described as a line of molded shapes that provide a simple method of creating subtle turns, contoured transitions, or precise reveals in drywall interiors. A coordinating product is custom column covers made of polished or colored stainless steel and aluminum. Conspec Systems, Inc., The C/S Group, Cranford, N.J.

320 Heavy-traffic ceramic tile
A new technology, the Firestream ceramic process applies glaze to the tile body after firing, creating a dense, extremely wear-resistant finish. Called Marazzi Enduro, the floor tile comes in four colors (Perlina is shown), for use in airports, mass-transit facilities, and malls. American Marazzi Tile, Inc., Sunnyvale, Tex.

321 Acoustical treatments
Avanti noise-reducing wall and ceiling systems are made to architectural specifications of resin-edged, rigid fiberglass-core shapes covered with fabric. Installations provide precise acoustic performance for interiors ranging from swimming pools to concert halls. Sound Solutions Systems, Inc., Buffalo, N.Y.

322 Commercial carpeting
Various backing constructions may be specified to meet special traffic and occupancy requirements: Certilok backing resists the snagging and delamination common to industrially cleaned health-care installations; Enhancer Plus provides cushioning for very heavy traffic areas. Both backings may be specified on these new patterns from the City Line II carpet of Antron III fiber. Armstrong World Industries, Inc., Lancaster, Pa.

323 Abrasion-resistant tile
Match ceramic tile has an extra-thick, glass-like fused glaze that can survive the most severe abrasion testing. Suitable for the very heavy traffic of airports and subway stations, the 12 Match colors have either a grip or gloss surface. Tile squares range up to 20 by 20 in.; bullnose edges and cove base are also available. CMC Monoceram, Miami, Fla.

324 Natural linen wallcoverings
Woven of linen in both natural and subtly colored tones, OJVM wallcoverings come 59 in. wide, and are offered in "continuous yardage" bolts. OJVM Wallcoverings, Marlboro, N.J.
325 Integrated interiors
Stripes & Textures 3 contains 35 patterns from textiles and faux finishes to warp lays, with complementary 54-in.-wide textures for design continuity in contract, health-care, and commercial interiors. Wallcovering coordinates with Genon Color System products, including Laminart surfaces and Pratt & Lambert paints. Diversitech General, a GenCorp Co., Hackensack, N.J.

326 Mosaic tile
Unglazed natural clay and porcelain tile for interior and exterior walls and floors is offered in 15 colors that can be used to create geometric, floral, and border patterns. Square tiles come in 1- and 2-in. sizes, back-mounted on a 13-in.-sq sheet. Huntington/Pacific International, Fort Worth, Tex.

327 FRP suspension grid
The Kenlite Sanigrid suspension system is recommended for high-moisture and harsh environments, as its rigid fiberglass grid resists atmospheric corrosion, dents, and rust. It has a Class I fire rating, is USDA accepted, and carries ceiling panels from 1/16 to 2 in. thick. Dyrotech Industries, Inc., Joliet, Ill.

328 Stone-like tile
A large, 12-in.-sq ceramic tile, ColourPointe is said to have the appearance and colorations of natural granite; patterns include Jade, Ruby Dust, Sandune, and Blacksand. For residential and light commercial floors, walls, and trim, flat-backed ColourPointe is frost- and acid-resistant. International American Ceramics, Tulsa, Okla.

329 Resilient sheet flooring
A natural linoleum product in a classic marbleized pattern, Kromenie Marmoleum is now available in 36 homogeneous colors. The sheet flooring has a jute backing; its fire- and chemical-resistant properties make it suitable for health-care, educational, and industrial installations. Forbo North America, Richmond, Va.

330 Hand-made tile
Produced by the traditional Chinese methods of hand-glazing and kiln-firing, imported Great Wall tile for walls and medium-traffic floors have slight variations from tile to tile. Colors include bright contemporary hues as well as earth tones. Shep Brown Assoc., Boston.

331 High-performance carpeting
Constructed of Antron Precedent nylon to withstand a million-plus foot traffics, Fortitude is a textured, woven-loop carpet with the appearance of sisal rope. It is offered in eight natural colorways, and is recommended for heavy-use interiors such as airports. Karastan Bigelow Commercial Carpet, Greenville, S.C.

332 Quarry tile
Extruded clay Quarry Tiles are available in an expanded color range, including gray, blue, bone, and green, as well as natural earthtones. For high-traffic floors indoors and out, tile comes in 6-in.-sq and 4- by 8-in. rectangular sizes. Finish may be smooth or abrasive. Summitville Tiles, Inc., Summitville, Ohio.

333 Wood strip ceilings
Derako ceilings are said to be easy to install with a unique clip-and-rail suspension method. Made of natural woods, the system was used to create the freeform, contoured, curved ceiling shown here, designed by John Portman & Assoc. Ceilings, which can carry a Class A fire rating, are claimed to provide superior acoustic performance. Ruon Co., Souderton, Pa.

334 Hazard-alert flooring
The Edge-Finder rubber floor tile was designed specifically to alert the sight-impaired and legally blind person to potentially dangerous situations such as the edge of subway platforms. The rounded dome pattern projects 3/16 in. above the rubber floor surface, and is easy to detect by foot or cane. Tile colors match flooring systems. Pirelli Flooring, Jason Industrial, Inc., Fairfield, N.J.

335 Textiles and vinyls
Wool, silk, and synthetic fabrics are offered along with textured and sculptured vinyls in a series of Priority Packages for contract wallcovering applications. More than 300 different selections are provided in the design program. Gilford Inc., Jeffersonville, Ind.

336 Woven wallcoverings
Described as combining the look and feel of natural woven linen with exceptional durability, Lynnescape comes in four designs for high-traffic commercial spaces. Fabric, made of spun polyolefin fibers, is Class A fire rated, and may be specified for hospitals. Lynnescape comes 54 in. wide, in 64 colors. J.M. Lynne Co., Smithtown, N.Y.
337 Accent tiles
Molded and glazed by hand, Signet 4- by 4-in. accent tiles complement the unglazed Metro and Ironrock ceramic line. Five different embossed patterns are offered: grid, leaf, pineapples, an 18th-century quilting design, and a Navaho motif. An inlaid glaze provides a slip-resistant surface, and a full-glaze style is brighter, for accent applications. Metropolitan Ceramics, Canton, Ohio.

338 Oak parquet flooring
An extension of the Specialty 900 floor line, Tiffany Square is a large-scale (8 1/2-in.) parquet, preassembled of tongue-and-grooved solid oak. Available in three thicknesses for various traffic requirements, flooring comes either 15-step finished in four shades or unfinished for custom staining on-site. Robbins/Sykes, Cincinnati.

339 Beveled-edge vinyl
Cabaret 9-in.-sq solid vinyl tile is beveled on all four edges, and has a scratch-concealing embossed surface. Available in five neutral and five accent colors, each in three hue values, Cabaret is especially suitable for retail installations. Armstrong World Industries, Inc., Lancaster, Pa.

340 Vinyl-faced drywall
Each of the four color and three accent lines of Tectone vinyl-faced drywall panels is now offered in a precoordinated system, with patterns designed to mix compatibly with any decor, color, or texture. The predecorated partition panels come in standard heights of up to 10 ft; custom lengths may be 14 ft. Tectone is also available in a fire-rated panel. United States Gypsum Co., Chicago.

341 Fabric wallcovering
A jacquard weave from this maker's new Textiles for Walls commercial wallcovering line, Rock On is a stone pattern with a satiny-like surface, offered in seven colorways. A Class A fabric of rayon and cotton, Rock On comes in 54-in.-wide, 50-yd rolls. BF Goodrich, Akron, Ohio.

342 Embossed ceramic tile
Shadows Silhouettes offer six different linear designs, embossed into 6 by 6-in. ceramic tiles. Patterns range from Grecian chains to Art Deco, and may be installed in a variety of geometric layouts. All tiles come in seven colorways, each matching existing Shadows field tile colors. Monarch Tile Mfg., Inc., San Angelo, Tex.

343 High-traffic ceramic
The subtle textures and tones of Crystalite ceramic tile vary from tile to tile, with no two exactly alike. Fired at high temperatures, the tiles have Group 4 FER rating for heavy traffic indoors or out. Also shown is Black Onyxite moderate-traffic tile. Steenbok America, Latco Products, Los Angeles.

344 Area separation wall
A gypsum-based, non-load-bearing assembly, the H-Stud Area Separation Wall has a 2-hour fire rating for use in multifamily structures. Walls consist of two layers of 1-in. Fire-Shield Shaftliner installed vertically between the legs of 2-in. H-stud metal framing. Its light weight, all-weather installation, and thin profile are said to provide cost savings. Gold Bond Building Products, Charlotte, N. C.

345 Wood-look vinyl
Bleached oak and black walnut colors have been added to the Stripwood line of commercial vinyl flooring. Supplied in 3-in.-wide, 36-in.-long planks with beveled edges, Stripwood may be installed on, above, or below-grade on concrete, wood, or plywood subfloors. Azrock Floor Products, San Antonio, Tex.

346 Custom carpet program
Shown in a carpet swatch folder, the Commercial Classics contract line offers 120 colors, which may be specified to produce an exact custom color match in quantities as low as 60 sq yd. Custom patterns are also available for a minimum order. J&J Industries, Inc., Dalton, Ga.

347 Interlocked rubber floor
A rubber mat-type floor of center tiles and beveled borders and corners, Pro-Lok III has hidden connectors to provide a one-piece appearance from an installation of 24-in.-sq modules. Offered in seven colors, Pro-Lok III is recommended for factory and recreational flooring, and is said to make an ideal aerobic dance floor. Pawling Corp., Pawling, N. Y.

348 Wood floor finish
Glitsa wood finishes from Sweden come in four versions for residential and commercial floors. Alcohol- and water-base urethane and polyurethane coatings are professionally applied to protect wood from heavy traffic, and are stain- and slip-resistant. Gold Seal stains come in light, dark, and custom-matched colors. Glitsa American, Inc., Seattle, Wash.
349 Etched metals
Individual metal panels are hand-etched, then sprayed with protective urethane to provide a scratch- and burn-resistant finish. Supplied un laminated, etched metal is suggested for elevator cab doors, as shown, counter surfaces, and wall paneling and trim. Lunstead Metals, Kent, Wash.

350 Marble aggregate material
A new color, Vert Classic, has been added to the Armstrong line of polymer-bound marble surfacing material for floor tiles and wall panels. The entire Armstrong range was developed by color specialist Barbara Schermeister. ArmStar, Lenoir City, Tenn.

351 Semi-matte glaze tile
Distinctions ceramic floor tile has green, blue, rose, and other colors offered in a family of lighter shades for design flexibility. Tiles have a low-relief back that assures a good bond, even on plywood underlayment. The semi-matte glaze, a mix of high- and low-gloss effects, provides a smooth-looking surface with excellent traction. American Olean Tile Co., Lansdale, Pa.

352 Tambour walls
For flat or curved vertical interior surfaces, Flexline offers solid wood, veneers, and metal backed with flexible material. Supplied in 1- by 8-ft or 4- by 8-ft sizes, Flexline may be glued directly to clean walls. The solid wood patterns include red oak V-groove, oak slats and half-rounds, and Philadelphia fencing (shown). Armstrong World Industries, Inc., Lancaster, Pa.

353 Solid vinyl tile
A three-dimensional mosaic effect for commercial floors, Byzantine vinyl tile comes in grays tone, moonstone, opal, brownstone, and earthtone colorways. The tile's Micro-squared edges are said to ensure a tight-fitting installation. Vinyl Plastics, Inc., Sheboygan, Wis.

354 Plank walledovering

355 Architectural ornament
A gypsum-based product, Laserstone can be cast to create entablatures, coffered ceilings, facades, domes, and architectural columns such as these pictured, from a California office complex designed by Skidmore, Owings & Merrill. Smooth or textured, white Laserstone may be integrally colored or on-site finished. Dura Art Stone, Fontana, Calif.

356 Grout sealer
An invisible, penetrating solution, Laticrete 190 sealer cures to form a water-repellent coating on grout joints, marble, brick, stone, or porous tile. It will reduce staining and water absorption, and protects against efflorescence in both interior and exterior applications. Laticrete International, Inc., Bethany, Conn.

357 Commercial carpeting
These small- and smaller-chevron designs are part of an extensive modular carpet program built on VersaTech patterning equipment. Squares, either 18 by 18 in. or 24 by 24 in., come in a choice of three backing systems, in both cut- and loop-pile constructions. Lees Commercial Carpet Co., King of Prussia, Pa.

358 Floor topping
A cement-based product, Bonsal is a self-leveling underlayment and topping system, that provides a level finish for ceramic tile, carpet, vinyl tile, and wood floors. It may be applied indoors or out. W. R. Bonsal Co., Charlotte, N. C.

359 Embossed frizze
A linoleum-type decoration manufactured in England using the original copper rollers dating from the 19th century, Linerussa can be used as a frieze as shown here, or to cover entire walls and ceilings. It meets ASTM E-84-80 when hung with appropriate glues and painted. Linerussa comes in a wide range of traditional and contemporary designs. Mile Hi Crown, Inc., Denver.

360 Wood flooring
Custom border treatments for residential and commercial wood floors are offered in five different patterns (Buckingham is pictured). Borders are made of quartered oak, walnut and mahogany, supplied in 12- by 22-in. sections for glue-down installation and on-site finishing. Kentucky Wood Floors, Inc., Louisville, Ky.
361 Acoustical wall panel
A fiberglass-finished panel with a honeycomb composite core, the Design Series 90 traps sound well enough to achieve an NRC rating of 0.70. Edges are protected by a PVC frame; the panel is wrapped in an upholstery-grade heather fabric. The lightweight panel can be mounted by mechanical clips, Velope strips, and magnetic fasteners. Peabody Noise Control, Dublin, Ohio.

362 Textured wall coating
Offered ready-mixed in 15 colors for use as an interior wall finish, Sto Decocote is said to provide the appearance of stone, tile, or brick at substantially lower cost. A synthetic resin dispersion, Decocote is scrub- and impact-resistant, and flexible enough to bridge normal shrinkage cracks. Sto Industries, Inc., Rutland, Vt.

363 Hospitality carpeting
Pictured in the Traceries flame-stitch design, Gematone cut-pile Atrion carpeting offers a custom border program, which includes all of the colors in the ground pattern. The specifier can create a unique curved design using up to 13 colors. Collins & Aikman, Inc., Dalton, Ga.

364 Marble-composite floor
A 3/16-in. thick tile with marble chips set in a white (shown) or colored thermoset matrix, the Renaissance 800 floor is resilient, and said to provide over five times the abrasive wear resistance of vinyl. The square-edged, 12-in. tiles install without grout lines, resist most solvents, and conform to fire codes. Fritz Chemical Co., Dallas.

365 Abuse-resistant walls
Armor Wall is a standard or Fire Shield gypsum-core panel supplied prefinished with a durable, 22-mil-thick vinyl covering. Armor Wall can be part of a demountable partition system, or be applied directly to fixed-wall studs. Gold Bond Building Products, Charlotte, N.C.

366 Seamless wallcovering
An abrasion-resistant wall fabric made of woven acrylic fibers, Bekertex Textiles are supplied as a room-height single roll, up to 130 running ft long. The material is hung horizontally from left to right, as shown, producing a seamless, matched interior. Bekertex is Class A-rated and treated with an antisick finish. Brewer Wallcovering Co., Boston.

367 Solid vinyl flooring
The flooring installation pictured is a custom pattern combining Contract Marble solid vinyl pattern with strips from the Real Wood Collection, of natural wood veneer sealed between clear vinyl. Natural Vinyl Floor Co., Inc., Florence, Ala.

368 Fabric-wrapped ceiling
Part of a line of fabric-finished walls, ceilings, and specialty panels designed to absorb noise within an interior, Silent Expressions embossed ceiling panels come in four standard as well as custom designs covered in plain, nonwoven fabrics. All Silent Expressions finishes meet ASTM E84 and California class 1 flammability standards. USG Interiors, Inc., Chicago.

369 Sheet vinyl flooring
Now offered in 8 shades described as Postmodern pastels, Optima commercial sheet vinyl flooring has a mottled pattern incorporating spots of every color in the line, facilitating the layout of coordinating floor designs. Sheet vinyl works with solid-color Expressions vinyl tile, accent strips, and cove base. Tarkett, Inc., Parsippany, N.J.

370 Porcelain tile
A highly polished tile with a mirrorlike finish, Opaline Keramik is offered in 16 new colors, including black, pure white, blues, pinks, grays, and an unusual green. Imported from Italy, Opaline Keramik comes in a 12-in.-sq size for interior walls and floors. Trans Ceramica Ltd., Elk Grove Village, Ill.

371 Commercial carpeting
Described as a composite design impression reminiscent of Navajo Indian motifs, Desert Art comes in 17 multihued colorways. A dense-textured, cut-pile carpet made of Anso X nylon yarns, Desert Art is suitable for high-traffic commercial installations. J. P. Stevens & Co., Inc., Aberdeen, N. C.

372 Terrazzo pattern vinyl
Supplied in solid-vinyl squares 1/8-in. thick, Terrazzo is said to combine the classic, smooth-surface look of terrazzo with the resilient comfort and installation economies of vinyl tile. The pattern comes in 8 colorways for commercial and institutional applications. Kentile Floors, Inc., Brooklyn, N. Y.
Karastan has woven over 119,000 tufts of yarn into each square yard of this extraordinarily dense new High Spec Series. The yarns used, DuPont ANTRON® and ANTRON® XL nylon, add static-control and soil-resistance to these outstandingly durable styles.

The rich, understated, coordinated colorings and tailored small scale designs work alone or with each other.

To put it more succinctly, never before has so much style been packed into so little space.

Karastan Rug Mills, a Division of Fieldcrest Cannon, Inc.
Finishes
Product literature

373 Vinyl flooring
A color binder contains mounted samples of the company’s line of Flor-Ever commercial sheet vinyl flooring. Besides the six samples, the Architect's Portfolio gives information on seamless installation, technical data, and brief architectural specifications, plus a listing of appropriate areas for resilient flooring. Congoleum Corp., Kearney, N. J.

374 Floor, wall panels
Cast-marble floor tile and wall paneling, Armstone consists of over 90 percent marble aggregate with a proprietary polymer binder, and can be installed over most sound, level surfaces on either floors or walls. A 4-page brochure provides technical data, costs, and installation procedures. ArmStar, Lenoir City, Tenn.

375 Wall coverings
The Architectural Tambourets collection of wall coverings is featured, including veneer and solid woods, metals, laminates, and combinations. Many profiles and species are available, and all materials may be produced with a Class A rating. A preshrunk, heavy-cloth backing adds stability and is said to ease installation. National Products, Inc., Louisville, Ky.

376 Rubber flooring
Lo-Pro studied tiles and stair treads are part of a complete line of resilient rubber-flooring products featured in a 12-page color catalog. Designed with slightly raised rubber discs, the tiles and treads are ideal for areas exposed to light-traffic, and are available in 10 marbled colors and 7 solid colors. R. C. A. Rubber Co., Akron, Ohio.

377 Wool carpeting
The Historical Collection of Wilton carpets, woven in Wilton, England, are 100 percent wool reproductions of documented patterns originally produced centuries ago. Illustrated in a 6-page color brochure, the six patterns are also available in a blend of 80 percent wool, reinforced with 20 percent nylon. Stark Carpet Corp., New York City.

378 Ceiling systems
A 20-page color brochure provides photos and technical data, including drawings, of the LuxaColor line of standard and unique custom ceiling systems, as well as other products such as wall systems and sun loyers. The company’s CADD support systems for custom applications are also featured. Hunter Douglas Architectural Products, Inc., Smyrna, Ga.

379 Grout additive
A styrene butadiene rubber additive for portland cement grouts and mortars, DOW Latex 450 SBR, is featured in a 16-page color brochure, which also provides a "quick course" in various types of ceramic-tile grouts and mortar modifiers, comparing their strengths and weaknesses. Dow Chemical Co., Midland, Mich.

380 Gym flooring
A maple hardwood flooring system is constructed with foam expansion joints designed to resist buckling problems caused by humidity fluctuations. Described in a 12-page color brochure, Sport-Flex comes factory-sanded, with only light sanding required on-site. Horner Flooring Co., Dollar Byme, Mich.

381 Ceramic flooring
A 12-page, color brochure features Fiandre Ceramic Granite, a vitrified porcelain stoneware product said to be 30 percent harder than natural granite and nearly twice as abrasion-resistant. Available in a range of colors, sizes, and surfaces, the tile is frost-proof. Castellanari-Fiandre Ceramiche/ Trans Ceramica Ltd., Elk Grove Village, Ill.

382 Texture coating
An all-purpose latex texture coating, DE-TO-TEX is a ready-mix coating for use on interior or exterior masonry, stucco, concrete block, and primed wood and metal. The product can be brushed, rolled or sprayed, and is tintable to a broad range of colors. Dwayne & Reynolds Co., Div. of Grow Group, Inc., Louisville, Ky.

383 Color card
The paint and coating manufacturer's interior color card includes 30 color chips that are categorized as Custom Classics, top selling colors that remain popular over the years; Standard Colors, an assortment of versatile off-whites and beiges; and Designer Favorites, reflecting the latest trends. Fimnare & Haley, Inc., Ardmore, Pa.

384 Flexible wall covering
A 20-page brochure describes and illustrates features, benefits, and technical data for Plastic In a Roll, a styrene-impregnated flexible wall covering designed specifically to conceal cracks and other wall problems. Background on basic uses, physical properties, installation, and maintenance procedures are included. Flexi-Wall Systems, Liberty, S. C.
385 Wallcovering
Genon RigiWall, a solid PVC sheeting used in health-care centers, is described in a 6-page, full-color brochure. The product is available in a variety of textures and colors, which are shown in the brochure. Also displayed are applications of the system. Specification information is included. DiversiTech General, Hackensack, N. J.

386 Decorative tambours
A 28-page, full-color catalog lists linear, architectural grids, and specific applications, such as doors, panels, ceilings, and walls. Practical applications of the finished product and samples of stock are shown. Also included is a product-availability list, technical data sheets, and specifications. Winona Industries, Inc., Winona, Minn.

387 Epoxy terrazzo
A 4-page catalog outlines the history of terrazzo flooring and illustrates the design versatility of epoxy terrazzo as a durable, lightweight, high-traffic surface. The epoxy product is described as crack-and-stain-resistant; it can be completely installed in four days. H.B. Fuller Co., Palatine, Ill.

388 Architectural coatings
A flyer covering protective coating applications at correctional institutions describes over 50 coatings for interiors and exteriors, which are said to give long-term protection against corrosion and are easy to maintain. A wide choice of colors is available. Thebene Co., Inc., Kansas City, Mo.

389 Painting systems
Coating systems for interior, exterior, and heavy-duty maintenance applications are illustrated in the manufacturer's 1987 Painting Systems Catalog. Detailed tables listing substrates with finishes and suggested coatings for each are included. Sherwin Williams Stores Group, Cleveland.

390 Stair and floor coverings
Detailed descriptions and specifications on marbleized or plain rubber-stair tread and landing tile systems, buff cord and traffic tile, cove bases and risers—all with recommended adhesives—are reviewed in a 16-page, color brochure. Printed color swatches and cross-sections are included. Musson Rubber Co., Akron, Ohio.

391 Linen wall coverings
A full-color brochure features examples of Linewall linen wall coverings. The document provides data on 56 patterns in various colors. Among those included are natural linen textures, boucles, and piece-dyed and yarn-dyed patterns. All of the wall coverings are available in a 39-in. width and are class A fire-rated. Tandem Contract, Inc., Marlboro, N. J.

392 Hardwood flooring
What Hardwood Flooring Was Meant To Be, a color brochure, describes the manufacturer's collections of plank and parquet flooring. Made of five-ply American red oak, the line includes pre-finished laminated wood-floor products. Also covered are tips on floor care and installation. Anderson Hardwood Floors, Clinton, S. C.

393 Acrylic/wood flooring
Illustrated with color installation photos, a specification and design catalog explains the Gronougar natural wood floor, impregnated with acrylic resins and hardened by gamma irradiation. ASTM tests for hardness, flame- and abrasion-resistance are described, and results are given. Applied Radiant Energy Corp., Lynneburg, Va.

394 Interior ornamentation
A brochure explains consultation services for the repair and restoration of architectural terra cotta, cast stone, and interior plaster ornamentation. Services include field inspection of buildings or architectural features, followed by an extensive report with recommendations. Lazoweki Celadon Co., New Lexington, Ohio.

395 Fiber glass wall coverings
FibreWall, a wall system designed for commercial, industrial, and residential interiors, is described in a color brochure. The product is a 100 percent fiberglass yarn woven into a textured fabric. Included is a sample swatch. Also illustrated are various models, which are available painted or unpainted. Regal of Scandinavia Inc., Los Angeles.

396 Wall panels
A color brochure sums up the acoustical qualities and displays practical applications of the manufacturer's wall panels. Photos showing the product being installed are also included. The wall panels come in a natural finish or factory-painted white, but can be field-painted without losing their acoustical properties. Teelam, Inc., Newark, Ohio.
10 Specialties

397 Office-enclosure system
MultiPlan uses easy-to-install portable panels and accordion doors to create enclosures for particular office requirements, such as the copier room shown here. System is offered in a variety of fabrics and textures, on matched panels that present a unified wall appearance. Surfaces are tappable and self-healing; vertical raceways are supplied between panels. Modernfold, Inc., New Castle, Ind.

398 Radius-profile partition
3000 Series movable, fixed, and demountable full-height partitions use thicker (.088-in.) extruded aluminum trim formed in a smooth, radius-edge profile. Trim sections, including door frames, are supplied in stock sizes for on-site fabrication, in either an anodized or durable powder-coat finish. Wilson Partitions, Inc., Los Angeles.

399 Suspended ceiling signage
Made of lightweight FRP, the Suspended Ceiling Module has a molded-in lip that fits over the exposed ceiling tee flange. The sign can be illuminated by diverting the light from existing lay-in fixtures. Units are offered in many colors and graphics options. APCO Graphics, Inc., Atlanta.

400 Washroom partitions
A high-density phenolic partition has been added to this manufacturer’s line of compartments for showers, toilets, and locker areas. Laminate-finished over a solid, 3/4-in.-thick phenolic core, panels are accented by dark brown edges, and are fitted with stainless-steel hardware. Weis/Robart Partitions, Inc., Detroit.

401 Directional carpet squares
Safe.Lite has small shatterproof low-voltage lights, attached to Super Flat ribbon cable, that fit into die-cut carpet modules. Installed in patterns, programmable lighting and graphic-patterned carpet form a floor signage system for safety or directional messages. Safe.Lite can be connected to fire- and smoke-alarm systems. Collins & Aikman, Inc., Dalton, Ga.

402 Washroom accessories
Part of a complete line of modular building-service equipment, washroom accessories are offered in brass, bronze, aluminum, and polished stainless steel. The unit shown here is a polished brass towel dispenser and disposal. American Specialties, Inc., Yonkers, N. Y.

403 Electronic glass panel
An integrated method of controlling visibility, creating privacy, or regulating sunlight into office spaces, electrical Frostlucent panels go from transparent through several degrees of opacity. A clear, liquid-crystal/electrode film laminated directly to the glass panel is controlled with a rheostat to vary light transmission. Harter Corp., Sturgis, Mich.

404 Concrete/steel access floor
Improved Tec-Crete access panel combines the tensile strength of steel with the compressive strength of concrete, providing a solid-feeling office floor with superior acoustical properties. Tec-Crete panels may be specified in a number of finishes. C-Tec, Inc., Grand Rapids, Mich.

405 Exterior sun shading
Enamel-coated Noral Xerotol aluminum blinds, mounted on the outside of the window frame, minimize heat gain and act as miniature light shelves to bounce glare-free daylight deep into interior spaces. Terrylene fiber tapes and cords are attached to the slats, and will not shift in the wind. Installation pictured was designed by Architecture Plus. Baumann, Inc., Wauconda, Ill.

406 Interior signage
Finished in polished aluminum or brass, as well as 35 paint colors, Duo Frame brackets hold frameless plastic inserts at two edges. Frames come in sizes up to 36 in. long and 24 in. high for a complete interior graphics system. Adelphia Graphic Systems, Exton, Pa.

407 Telephone booth
Vogueline Boothette comes with a seat, writing shelf, built-in lighting, and tempered-glass dividers. Accessible to the handicapped, the booths require a minimum of floor space, and can be freestanding or wall-mounted in a number of layouts. Redy Ref Pressed & Welded, Inc., Long Island City, N. Y.

408 Crowd-control barrier
This offset station is from an extensive line of guidance barriers constructed with a decorative polished tubing placed over a sturdy cast-iron base and steel pipe. Guidance ropes are covered in velour, Naugahyde, or COM; optional Clear Coat keeps bright brass finish from tarnishing. Brass Smith, Inc., Denver.
409 Selectively transparent
Offered as an option for full-height permanent or movable partitions, as well as in open-plan office systems, the Translight panel provides a range of visibility—from total to none—in the same pane of glass. A conductive film on the panel responds to electric current to opaque the glass for privacy or light control when desired. Krueger, Inc., Green Bay, Wis.

410 Exterior signage
Theft-resistant aluminum exterior post system mounts sign panels flush with the edge of the frame. Available in Kal-Color bronze or clear anodized finishes, the 3800 sign is said to need no maintenance for at least 20 years under normal conditions. Best Mfg. Co., Montrose, Colo.

411 Static dissipative floor system
Offered in both conductive and dissipative versions, CleanStat vinyl tile is said to control problems caused by electrostatic discharge. The resilient, solid vinyl tile comes in 12- by 12-in. and 36- by 36-in. squares, as well as all access floor panel sizes. Floors are heat-welded with matching or contrasting bonding strips. Floating Floors, Inc., Toledo.

412 Lockers
Metal storage lockers are available in an expanded range of 14 standard colors and two new finishes: high-gloss and Mica Glamour. The high-solids acrylic coating is said to provide superior durability and scratch-resistance. Lyon Metal Products, Inc., Aurora, Ill.

413 Merchandise display
The Axent three-dimensional display module, composed of an end-threaded tube and a tapped spherical node, is now offered in solid wood, finished with mahogany, oak, maple, and walnut stains. Sleeves and nodes are brass. Axent accessories include lighting fixtures, graphic and fabric panels, and adjustable shelves. Unistrut Corp., Wayne, Mich.

414 Bath accessories
Made of solid, glossy Duraplast in 10 bright colors, Italian-made Linea bath fittings include towel bars and rings, toilet seats, an illuminated mirror, shelves, stools, and hanging and ceiling-mounted lamps. Watercolors, Inc., Garrison-on-Hudson, N. Y.

415 Directory boards
Delta Series 2000 directory boards are secured to a wall-mounted inner frame with recessed screws to deter vandalism. There can be as many as 20 tenant-listing inserts; signs accommodate building service information and customized graphics or logos. Dura Architectural Signage, Long Island City, N. Y.

416 Wall protection system
All Acrolytyn corner-, wall-, and door-protection items now have a Class 1 fire rating from UL. Handrail designs meet all code requirements. Products come in 20 additional colors, coordinated with Formica laminates. Construction Specialties, Inc., Muney, Pa.

417 High-density files
The S/Line mobile storage system includes 15 units, from 5-ft-long manually operated files with a 5,000 lb capacity, up to heavy-duty S/5 electric systems of over 200 ft, with load capacities of 2,000 lb per carriage foot. All systems save floor space by eliminating unproductive aisles. Units can be covered with laminate, wood, fabrics or custom graphic end panels. Spacesaver Corp., Fort Atkinson, Wis.

418 Access flooring
Six new patterns, compatible with the colors of most current computer hardware, are offered on Down access floor panels. Panels feature an integral trim edge, machined from the high-pressure laminate surface itself, not added-on. USG Interiors, Inc., Chicago.

419 Freestanding display walls
Described as totally nonprogressive, the Perimeters merchandising wall system needs no attachment to permanent walls, and can be reconfigured and moved easily by store personnel. Panels are connected by Allen-wrench-type fittings; slotted support standards are recessed, and covered by PVC extrusions to match or contrast with the panel face. Both panel sides can be decoratively finished. The Marlite Organization, Dover, Ohio.

420 Contoured rail
The BR-300 wall protector/rail is said to incorporate ergonomic design principles, with a 1 5/8-in. sculptured grasping area curving in to form a groove for the thumb. The 7-in. plastic face of the rail protects the wall surface from cart and equipment damage. Pawling Corp., Pawling, N. Y.
We share your dream of uniting form with function.

More than a decade ago, we founded a company on the universal principle that the fundamental challenge of architecture is the accommodation of space. How to occupy it usefully. Efficiently. And with beauty.

With Spacesaver high-density mobile storage systems, you won’t have to sacrifice your desire to create a structure that is as aesthetically pleasing as it is useful for your building’s storage requirements.

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FULLSPACE not only reflects your concern for space and its use. FULLSPACE offers you a means of improving space utilization. FULLSPACE is storage equipment on wheels. Moveable shelving units roll on steel tracks to allow access to stored materials by means of "floating aisles." Shelving not being used remains compacted in a storage cube. In essence, FULLSPACE eliminates permanent aisles. That’s how space is gained.

Condensed space means condensed costs. A building designed using FULLSPACE is a more compact building. Original construction costs are reduced. And your client's on-going costs—HVAC, lighting and general maintenance—are reduced...for the life of the building. Or look at it another way: Reduce the space...and the cost...of the storage areas by using FULLSPACE. And the money saved can be used for comfort, for aesthetics. Give the space and ambience to its rightful owners—the people who will use that space, not the files and books and tapes and supplies. Either way, FULLSPACE will help you do the job. And LUNDIA will help you do the job.

Whether it's a small storage system for supplies storage or a large FULLSPACE for a library or fileroom...whether it's the affordable luxury of solid wood shelving or the pure function of painted steel shelving...whatever your storage specification needs, LUNDIA offers you and your clients complete turnkey installation of FULLSPACE.

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Write or call 800/258-6342. In Illinois, call 800/232-8844.
We'll send you our guidebook for planning and specifying FULLSPACE.
10 Specialties
Product literature

421 Movable wall systems
An 8-page, color brochure illustrates the Silhouette line of steel wall systems that require no fastening holes, thereby leaving no evidence of its previous location when moved. Electrical raceways in both the tops and bottoms of panels allow for extensive invisible wiring. A modular wall system is also described. Virginia Metal Industries, Inc., Orange, Va.

422 Washroom accessories
A complete line of washroom accessories, covered in a 44-page catalog, includes combination units, towel, toilet tissue, soap dispensers, waste receptacles, napkin/tampon vendors, mirrors, and grab bars. Units range from luxurious brass and bronze accessories to hotel and speciality items. Bradley Corp., Menomonee, Wis.

423 Washroom accessories
The 1988 49-page catalog from this manufacturer of washroom accessories covers a line of stainless-steel accessories, including standard equipment and as well as tile-seat-cover dispensers, shower seats, and assorted towel hooks and bars. A&J Washroom Accessories, Div. of A&J United Machine and Metal Products Corp., New Windsor, N.Y.

424 Ventilation louvers
A 72-page, illustrated catalog gives complete specifications for extruded aluminum and fabricated steel, stationary and operable, horizontal and vertical louvers; special-purpose louvers; and mechanical dampers. Engineering data include sizing and structural information. Airstream Products Div., Penn Ventilator Co., Inc., Philadelphia.

425 Fire-alarm system
The compact Cabinet Alarm is a self-contained unit that mounts inside cabinets housing fire extinguishers, hose, sprinkler shut-offs or similar gear. Product data sheet explains how an alarm horn sounds when the cabinet is opened to discourage unauthorized use of such equipment. Safety Technology International, Inc., Waterford, Mich.

426 Steel lockers
A 12-page, color brochure provides specifications, including color chart, for a line of steel lockers ranging from school and gym units to custom designs for commercial, recreational, and home use. Top-of-the-line models feature sound-deadening door designs aimed at preventing noise pollution. Medart, Inc., Greenwood, Mass.

427 Louvers, ventilators
A new brochure describes fixed and adjustable Extera-Aire louver and gravity ventilators for architectural and industrial applications. Specifications are provided for fixed adjustable louvers, continuous-edge ventilators, and continuous-camshell ventilators. Steelite, Inc., Pittsburgh.

428 Secure storage
A 4-page, color brochure describes a high-security storage system with a computerized keypad console that can control access to as many as 250 storage compartments. Uses include storage of data-processing tapes and disks, payroll records, expensive parts and tools, hospital supplies, cash, and securities. American Locker Security Systems, Inc., Jamestown, N.Y.

429 Extinguisher cabinets
A 12-page brochure provides specifications and other technical details of a line of fire-extinguisher cabinets, including exploded views of various installations to aid in design application. Fire-protection signs and other accessories are also described. J. L. Indus., Bloomington, Minn.

430 Wire partitions
A 6-page, color brochure illustrates and provides technical details, including drawings, on modular woven-wire partitions. Made of rectangular mesh welded into angle frames, the 4-ft. and 5-ft. high panels can be stacked to form any height partition. A variety of hinged and sliding gates are available. Wire Crafters Inc., Louisville, Ky.

431 Wire shelving
Epoxy-coated, steel-rod ventilated shelving for use in closets, utility rooms, hotels, and hospitals is presented in an 8-page brochure complete with color photos, closet layouts and hardware specifications. TRILOC installation is said to save installation time, while providing an attractive, economical shelving system. Schulte Corp., Cincinnati.

432 Architectural signage
A 44-page catalog presents a complete interior and exterior architectural-signage lineup, ranging from cast and fabricated letters to complete corporate-sign systems and building directories. The company's technical support program is explained, and specific details of product offerings are provided. Andco Indus.Corp., Greensboro, N.C.
433 Access floor systems
An 8-page brochure explains the company's Innocrete S-Floor access flooring system for commercial buildings and other raised flooring applications. Complete specifications are provided for the system, which uses reinforced modular slabs supported by adjustable steel pedestals. Innocrete Systems, Inc., Div. of C/S Group, Cranford, N. J.

434 Personal lockers
A line of freestanding personal storage units for changing rooms is described and illustrated in a 4-page brochure, which includes specifications and installation details. Available with either flat or sloping tops, the nonmetallic units' exposed surfaces are thermally fused melamine laminates. Fibersin Industries, Inc., Oconomowoc, Wis.

435 Washroom equipment
A 52-page, color catalog covers the company's complete line of washroom accessories, including its latest Airsoft warm-air dryers. Details shown are line drawings, rough-in dimensions, and recommended mounting heights. Specialized hospital equipment and accessories are also covered. Bobrick Washroom Equipment, Inc., North Hollywood, Calif.

436 Washroom hardware
Catalog 802 is a 340-page volume that includes design information, technical specifications, and color photos of typical installations. A technical data section is cross-referenced to the illustrated catalog section, and a reference section covers architectural/design specifications such as Federal handicapped standards. Tubular Specialties Mfg., Inc., Los Angeles.

437 Sun control
An 8-page, color brochure explains and illustrates two types of exterior shading for windows and glass doors. SunScreen solar screening and ShadeScreen louvered aluminum keep the sun's heat out of air-conditioned rooms and, therefore, are said to improve air-conditioner efficiency and reduce energy costs. Phifer Wire Products, Inc., Tuscaloosa, Ala.

438 Signage
A complete line of cast, fabricated, and cut-out letters, custom plaques and logos, available in aluminum, bronze, and brass, are detailed and illustrated in a 24-page, color catalog. Post and panel, plastic, handicapped and interior signage, as well as cross and caduceus symbols, are also covered. Mills Manufacturing Co., Muskegon, Mich.

439 Tubular display systems
A lightweight modular tubular structural system for displays, exhibits, store fixtures, and furniture is described and illustrated in a 4-page brochure. The same basic components—connector, tube and clip/fastener—can be used to construct a 15-in. cube or an exhibition structure 3 ft. tall. Abstracta Structures, Inc., New York City.

440 Fireplaces
A new catalog describes the Super Energy Mixer fireplace with horizontal-louver design above and below the firebox and heat directors for improved circulation. The unit has a single outside-air intake governed by a barometric damper, a front-controlled chimney damper, and brass-framed glass doors. Proway Inc. (Fireplace Div.), Wisconsin Rapids, Wis.

441 Hearth stove
The Heirloom, a compact, cast-iron boul'chre stove, is said to provide a maximum heating capacity of 60,000 Btu/hr. Model 300 HC is designed to meet the 1986 clean-burning standards set by Oregon, Colorado, and the U. S. EPA. A catalytic combustor and bypass system is optional. Dovre, Inc., Aurora, Ill.

442 Movable partitions
The Raco movable Superwall is a partition system that uses any brand of locally available gypsum board, vinyl-covered or plain, in combination with the company's door frames and partition headers. Quickly installed by any drywall carpenter crew, the system is said to reduce construction time by half. Ragland Manufacturing Co., Inc., Houston.

443 Factory-built fireplaces
A 16-page, color brochure describes a complete line of factory-built, wood-burning, and gas-fired fireplaces. The wood-burning, heat-circulating HCE Series with optional glass doors and brass-trim kits is explained in detail, as are heat-circulating and radiant gas-fired models. Superior Fireplaces Co., Fullerton, Calif.

444 Fabric awnings
A new brochure discusses advances in fabric technology, hardware, and framework systems used in today's awnings for both commercial and residential applications. Fabric characteristics and various frames and styles are covered, as are available graphics including back-lit awnings and canopies. Awning Div., Industrial Fabrics Assn., International, St. Paul, Minn.
445 Recessed projector
The Electramount comes in four sizes to accommodate almost any ceiling-mounted video projector, keeping it concealed overhead until needed. It may be operated in tandem with a motorized video screen, or independently, from anywhere in the room. Draper Shade & Screen Co., Inc., Spiceland, Ind.

446 Medical headwalls
A new standard feature on electrical headwalls for patient care and monitoring equipment, an adjustable track hanger holds accessories such as IV brackets and bottle holders at any desired height. Square D Co., Oshkosh, Wis.

447 Health-care casework
Specialty cabinets for medical and dental offices and other health-care facilities have a built-in appearance achieved with standard, modular components. These European-styled fronts have been added to the Lamco line, and are offered in 150 laminate colors and textures. Howe Furniture Corp., Trumbull, Conn.

448 Range hood
Kitchen range hoods imported from Denmark are now available in fusion-welded solid copper, in the mirror finish shown. Stainless, gloss white, and matte black enameled steel hoods may be ordered; all are equipped with double- or single-unit exhaust fans, lighting, and controls. Abbaka, San Francisco.

449 Kitchen cabinets
Described as a true European frameless style, Concept 180 cabinets are laminate-surfaced inside and out. Doors are edge-banded on four sides, and open a full 180 deg; drawers are fully extendible. Offered in 20 colors, Concept 180 provides extensive customizing options. HomeMark Cabinets, Woodinville, Wash.

450 Checkroom equipment
The Modric garment-storage system with rounded hangers comes in five metal finishes and 350 Spectra colors. The equipment may be wall-, floor-, or ceiling-mounted. Modric Inc., Chicago.

451 Acoustical shell
Constructed of molded fiberglass-reinforced gypsum, the Designer Shell provides various panel shapes to reflect the architectural style of the theater. Said to have excellent acoustical qualities, the shell is inherently fire-resistant, and includes built-in lighting, leveling casters, and access doors. Wenger Corp., Owatonna, Minn.

452 Merchandising display
A Monofinish treatment option, with matched painted grooves and panel face in almond, gray, white, stone, and opal, is offered with the Displaywall display system. A selection of trim strips and inserts includes new colors of teal, pumpernickel, and red, and matte black aluminum. Displaywall coordinates with major laminate colors. The Marlite Organization, USG Interiors, Inc., Dover, Ohio.

453 Built-in appliances
For custom kitchen installations, the Monogram appliance line provides an integrated appearance throughout, with all-white ovens, cooktops, double-door refrigerator, and dishwasher. Trim kits and toe-kick options permit flush, unbroken cabinet lines. General Electric Co., Louisville.

454 Retail fixtures
Made of industrial-gauge wire and steel in bright colors, Design Line offers over 6,000 merchandising components, many mobile on caster bases. Sizes, shapes, and colors can be mixed or matched to create unique product displays. Equipto, Aurora, Ill.

455 Lacquer-finish cabinets
Applied in multiple coats to get a mirrorlike finish, high-gloss lacquer is offered as an option in the Milano rounded-edge cabinet line from Germany. Milano High Gloss is available in anthracite (shown), pewter gray, and white. Almilco Corp., Fairfield, N.J.

456 Custom cabinets
Opus One, a frameless, contemporary style, comes in a variety of door configurations to suit custom kitchen requirements. Cabinets may be ordered in any of over 150 laminate colors and patterns, as well as white oak in different finishes. Crystal Cabinet Works, Princeton, Minn.
457 Spaceframe
Polystand, a structural system designed for showrooms, museums, avant-garde interiors, and exhibition architecture. The product's components integrate into vertical and horizontal modular structures linked with four-way connectors. Les Concepts Polystand Inc., Montreal, Que.

458 Laminated kitchens
A 38-page catalog highlights complete laminated kitchen models offered by the manufacturer. Drawings show details of handles, cabinets, light, plinths, and pelmets. A summary of models listing sizes of all kitchen units is also included. SieMatic Corp., Trevose, Pa.

459 Custom kitchens
A 40-page color brochure shows installation and room-setting photography of custom kitchens and baths, convenience and storage features, and hardware selections. Also included are data on cabinetry construction and materials. Quaker Maid, Div. WCI, Inc., Leesport, Pa.

460 Compact kitchens and baths
Cabinets and vanity styles are highlighted in a 32-page color brochure. Planning principles are discussed, and all construction units, dimension, and trim are illustrated. Descriptions of construction elements, fortune, features, and specifications are included. Kompact Inc., Jeffersonville, Ind.

461 Modular kitchen
A 16-page color brochure displays kitchen models offered by the manufacturer, with complete descriptions. Elevations of all the units are included. Modifications, standard features, and options are listed. The literature also includes color availability, specifications, and warranty data. Dwyer Products Corp., Michigan City, Ind.

462 Walk-in coolers
The energy and space-saving characteristics of urethane-core panels used in refrigerated buildings and coolers are reviewed in a 29-page catalog. Included are construction features, dimensional data, door applications, optional accessories and equipment, floor-construction drawings, and size and capacity listings. Dally Engineered Structures, Bally, Pa.

463 Lab furnishings
A 4-page illustrated folder describes an integral laboratory system. Labsmart is a utility module, composed of self-supporting components that are independent of walls and ceilings. The module can be modified to individual needs. Photos of a variety of laboratory applications are included. Labsmart Inc., Cambridge, Mass.

464 Compact metal kitchens
The line of Davis metal kitchen units is featured in an 8-page color brochure. Descriptions are offered of ranges and ovens, countertops and sinks, refrigerators, wall cabinets, and convenience options. Specifications and a sample of color choices are also included. Davis Products Co., Dowagiac, Mich.

465 Kitchen and bath cabinets
A 16-page color brochure provides specifications, describes and illustrates the manufacturer's cabinetry, kitchen and bath accessories, shelving and and top components. The cabinet models include 13 door styles and finishes ranging from light, medium, or dark brown oak to almond-wood grain melamine laminate. Merillat Industries, Inc., Adrian, Mich.

466 Conference-room equipment
The Weyer Decision Center is the centerpiece of an 8-page brochure. Designed as a conference table system, monitors are ergonomically integrated into the base of the table, freeing the tabletop space. Reading camera, control monitor, and central panel can be moved whenever required. Weyer International, Delray Beach, Fla.

467 Security equipment
Components of Diebold's physical and electronic security equipment systems are outlined in a full-color, 8-page brochure. The manufacturer offers product/system compatibility, simplified purchasing, and service. Specifications, detailed line drawings, and additional literature are available. Diebold Incorporated, Canton, Ohio.

468 Lab work surfaces
A line of laboratory work surfaces is shown in a 12-page catalog. Details on performance, composition, applications, properties, and colors are provided. The literature includes selection criteria such as safety, function, appearance, and economics for fume hoods and work tops. Manville, Mineral Panels Dept., Denver.
Now GE simplifies the whole difficult business of ordering built-in appliances.
Until now, specifying built-in appliances has not always been easy.
Unfortunately, the refrigerator most people seemed to want was only made by one company.

(And if they couldn't give you what you wanted, when you wanted it, you were out of luck.)
A different manufacturer made the most popular cooktop.
And the oven and dishwasher came from two others.

Which often meant you had to deal with at least four different people to order them, check up on delivery, and get service.
Now GE has simplified the whole time-consuming process.
We're introducing a new line of built-in appliances called Monogram.
A line of appliances with some significant advantages over the others.
It includes a 25.7 cu. ft. refrigerator with features that have never previously been available on a built-in.
A double oven with European style and American capacity.
A solid disk and a downdraft induction cooktop.
A conventional and a convection microwave oven.
And an electronic dishwasher that can blend in with the kitchen cabinets better than any other.
But product advances like these are not the only reason for specifying this new line.
Its major virtue is the fact that you only have to deal with one company to get it, and have it serviced.
A company that goes just a little further when it comes to service.
Who else offers anything that can give you as much helpful information as The GE Answer Center service? (Just call 800-626-2000, any hour of the day or night.)
Who else backs their products with a nationwide network of factory-trained service professionals?
No one else.
Only GE.

Monogram.
469 **Office furniture**
The manufacturer's *New Elective Elements* line of office furniture includes rigid panel frames, which can accommodate electrical and communication cables, storage components, and a variety of worksurfaces. Wood veneer or laminate finishes can be specified. Stow & Davis, Grand Rapids, Mich.

470 **Table and chair**
The *Allen* table, originally designed by Frank Lloyd Wright for a private commission in 1908, and the *Robie* chair of 1917 are part of the manufacturer's collection of Wright re-editions. Atelier International, Ltd., Long Island City, N. Y.

471 **Hassock**
A new line of hassocks is intended for office and residential use. The footstools are 16 in. high, and come in round, square, and hexagonal shapes. A variety of upholstery fabrics and leathers can be specified. Dongha Furniture, New York City.

472 **Seating**
Designed by Burkhard Vogttherr, the *Span* line of sofas comes in two-, three-, and four-seater versions. The cushions can be upholstered in fabric or leather, and the exposed metal frame can be specified in black, red, white, and gray. Brayton International Collection, High Point, N. C.

473 **Chair**
The *Hannes* chair, designed by Eliel Saarinen in 1908 for his brother, is made of mahogany with rosewood inlays. The padded seat is upholstered in black leather, and is accented by copper nailheads. International Contract Furnishings, Inc., New York City.

474 **Fabric**
The manufacturer's *Black and White* collection of upholstery fabrics includes the *Baste*, *Calloway*, and *Ellington* patterns. Constructed from a 100 percent cotton pocket weave, the fabrics are reversible. Roger Arlington, Inc., New York City.

475 **Panel fabric**
The *Woven Surfaces* collection of 54- and 66-in.-wide fabrics is designed for use on panel systems. Acrylic-backed and treated with a soil-resistant finish, the fabrics are made from silk, wool, linen, viscose, and polyester blends. 11 patterns and 12 colorways are available. Maharam, Hauppauge, N. Y.

476 **Desk**
A bird's-eye maple veneer desk designed by Pierre Paulin has a walnut inlay top and cast-brass hardware coated with a bronze finish. The desk is part of the manufacturer's line of executive office furniture, which also includes seating and storage units. Baker Furniture, Executive Office Division, Chicago.

477 **Leaded-glass panels**
This studio manufactures custom-designed leaded-glass panels, which can be ordered as part of specially made hardwood doors, screens, and furniture. The wood can be specified with lacquered or laminate finishes. Arthur Stern Studios, Oakland, Calif.

478 **Chair**
Designed by Milanese architect Ettore Sottsass, the *Mandarin* chair has sculptural arms that wrap around the flat seat and curved back. The arms are constructed from rattan, with a wood-veneer finish, and tubular steel, with a glossy paint finish. Knoll International, New York City.

479 **Office furniture**
The *Newhouse Group* of office furniture, which includes pedestal desks, VDT tables, lateral files, credenzas, and adjustable worksurfaces, is compatible with the manufacturer's existing line of systems furniture. Wire- and cable-management devices are contained within the individual components. Herman Miller, Inc., Zeeland, Mich.

480 **Seating**
Designer Bill Stephens's *1800 Series* of seating includes the new side chair (above). The tubular steel frame supports a plywood back and seat, which can be upholstered in a variety of fabrics. Sled-base or rocker versions are available. Domore Corp., Elkhart, Ind.
481 Customized files
The Select Plus program provides metal lateral files, pedestals, and cupboards without drawer fronts to let the designer choose facing materials appropriate to each office installation. Units pictured have fronts of natural wood and Avonite synthetic stone. Storwal International, Inc., Toronto.

482 Cushioned chair
Designed by Edward Alexander and Peter Robinson, the Wallaby management chair has segmented cushions and rounded edges for a more casual yet functional appearance. Harter Corp., Sturgis, Mich.

483 Desk accessories
Murano executive desk accessories are made of smoke or bronze beveled glass set on chrome or brass pedestals. Peter Pepper Products, Inc., Compton, Calif.

484 Window shutters
Arch-shaped interior shutters with movable louvers are available in a number of traditional and contemporary styles to conform to window dimensions. Pinecrest, Inc., Minneapolis.

485 Contract tables
Set on a cylindrical base finished in polished chrome, the Rondo table line offers a selection of tops, shapes, and sizes appropriate for offices, hotels, restaurants, libraries, and other public spaces. Tables come with marble and clear glass tops, as well as the wood-edged laminate shown. Howe Furniture Corp., Trumbull, Conn.

486 Table desk
This cherry-wood desk from the Enlow/Summers collection is described as having a feeling of the Biedermeier era, with diamond-shaped black accent hardware. Dunbar Furniture, Inc., Berne, Ind.

487 Contract fabric

488 Side chair
This slat-back version of the March Chair has a classic Shaker simplicity. Designed by Massimo and Lella Vignelli with David Law, the chair comes with or without arms; finish options include matte black, gray, natural cherry and red mahogany. Hickory Business Furniture, Hickory, N. C.

489 Gallery chair
Created by Ron Carter of Miles/Carter specifically for the use of the guards in the new wing of London’s Tate Gallery, the original Tate chair had an under-seat shelf to hold a lunchbox. It is available in a number of different woods and finishes. Interna Designs, Ltd., Chicago.

490 Rectilinear group
Exel operational and lounge seating has a slim profile, with a single-piece wood frame Steamfolded to create a 50-degree wristbend arm detail. Exel tables have the same angled-edge treatment, with tops in natural or leather-wrapped wood, or stone-like Corian. The Gunlocke Company, Wayland, N. Y.

491 Upholstered seating
Brian Kane’s Belvedere armchair has concealed zippers at each corner that unzip to reveal a skirt in the same contrasting fabric as the Welt detail. The fully zipped-up chair resembles a cube. Metropolitan Furniture Corp., South San Francisco, Calif.

492 Conference table
Series 7000 tables have individually selected starburst and reverse-diamond veneer patterns in walnut, mahogany, and oak. A custom table can be specified from an extensive range of base and top shapes. Dar-Ran Furniture Industries, High Point, N. C.
493 Table
The Hashi High table, designed by Robert Sonneman, consists of a 3/4-
in.-thick glass slab atop arch-shaped stainless-steel tub legs connected to
steel support beams. The base can be specified in a polished or satin
finish and a selection of opaque colors. The table top is available in
clear and colored glass. Brueton Industries, Inc., Springfield
Gardens, N. Y.

494 Seating
The manufacturer’s Concept ‘87
collection includes attachable chairs
and side tables. The chairs, which are
66 in. wide, 23 3/4 in.
depth, and 31 in. high, come
upholstered in a variety of fabrics.
Carolina Seating Co., Div. of U. S.
Furniture Ind., High Point, N. C.

495 Office furniture
Designed by Charles Ghibertelli, the Continuum 1050 series of ganged
seating is part of the
manufacturer’s line of coordinating
office furniture. The chairs have
molded-seat shells and bentwood
armrests/legs. Condi, Div. of
Pacific Furniture Manufacturing
Co., Compton, Calif.

496 Tapestries
Tapestries designed by Irene R. de
Gair are hand-woven from wool in
limited editions of 10. Flat- and
rolled-weave techniques are used to
produce geometric and floral
patterns. Irene R. de Gair
Tapestries, Vienna, Va.

497 Stacking chair
The stackable 6-Chair, intended for
conference rooms and waiting
areas, is constructed from
laminated hardwoods. The curved
seat and back are covered in a
padded upholstery. Rudd
International Corp.,
Washington, D. C.

498 Fabric
Cranbrook, designed in 1929 by
Eliel Saarinen for his own house at
the Cranbrook Academy of Art in
Bloomfield Hills, Mich., is a new
addition to the Archives Collection
of re-edition fabrics. Made from 100
percent viscose, the fabric is
available in five colorways. Unika
Vaeus USA, Div. of International
Contract Furnishings, Inc., New
York City.

499 Awning fabric
A new fabric intended for
commercial awnings is made of
SEF Plus—a pigmented modacrylic
fiber said to have high fade-
resistance and fire-retardant
properties. The fabric is available in
7 solid colors and a variety of
striped and patterned designs. Glen
Raven Mills, Inc., Glen Raven, N. C.

500 Office system
Stackable storage components, door
units, and ClearStory partitions
have been added to the
manufacturer’s IOP Open Office
System line. The prehung door
units come in 30- and 36-in. widths,
and are designed to replace existing
system panels. JG Furniture

501 Chair
The slim, hollow profile of the
Paper Clip chair was designed to
simulate the spring and flexibility of
a paper clip. Dynemtol fabric,
made by Du Pont, was heat-shrunk
around the chair’s frame, seat, and
back to hide welding marks.
Contours Consulting Design Group,
Inc., Bartlett, Ill.

502 Storage cabinets
The manufacturer’s line of storage
cabinets is designed to
accommodate a range of material
from filing to computer-related
equipment. The cabinets are
available in 41 different heights,
ranging from 17 5/8 in. to 79 3/8 in.
Office Specialty, Chicago.

503 Recessed window pocket
A new snap-mounted pocket system
is designed to accommodate pleated
shade headrails and vertical or
horizontal blinds. No screws or
tools are required to attach the
shades or blinds to the recessed
aluminum extrusion. Graber
Industries, Inc., Middleton, Wis.

504 Wall clock
A battery-powered wall clock is part
of the manufacturer’s 750-piece
creation of hardware and
furnishing accessories. The clock is
available in 5 metal finishes and 350
Spectra colors. Modric, Inc.,
Chicago.
505 Chair
A two-position oak armchair, intended for dormitory and library applications, is 23 5/8 in. wide, 26 3/4 in. deep, and 32 1/2 in. high. A narrow version is also available. Buckstaff Co., Oshkosh, Wis.

506 Office furniture
The System R line of office furniture includes overhead storage components, file bins, and a variety of worksurfaces and equipment-support units. Different height and width panels, which accommodate snap-on accessories, are also available. American Seating Co., Grand Rapids, Mich.

507 Shutter
The Boston Shutter is said to reduce 90 percent of conductive heat loss through a typical window. Available in flush and recessed or raised panel versions, the shutters can be specified in white pine, white ash, rock maple, red oak, black cherry, Honduran mahogany, and American black walnut. Boston Shutter & Door, Inc., Keene, N. H.

508 Benches
The Kenwood series is available in one- or two-seater units. Made of oak with a natural or dark finish, the benches can be ordered with upholstered seats. Etched-glass, lattice, and spandrel panel inserts can be specified on high-back models. Plymold Booths, Div. of Foldcraft Co., Kenyon, Minn.

509 Seating
Designed by Peter Buak, the Buak 100 office-seating collection features a variety of size and model chairs with a knee-tilt mechanism and a pneumatic seat-height adjustor. Constructed of aluminum, the seating is available in 6 metallic finishes. Allsteel, Inc., Aurora, Ill.

510 Display cases
The Murano collection of glass display cases features aluminum frames, which can be specified in bronze, chrome, or a selection of lacquer colors. Available in 3 standard sizes and a corner version, the vitrines come with halogen lighting fixtures, and adjustable shelves. Cumberland Furniture, Div. of I. M. Rosen & Co., Inc., Long Island City, N. Y.

511 Fabric
Woven in Australia, Wilderness Park is a new addition to the manufacturer’s line of upholstery and drapery fabrics. The pattern has a wool background, which can be specified in red, green, blue, burgundy, and gray, accentuated by brightly colored rayon stubs. Gretchen Bellinger, Inc., New York City.

512 Reception desk
The Capri reception desk contains double-pedestal drawers and a pull-out computer keyboard shelf. The unit is available in 8 versions and can be specified in oak, walnut, or mahogany. Custom Executive Office, Inc., Palos Park, Ill.

513 Storage cabinets
The Vario Vertical Casegoods line includes bookcases, wardrobes, storage units, and a variety of matching worksurfaces and pedestal drawers. The collection is available in 24 standard wood and lacquer finishes. Mueller Furniture Corp., Grand Rapids, Mich.

514 Children’s furniture
Scamps, a line of children’s furniture, includes a chair with a tubular steel frame (above). The seat and back consist of plastic laminate discs over a substrate core, and the molded polyurethane feet pads are intended to protect against injury. The chair is available in 24 colors. Kinetics Furniture, Rexdale, Ontario.

515 Conference tables
A line of solid cherry conference tables includes 7 shapes and units that can be arranged in U and L configurations. The table tops can be specified with square, radius, or molded edges and the base comes with either raised-panel detailing or four Queen Anne-style legs. Harden Furniture, McConnellsburg, N. Y.

516 Shade
The Window Manager insulation shade is intended to control light, and heat gain or loss. The two-layer shade comes mounted on a 2 1/4-in.-deep track-and-valance unit, which can be specified in tan, white, or bronze. A built-in venting system is said to protect windows from heat build-up. Appropriate Technology Corp., Brattleboro, Vt.
517 Paper-management system
McSort is a wall-hung paper-management system designed for open-plan offices. The heart of the system is a load bar that accommodates a variety of mounted components, including message and diskette sorters, binder bins, correspondence pockets, hanging-folder files, and utility shelves.
Smith Metal Arts, Buffalo, N. Y.

518 Ceramic planters
The Gainey Collection is a line of interior and exterior ceramic cylinders and jars ranging in diameter from 6 to 24 in. The planters come in either matte or gloss finish and are available in 19 standard colors. Custom colors and styles are available by special order. Syracuse Pottery, Syracuse, N. Y.

519 Window shading system
Trackstar window shading systems, designed for greenhouses and solariums, are now available with pre-bent tracks, tubes cut to length at the factory, and pre-installed motors—all refines the manufacturer claims significantly reduce installation time. Castec, North Hollywood, Calif.

520 Computer-integrated desk
A prototypical “desk of the future” features a modular desk top and an integrated computer system built into a box beneath the desk’s work surface. An 11-in.-wide, 1-in.-thick electroluminescent flat-panel display provides visuals. The system includes a matching credenza (right). Haworth, Inc., Holland, Mich.

521 Lounge chair
Hans Wegner’s most recent seating design, dubbed the Ring chair, is constructed around a 40-in.-dia ring of natural ash. The unit features a seat cushion and headrest upholstered in 100 percent linen. Design Selections International, Inc., New York City.

522 Chair
Designed by Borek Sipek, the Janusky chair is, according to the manufacturer, “the archetypal of the common chair... tainted by the emergence of fantastic secrets of unusual colors.” The chair’s seat, back, and front legs are made of natural maple; the back legs are of tubular steel, varnished walnut. SEE, Ltd., New York City.

523 Office-systems furniture
West Germany’s largest office-furniture manufacturer is introducing its RMT panel system to the American market. The steel-based, radius-edged system includes 4-in.-thick acoustical panels, offered in a variety of wood, laminate, fabric, and painted finishes. Integrated desks, storage modules, and electrical raceways are available. Voko U. S., Houston.

524 Armchair
Designed by Franz Romero, the Bugatti leather-upholstered armchair features voluptuous curves meant to evoke furniture of the 1920s and ’30s. The chair has a hardwood frame, a black matte-finish base, and a satin-finish aluminum stretcher. Stendig International, New York City.

525 Folding table
Encore folding tables feature dual-column legs—available in standard polished chrome or custom epoxy colors—that are locked into position by a heavy steel mechanism. Options include a self-leveling locking connector and a suspended corner round extension insert designed to accommodate any room configuration. Fixtures Furniture, Kansas City, Mo.

526 Chair
With its curved arms and back supported by hand-rubbed slats, the manufacturer's new Vienna chair is meant as an updated version of the classic captain’s chair. The chair is constructed of maple and is available in mahogany, oak, walnut, and cherry finishes. Helikon, Taftville, Conn.

527 Upholstery fiber
Cordura is an air-textured nylon upholstery fiber designed for such heavy-duty public-seating applications as offices, airports, theaters, and restaurants. The fiber’s abrasion resistance and burst strength are said to surpass those of spun nylon, polypropylene, cotton, or vinyl. Du Pont Co., Wilmington, Del.

528 Furniture
The Jugendstil collection comprises a variety of tables, chairs, sofas, credenzas, and bookcases inspired by the straight lines and cubic forms of early 20th-century Viennese design. The furniture is available in black, red, or natural mahogany; chairs and sofas may be upholstered in three fabric patterns designed by Josef Hoffmann and Franz Safoith between 1904 and 1907. Geiger International, Atlanta.
529 Fabric
Atlanta is a 44-percent polyester, 34-percent rayon, 22-percent cotton fabric whose nondirectional design is meant to resemble abstract brushwork on canvas. Designated for contract applications, the 51-in. wide fabric is available in 4 colorsways. Stroheim & Romann, New York City.

530 Tables
Venue tables incorporate tubular steel pedestals, a cast-aluminum bugle base, and a range of round, square, rectangular, boat-shaped, and oval tabletops available in dimensions of 24 in. to 28 in. The tables are offered with 16 edge-treatment options. Krueger, Green Bay, Wis.

531 Office-systems furniture
The Adapt Group is a series of office-systems furniture, casework, and seating that combines wood and steel components. The system comprises over 250 sizes of hang-on worksurfaces, in addition to overhead-storage units, lateral files, pedestals, and surface-mounted storage modules. Cole Office Environments, York, Pa.

532 Sideboard
Part of an eclectic collection that the manufacturer recently introduced at the Milan Furniture Fair, Bertrand is a wood and metal sideboard designed by Massimo Iosa-Ghini. The futuristic-looking unit measures 87 in. long, 20 3/4 in. deep, and 35 1/2 in. high. Memphis Milano, Div. of Artemide, Inc., Long Island City, N. Y.

533 Tables
The Kiwara table collection, designed by Paul Haigh, was inspired by the grid-structured proportional system used in traditional Japanese residential architecture. The tables are made of ebonized oak with a cross detail of maple marquetry in the top, or of maple veneer with an ebonized oak detail. High and low tables in three squares and rectangles are available. Conde House, San Francisco.

534 Folding chair
Designed by Michael Kirkpatrick, a new folding chair features a hinge with a cam that connects the movement of the seat to the back. When the seat is lowered, the back automatically locks into place. The unit is made of white ash, finished with clear lacquer. C I Designs, Medford, Mass.

535 Desks and storage units
The Sirru group of modular desks and storage units has been designed to coordinate with the manufacturer's Arris open-plan office system. The components are offered in light oak, medium oak, natural walnut, and mahogany on walnut finishes. Alma Desk Co., High Point, N. C.

536 Lacquer furniture
A line of lacquer furniture for contract and residential applications is said to incorporate techniques practiced in China and Japan. The manufacturer utilizes solid birch and natural lacquer extracted from cashew-nut oil, which is claimed to produce a durable, heat- and liquid-resistant finish. Tansuya Corp., New York City.

537 Lounge seating and tables
Designed by Robert Kleinschmidt, a new series of upper- and middle-management tables and chairs has been developed for applications in employee lounges, clubs, libraries, and reception areas. Components include low-, wing-, and high-back lounges, settees, and sofas; a wood- or glass-topped table with tripod base; an ottoman; and optional bolsters. SunarHauserman, Inc., Cleveland.

538 Vertical window treatment
Rideau is a new window treatment meant, according to the manufacturer, "to combine the softness of draperies with the sleekness of verticals." Initially available in four fabrics, the blind moves along an upper track without the need for chains, weights, or bottom track. Operation is either by hand or by drapery traverse cord. Verosol USA, Inc., Pittsburgh.

539 Armchair and sofa
Designed by Paolo Portoghesi and manufactured in Italy, the Liuto armchair and two-seat sofa have steel frames, polyurethane and dacron upholstery, and bases of cherry or beech. Three- and four-seat sofa models are also available. Poltronova International, Inc., Long Island City, N. Y.

540 Wool fabrics
Frequa and Schirocco are two new 100-percent worsted-wool fabrics designed for contract applications. The 54-in.-wide fabrics meet most local, state, and national fire codes. Arc-Com Fabrics, Inc., Orangeburg, N. Y.
541 Casework
Described by Dewey Hodgdon, Laureate is a new line of transitional mahogany caseworks. The series consists of a rectangular or bow-shaped desk—each with a rounded, convex-molding edge treatment—and a choice of kneepace or storage credenzas. Kimball Office Furniture Co., Jasper, Ind.

542 Table
An epoxy-finished tubular steel frame and a biaxor top characterize Pack, a new rectangular table designed by Anna Anselmi. The table measures 74 1/2 in. wide, 34 1/2 in. deep, and 29 1/2 in. high. Gallant International, Long Island City, N.Y.

543 Interior shutters
Mark V is a new wood shutter featuring an electronic operating mechanism built into the vertical frame that eliminates the need for a center tilt bar. The shutters can be specified for both contract and residential applications, and are available in a choice of wood finishes. Benchmark Shutters, Tampa, Fla.

544 Stool
Named for designer Anna Castelli Ferrier, the Anna stool comes in seat heights of 17 3/4 in., 21 1/2 in., 25 5/8 in., and 29 1/2 in. It is also offered in a high-backed, low model. Four color combinations are available; cushions and cushion covers are optional. Kartell USA, Easley, S.C.

545 Conference table
Part of the manufacturer's new Cove line of caseworks, this conference table has legs formed by angled wood panels. The table was designed by Brian Kimura and is available in cherry, maple, mahogany, oak, and walnut veneers. Modern Mode, Inc., San Leandro, Calif.

546 Table
Designed by Thomas Lamb, the manufacturer's new Embassy tables may be joined end to end for boardroom use or placed separately for executive dining. The tables are available in a variety of wood species, and their 84-in.-sq tops are removable for storage. Nienkamper, Scarborough, Ont.

547 Wall fabrics
Fourteen solid colors have been added to the manufacturer's Regatta collection of vertical-surface fabrics. The 100 percent polyester fabric is also available in 11 heathered tones. The fabric may be specified for the company's Series 8000 and Movable Walls office-systems components. Steelcase Inc., Grand Rapids, Mich.

548 Conference tables
Prism executive conference tables are available in two design motifs: one with a bevel top and apron/stretcher (shown), the other with a square cut. Offered in lengths up to 20 ft., the tables may be ordered in Honduras mahogany, walnut, or white oak, with a variety of finish options. Tuohy Furniture Corp., Chatfield, Minn.

549 Seating
The Metro series of office seating features a contoured, molded back, rubber webbing in the seat, and gas-lift control on all swivel models. The seating is available in executive and secretarial models, side chairs, and the two- or three-seater versions pictured above, with wood or metal frames. Patrician Furniture Company, High Point, N.C.

550 Desks
A new series of desks and lateral files with beveled tops is designed to complement the manufacturer's Roommate and Health Care collections of institutional furniture. The desks and files are clad in red-oak veneers, and their solid-oak drawer fronts are matched on the vertical grain. Coordinating secretarial and side chairs are also available. Adden Furniture, Inc., Lowell, Mass.

551 Seating
Designed by Burkhard Vogtherr, Connex office seating features unusual triangle and stripe detailing which may be specified in any color from the manufacturer's color palette. The chairs are available in two shell finishes—ice gray and dark brown—and a variety of upholstery options. Artex, Div. of Kimball International, Jasper, Ind.

552 Desks
The Tricele Series 800 consists of desks, credenzas, and storage units clad in swirled mahogany veneers and detailed with fluted edges. The caseworks are available in dark and light mahogany finishes. Jasper Desk Co., Jasper, Ind.
The Com System was designed by F. Frascaroli and C. Blondi for C.O.M., Bologna, Italy, and is distributed under license by Krueger.
Furnishings
Product literature

553 Photo murals, images
A 44-page, color catalog displays the range of photographs and other images available to architects, interior designers, and space planners who want to use large photographs in eye-catching ways. The company also offers display transparencies and a variety of specialized services. Photographic Specialties, Inc., Minneapolis, Minn.

554 Designer chairs
The *Bellini* line of office chairs is illustrated in a 4-page, color brochure that includes the *Persona* ergonomically designed working chair, the *Figura* fabric-covered arm chair, and the leather-upholstered *Imago* executive arm chair. Features are described in English, German and French. Vitra Seating, Inc., New York City.

555 Table tops
A 12-page, color catalog illustrates and explains the company’s line of basic table tops for designers, restaurant and hotel owners. Basic finishes, surfaces, edges, and bases are described, as is a line of *Flex-a-shape* table tops that convert from square tables to octagonal and round units. Johnson Industries, Inc., Elgin, Ill.

556 Needlepoint rugs
The *Tregmaid* collection of hand-woven wool-needlepoint rugs offers designers a varied selection of both antique French and English designs. Floral needlepoint and classic Regency all-over patterns highlight the collection, along with a broad assortment of documentary reproductions and eclectic adaptations. Ernest Treganowan, Inc., New York City.

557 Office seating
A 4-page brochure describes a line of ergonomic chairs the maker claims will improve performance, reduce fatigue, absenteeism, and stress while improving posture. Close-ups of various fabric coverings are provided. Top-of-the-line models are equipped with pneumatic-lift/dual nylon casters. Hag USA, Inc., Greensboro, N. C.

558 Office systems
A 6-page, color brochure highlights the company’s broad product line, including casegoods, tables, seating, and systems furniture. Illustrations include some of the latest products and finishes unveiled at NEOCON 19. Information is provided on sales offices, showrooms, and delivery routes. Executive Office Concepts, Compton, Calif.

559 Executive seating
Literature details the *Oxford* chair, crafted from solid classic hardwood with European styling, in a design highlighted by graceful curving lines. Available in more than a dozen varieties of hardwoods including oaks, walnuts, cherries, and mahoganies, the chairs are available with an upholstered back or a slat back. Hardwood House, Inc., Rochester, N. Y.

560 Office seating
An 8-page, illustrated brochure describes a selection of ergonomic chairs, designed and manufactured in Germany, and said to be suitable for any working environment, whether for artists, architects, CRT operators, secretaries, managers, or executives. A fabric swatch and color chart is included. Sam Flax, Inc., New York City.

561 Office-planning guide
The maker of contemporary-office and electronic-support furniture provides assistance and ideas for designing office floor plans in its Electronic Environment guide, which offers 10 basic rules for planning work space with computer equipment. Scale drawings of typical configurations are provided to create floor plans. The Marvel Group, Chicago.

562 Children’s environments
An 8-page, color catalog explains and illustrates company’s complete line of Playscapes, children’s indoor play environments for medical facilities, dental offices, day-care centers, and retail space. Space planning aids, material specifications, and descriptions of customized services are provided for architects. Playscapes, Madison, Wis.

563 Drapery track systems
The *Lo Pro* line of drapery track systems is described in a 16-page catalog. *Lo Pro* systems, designed specifically for the commercial market, include extended durability, innovative and efficient design, and a sleek architectural appearance, the company claims. Installation photographs, specifications, and pricing data are included. Coral of Chicago, Chicago.

564 Self-watering planters
A line of planters and architectural planter boxes includes *Natural Spring*, self-contained, self-watering units that eliminate the need for drip irrigation, drainage, or waterproofing. A 4-page, color brochure illustrates various systems and provides technical details and specifications. Planter Technology, Mountain View, Calif.
565 Stackable chairs
A 20-page, color brochure describes moderate-to-high volume Volta chairs, said to be affordable, stackable, and lightweight, with a tubular frame in chrome, black chrome, or fusion nylon in various colors. Seats come either fully upholstered, or with an exposed wood back in maple, oak, cherry, or mahogany. Rudd International Corp., Washington, D. C.

566 Area rugs
A selection of handcrafted area rugs made by Cellia, Inc., which also designed many of the patterns, is offered in an 8-page brochure. The rugs are created by inlaying pieces to complete an overall design, then, carved to highlight that design. Designs include florals, geometrics, heritage classics, and European and Oriental patterns. Fabrics International, Santa Ana, Calif.

567 Office systems
A 28-page, color brochure entitled SYSTEM 2PLUS presents planning and product data devoted to popular office configurations ranging from executive office to clerical workstations. Products highlighted include the IMPAC 4 4-circuit/8-wire power distribution system. Computer-support products are also illustrated. Panel Concepts, L. P., Santa Ana, Calif.

568 Ergonomic seating
The Charvoz Contract catalog introduces the company's complete line of ergonomic seating. Separate catalogs are available that give details of the Task series, the Advance Seating series, the Side Chair and Executive series. All of the selections are available in an array of designer fabrics and finish options. Charvoz-Caren Corp., Fairfield, N. J.

569 Floor, stair coverings
An 80-page, color catalog features entrance mats, tiles, and carpets. Also, a complete line of stair treads and floor-covering accessories is offered, including chair mats and anti-static floor coverings. Interlocking tiles and drain tiles for lockers, weight rooms or other wet situations are also covered. Pawling Corp., Pawling, N. Y.

570 Bookcases
A line of natural wood finish bookcases is described and pictured in a 6-page, color brochure. Three basic designs include recessed base, traditional base, and finished-back units. The 36-in.-wide units are available in heights from 20- to 84-in., with as many as six adjustable shelves. The Boling Co., Siler City, N. C.

571 Executive furniture
An 8-page brochure describes and illustrates a complete line of traditional wood office furniture, featuring four executive desk designs, secretarial desks, credenzas, file drawers, printer stands, computer keyboard stands, and bookcases with glass doors, all finished in hand-rubbed walnut veneer. The HON Co., Muscatine, Iowa.

572 Wood shutters
A 4-page, color brochure explains and illustrates a line of custom-made wood shutters, available in 33 standard colors, and three different finishes: smooth stain, smooth paint and sandblasted. Half-circle arched shutters, which easily snap out of the frame, are also offered, made of kiln-dried basswood. Nanik Div., Wausau Metals Corp., Wausau, Wis.

573 Architectural casework
An 18-page, general detail and specification guide provides standard dimensions for conventional casework, as well as casework for the handicapped. Comparative tables for cabinet hinges and metal drawer slide selection are provided, along with an illustrated glossary of detail nomenclature. Architectural Woodwork Inst., Arlington, Va.

574 Library furniture
The OakQuest line of library furniture is presented in a 4-page, color brochure. The furniture, including circulation desks, tables and chairs, a book truck, and an atlas case, incorporates oak components with either solid-color or woodgrain laminates to produce high-strength, durable units. Decor Corp., A Doloris Corp. Co., Middleton, Wis.

575 Wool upholstery
The 16-page Wool Library explains why wool is such a desirable fabric for upholstery; design opportunities provided by different fabrics, the natural qualities of pure wool, even a discussion of the source—the sheep—are included, along with testing procedures used on upholstery fabrics. The Wool Institute, Inc., New York City.

576 Seating
The Bitex line of indoor-outdoor furniture is described and illustrated in a 16-page brochure. The all-metal design, involving woven steel mats for the flexible seat and back, meets all fire codes, yet is said to be comfortable and attractive. They are also available in leather and other fabrics. Kubus USA, Inc., New York City.
13 Special Construction

577 Patio enclosure
A 3-in. wall panel is said to offer additional design flexibility and thermal efficiency to the Solera glazed room enclosure, improving its performance in climates with wide temperature fluctuations. The structure has an insulated metal roof, with an R value of 24. Alumax Building Specialties, Mesquite, Tex.

578 Custom atrium
The office-building-entrance enclosure pictured, designed to architectural specifications, has been constructed with Florez ITB extrusions capable of spanning up to 28 ft. The thermally broken glazed enclosure system is capable of several stories, depending on configuration. English Greenhouse Products Corp., Camden, N.J.

579 Parking structure
Bolted together from steel panels and decking, the Redi-Park prefabricated automobile parking structure meets national building codes. Using no concrete, Redi-Park needs minimum foundations; ductility in the structure and epoxy coatings prevent settling damage and rust. Redi Park Systems, Inc., Coquitlan, B.C.

580 On-site office
The Designer relocatable office has 576 sq ft of space, including an office, half-bath, and bar/sink. Recessed fluorescent lighting, electric heat, and air conditioning are standard features. Mobile units are available nationally for rent or purchase as construction offices. Gelco Space, Bala Cynwyd, Pa.

581 Modular ceiling
An open-design ceiling designed to camouflage the suspension grid, Flugolz 2 ft-sq panels have a 30-deg visual cut-off angle that conceals plenum equipment while transmitting light and air to the space below. Made of cellulose resins, the ceiling can be used with either standard or narrow grids. USG Interiors, Inc., Cedar Rapids, Iowa.

582 Pool enclosure
Tube purins and aluminum rafters support both operable and fixed polycarbonate roof panels in Atria's redesigned swimming-pool structure. Offered in standard widths of from 16 to 50 ft, the enclosure can be built any length, in 8-ft increments. Atria, Inc., Div. Super Sky Products, Mequon, Wis.

583 Conservatories
Offered by the American subsidiary of a British manufacturer, conservatories are constructed of aluminum, glass, acrylic, and steel. The system accommodates thermal and mechanical movement with a low-maintenance structure for commercial, residential, and hospitality use. Machin Designs (USA) Inc., Wilton, Conn.

584 Integrated ceiling
The Panorama ceiling has a totally concealed carrier; square or rectangular panels have a smooth, flat surface. The system is offered with integrated light and HVAC features; it can also be hung under, and use existing light fixtures and air diffusers in retrofit applications. Alcan Building Products, Charlotte, N.C.

585 Beam ceiling
An optional component package provides the Parallel Beam Ceiling with integrated fluorescent fixtures in single or double widths, with prismatic, paracube, or beam-shaped lenses. Regressed slots between beams are used for air distribution; acoustical blankets improve sound attenuation. Chicago Metallic Corp., Chicago.

586 Metal ceiling
The ColorTrak integrated ceiling comes in 124 standard panel colors, ranging from soft pastels to deep blues and reds, as well as metallics and wood finishes. Panels can be snapped onto the carrier by fingertip pressure; lighting and air distribution components work with a number of different ceiling profiles. Levolor Lorentzen, Inc., Parsippany, N.J.

587 Tensioned membrane
Soft Shell Structures are offered for standard or custom architectural projects, such as this exhibit shelter. Wind-tunnel tests are performed to determine the best aerodynamic design for large structures. Helios Industries, Inc., Hayward, Calif.

588 Insulated panels
For use on pre-engineered refrigerated buildings, foam-insulated steel panels are provided with a factory-applied stone aggregate exterior. The construction panel comes in lengths for single-tier walls of over 27 ft. Bally Engineered Structures, Bally, Pa.
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Special Construction
Product literature

596 Fiberglass insulation
The Sound Solution is a color brochure describing fiberglass wall-cavity insulations to reduce noise transmission. Compatible with lightweight wood- and steel-frame construction, the system is said to offer optimum acoustical efficiency with little mass. Practical applications are shown in dimensional drawings. Knauf Fiber Glass, Shelbyville, Ind.

597 Floating structures
United McGill offers a full-service approach to providing specialized and floating structures for waterfront areas described in a full-color brochure. Illustrated are some applications, including floating amphitheaters, fishing piers, floating service centers, excursion boat docks, and floating swimming pools. United McGill Corp., Groveport, Ohio.

598 Space-frame ceilings
An 8-page brochure explains Meroform modular systems for space-frame ceilings and displays. The two-component system of nodes and tubes allows designers and contractors to create domes and displays for interior applications. A full line of decorative accessories and a new tubelight are also available. Mero Corp., Hawthorne, N.Y.

599 Grandstands
Featured in a color catalog are the manufacturer's permanent steel grandstands, permanent and transportable angle-frame bleachers, seating and stage units, picnic tables, and park and team benches. Illustrated are studies, specifications, and design test information are also included. Stadiums Unlimited, Inc., Grinnell, Iowa.

600 Solar rooms and greenhouses
A 12-page color brochure spotlights Janco's Solarooms, greenhouses, and accessories for commercial and residential use. Practical applications are shown. A solar-room selection guide gives detailed drawings of the system's roof, and illustrations of gable, side, and greenhouse sections. Janco, Laurel, Md.
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601 Hydraulc lift
Designed to be easy to install, the Swift Lift is a fully OSHA-approved hydraulcally actuated 22-ft-high lift that can transport 300-lb loads at 70 ft/min. The factory-assembled unit is especially useful in transporting material to the mezzanine level in factories. Piuflow Industries, Inc., Milwaukee.

602 Elevator modernization
The TMS 900EC microprocessor dispatch and speed-control system is designed for use with many existing geared or gearless elevators. The modernization equipment is said to significantly improve travel time, ride quality, leveling, and reliability. The TMS 900EC can be reprogrammed to reflect changes in traffic patterns. Armor Elevator Co., Inc., Louisville.

603 Elevator cab
A new elevator car design, Triad meets all nationwide code requirements with substantial reductions in overall cab weight. Among the standard appearance options available is the aluminum Stratus ceiling panel shown here, which incorporates parabolic light diffusers in over 120 colors and metallic finishes. Montgomery Elevator Co., Moline, Ill.

604 Hydraulc elevator controls
Replacing electro-mechanical controls on this maker's Oidraulc low-rise elevators, the DMC-1 computer links call allocation, door controls, speed sensing, and position indicators into a single network capable of exchanging information instantly. The hand-held FAST device shown reads performance data from the on-board computers, facilitating maintenance. Dover Elevator Systems, Inc., Memphis.

605 Freight elevator
A rack-and-pinion lift that meets all current ANSI codes, this Alimak elevator has the drive mounted on the car frame, and does not require a machine room or overhead structural reinforcement. The freight lift is offered as a complete system, or as a basic-component-only package for all load classes. Alimak, Inc., Bridgeport, Conn.

606 Wheelchair lift
The Aligna-Rite feature on the PL-144 Porch Lift provides accurate alignment of the 160-in-long ball screw, and prevents any whipping action caused by stress. The lift has a smooth, solid motion throughout its 12-ft travel. American Stair-Glide Corp., Grandview, Mo.

607 Elevator panel upgrade
For use with new equipment, and as an up-to-standard retrofit for existing elevator controls, overlay panels are made of 20-gauge stainless steel or 18-gauge bronze. Markings are vandal-proof; Braille stampings comply with access codes. Diversified Enterprises, Int., Inc., Grand Ledge, Mich.

608 Shaft smoke seal
Therm-L-Brush II can contain hot smoke and gases for up to one hour at 410 deg, retarding smoke migration through the elevator shaft of high-rise buildings. The special polyamide filaments of the gasket system do not produce noticeable drag on the elevator doors, allowing them to float freely for proper operation. Sealeze Corp., Richmond, Va.

609 Selective vertical conveyor
A continuously operating selective vertical conveyor has a series of carriages attached to a drive chain automatically circulating fiberglass totes to any level in multistory facilities. All payloads maintain an upright orientation. TransLogic Corp., Denver.

610 High-rise elevator controller
Using a 16-bit microprocessor, the Miconic V controller concentrates all elevator group supervisory functions in the car controller, increasing response time significantly. The controller can anticipate future traffic patterns, dispatching and positioning cars for the fastest possible response. Schindler Elevator Corp., Toledo.

611 Glass-walled cab
Cab 130P, a Signature Series hydraulic elevator, comes with a rear wall of 1/2-in. clear laminated safety glass. A number of architectural appearance options are available, including door openings, ceilings, entrances, fixtures, and finishes. Westinghouse Electric Corp., Morristown, N.J.

612 People mover
The project shown is a 1 1/4-mile-long light rail system connecting offices, hotels, and shops in the Las Colinas Urban Center near Dallas. The double-ended C-45 rubber-tired people-mover vehicle holds up to 45 passengers, guided along the running surface by an electronic beam. Westinghouse Electric Corp., Transportation Systems and Support Div., Pittsburgh.
With over 11,000,000 appearance variations, TRIAD makes Montgomery's Standards of Excellence...your standards of choice.

- Lightweight
- High-strength
- Fully tested
- ANSI Code—total compliance
- Hundreds of wall colors & patterns
- Varied handrail designs, metals and finishes
- Made with pride in the United States.

A Montgomery exclusive. A totally new concept in passenger car ceilings. The panelized aluminum linear design offers over 120 colors and metallic finishes. Semi-specular parabolic light diffusers provide exceptional light transmission.

STRATUS...another standard of choice... patents pending...exclusively from Montgomery.

Circle 1086 on inquiry card
Conveying Systems
Product literature

613 Pneumatic transport system
Custom-engineered, vacuum-operated conveying systems that collect trash and soiled linen in health-care and hotel facilities are described in a 4-page design catalog. A schematic drawing outlines major vertical and lateral components of a typical system. Trans-Vac Systems, Contractors, Engineers International, Inc., Georgetown, Tex.

614 Elevator-signal fixtures
Vector elevator-control panels, call signals, and hall push-buttons, designed with human engineering principles, are part of the graphically integrated Magtech system. A 6-page folder illustrates stainless-steel fixtures, including an illuminated car station with a dot-matrix position indicator. Montgomery Elevator Co., Moline, Ill.

615 Wheelchair lifts
A 4-page catalog illustrates how the Liberty variable inclined stairway lift can overcome architectural barriers in homes and public buildings. The Eagle lift, a new rail-mounted lift for curved or straight staircases, is included. The Cheney Co., New Berlin, Wis.

616 Elevator conversion kits
A color brochure, Seven things you need to know about elevator modernization, describes problems common to older elevators—sticky doors, slow-moving cars, uneven leveling at stops—and suggests cost-efficient equipment kits to solve them. Dover Elevator Systems, Memphis, Tenn.

617 Passenger conveying systems
Speedwalk and Speedramp belt-driven systems for crowd control and pedestrian movement are explained in a 4-page color brochure illustrated with on-site photos and detail drawings. Horizontal and inclined installations can accommodate a variety of wheeled traffic, such as shopping carts. Westmont Indus., Santa Fe Springs, Calif.

618 Dumbwaiters
An 8-page catalog describes parcel lifts and dumbwaiters designed for a number of light- and heavy-duty materials-handling needs in hospitals, hotels, residences, offices, and manufacturing plants. Microprocessor controls, said to facilitate installation and improve lift performance, are explained. Sedgwick Lifts, Inc., Poughkeepsie, N.Y.

619 Materials handling
Vertical conveyors that transport unit loads to any number of levels for storage and retrieval are explained in a new 29-page brochure. Installations guaranteed to meet all code requirements are illustrated, including a completely automated system. Pfleiderer Industries, Inc., Milwaukee.

620 Residential elevators
An 8-page, architectural catalog describes elevators and stairway lifts primarily for residential use, including Elevette cantilevered and in-shaft elevators, and StairLift and Inclinator lifts; all equipment meets ANSI/ASME A 17.1 Part V. Color options and installation details are illustrated. Inclinator Co. of America, Harrisburg, Pa.

621 Elevator design
A 26-page, architectural catalog covers all Otis products: hydraulic, geared, and gearless elevators; escalators; flat and inclined moving walks; cars; elevator entrances; fixtures; and design and maintenance services. Color photos illustrate recent installations; detail drawings display dimensional and structural material. Otis Elevator Co., Hartford, Conn.

622 Powered-access systems
Custom-designed systems for exterior maintenance and construction are shown in a 4-page catalog. Davit and socket, roof carriage, and rail-mounted equipment, such as the Sky Stage modular workstation and Alpha hoist, is included. Sky Climber, Inc., Stone Mountain, Ga.

623 Powered scaffolds
Literature on high-rise powered platforms for exterior maintenance stresses the 30-year safety record of German-made Mannesmann equipment. Trackless, free-laid, and anchored rail configurations are detailed; American architects, clients, and contractors are named on a reference list. Verta Corp., Eden Prairie, Minn.

624 Escalator design
An architect/contractor planning guide for the Moduline 200 escalator includes an accurate overlay with side and end elevations, and plan views for balustrades, said to save time and eliminate repetitive work in the preparation of preliminary building plans. Westinghouse Elevator Co., Morristown, N.J.
You can be sure...

it's more than a beautiful elevator.

When you specify a Westinghouse hydraulic elevator for your low-rise building, you'll get performance and value, as well as flexibility in your selection of architectural features.

The Signature™ Series, with its wide selection of cabs and fixtures, allows you to select a unique look to complement any building's decor.

The Fastrack™ Series—when delivery is critical—is practical yet handsome. Delivered to you complete, its limited options don't economize on looks.

And our hospital/service applications are available with both Fastrack and Signature Series. They combine the right prescription of features for passenger and service use in a single car.

Use this coupon to order a free Westinghouse hydraulic elevator specification. You'll see for yourself how easy it is to get performance, value and flexibility in almost any low-rise application.

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Name __________________________

Title __________________________

Company _______________________

Address ________________________

City, State, Zip __________________

Phone ( ) ______________________

Return coupon to: Marketing Department, Westinghouse Elevator Company, 20 Whippany Road, CN 1935, Morristown, NJ 07960-1935.

Circle 1087 on inquiry card
625 Double-bowl sink
The unusual bowl configuration of the Sunline kitchen sink was designed by Luigi Colani to provide maximum working area in a small space. The sink takes single- or double-handle faucets; optional accessories include a deck-mounted knob for drain release, colander tray, and wooden cutting board. Franke, Inc., Hatfield, Pa.

626 Bath spout
The Souri's tub filler sends a sheet of water 6 in. wide into the bath. Because the spout is mounted on the wall 40 in. above the bottom of the tub, a bather can sit back of the flow, for a behind-the-waterfall effect. Souri's is available in various chrome, nickel, brass, and gold finishes. Kohler Co., Kohler, Wis.

627 Kitchen faucet
The head of the Ladylux kitchen sink deck faucet clicks off of the stem to become a flexible spray. Accessories include a water-purifying filter, a brush spray for china, and a scraper spray for pots and pans. The Ladylux faucet comes in black, white, bone, and two-color combinations including white/red. Grohe America, Inc., Wood Dale, Ill.

628 Modular air cleaner
The Tectronic self-contained electrostatic air cleaner replaces a 2- by 2- or 2- by 4-ft ceiling panel, fitting flush with the surrounding tiles. It cleans and recirculates conditioned air over 360 deg, trapping pollutants on a washable collecting cell. There is an optional remote on/off control. Tectronic Products Co., Inc., East Syracuse, N. Y.

629 Tub spout
All Chateau faucets, such as the deck-mounted Roman tub filler set pictured, come with a lifetime warranty against leaks and drips. Finish options include polished brass, with wood inserts on the handles. Moen Group, Stanadyne, Inc., Elyria, Ohio.

630 Water fountains
Pedestal fountains in the Fashion Plate Collection come in bright colors like "Scarlet O'Hara" red and "Fountainblue" as well as polished brass. Wall-mounted water coolers are also available in the 7-color range. Haws Drinking Faucet Co., Berkeley, Calif.

631 Radiant floor heating
The Infloor radiant heating system uses Gyp-Crete 2000 gypsum-based pourable cement as a thin (1/4-in.) thermal mass that will not crick or shrink away from contact with the polybutylene hot-water tubes. The zone control (picture) is placed within a 6-in. wall cavity; nothing interferes with furniture placement. Infloor Inc., Gyp-Crete Corp., Hamel, Minn.

632 Stainless-steel sink
Larger-size Gourmet kitchen sink measures 21 by 18 5/8 by 8 in., with an off-center, space-saving drain. It comes with a smaller food-preparation sink, and is shown with an instant hot-water dispenser. Steel has a scratch-resistant, reflective satin finish. Elkay Mfg. Co., Oak Brook, Ill.

633 Water closet
The one-piece china Economiser toilet is a flushometer/tank unit, using air pressure within the tank to activate a turbo-charge flushing action requiring only 6 quarts of water. Water costs and sewage-rate charges are substantially reduced, making Economiser toilets especially useful in hotel and apartment projects. Crane Plumbing, Evanston, Ill.

634 Pressure-balancing valve
The Aquatrol is designed for shallow-wall construction, with all parts easily accessible for on-site maintenance. The single-lever handle accommodates the natural turning motion of the bather's hand; limit stops prevent excessive handle rotation. Leonard Valve Co., Cranston, R. I.

635 Viennese replica
A replica of the 1895 Viennese original, the Nautlius II toilet reflects some of the artistic enthusiasm that accompanied widespread installation of indoor plumbing towards the end of the 19th century. Manufactured in Austria, the toilet meets all American code and installation requirements. Reproduction lavatories, shelves, and mirrors are also offered. Laufen Sanitaryware, Stamford, Conn.

636 Single-control faucet
Swiss-made by KWC, Neodomo faucet has adjustments that let the user limit temperature and water flow; the spray head pulls out on a 4-ft retractable wand to fill pails or spray-rinse. Western States Mfg. Corp., Santa Ana, Calif.
637 Water-saving shower
Shower head has a special flow regulator that adjusts to differing line pressures, supplying a consistent, full spray at less than 3 gal./min. The competitively priced line includes a dual-function shower, with an adjustable spray and massage action. Brass Craft Mfg. Co., Southfield, Mich.

638 Tub set
Italian in design and manufacture, Magia faucets and fittings offer a variety of knob detail and finish combinations. Pictured is a Roman three-hole deck-mounted set in black with gold ring handles; fixtures are also available in white, red, gold, and chrome, with marble, quartz, and chrome rings. Watercolors, Garrison-on-Hudson, N. Y.

639 Air cleaner
The Smokemaster X-500 is a 2-ft-sq unit that mounts flush with suspended ceiling panels, removing 96 percent of air contaminants from private offices, conference rooms, or for spot air cleaning above individual work stations. The unit has three operating speeds. Air Quality Engineering, Inc., Minneapolis.

640 Decorative faucet
Deco Series #2 fittings come in three handle side and top profiles, with a choice of 13 decorative finishes. Faucets and spouts are solid brass, and feature quarter-turn washerless valves. Sepeco Industries, Inc., Brooklyn, N. Y.

641 Residential air cleaner
A solid-state power-supply and a 20-in. size, matched to hvac return-air openings, are product improvements offered by F50 electronic whole-house air cleaners. Research is said to show that air cleaners effectively remove radon decay products from indoor air, and extend the useful life of heat-pump coils. Honeywell Inc., Golden Valley, Minn.

642 Designed fixtures
Part of an expanded collection of Artist Edition bath fixtures, some with coordinating wallpapers, Northern Lights by ceramist William Mead has luminescent pastel frosting on a lavatory and toilet in Thunder Grey. Ceramic glaze design is hand-applied to the fixture before firing. Kohler Co., Kohler, Wis.

643 Onyx lavatory
Set on an H-shaped stainless-steel base, the #44 bevel-front pedestal lavatory is made of brown onyx. A hexagonal bowl of gold-coated porcelain is matched with a basin set of chrome with gold-plated inserts. Sherle Wagner International, Inc., New York City.

644 Whirlpool bath
A two-person contoured tub, the Aura has two Water Rainbow sheet-type spouts: one fills the tub, and the other is plumbed into the whirlpool system. Smoked acrylic covers with interior mirrors conceal the controls and a soap compartment. Jacuzzi Whirlpool Bath, Walnut Creek, Calif.

645 Recessed sprinklers
The Starmist is described as less expensive and easier to install than conventional recessed sprinklers, allowing for up to an inch of adjustment after the ceiling is in place. Sprinklers are UL listed and FM approved for hazard groups 1 and 2. Star Sprinkler Corp., Milwaukee.

646 Fire sprinklers
Offered in models for both commercial and residential applications, the Horizon sprinkler head comes in chrome, stainless steel, brass, white, off-white, and black chrome finishes, with a matching, adjustable escutcheon ring. All models qualify for use as institutional sprinklers. The Viking Corp., Hastings, Mich.

647 Drinking fountain
Extending 20 in. from the wall for easier wheelchair access, the rounded 2f-WCRP-C fountain has a contoured push bar that operates the water flow at a light touch. Fountain, back plate, and grille are made of 18-gauge stainless steel. Western Drinking Fountains, Sub. Sunroc Corp., San Leandro, Calif.

648 Pedestal lavatory
The Alida vitreous china lavatory sits on a space-saving pedestal base. Fixture comes drilled for either a 4-in. centerset or 8-in. combination fitting, and is offered in a range of colors, as well as white. Briggs Plumbingware, Inc., Tampa, Fla.
649 Multibowl lavatory
Made of cultured marble, vanity tops may be custom-ordered in multiple-bowl configurations, in lengths up to 144 in. Tops have a no-drip front edge and integral backsplash; bowl style, deck treatment, soap dishes, trim, and color and finish options are included in the custom program. Romasco Corp., Morgantown, N. C.

650 Gas furnace
The Plus 90 condensing gas furnace has a microprocessor control that interacts with a two-stage gas valve and two electronically commutated motors to achieve a 94-percent fuel-efficiency rating. The sealed combustion chamber uses outside air, reducing noise and extending the life of the furnace. Carrier North American Operations, Indianapolis.

651 Sensor-operated faucet
Streamlined No-Touch metering faucet has an infrared sensor that detects hands within its preset range, and automatically starts a flow of temperature-controlled water, which stops as soon as the user's hands are withdrawn. Bradley Corp., Menomonee Falls, Wis.

652 VAV package
Available in 8 capacities, compact PVW air-conditioning units are suggested for floor-by-floor installation in commercial buildings, hospitals, and institutions. Packaged configuration is said to offer significant savings from reduced labor costs and flexible, multiple-tenant applications. Units may heat as well as condition air. Bohn Heat Transfer, Wickes Mfg. Co., Danville, Ill.

653 Ventilation fans
T-Series window, wall, panel, and roof fans come in 4 capacity ranges to provide ventilation for commercial, industrial, and residential structures. Fans feature reversible, three-speed operation, and are said to be easy to install and maintain. Vent-Axia, Inc., Woburn, Mass.

654 Drinking fountain
Designed to be accessible and easy to use, stainless-steel OVL water coolers and drinking fountains have an oval receptor and 180-deg push-bar actuator. Halsey Taylor Div., Household International, Freeport, Ill.

655 Wall-mounted gas boiler
Model AHE cast-iron combustion boiler vents directly outside, with no chimney required; its compact size and quiet operation permit installation in any room. It is intended for individual metering in apartments and condominiums, as well as for use in room additions. Weil-McLain, Michigan City, Ind.

656 Pedestal sink
China Antica sink measures 36 by 22 in., with a 6-in. rim around the oblong basin. Shown here in tones of blue, the Antica is also offered in white, gray and other pastel colors, and several two-tone shades. Porcher, Inc., Chicago.

657 Hotel energy management
Running off existing AC lines, System 55/110 economically controls hotel-room temperatures as a function of occupancy, automatically turning HVAC equipment on when a guest checks out. It also constantly monitors guest-room smoke alarms, annunciating alarms or malfunctions by room number, in a central location. Robertshaw Controls Co., Las Vegas, Nev.

658 High-rise sprinklers
FireMaster decorative bulb-type sprinklers have 0-ring seals that actually fit tighter as the static pressure of a system increases on the higher floors of buildings. Color-coded for different temperature ratings, sprinklers have special ejection springs to assure positive release of water flow. Firematic Sprinkler Devices, Inc., Shrewsbury, Mass.

659 Split-system air conditioner
Described as an easy-to-install, high-performance unit, the Tempstar 712AC offers efficient scroll-type compressors on several air conditioners of from 2- to 5-ton capacities. Other product improvements include cathodic E-coat paint on cabinets and coils. Heil Quaker Corp., La Vergne, Tenn.

660 Water-source heat pumps
Designed for multiroom commercial buildings, which often require both heating and cooling at the same time, self-contained EnerCon water-source heat pumps have a reversing valve that regulates the flow of hot and cold refrigerant gas. Heat energy is never wasted as long as it is needed in the building. American Air Filter Co., Louisville.
Foundation of the well-dressed bath—a Kohler console table—draped in stone, brass and vitrified clay. The console shown here in black marble with IV Georges Brass™ faucet, matching legs and basin in Tender™ Grey. The wall mirror, one in a line of coordinating bath accessories. To look into any part of the Kohler collection, see your nearest Kohler distributor or write Kohler Co., Department RAD, Kohler, Wisconsin 53044.

Circle 1091 on inquiry card
661 Institutional sinks
A 15-page, illustrated catalog reviews stainless steel products for hospitals and other institutions. The line includes wall-mounted scrub-up sinks, surgeon’s lavatory with instrument trays, lavatories, floor and wall-service sinks, multiple-station urinals, faucets, and fittings. Performance specs are included. Elkay Manufacturing Co., Oak Brook, Ill.

662 Cooling system
Tri-Ad cooling, a three-phase cooling method using exhaust fans, louvers, an evaporation roof-cooling system, and internal circulating fans, is described in a 4-page brochure. Case histories are highlighted. Dimensional diagrams and information on installation, warranty, laboratory testing, and specifications are also included. Solar Shield, Inc., Columbia, S.C.

663 Fire protection
A fire-protection product manufacturer offers inspection and testing services for all types of alarm and detection, sprinkler, and special-hazards systems. A 12-page, color booklet describes the company’s retrofit operation, which provides complete design, installation, and finishing, including painting, papering, and softfit work. Grinnell Corp., Exeter, N.H.

664 Shower and bath valves
An illustrated brochure contains descriptions of the manufacturer’s anti-scald balanced pressure shower and bath valves. The ceramic product has an adjustable temperature-limit stop that controls the handle to avoid hot and cold extremes. Photos and a diagram of operational characteristics are included. Speakman Co., Wilmington, Del.

665 Computer-room protection
An 8-page, color brochure features a voice alarm for Halon 1301 fire-suppression systems. Intended for use in computer-room areas where mechanical sounds would make a conventional alarm confusing, the voice alarm is activated when the fire detector goes into alarm. A working diagram and photos are included. Ansul Fire Protection, Marinette, Wis.

666 Direct digital control
A 2-color, 32-page, illustrated catalog highlights the manufacturer’s factory-installed direct digital control system on central-station air handlers. Details are provided on control strategy, control system sequences, applications, module menu, hardware options, installation, and mechanical specifications. The Trane Co., La Crosse, Wis.

667 Temperature controls
Electronic proportional temperature controls are explained in a capabilities brochure. The units provide digital temperature readout indication of hot water, chilled water, space and duct temperature, discharge air, mixed air, and return air. The controller has a number of commercial applications. Barber Colman Co., Loves Park, Ill.

668 Drinking fountains
A complete line of pedestal, wall-mounted, deck, bracket, and outdoor fountains are displayed in a 4-page catalog. Remote electric chillers that can convert the manufacturer’s wall or deck fountain into a water cooler are also illustrated. A palette of colors is included. Stern-Williams Co., Inc., Shawnee-Mission, Kansas.

669 Cooling towers
The Series 3000 cooling towers for industrial cooling, air conditioning, and refrigeration are reviewed in a 15-page manual. Information includes construction details, selection charts, engineering, specification and installation data, support services, and optional accessories. Photos and diagrams are also featured. Baltimore Aircoil Co., Baltimore.

670 Engineering handbook
Lennox has issued a loose-leaf, engineering handbook that also includes new and revised bulletins. Topics covered are heating units, cooling units, combination units, heat pumps, accessories, and miscellaneous engineering data. Dimensional drawings, cross-sections and product drawings accompany the text. Lennox Industries Inc., Dallas.

671 Fire-suppression systems
A capabilities folder explains how Halon 1301 fire-extinguishing systems are custom-designed for the specific hazards of communications facilities. Colorless, odorless, and non-conductive, halon is described as the agent of choice for protecting digital switches and fiber-optic equipment. Walter Kidde, Division of Kidde Inc., Wake Forest, N.C.

672 Insulation
A 24-page, color guide describes Fiberglas glass fiber and asbestos-free calcium silicate insulations for mechanical systems, including pipes, flanges, and heated equipment. The brochure features the company’s product line and data on performance, availability, and applications. Owens-Corning Fiberglas Corp., Toledo, Ohio
673 Low-tension connection
A low-profile, large-capacity flush fitting has special inserts that permit instant disconnection of data and communications cabling, just as easily as unplugging a power cord. The low-tension disconnect mode lets abandoned fittings remain energized for future use. Raceway Components, Inc., Nutley, N. J.

674 Picture light
A die-cast, compact fixture, this picture light takes MR-16 lamps from 20 to 75 watts in all beam spreads. A self-locking cylindrical swivel adjusts the light at any angle to illuminate vertical surfaces from a shelf or desk top. Light comes in black, white, and silver aluminum paint finishes. Accessories include lenses and filters. Lighting Services, Inc., New York City.

675 Compact floodlight
The PF-400 Powerflood takes HID lamps from 200 to 400 watts, and provides a number of light-distribution patterns. The Powerflood can be mounted vertically or horizontally; a quick-aiming sight molded into the dark bronze aluminum housing simplifies direction of the light beam. General Electric, Lighting Systems, Hendersonville, N. C.

676 Illuminated ceiling
A barrel-vault luminous skylight can be assembled on-site of cored, prefabricated aluminum framing members and precut acrylic diffusers, to accommodate opening widths of 6, 8, 10, and 12 ft. Custom sizes, arcs, and framing colors are available. Forms + Surfaces, Inc., Santa Barbara, Calif.

677 Lighting pilaster
Designed by Louis Bromante, illuminated Paris pilaster serves as both an architectural element and a source of light. Installation shown measures 12-ft-high, 20-in-wide, and 11-in-deep, and has a sandstone finish; custom sizes and finishes are available. Sironos, Inc., New York City.

678 Outdoor fixture
Offered in matching components for roadway and area illumination, bollards, Rail-Lite path lighting and poles, Softform fixtures have custom-looking radiused vertical edges. Latch-fastened semispecular reflector is hinged for bulb access. Sterner Lighting Systems, Winsted, Minn.

679 Communications system
Microprocessor-based telephone is described as six communications systems in a single package. Intended for schools and institutions, the Telescenter IV provides telephone service; paging and emergency call; intercom system with 16 talk links; a time signal system; and a music- or program-distribution system. Rauland-Borg Corp., Chicago.

680 Italian design
A floor lamp standing 71-in-high, Wagneriane was designed by Lella and Massimo Vignelli for Casigliani with a white marble pedestal and a reflector of green antiqued copper. Light source is a dimmer-controlled halogen bulb. Series includes a table lamp and centerpiece. Lighting Associates, Inc., New York City.

681 Wall sconce
Designed by Sandy Littman, the Alexandra sconce is shown here in satin-finished aluminum with pink sandblasted glass; fixtures take either incandescent or fluorescent lamps. The Alexandra line includes up- and down-lightes and wall brackets. American Glass Light Co., New York City.

682 Lighting control
A preset control to provide architectural lighting effects in residences or small offices, the Scenist dims four groups of lights into four independent lighting compositions. Available in 1600 and 2400 wattages, the unit fits into a standard four-gang wallbox. Digital control is easy to operate and program. Lightolier, Secaucus, N. J.

683 Undercupt wiring
Described as the broadest range of telecommunications products offered, new Flexway devices are fully compatible with existing power and data systems. System includes updated versions of existing products and such introductions as field termination devices for telecommunications and 2-pair cable. Burrey Corp., Norwalk, Conn.

684 Ornamental light posts
Made of cast iron in historically accurate or custom designs, lighting posts accommodate incandescent, mercury vapor, metal halide, and hps light sources. Installation pictured is a standard created for Galter Plaza in St. Paul, Minn., standing over 7-ft-high. Spring City Electrical Mfg. Co., Spring City, Pa.
685 Fluorescent fixture
Stepped-profile Series 12 pendant luminaire provides high levels of evenly distributed light from T8 or biax lamps; fixture comes in sizes from 3- to 10-ft long. The low-glare parabolic louver is finished in specular aluminum or gold. Neo-Ray Lighting Products, Inc., Brooklyn, N. Y.

686 Granite-tone pendant
Designed by Robert Sonneman for the Yubi Kaaba lighting series, the Tojo pendant is a granite-tone fixture, with a frosted white-glass diffuser suspended by cables from a red-trimmed stem. Light source is two Q150CL/MC halogen bulbs. George Kovacs Lighting, Inc., New York City.

687 Spaceframe lighting
The Meroform modular ceiling and display system is now available with low-voltage tubelight components. These lighting fixtures form part of the tube-and-node assembly itself, outlining the geometric forms of the ceiling with bright spots of light. Mero Corp., Hawthorne, N. Y.

688 Worksurface power source
Designed to manage and conceal cabling on the worksurface, the Power-Pac is a 5-in. deep metal channel that can be panel-hung, or mounted at the rear of the desk. It provides data, telephone, coaxial, and electrical power connections in units up to 6-ft long; Power-Pac can be connected in series between workstations. Westinghouse Furniture Systems, Grand Rapids, Mich.

689 Video entry system
The Aiphone MC Video entry security system works with an intercom to provide remote screening of visitors. A small CCD camera, set behind a plastic window in the outside station, turns on when the doorbell is pressed. The interior monitor has a 4-in. screen, and a handset for the intercom. Aiphone Corp., Bellevue, Wash.

690 Low-voltage lighting
Low-voltage bulbs set in plastic tubes only 1/2-in. wide, Startubes outline or highlight architectural forms or create designs with light. Snapped into a parabolic-shaped channel, Startube can be used for safety lighting of steps and handrails. Starfire Lighting, Inc., Jersey City, N. J.

691 Service access
The AF Series Service Module is said to lower activation costs of power, data, and communications cables in raised flooring. Triple-access box separates power supply from voice and data cables, and accepts other power devices such as duplex receptacles, ground-fault interrupters, and quick-connect low-tension service. Walker Div., Butler Mfg. Co., Parkersburg, W. V.

692 Halogen accent light
The Designer 16 55- and 75-watt halogen bulb is an economical replacement for the 12-volt MR16 bulb widely used in accent and merchandising applications, as it does not need a transformer to run directly off line current. Bulb has a molded ceramic casing, and comes in narrow spot or flood beam spreads. GTE Products Corp., Danvers, Mass.

693 Prismatic glass luminaire
Trimmed in solid brass, the Liberty luminaire provides lighting sparkle through its prismatic glass shade. Model is available as a sconce, as well as the pendant shown. Liberty Series lights are suggested for restaurants, stores, and other commercial applications. Holophane Div., Manville, Newark, Ohio.

694 Access security
Described as a start-up system with expansion potential, the LEF 416 is a modular stand-alone access security system that can manage up to four card readers, both magnetic stripe or keypad-controlled. There is a narrow reader for installation in any standard aluminum mullion. LeFebvre, Cedar Rapids, Iowa.

695 Sconce
The Beam 2 light is made of steel, with the diffuser disc and back mount painted in combinations of white/black, gray/blue, black/blue, and all-white. UL-listed Beam 2 takes a 300-watt halogen bulb. Gullans International, Long Island City, N. Y.

696 Fiber optic lamp
697 Triangular luminaire
Part of the DZLight outdoor line, the Apollo luminaire has a futuristic appearance in keeping with the landscape-lighting requirements of large-scale architectural projects. The 14-ft-high triangular housing is sand-cast aluminum; 100-watt mercury vapor or 70-watt hps lamps mounted at the top of the fixture direct light through three clear wired-glass lenses. Staff Lighting Corp., Highland, N. Y.

698 Table lamp
A compact (7-in.-high) globe of white frosted glass set in a brass orbit with small round feet, the Espace lamp was designed by Patrick Monoury. The table lamp takes a 60W bulb. Koch + Lowy Inc., Long Island City, N. Y.

699 Landscape lighting
The GM-3000 grade-mounted uplight effectively uses some of the newer miniature light sources, such as 20- to 75-watt low-voltage halogen MR16s, and incandescent PAR-36 lamps. The square-lensed light measures 9 by 5 3/4 by 4 in.; housing and face plate are made of an impact-resistant fiberglass-reinforced composite. Imperial Bronzelite, San Marcos, Tex.

700 Fluorescent fixture
Suggested for the corporate office and conference room, Series TM-400 has a contoured-edge profile, wrapping around to a low-brightness parabolic louver covering four 40-watt lamps. Pendant fixture, finished in a range of standard and custom colors, comes in lengths of 55 and 111 in. Contract Lighting Systems, New Canaan, Conn.

701 Telephone
The Enorme by Sottsass phone is described as combining Italian flair for industrial design with American state-of-the-art audio and transmission capabilities. Receiver is self-standing for hands-free use; phone comes in the tri-color combination shown, as well as all-gray. Becker, Inc., Westport, Conn.

702 Lighting calculator
Multifunctional hand-held calculator helps the lighting designer determine the number of luminaires required, footcandles of illumination, fixture spacing, and the area lit by each fixture. The HLC-1 can compare alternate layouts, and compute maintained fc levels over the life of the installation. Halo Lighting, Elk Grove Village, Ill.

703 Multilink communications
For schools, prisons, and other institutions, the Modular Administrative Communications System needs no telephone key to handle multiple simultaneous conversation paths. Suitable for retrofit projects, the system interfaces with existing call point/remote-communications stations and clock systems. Dukane Corp., St. Charles, Ill.

704 Grid lighting
Beamers light squares lay into standard 2-by-2-ft grids, expanding the ceiling with a complex-curved white lighting pan defined by colorful, profiled aluminum moldings housing compact 18-watt twin-tube fluorescents. Corner cubes can incorporate incandescent down-lighting as shown. Winona Lighting, Winona, Minn.

705 Automatic light switch
An extension of the Light-O-Matic occupancy-sensing product line, this wall-mounted switch for one-person offices is designed to save over 45 percent of lighting electricity. Energy wasted when lights are left on in unused areas. The device replaces an ordinary wall switch with no reduction in lighting levels. Novitas, Inc., Santa Monica, Calif.

706 Kinetic suspension
A counterbalanced disc, the Tilt fixture is suspended by four steel cables, and may be adjusted to any point off the horizontal to aim the light beam as desired. Light source is one 12-volt PAR 36/50 bulb; the solid-state transformer is in the canopy. Tilt was designed by Doyle Crosby, Boyd Lighting Co., San Francisco.

707 Cable connector
Type SCXP and SCSR heat-shrink closures facilitate positive on-site connection of voice- and data-carrying coaxial cables. They are part of an extensive product line, AMP NECON, which includes undercarpet wiring systems, networking accessories, and connectors for power, phone, data, and fiber-optic cable. AMP Products Corp., Berwyn, Pa.

708 Recessed lighting shades
Designer/architect Kenneth Garcia has named his suspended constructions, of wire, leather lacing, rice paper, and other materials, "can shades," and placed them below recessed ceiling fixtures to ornamentally screen the light. Wall lights of similar materials are included in the Zooke line. ZOOK, Tampa, Fla.
709 Multi-outlet strips
Surface raceway is available in noncorrosive stainless steel, prewired with receptacles at 6- or 12-in. intervals. The Plugmold multi-outlet system comes in 3-, 5-, and 6-ft lengths, with a range of fittings for joining sections and connecting it to power sources. Blank covers are used on the raceway where no outlets are required. The Wiremold Co., West Hartford, Conn.

710 Suspended light
The Celeste, a Ron Rezek design, incorporates a number of materials in a simple, diffused light. Molded wire glass with a sandblasted finish is set into a stainless-steel ring; the ceiling canopy is anodized aluminum and the suspension rods are nickel-steel and polished brass. Celeste comes in 19- and 23-in. sizes, for mounting as much as 30 in. from the ceiling. Artemide, Inc., Farmingdale, N.Y.

711 Linear fluorescent
An interconnected, pendant system made of one-lamp fluorescent tubes, these directional luminaires come in three decorative styles, and standard and custom lengths. Architectural Lighting Systems, Inc., Taunton, Mass.

712 Specular louver
For office-lighting applications, the BS 900 has a slim housing and glare-reducing specular louvers; luminaires may be surface-mounted, as shown, or suspended. Integral electronic controls reduce energy use over 25 percent, and insure superior illumination without flickering and buzzing. Siemens Lighting Systems, Iselin, N. J.

713 Low-ceiling indirect
A very shallow fixture, only 2 7/8 in. deep, the LCI can be installed effectively on ceilings with 8 ft 6 in. heights, with fixture rows spaced 12 ft apart. The reflector design and over-and-under T5 fluorescents are said to provide efficient, uniform low-brightness illumination with a wide lateral spread. Litecontrol, Hanson, Mass.

714 Versatile floodlight
The 4900 Series Architectural Mini-Floods are cylindrical aluminum lights with no exposed fasteners, finished in dark bronze enamel. Set on a swivel base, Mini-Floods are suitable for illuminating walls, facades, signs, landscapes, and pathways. Low-wattage fixtures take incandescent, compact fluorescent, and hps sources. Kim Lighting, City of Industry, Calif.

715 Concealed accent lighting
Based on low-voltage modules using MR-16 bulbs, Recessed Track incorporates the fixture placement and aiming flexibility of track lighting into a completely hidden system. All of the light passes through the 2-in. linear aperture. Various lamps, beamspreads, and lenses allow different lighting effects from pinspots to wall-wash. Alko, Franklin Park, Ill.

716 Workstation light
The Personal Articulating Lightsource-PAL is offered with the System2 Plus open office. Designed by John Caldwell, the rotating-head, swing-arm light may be panel-mounted as shown, or set on the work surface. Fixture takes a twin-tube 18-watt fluorescent, and comes in six panel-matching colors. Panel Concepts, Santa Ana, Calif.

717 Architectural design
A collaboration between architects Sheila Kennedy and Prano Violich and an established lighting manufacturer has produced the first of a projected Architectural Series, using etched glass, marble, perforated metal, and laser-cut steel plates. Mask is shown in floor and table versions. Ainsley Lamps, Brooklyn, N. Y.

718 Cylindrical sconce
Designed by Alex Foez to appear as a projection from the wall on which it is mounted, the Zeta sconce is attached to the wall by hidden brackets. Stainless-steel fixture is 10 in. high, and projects 9 3/4 in.; light source is a 150-watt halogen lamp. Bruenton Industries, Inc., Springfield Gardens, N. Y.

719 Table lamp
The Tikal lamp revolves on its base to display either a clear white or gray diffuser, providing high- and low-intensity light, respectively. Designer Pier Ramella describes the light as representing the night and day concepts of the ancient Maya. Central halo-shaped element is blue glass. Atelier International Lighting, New York City.

720 Surface-mount cable
A 2 1/2-in.-deep wire-management system is offered in three cross-section sizes; the Multi-A-Serv raceway distributes power, telephone, and data networks along interior walls, partitions, above work benches, or beneath computer tables as shown. Interior brackets hold power cable in the upper section of the housing. American Electric, Construction Materials Group, Pittsburgh.
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AMERICAN ELECTRIC
FL INDUSTRIES, INC.
<table>
<thead>
<tr>
<th>Electrical Product literature</th>
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<tr>
<td><strong>721 Track lighting</strong></td>
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<tr>
<td>An 82-page Lytespan catalog describes how to select the correct track-lighting system. In addition to showing various lines and supplying technical tips, the text helps define room-lighting tasks, decide on type and color of light wanted, select a lamp producing right intensity and beam, and choose the proper track light for application. Lightolier Inc., Secaucus, N.J.</td>
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<tr>
<td><strong>727 Building-service management</strong></td>
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<tr>
<td>A digitized energy- and lighting-control system that simultaneously monitors and controls a number of essential house and lighting services is described in depth in a 4-page color brochure. Digital Workstation's reprogramming, monitoring, critical-equipment alarms, and data-summation features are also discussed. Johnson Controls Inc., Milwaukee.</td>
</tr>
<tr>
<td><strong>728 Electrical switchgear</strong></td>
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<tr>
<td>Color bulletin SY-8 concentrates on the features of metal-clad switchgear that can handle 2,300-17,000-volt AC distribution systems. Details of switchgear's safety features, which include type FG-2, SF-6 and/or VDA-2 (vacuum-type) circuit breakers, are explained. Annotated cutaway drawings illustrate principal components. Square D Co., Palatine, Ill.</td>
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<tr>
<td><strong>729 Lighting switches</strong></td>
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<td>LiteTouch, a low-voltage lighting-control system engineered for custom residential applications, is well described and illustrated in a 4-page brochure containing technical detail on lighting and programmability, as well as decorator and switchplate options. LiteTouch, Salt Lake City, Utah.</td>
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<tr>
<td><strong>730 Lighting standards</strong></td>
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<tr>
<td>Tapered octagonal steel Trimline lighting standards, constructed with a circumferentially welded tapered base and available in a variety of designs and sizes, are the subject of a 2-page catalog sheet. Sample mechanical drawings included provide representative base-plate information and anchoring details. Miller-Hard Manufacturing Co., Winsted, Minn.</td>
</tr>
<tr>
<td><strong>731 Lighting systems</strong></td>
</tr>
<tr>
<td>Over 350 cast and extruded aluminum lighting systems for a variety of outdoor applications are described in a hardcover &quot;Architectural Lighting Solutions&quot; catalog. Each luminaire is shown with accompanying photometrics, dimensions, and a source chart. Options and specifications are listed at the end of each section. Devine Design, Kansas City, Mo.</td>
</tr>
<tr>
<td><strong>732 Video-display terminals</strong></td>
</tr>
<tr>
<td>A newly released handbook deals with the issue of video-display terminal glare and suggests ways it may be reduced, along with related instances of operator eyestrain and fatigue. Solving the puzzle of VDT viewing problems offers a number of practical-to-adopt suggestions, from initial vision testing to subtle lighting changes. The National Lighting Bureau, Washington, D.C.</td>
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**722 Wall brackets**  
The Silhouette line of U.L.-listed fluorescent-type sconces is described and illustrated in Form 1230. The four steel-bodied lamps depicted in actual installation photographs are the black pearl, brass, and two types of black units. Each fixture discussed accommodates a 15-watt non-fluorescent single-ended tube. Guth, St. Louis.

**723 Lighting fixtures**  
Freestanding area lighting fixtures are shown in a new catalog. Lamp housings, as depicted in the literature, are produced in two basic shapes: round and square. Some models can be ordered with either incandescent, mercury vapor, metal halide, hps, or ips lighting elements. Horizontal initial footcandle data are provided for each model. TrimbleHouse, Norcross, Ga.

**724 Wall displays**  
Programmable, attention-getting data walls, graphic walls, data sticks, and related animated message-relaying devices, used to visually communicate information, are illustrated in a color booklet. Advantages of the movable marquee-style signs, colors, fascia, options, and accessories are described. Trans-Lux Corp., Norwalk, Conn.

**725 Indoor lighting**  
A total of 68 Italian-designed, recessed wall, ceiling, and suspended lighting fixtures, plus 46 table and floor lamps available in various colors and finishes, are shown in a new 38-page, color catalog. Details on warranty coverage offered, and shipment procedures on the complete line of lighting products, are given. IPI Inc., Long Island City, N.Y.

**726 Fluorescent lenses**  
Prismatic lenses that fit over fluorescent fixtures to create "yellow" light, high-contrast light, and other forms of specialty illumination are treated in a new brochure, which identifies individual work areas that either benefit from certain types of lighting, or which require some form of ultraviolet-light suppression. KSH, St. Louis.
733 Architectural lighting
A 66-page specification catalog features Capri lighting products, including a selection from over 250 incandescent and HID recessed downlights, low-voltage recessed lighting, and compact fluorescent downlight fixtures and accessories. A special section covers lighting techniques, illumination data, and guidelines for lighting design. Capri Lighting, Los Angeles.

734 Cast lighting posts
A broad range of cast lighting posts and coordinating luminaires is shown in the manufacturer's color fold-out brochure. Post materials used include cast iron, cast iron and steel, fiberglass-reinforced polyester, cast aluminum, and polyethylene. Model illustrations and order information are available. Antique Street Lamps, Inc., Austin, Tex.

735 Isolated ground devices
A complete line of isolated ground devices, designed to reduce electromagnetic interference, is described in a color brochure. The manufacturer offers a straight-blade isolated ground single and duplex receptacle series, Twistlock isolated ground receptacles, and straight-blade IG plugs. Pass & Seymour, Inc., Syracuse, N.Y.

736 Heating panels
Illustrations of heating panels and applications for Aztec low-temperature, electric radiant ceiling panels are contained in a 4-page, loose-leaf color brochure. Photographs and drawings show the perimeter heating panels used in schools, restaurants, and low- and high-rise commercial buildings. Aztech International, Ltd., Albuquerque, N.M.

737 Emergency lighting sconces
A line of decorative wall luminaires for commercial and industrial use are presented in Siltron's 4-page color brochure. Also doubling as emergency fixtures, the sconces offer an alternative to the traditional "2-headed boxes." Fixture styles include art deco glass on a brass base, and a tiered brass sconce. Siltron Illumination, Inc., Cucamonga, Calif.

738 Electric ballasts
A color brochure details Triad-Utrad's line of 50 ballasts. User benefits of the switching system and emergency-lighting systems in schools, hospitals, offices, factories, warehouses, and other buildings are outlined. Parallel- and series-type wiring charts are included. Triad-Utrad, Div. of MagneTech, Inc., Huntington, Ind.

739 Voice/data wiring
The Mod-Tap voice and communications system is explained in a 28-page catalog. Descriptive data, detailed drawings, and ordering information are supplied on cross connect, system connectors, demountable drops, wall plates, line cords, MOD adapters, cable, and test equipment. MOD-TAP System, Harvard, Mass.

740 Designer lighting fixtures
Columbia Lighting has issued a 44-page color catalog on interior fluorescent luminaires. Divided into four categories covering linear forms, ceilings and modules, sculptures, and compact fluorescent and architectural specialties, the illustrated brochure contains new designs and installation schemes. Columbia Lighting, Spokane, Wash.

741 Outdoor lighting
Nite Brites, an exterior lighting system used in sports arenas, general-purpose areas, parking lots, and building perimeters, is featured in a 20-page catalog. Details, typical layouts, and photographs of the product line are shown. Ordering information is included. Day-Brite Lighting Division, Emerson Electric Co., Tupelo, Miss.

742 Power-line protection
AC-power-line protectors, designed to safeguard sensitive equipment from damaging voltage surges, transients and lightning, are shown in a 7-page catalog. Six protectors, ranging from the manufacturer's plug-in protectors to heavy-duty plant power-line protectors and on-line uninterruptible power systems, are highlighted. MCG Electronics, Inc., Deer Park, N.Y.

743 Combination locks
An 8-page booklet reviews Cypher Lock's electronic combination lock/access control-system products. The line includes options such as indoor decorative panels, outdoor weather-resistant panels, and an all-in-one control package. Photographs, specifications, and an ordering guide are included. Continental Instruments Corp., Westbury, N.Y.

744 Fiberglass light poles
Decorative fiberglass light poles are spotlighted in a 4-page brochure. Used extensively in residential areas, and shopping malls, theme parks, and public areas; these poles are replicas of turn-of-the-century cast-iron poles. Charts showing heights, weights, diameters, and fixture specs are featured. Shakespeare Co., Newberry, S.C.
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