

PRODUCT REPORTS 75: PRODUCT IDEAS FOR ARCHITECTS & ENGINEERS, ALL ILLUSTRATED
 THE ARCHITECT AS PRODUCT DESIGNER
 ARCHITECTURAL ENGINEERING: GSA UNWRAPS MAJOR SYSTEMS PROJECT
 ARCHITECTURAL BUSINESS: A NEW TOOL FOR COST/DESIGN ANALYSES OF SYSTEMS
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ARCHITECTURAL RECORD

MID-OCTOBER 1974



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Cover: Ten products featured in this issue and selected for the cover



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Some random thoughts on the future of the market place

If the country's greatest economists (of all schools of economics and all shades of political persuasion) gathered in solemn convocation under the chairmanship of the President of the United States cannot agree on what is happening to money and the marketplace, I sure am not going to try such an analysis. But I think I know one thing: Though housing is now in a disastrous tailspin it can't stay in a tailspin. All historic precedent says it can't stay in a tailspin. The size and muscle of the housing and construction industry says it can't stay in a tailspin. Not to mention the enormous market potential that gets bigger with each month of production hammered down by present policy.

So maybe in the midst of the general doom and gloom it's helpful to remind everyone that for practically all of our history, we have managed to solve problems only when they have reached the crisis stage—but we have managed to solve them.

There have been all kinds of hints from the White House that the housing industry would get attention from the new Administration—and I don't think we should be surprised that there are no hints about what measures—over and above the new omnibus law, which has no instant pep pills built in—are being considered. But you've got to know that new credit and subsidy considerations are only the most obvious of many, many options presented to Secretary Lynn and the President by concerned and informed industry people—including organized labor. Long before the economic summits, Robert Georgine, president of the Building and Construction Trades Department of AFL-CIO was pointing out in all the right places that a 10.6 per cent unemployment rate among all construction workers was contributing significantly to the climbing national jobless rate. And he claims that some building trades crafts in certain areas of the country are experiencing unemployment rates as high as 40 per cent.

If you're a politician, you don't not do something about that—even if inflation is your number one target.

In short, I'd put a lot of faith in those economic analysts who see housing starting back up soon and plan accordingly.

Other thoughts:

- The rules for the distribution of community-development block grants under the new omnibus law seem to make pretty good sense—especially when you think back to the continuous controversies that have surrounded, for all of recent memory, the various specifically aimed sections under which we have been building: urban renewal, neighborhood development, Model Cities, water and sewer facilities, public facilities, open space, and rehab.

With a little optimism (and a little faith in the administration of funds by state and local governments) you can see the new block grants—amounting to \$2.5 billion in fiscal 1975 out of a program total of \$8.4 billion—accomplishing the announced goals:

1. The granting of aid on an annual basis, with maximum certainty and minimum delay, upon which communities can rely in their planning.

2. Encouragement of community development activities consistent with comprehensive local and regional development plans.

3. Fostering of housing and community development activities in a coordinated and mutually supportive way.

If it works—if the funds are not impounded, if the Feds stick to their promise to complete reviews in 75 days or less—it could just be that the new system will help us develop better and more reasonable growth patterns—instead of growth based on the developers' skill at finding the Fed program that lets them get rich fastest. And if it works, we may well find that planning is better done at the state and local level than in Washington. Considering the record, such a concept is worth a try, seems to me.

- The National Institute of Building Sciences—long pushed for by most of the manufacturers and producers—is now authorized and requires careful watching by both its proponents and by the professions. Authority to establish NIBS is in the omnibus housing law, and HUD Secretary Lynn has turned over the prime responsibility for setting up the Institute to his research and technology expert, Mike Moskow. It is, of course, too early to guess whether NIBS can meet its goal of increasing uniformity among building codes, getting them updated more regularly, and establishing a new and sensible procedure governing (perhaps encouraging) new products and practices.

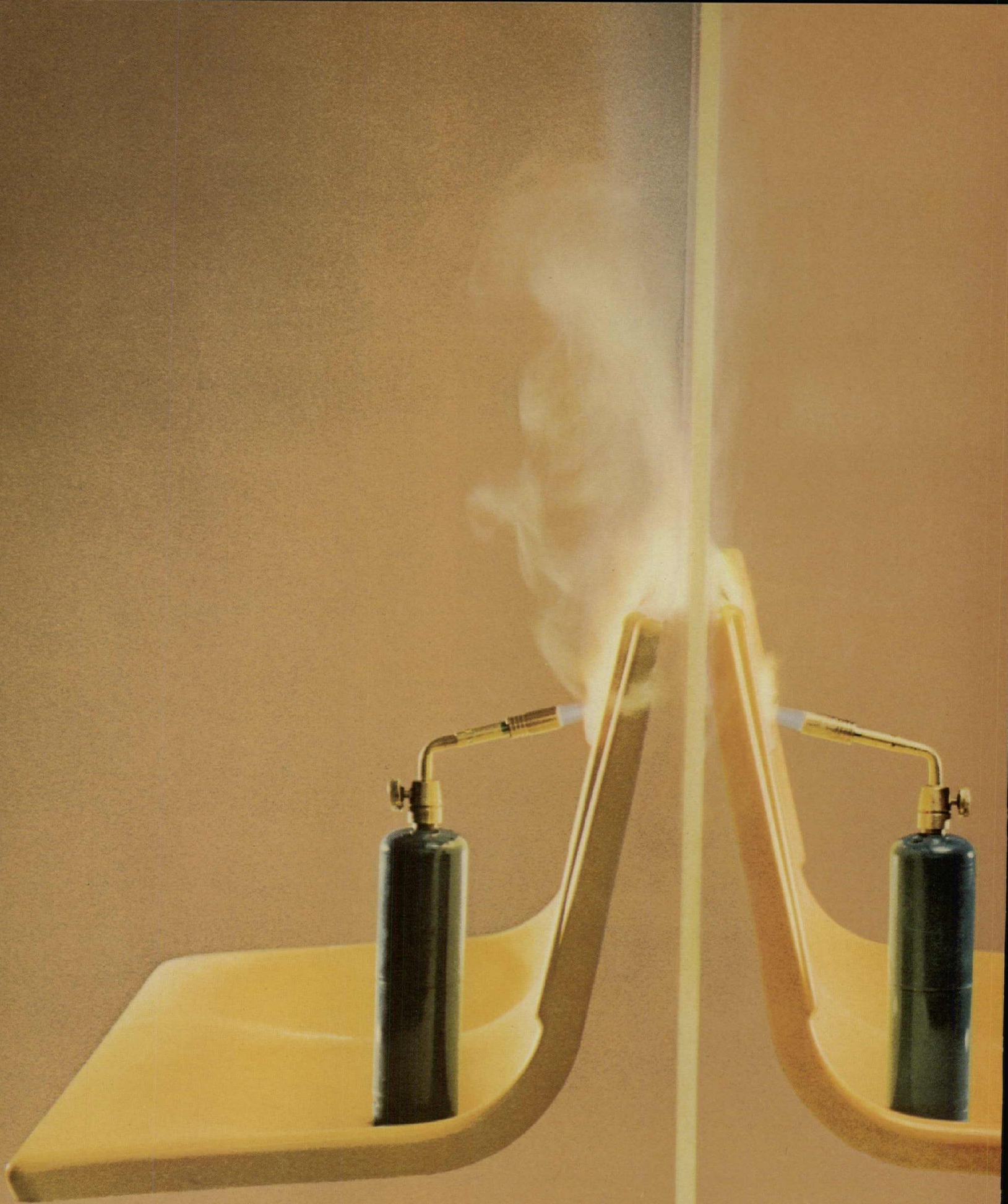
There is no doubt that present regulations and restrictions are hopelessly complex and bogged. But if NIBS is to succeed, the thing that it needs most is the input of the right people at the right time. And those right people, if anyone were to ask me, would not be primarily Federal agency people but:

- 1) The best *technical* help from the manufacturers or producers; and

- 2) Those architect and engineers in private practice with especial expertise in the use of the affected product or process or code.

As we said in the *ENGINEERING FOR ARCHITECTURE* issue; the biggest need and the best tool is the use of the right people, with the right expertise, at the right time.

—Walter F. Wagner Jr.



These fire-retardant seats prove a point about Alcoa hydrated alumina.

There's less smoke.

Both of these FRP seats are fire retardant, as indicated by comparable Limiting Oxygen Indices of 26. But the one with Alcoa® hydrated alumina filler does more than help stop fire. It helps reduce smoke. Which means far less smoke to obscure exits and stairwells.

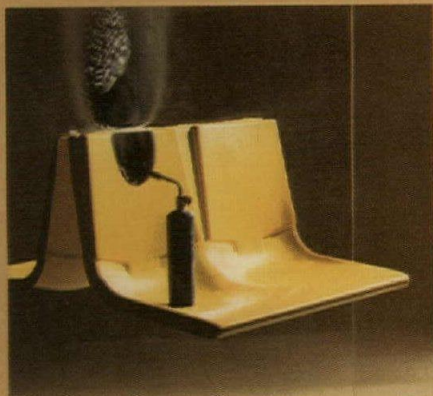
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Now... there's hydrated alumina. It retards the fire because it absorbs heat to help cool plastic below its kindling point. If the flame isn't removed, water evolves from hydrated alumina and dilutes combustible gases. So the mechanism by which it retards the fire isn't dependent on generating char

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It's simple and it works... with polyesters, epoxies, phenolics and many other resins. It's also inexpensive. It can be used in previously unfilled systems to replace some of the resin, so there's less resin to volatilize and produce smoke. It can even help reduce smoke in halogenated resins. And Alcoa hydrated alumina is available in several grades, in quantity, from three manufacturing locations in the United States.

For our new hydrated alumina bulletin, write Aluminum Company of America, 1230 Alcoa Building, Pittsburgh, PA 15219.



When the 2000 F torches are removed, both fire-retardant benches stop burning. The facing bench achieved its fire retardancy by the addition of Alcoa hydrated alumina filler. The bench made with the more expensive, chlorinated resin and antimony oxide, on the other side of the acrylic sheet, derived its fire retardancy at the expense of smoke generation, producing much heavier deposits.

Alcoa thanks American Seating and Cincinnati Milacron, Molded Plastics Division, for their considerable assistance in preparing materials for this demonstration. Initially, Cincinnati Milacron prepared panels which were subjected to the Fenimore Martin LOI Test (ASTM G-2863-70T) to establish equivalent fire retardancy. They then used American Seating molds to produce the seats tested with the pre-established formulations: 50 parts chlorinated polyester resin and 2.5 parts antimony oxide plus 50 parts simple mineral filler (plus fiberglass) for one, and 47 parts general-purpose polyester resin plus 53 parts Alcoa hydrated alumina (plus fiberglass) for the other. It was felt that it was much fairer to compare 2 filled systems rather than one unfilled (which would generate considerably more smoke than shown) and one hydrate filled.

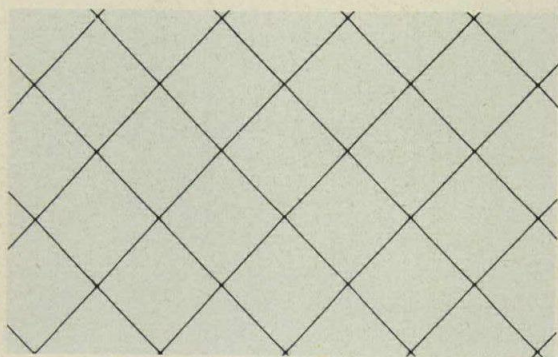
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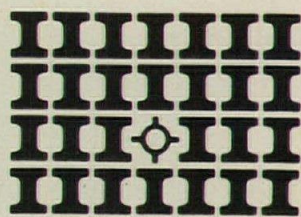
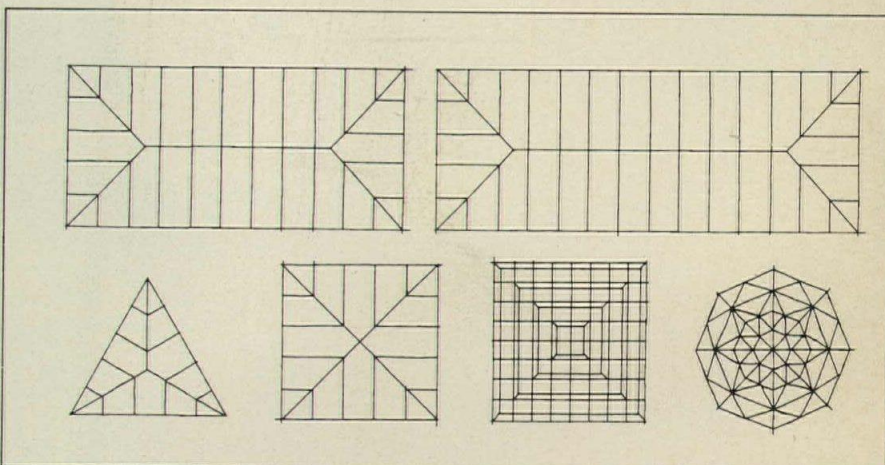


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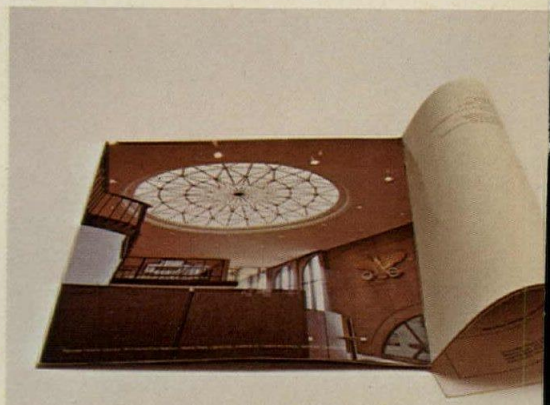
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Cost resources geared to design options

The increasing importance of the instant estimate early in the budgeting and design of buildings has resulted in a number of intensified costing activities. Computerized cost data banks have been developed to the point of real utility—despite the massive detail and constant updating that must go into them. (See: "Estimating provides the scale for budgeting," RECORD, October, 1974.) Also, published cost estimating books have been updated and re-edited for greater utility during design development.

A case in point is the 32nd annual edition of R. S. Means Company's *Building Construction Cost Data* (302 pages, \$9.50). The long standing "take-off" estimating format of this manual has not been violated, but it offers an expanded data base and permits refinement of labor cost calculations in tables of crew sizes and rates for various jobs. It has also updated sections on average costs per square foot and cubic foot for some 50 building types with various systems shown as percentages of total cost. While it cannot be said that this rather "contract-oriented" manual is a handy guide to costing design options, it is beginning to develop some flexibility in that area. It has a companion volume this year, *1974 Labor Rates for the Construction Industry* (192 pages, \$17.50), that gives wages, current and projected, for some 45 trades in 264 U.S. and Canadian cities. Again, this is not a design-aid manual, but is a resource for those who want to pinpoint figures in later stages of documentation.

Two September publications have grasped the nettle of early estimating problems much more closely and from slightly different angles. First is the *1975 Dodge Construction Systems Costs* (216 pages, \$33.80), published by McGraw-Hill Information Systems Company and described in detail in RECORD, June 1974. Next is the *Design Cost File* of 1975 composite prices (210 pages, \$29.95) published by Construction Publishing Company, Inc.

The Dodge book is computer-linked to programs of Wood & Tower, Inc., a long-established New Jersey firm of construction estimators and managers. The book itemizes labor, material and total costs per square foot of the in-place components of various assemblies and systems. Systems are arranged in categories (exterior walls, partitions, roofing, etc.) for direct comparison of various assemblies. Conversion tables and formulas than make it possible to compare the cost effect of various assemblies on a given building. The section on

dry-wall partitions, for example, gives the costs per square foot of wall for the component gypsum board, studs, taping, and spackling, item by item and in various combinations of materials and thicknesses.

The Design Cost File, on the other hand, does not separate labor and materials on so fine a scale, but it does give installed costs of various assemblies, including ceiling cove and baseboard—with applicable sketches and sections. Further information includes design factors such as fire ratings, over-all thicknesses, sound transmission, U-values, dead loadings and costs per square and lineal foot.

Other systems costs are similarly detailed

from the designer's point of view, and back-up information permits ready comparison of various systems in various geographic locations and for various building types. The flooring section, for example, has graphs of the cost and loading relationships for various floor framing systems under different conditions of loading and bay size.

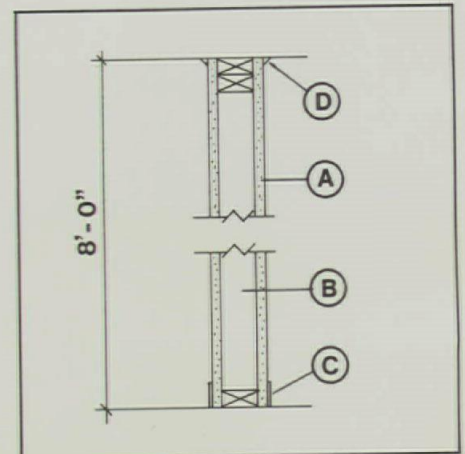
The *Design Cost File* is a self-contained companion volume to the same publisher's *Building Cost File* of unit costs for labor and materials. Both are compiled from the computerized and updated working data of consultants McKee-Berger-Mansueto, Inc. A page from the *Design Cost File* is shown below.

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The Architect as Product Designer

by Sam Davis, AIA

Architects are in a unique position to influence product design—their specifications affect the product marketplace, and they create new markets by continually uncovering new situations. But—to a degree perhaps not widely understood—they influence products by designing them. And this is not a new phenomenon.

The Bauhaus movement and its leaders are often associated with product design

The Barcelona chair by Mies (Figure 1) and Breuer furniture (Figure 2) are classics still in popular use today. More recent architect-designed products, like the work of Charles Eames (Figure 3) and George Nelson, were influenced by this European tradition. Such works were not always developed for a client, but were considered pure research—an attempt to find the ultimate use of a material or the capacity of some new form. There was also the new-found tool—industrialized process—and the challenge of developing an artifact of significant craft, available to the masses, within the constraints of mass production. Many feel that only lip service was given to this new collaboration of industry and art by these architects, and that they were really interested in the older traditional craft aspect of furniture with an international stylism. However, because of the simplicity of the form and their appropriateness for production, and because of the eminence of the designers as architects, the products have lasted.

Subsequent to the Bauhaus, architectural training and practice in Europe evolved into specialization without loss of professionalism or status. Designers have for many years been trained in the universities as either architects or interior architects, and many of the products developed in Europe come from the specialists in interiors.

In the United States, however, the architect or interior designer (who sometimes has had less professional status and credentials than architects) who specializes in interiors is a new phenomenon, caused by the boom in neutral interior space in office blocks and shopping malls. Most schools of architecture have largely ignored the subjects, and few now offer classes in interiors or product design, so the professional must learn on the job the level of detail, and the constraints of mass production involved in most products. Charles Eames refers to these capabilities as the "continuous design process." It is the ability to think of the next smaller and next larger part of the building as one continuous product. Thus, the line between product and architecture becomes increasingly less distinguishable. The European architect most renowned for this type of design is Alvar Aalto. He is associated with bringing a high level of craft to the practice of architecture as well as greatly influencing product design through his work. A good example is his

use of handrails. Not only was he concerned with what the rail meant for the movement and continuity of space, but also how it met the hand of the user. The product was an integral part of the architecture.

Many feel that the level of product design is higher in Europe, particularly in Italy

If the Europeans do have better product design, there are many reasons for it. There are many small manufacturers who are willing to take products through prototyping before discarding them, which allows for more experimentation, and some of the objects will be marketed if only for a short run. Furthermore, designs are often publicized in magazines like *Domus* and *Abitare*, which are not only respected by designers but also reach larger lay audiences than professional journals do in this country. Therefore, not only do products have exposure, but the general population is more educated as to the possibilities and availability of designs. It is not unusual in this context for large retail outlets, like Ikea in Sweden, to open on Sundays, almost as museums, for the populace to view these pieces. Again, such an open-door policy is contrary to American practice: the showrooms for quality design products in this country are largely closed to the general public, who therefore rarely see alternatives to traditional mass-produced forms.

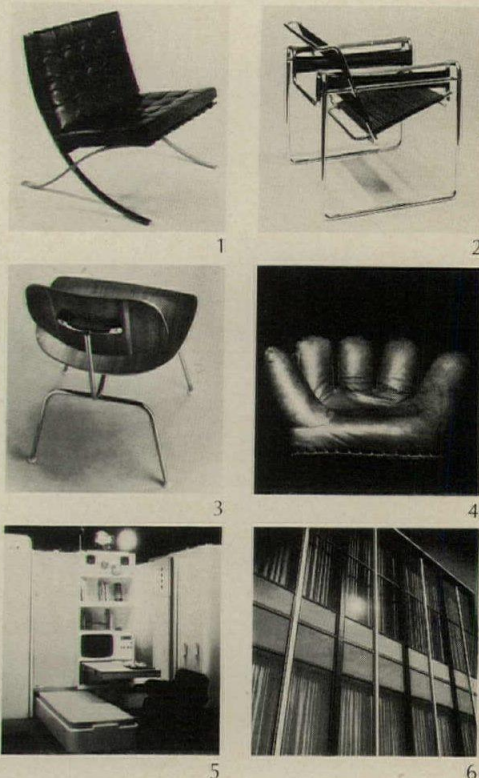
The Italians are particularly well-equipped to keep pace with a popular market. The exuberance and daring of their designs (Figure 4) have stimulated other designers around the world. The Italian architects are often more interested in this stimulation and publication of ideas than in the products themselves, which has given credence to those who think their design is superficial. The Italians, for instance, have mastered the internal relationships and forms (the parts of the object as they relate to each other) but not always the external relationships (how the object relates to the user). The exposure of ideas—not products—was the major purpose of the "Italy—The New Domestic Landscape" show at the Museum of Modern Art in New York (Figure 5). This action can be compared to what Archigram did for architecture in the mid- and late-sixties.

Even though many of their designs are fanciful and unrealistic, Italian industry has encouraged architects in product design work and has given them technical assistance. Many of these designs use a mold technology, and the creation of molds is generally a craft—not an industrial—process. The Europeans still have craftsmen, even in larger industries. This relationship of designer, craftsman, and manufacturer is self-perpetuating, and the rapport and respect established can itself motivate further product design development.

Some manufacturers in the United States and Europe have in-house designers, but it has been a more common practice in Europe—and

is becoming more common in the United States—for producers to solicit and encourage designs from people in the field, particularly architects. Manufacturers feel that the outside architect's viewpoint is often fresh and unencumbered by preconceptions about what is possible or marketable. For Olivetti of Italy, the use of outside designers has resulted in continuously high quality in both buildings and products. The architect has what Eames calls the "amateur standing" that allows him to probe a problem with new insight and perspective. This "novice" approach allowed Saarinen to develop an entirely new answer to airport design—one that stimulated a new product in the form of the movable lounge. In a similar way, he was able to develop the now-common neoprene gasket for curtain walls by extending the automobile technology of his client (General Motors) to their building (Figure 6). Of course, the danger of becoming a specialist after two or three such ventures, and thereby losing this freshness, is always present.

This collaboration between architect and manufacturer is less covert in Europe than in the United States. In Europe, the designers are often known to the public, and the manufacturer often gives credit publicly to the designer. In the United States, manufacturers are much more corporate-minded; the product is developed by "we" and the designer is usually considered merely one input. This situation not only may discourage designers from presenting ideas to manufacturers, but also has led to intense competition between manufacturers for similar products, for it is more objectionable (and perhaps less ethical) to use an individual's design than it is to copy a corporate product. However, in the United States marketplace, there are indications that full recognition of the designer is forthcoming: products in Design Research stores are marketed with the designer's name, and Knoll International and others are similarly crediting designers in their advertising.



Many products have been designed in the course of an architect's service . . .

. . . when the size of the job or the special interests of the client warrant and/or encourage the architect's involvement. Often it is the multi-comprehensive architectural firm which can best respond to this need.

Some products are initiated by architects but given the needed impetus by the manufacturer. In these cases, the architect may have no

real concern in the product beyond his client's need, whereas the manufacturer may see potential beyond the initial application and will expend large amounts of research and development with the architect for what will be an eventual production item. All architects will, in the course of their work on a project, develop a special item, but the cost of custom work without the thought of ultimate production is becoming unfeasible.

CASE 1: SOM, Weyerhaeuser, Knoll—and the Stephens System

Architects: Skidmore, Owings, Merrill

Client: Weyerhaeuser Company

Headquarters

Product: Stephens System Office-Landscape

Manufacturer: Knoll International

The Architect's role:

The decision to do this corporate headquarters in open planning was made early by the client. The architects attended a number of seminars on "office-landscape"—a relatively new concept at the time—and, following a market search, came away feeling that they would prefer to design something themselves.

The program was developed after extensive surveys of the Weyerhaeuser staff had determined the types and amounts of storage, working surfaces, and equipment. The information was organized into a few groupings, according to similarities: thus the finished product consisted of a few basic components which could be easily adaptable to specific needs. An example is the addition of sound-absorbing material into the partitions of work stations where office machinery noise was present. Similarly, storage components can be replaced with tacking surfaces. The amount and form of the storage as well as the addition of integral desk lighting where overhead storage blocks out the general lighting are also examples of this flexibility. The features required by the original client ultimately assured the universality and the marketability of the product.

A material constraint of wood (obviously desirable for Weyerhaeuser) was happily accepted by the architects, but it was felt that some other material would be needed as well to relieve the large expanses of woodslab desks and partitions. The use of polished metal details and white storage cabinets accomplished this goal.

The initial application of the system at Weyerhaeuser is probably the most effective use there has been of both the system and of the office-landscape concept. Large amounts of space left between work stations alleviated much of the need for visual and acoustical privacy. Most of the work-stations were independent and few of the components served double duty by being used in adjacent stations (Figure 7).

During the design process the architects and manufacturer were in continuous collaboration, as one team. There was no real system of submission and approval by one to the

other; decisions were arrived at jointly, as were alterations to the product.

SOM's interiors department is composed mostly of architects. Charles Pfister, the architect who is head of interiors in the San Francisco office, feels that although architects by their training are not particularly well prepared for product design work, they do have the "amateur standing" that Eames refers to and the breadth of ideas that makes them different from industrial designers. He feels the architect is concerned with both the external relationships (how the products work for the user and the space) as well as the internal functioning (how the components of the product work and look together). Where architects fall short on the internal design, they are usually supported technologically by the manufacturers by means of their house designers.

The Manufacturer

To equip a building of as much as half a million square feet is a substantial financial commitment. A major part of the research and development costs in a case such as this are carried by the architect, and the manufacturer is then concerned about absorbing tooling costs. These, however, might easily be amortized over the original installation. In addition to the benefits of a pre-production market and substantial "free" design input, the manufacturer is also aware of the public relations value of a major corporate client and architectural firm participation.

Here, the flexibility of the product and the quality of the materials have caused a marked success of the product for the corporate office market. The Stephens System proved to be even more flexible than originally anticipated. Although work stations have many potential configurations, many over-all floor plans are also possible. In subsequent applications cubical work stations were designed in which adjacent spaces use the same partition and the storage and other components are attached to both sides of the wall. This allows many more people per square foot than the Weyerhaeuser application, and when a client is paying 80 cents to 90 cents a foot, this compactness is sometimes a necessity. Bankers Mortgage Company in San Francisco (Designers: Environmental Planning and Research) successfully applied the Stephens System in this way (Figure 8).

The future potential of the system was only part of the initial advantage for Knoll. Weyerhaeuser has its own factory in Wisconsin (which produces wood doors), and they

The following case studies illustrate the two approaches mentioned above. In the first (below) a large architectural firm, a large corporate client, and a nationally-renowned manufacturer develop a sophisticated furniture line. In the second study a moderate-sized architectural firm, its engineer, and a manufacturer evolve a specialty fixture for a public building into a flexible lighting system. Both products are now in regular production.

were familiar with the production of wood slabs—a major portion of this system. This expertise was a definite benefit in the development and ultimate success of the product. This company still produces parts of the Stephens System for Knoll.

Knoll has consistently credited designers in both the name of the product and in the advertising of them. William Stephens, for whom the system is named, was the Knoll designer who worked with SOM. In this case, SOM was reluctant to put their name to the product or publicize their participation because of possible ethics of an architect advertising. This attitude is changing as the quality and numbers of architect-designed products increases and the value of their input is publicly recognized by manufacturers like Knoll. Although Knoll has its own design and development division in Pennsylvania, they often solicit designs from architects outside of their organization, even without a major initial client like Weyerhaeuser. Stephens himself is now independent and often does work for Knoll as does Pfister of SOM.



7



8

CASE 2: Esherick, Homsey, Dodge, Davis—and the Litebar System

Architects: Esherick, Homsey, Dodge, Davis
Electrical Engineer: Bemer/Wilkinson (Dan Dibble, designer)

Client: California State University at San Luis Obispo, Student Union Building

Manufacturer: Peerless Electric

Product: Litebar System

Lighting is an area of product design that has made many advances in recent years and in which the architect and engineers have made a significant impact. A collaborative process is most important in the development of lighting fixtures; there are internal manufacturing technicalities, scientific calculations on photometrics, as well as the traditional aspects of appearance of the fixture and its effect in the space. The collaboration, as in this case, is usually between independent sources not within one office.

The Architect and Electrical Consultant

The building into which the lighting was to go is organized in long spaces, and reinforcement of this spatial effect by the lighting was desired (Figure 9). The architect's role was the establishment of criteria and evaluation of subsequent product proposals and developments against these specifications. This situation is similar to the open-performance specification system used in the design of industrialized construction components. Thus the architect wanted a "homey" atmosphere, and originally specified incandescent lighting because of its warm color. It was felt that the fixture itself could be visible, but that the actual lighting source should be hidden. The architect suggested a "U"-shaped metal enclosure with a void large enough to hold the source. The architect also required that the fixture span large distances so that supports would not occur often. Some spotlights were also needed.

The lighting engineer accepted these requirements—long, linear fixtures without many supports, clean lines and proportions, upright with capacity for spots below, and soft color. The first decision was that incandescent was not economically possible; but since the architect was painting the ceiling with bold colors and since the ceiling was multifaceted, it was possible to use the colder fluorescent source, which would appear warm when reflected off these colors, particularly yellows.

Developing a fixture that would give indirect light reflecting from a complicated colorful ceiling was the most tricky technical problem, because of the high loss factor. The extrusions had to be large enough to hold two fluorescent tubes, and the support system had to be flexible enough to allow attachment both between tubes in the fixture and onto the structural grid of the building. The extrusion was designed with a self-tapping rail so that the cable supports could be placed anywhere on

the length of the fixture.

Testing was done to establish light levels emanating from various colors on the ceiling, and the electrical engineer and the architect made some adjustments to the colors ultimately chosen as a result of this testing.

Finally, a prototype was developed by the electrical engineer and approved by the architect. A simple, long-spanning "U" extrusion in straight lines was the form of the product.

The Manufacturer

At the time the electrical engineer approached the manufacturer, there was no discussion of a catalog production item. Both the architect and engineer considered the product simply a specialty light. But at first glance, Doug Hurst of Peerless Electric saw many applications beyond the installation in the college union. Therefore, Peerless agreed to do further research and development, if the company would be specified for the job. Since this was public construction, the actual specification read "Peerless or equal." Given such an agreement, a manufacturer often considers it feasible to put a high level of design and research into a new fixture, with the idea that tooling costs will be recovered from the initial application and research and development costs will be amortized over the eventual run of the cata-

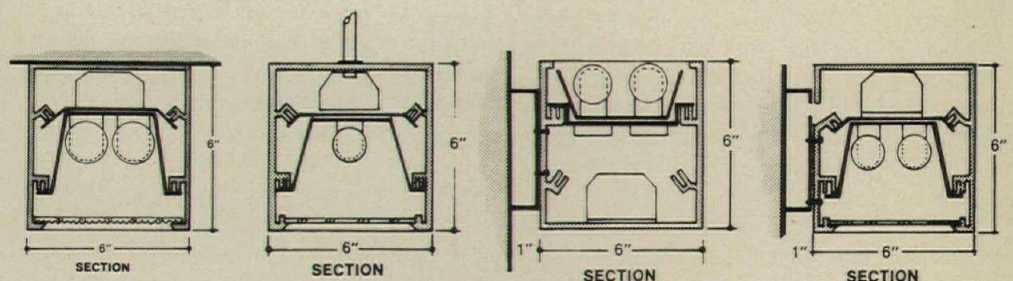
log offspring. If the normal competitive bidding process is followed, this work is not entered into until after the contract has been awarded—which is often too late in the design process to allow significant input into the evolution of the product.

The attraction for Peerless was the simplicity of the form and the fact that it had a large enough interior void for various types and directions of sources. Using their own staff of designers (for product development but not initiation) they added a number of interior ridges to the extrusion (Figure 10). This new extrusion enables the use of diffusers, lenses, and a variety of sources at different depths within the enclosure. At the same time, the thickness of the extrusion was increased so that it could span further and have fewer supports (Peerless absorbed the additional cost of material so that the client actually got a better product for the same money.) In addition to internal adjustments, the manufacturer developed extra pieces that would allow other than long, straight lines. The fixtures have subsequently been installed in modular bays and other configurations (Figures 11, 12).

It was not until late in the process, when the architect and engineer saw the additions to the extrusion, that they realized the universality of the product and that it would be a reg-

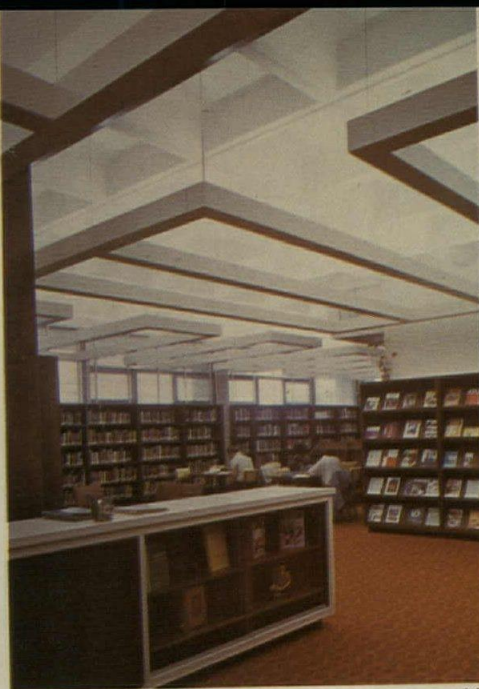


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ular production item. All were flattered that the extra research was done and that they contributed to a new tool now available to other architects. At the same time the manufacturer respected the input of the designers, and credits them in advertising the product. The architect and engineers are now aware of the potential of the collaborative process and conscious that the development of new tools for architects in this way is possible. More attention is now being paid by the architect and engineer to the possibilities of making such specialty work universally applicable if it can be done within the requirements of the original client. That is, all of the participants in this project agree that the fixture itself was of little importance: the effect and quality of the space were the objective, and it is agreed that products cannot be designed and manufactured in a vacuum but must have this realistic input.



11



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Architects can influence the form of products already on the market

Although they are often reluctant to admit it, most manufacturers approached by an architect whose job is large enough will alter a product to meet the specification. But architects can also influence new functions and uses of old products. The combining of existing components is not a new approach: the most famous catalog design is Eames' component house built in 1949 (Figure 13).

Eames claims that this house has been greatly misunderstood. It has been called innovative and a new approach to building, but he says that innovation has nothing to do with it. Whereas Mies felt that the moment of truth was in the combination of two *materials*, Eames feels that the moment occurs when two *parts* combine, and that architects can continually put things together in new and exciting ways. This is discovery and design, and not innovation or invention. Using an aluminum handrail system for a dressrack (Figure 14) or industrial fixtures in custom residential design (Figure 15) are examples of inventive new ways to use old products.

Architects need not be content with specifying products which do not meet the requirements of the job. They can influence and evolve appropriate products through a willingness to collaborate with consultants and manufacturers or by discovering new ways of using old products. The architect can even expect additional remuneration through royalties outside the traditional client fee structure. If we intend to produce total environments—within our structures as well as outside them—we must continually revitalize our input into the products we use. Manufacturers, on the other hand, must continually be aware of the architect's potential as the product designer, not just as the product specifier. Schools of architecture must also participate by developing skills and an awareness of the importance of interiors and products. It takes this total effort to constantly upgrade building product design. Many architects, manufacturers, and educators seem interested and capable of working toward this goal—and if this collaboration increases, surely we will all benefit.



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GSA and the systems approach: a full-scale demonstration

On September 24, 1974, a press conference was held in Philadelphia to publicize the results of a systems building effort begun in March 1973, when the U.S. General Services Administration awarded the Owens-Corning/Wolff & Munier Joint Venture a \$26.9-million contract for the development, fabrication and installation of 1.9 million gross square feet of office space for the three Social Security Administration Program Centers.

The OC-W&M Joint Venture was the lowest "responsible bidder" on the project, an attempt to use life-cycle costs and performance specifications to bring about innovations and new combinations of existing products to achieve maximum energy and cost efficiencies. Included in the "in-systems" contract are structure, HVAC, electrical distribution, luminaires, finished floors and ceilings, and space dividers.

The buildings are under construction in Richmond, Calif. (above right), Chicago (below, right), and Philadelphia (below, left). GSA commissioned the firms of Deeter Ritchey Sippel Associates; Lester B. Knight & Associates, Inc.; and Pereira/Bentley/Tudor Joint Venture for the Philadelphia, Chicago and Richmond buildings respectively. These architects are responsible for the building designs.



To accomplish the objectives of applying the systems approach and construction management techniques in a way competitive with conventional construction, Owens-Corning asked five companies to join in developing a technical proposal for the design, fabrication and installation of the "in-systems portion" of the project. Under OC direction, Wolff & Munier, American Bridge Division of U.S. Steel Corp., Westinghouse Electric Corp., and E. C. Ernst, Inc., provided an expert in each field as a member of the project team.

Upon acceptance of the "technical proposal" by the General Services Administration, Owens-Corning was asked to bid on the "in-systems." The Owens-Corning/Wolff & Munier Joint Venture was then formed as the bid offerer. The winning bid from the Joint Venture resulted in American Bridge, Westinghouse, E.

C. Ernst and Owens-Corning becoming the sub-system suppliers.

The project's executive architect is Leo A. Daly in joint venture with Nolen and Swinburne Associates. They are responsible for coordinating the successful development of



building systems in response to the "Public Building Service Performance Specification for Office Buildings," and the integration of the "in-system" and the "out-system" design considerations for the project, meant to encourage the maximization of sub-system integration.

According to Robert R. Ramsey, vice president of the Leo A. Daly Company, bid packages included the net system price and nine-year optional maintenance cost in the life-cycle costs which could be objectively meas-



ured by calculation and confirmed by tests. They were the costs of operating the heating, ventilating and air-conditioning system for 40 years; space adjustment which accounted for the building adaptability during its 40-year life; and the life costs for luminaire operation.

Prototype built first

Shown at the press conference in Philadelphia was a 30-by-30-foot "in-system" prototype. This test facility (shown in several of the photos at right) consists of the structure, electrical distribution, luminaires, finished floors, finished ceilings, space dividers, and heating-ventilating air-conditioning distribution equipment—all constructed in compliance with the building systems approach adopted by the GSA.

This project specified user comforts and efficiencies in terms of control of temperature,

air movement, humidity, sound levels, and lighting.

Control of air motion

In the HVAC sub-system, the performance criterion for control of air motion was specified at "no less than 20 fpm nor more than 50 fpm." The minimum and maximum levels were to be maintained in open space as well as within enclosed office spaces.

Over-all air motion, temperature and humidity control were achieved through a combination of induction boxes and linear air diffusers (Figure 1).

The induction box is arranged with tandem dampers to provide cooling, heating or a combination of both. When maximum cooling is required, primary air is mixed with the induced room air and the total mixture is supplied into the space through the air bar and air tube assembly. When less than maximum cooling is required, a combination of air induced from the room and the plenum, or all warmer plenum air, is used to temper or reheat the primary air.

To achieve the desired sound level in enclosed areas, a space divider acoustical cap (Figure 2) was developed to fit on top of each wall section. It reaches to within one half inch of the ceiling (Figure 3), providing enough space for air movement in and out of enclosed offices; it also meets the acoustical performance levels.

Airborne sound transmission

Control of airborne sound transmission (between offices as well as in open spaces) and control of impact generated sound transmission (through floor and ceiling) were two important acoustics criteria, requiring a combination of materials. A new *Fiberglas* lay-in ceiling board (Figure 3) was developed, incorporating a linear glass cloth facing and a special combination of density, thickness and backing to meet the performance level.

A supplemental sound masking system (electronically produced), a special carpet and space dividers (factory-fabricated gypsum board demountable panels on steel studs) were all designed to achieve together the performance levels while fulfilling the requirements of open-office planning. The space dividers are supported by the structural floor, but not attached directly to it. Instead, the base track is attached directly to the carpet with a nylon hook tape.

Control of illumination

Specifications called for balanced illumination in all areas, and high-quantity illumination was

said to be achieved with only three tubes per fixture. Air- and water-cooled luminaires (Figure 4) were combined with prismatic lenses to provide the prescribed quality.

The luminaires are simple heat exchangers in the shape of a standard fluorescent fixture. Water passing through the integral tube absorbs much of the luminaire heat which in winter can be used to pre-heat the cooler outside air before it enters the ventilating system. This sub-system reportedly reduces energy usage by 25 per cent over a conventional installation. Construction costs were reduced by combining the water-coolant pumping system with the sprinkler piping system.

Electrical distribution

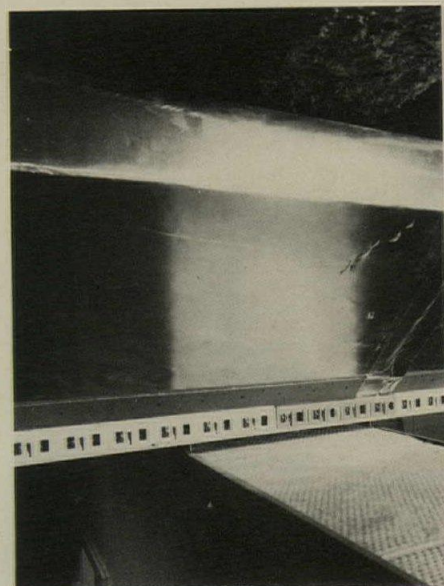
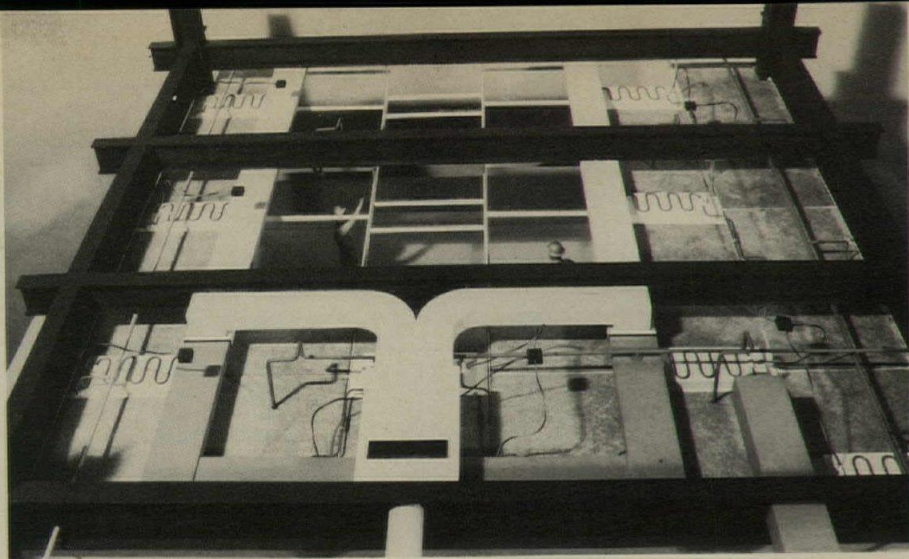
The electrical and communications distribution sub-system consists of a cellular steel floor raceway (Figure 6) which is part of the structural floor system, and through-cellular units embedded in the structural concrete slab at the out-of-system core areas. Header trenches with removable covers, perpendicular to the cellular steel raceway, provide for raceway continuity in routing out-of-system conductors.

Multi-service terminal outlet boxes offer accessibility into two adjacent cellular-steel raceway cells at 5-foot increments, and luminaire junction boxes are secured to the underside of the raceway in the ceiling plenum. Each box connects to three luminaires.

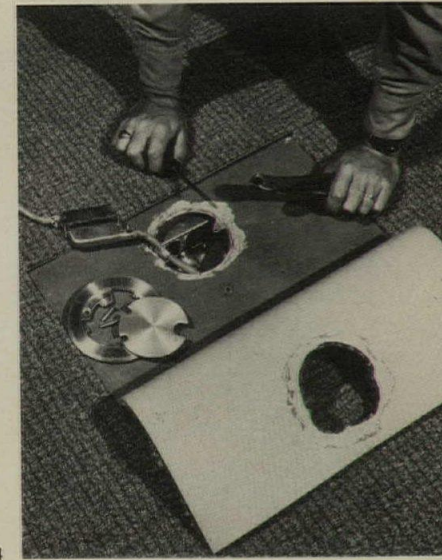
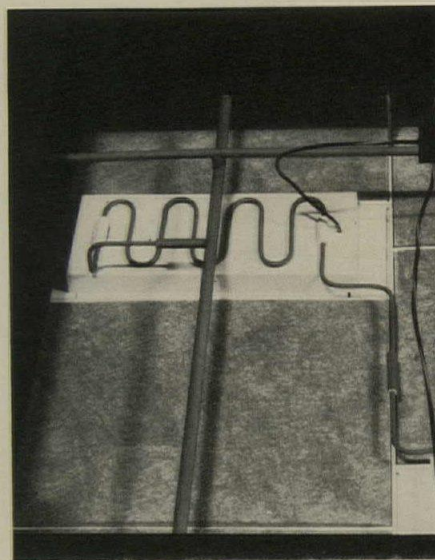
A 3-inch diameter hole (Figure 5) can be cut in the floor covering at prescribed locations for power, signal and communication service. Outlets are positioned on a 60-by-30-inch grid to accommodate numerous interior furnishing and equipment plans. The "self-abandoning" outlet cover rotates to cover holes when not used by service wiring. (This floor distribution system is shown in Division 5, page 46.)

Anti-static, 18-inch square carpet tiles are attached to the floor with a non-setting adhesive, permitting access to electric outlets.

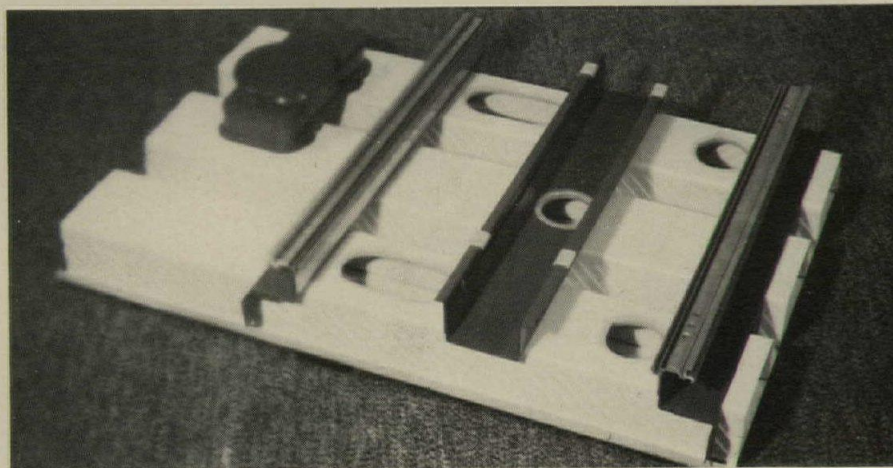
THREE SOCIAL SECURITY ADMINISTRATION PROGRAM CENTERS. Owner: U.S. General Services Administration. Building design architects: Deeter Ritchey Sippel Associates; Lester B. Knight & Associates, Inc.; Pereira/Bentley/Tudor Joint Venture. In-system executive architects: Leo A. Daly Company, Nolen and Swinburne Associates. In-system contractor: Owens-Corning Fiberglas Corporation, Wolff & Munier, Inc. Construction managers: Turner Construction Company (for GSA); Tishman Realty & Construction Company (for in-system contractor). Engineers: American Bridge Division of U.S. Steel (structural); E.C. Ernst (electrical). HVAC and lighting equipment: Westinghouse Electric Corporation.

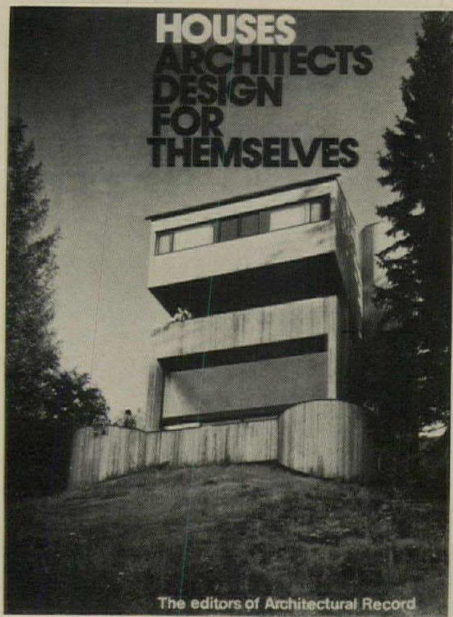


Lawrence S. Williams photos



Lawrence S. Williams





...ideas that reflect what you want, perhaps the way you want to live.

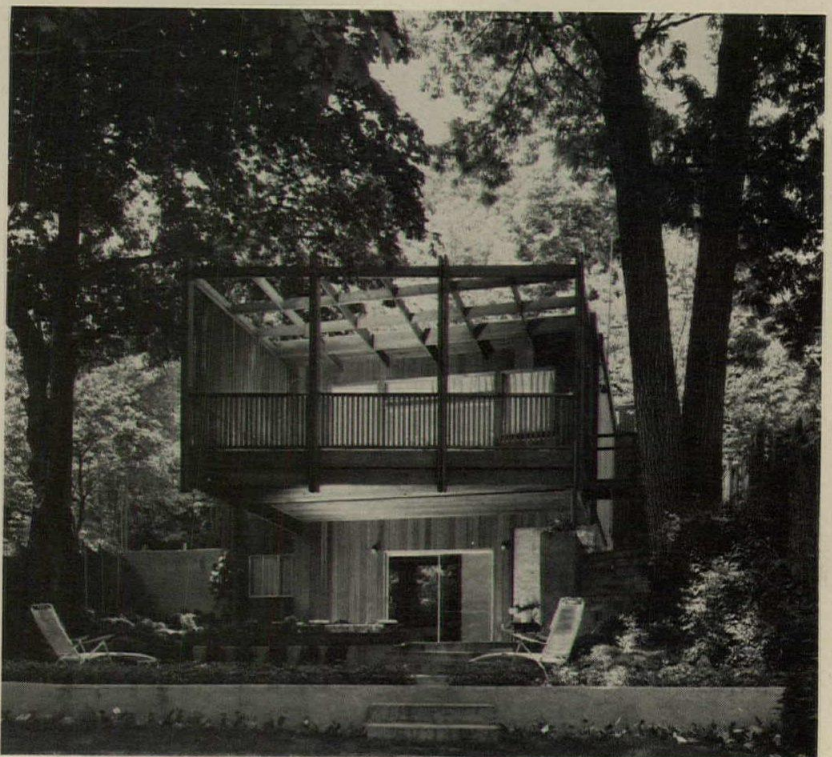
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product reports 75

A recent RECORD survey of manufacturers for the construction industry revealed that activity in product development remained good in the last 12 months, as evidenced by nearly 75 per cent of the respondents reporting a significant new product or product modification during the period. However, when asked about new introductions in the next 12 months, only 50 per cent of the companies said they would be placing new products on the market. Seventy-seven per cent of the respondents reported raw material shortages as the most important product-related issue in the construction industry now. That should not be news to anyone.

How will these shortages affect new product development efforts? The manufacturers themselves say that two alternatives are apparent. Manufacturers will either accept an era of limited production and product development, or they will speed up design and development efforts to compensate for traditional materials shortages, and seek ways to use materials which are available. The choice has yet to be made by many producers.

Clearly, the research acquired by the RECORD shows that in an attempt to keep costs in line and delivery problems at bay, manufacturers are switching to available raw materials, redesigning as a result, and cutting product lines back to the standard bread and butter items. This last strategy is one that seems common to all segments of manufacturing in the construction industry, and one which will limit the specifier's options for custom modifications.

Arthur D. Little, Inc. foresees unprecedented change in the construction industry in the next decade as the industry responds to the higher cost and restricted availability of traditional energy sources. In an attempt to assess the effects of the energy crisis on all levels of the \$135 billion construction industry, the company is preparing a study, "Energy and the Construction Industry," which will be available in November. The study may provide help to construction companies and suppliers by making three sets of assumptions about energy price and availability through 1980, and measuring the probable impacts of each assumption on major construction industry participants—manufacturers, architects, engineers, contractors and developers. We look forward to the results of this ambitious report.

How to use this issue

This year Product Reports is organized, as usual on the 16-division UCI format. The page number for each division can be found on the Contents page, page 3, and more information on any product or service in this issue can be easily obtained by using the Reader Service section which begins on page 14. Post-paid inquiry cards are provided for reader convenience on page 15. An Index to manufacturers whose products appear editorially may be found on page 11, while advertisers in the issue are indexed on page 17.

A special feature of this issue should be noted. For the first time, readers will be able to circle one number on the reader service card to receive manufacturers' literature on entire product sections within any of the 16 divisions. Of course, information on individual products may still be requested by circling the product's number in the case of advertisers, or by writing the number in the space provided, in the case of products featured editorially. However you wish to use the Reader Service cards on page 15, we think you will find them useful as you read this issue.

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COMPUTERS
INFORMATION SYSTEMS
MAINTENANCE/OPERATIONAL EQUIPMENT
OFFICE MACHINES
OFFICE SUPPLIES
REPRODUCTION EQUIPMENT

In comparing this year's Office Equipment section with those of earlier years, the immediate impression is that it contains a relatively high proportion of fairly sophisticated "pocket" calculators, some of them designed for scientific computations, one of them "programmable" for structural analyses. Although the comparatively low cost of these calculators tempts one to think of them as toys for the mathematically minded, their presence in such number suggests rather that the resources of large computers have reached down to an interface with everyday architectural and engineering calculations that demands easily available, reasonably simple tools to translate voluminous data into practical execution.

Building design and construction firms are, in any case, becoming more and more dependent on computer services to cope with such pressing concerns as energy and materials shortages, economic uncertainties and demanding questions from building owners and users. Architects can draw on an increasing number of these services, which are offered for design, planning and perspective studies, as well as for scheduling, specifying and office management. Among the new products described on the following pages are a mapping computer and information services for cost estimating and for hospital planning.

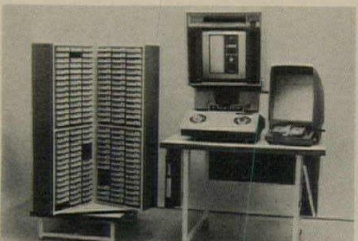
However useful, indeed necessary, these services and other sophisticated systems approaches may be, they proliferate at a speed that is bound to leave even the most industrious architect at sea in a flood of innovation. In recognition of this state of affairs, the Systems Committee of the American Institute of Architects will hold a conference on "Evolving Systems for Building Delivery" in New Orleans on November 19-20. The program will encompass such subjects as system approaches to architectural programming, design and construction management; building systems hardware; performance specifications; and computer graphics.



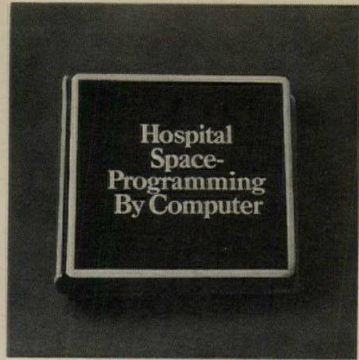
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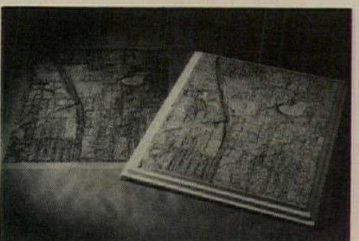
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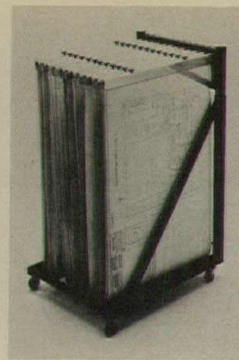
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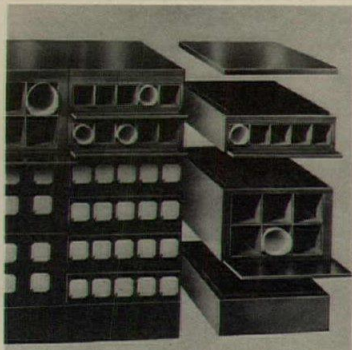
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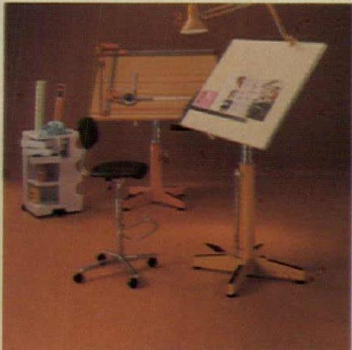
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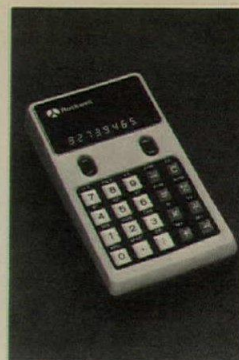
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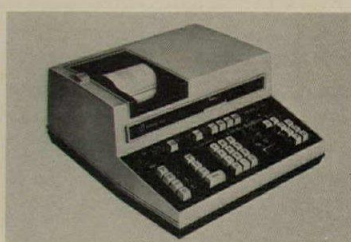
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COMPUTERS

1 GRAPHIC INFORMATION / System can store up to a million pages of data, carry out any search parameter, retrieve, display and copy one page or a series. *MRS 90* system has a terminal, photocopy component, alpha-numeric keyboard, and memory unit. / Ragen Precision Industries, Inc.

2 MAPPING COMPUTER / A graphics system for the collection, classification and retrieval of mapping information, and the automatic production and revision of maps, permits a relatively inexperienced operator to perform the editing and revising function at CRT input station. / Calma Co.

INFORMATION SYSTEMS

3 COST ESTIMATING / *Spec-Data II*, a microfilmed building products information system produced jointly with the Construction Specifications Institute, now contains Means' Building Construction Cost Data, microfilmed. / Information Handling Services.

4 HOSPITAL PROGRAMMING / This area programming tool employs comprehensive questionnaires and computerized data storage and processing to assist architects in long-range planning, additions, and remodeling programs for hospitals. / Medical Planning Assoc.

5 CARD/CRT SYSTEM / A CRT data entry and retrieval system permits stand-alone order entry, updating of client files, and on-site storage of data at local offices. The *System/500* batches data, and, when polled by a central computer, transmits it over dial-up telephone facilities. / Wiltek, Inc.

OPERATIONAL

6 MODELED IMAGE / Firm has developed process to apply photographic image to sculptured model surface, such as a contour map with aerial photograph. / Contours, Inc.

7 PLAN FILING / The pivot plan filing system takes up 25 per cent less floor space than other similar systems according to the company. The aluminum system, in mobile (shown) and wall mounted units, holds as many sheets or sets of drawings as a common flat drawer. / Plan File Co.

8 TUBE STACK FILES / Both large and small square tubes can be intermixed and files can be expanded to any height or width. A separate base has been designed for the modular unit, along with a cap placed over the top unit. Tube is of fiberboard with aluminum reinforcing. / Plan Hold Corp.

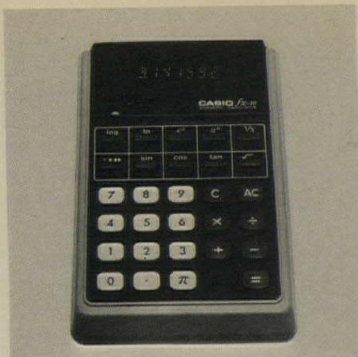
9 DRAFTING TABLES / Rotary drawing stand with pneumatic balance is from a European series of drafting furniture. Board can be rotated 360 degrees, and height and inclination are controlled by hand and foot levers. / Sam Flax, Inc.

OFFICE MACHINES

10 UNIVERSAL CONVERTER / *Rockwell 203*, a pre-programmed universal converter, can perform 112 direct conversions involving U.S., metric and Imperial constants. The machine can also be used for calculations. / Rockwell International.

11 ENGINEERING PROGRAMS / *Manufacturer's No. 3021 Structural Engineering Package*, for use with 1880 programmable calculator, consists of 12-programs, such as rigid frame analysis and section properties for concrete and for steel and aluminum. / Monroe.

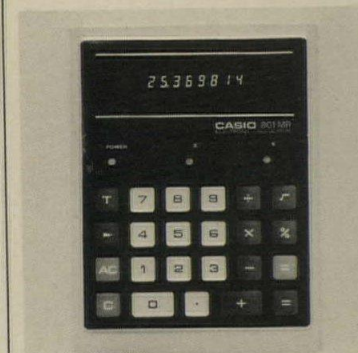
12 BUSINESS CALCULATOR / *HP-70* is preprogrammed with 21 of the most common equations used in business calculations. Four-memory stack and two independent memories allow machine to accumulate two running totals concurrently. / Hewlett-Packard Co.



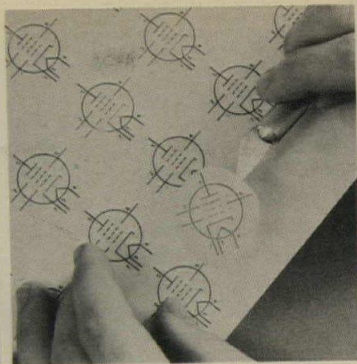
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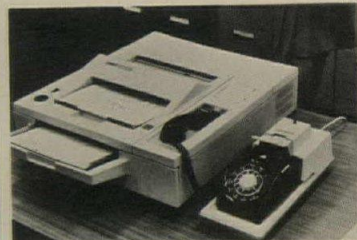
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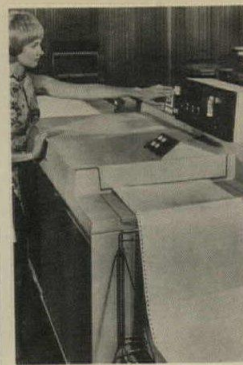
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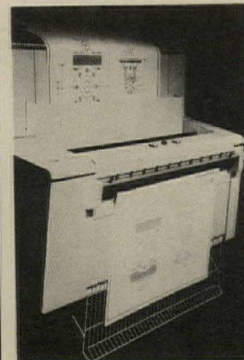
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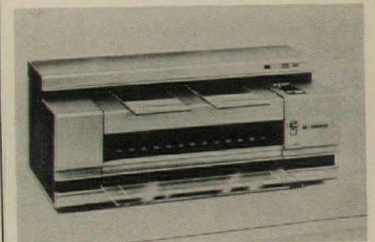
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13 LOW-COST CALCULATOR / *FX-10* scientific calculator, designed to sell at relatively low price for its purpose, offers ten of the most commonly used math functions as one-key operations, and has special π key that can be used in combination with any of the other functions. / Casio, Inc.

14 CONVERSION MACHINE / *Universal Conversion Calculator* performs 112 direct conversions for U.S., metric and Imperial systems, and can be keyed for currency and other conversions. / Sears, Roebuck and Co.

15 DESKTOP CALCULATOR / Major features of *801-MR* include keys for such functions as mark-ups, discounts and square root, automatic accumulation and recall of results, and a switch that establishes a constant to speed repetitive calculations. / Casio, Inc.

OFFICE SUPPLIES

16 GRAPHICS FILM / Manufacturer offers six types of *Technical/Visual Film* to reduce drafting repeats. Matte films, with pressure-sensitive adhesive backing, take pencil, ink or print and in some cases images from copiers. Transparent film takes only copier images. / Saga, Inc.

REPRODUCTION

17 FACSIMILE MACHINE / The new *410* system automatically sends or receives by telephone as many as 75 documents without an operator in attendance. The system answers calls, starts the sending and receiving process and hangs up when transmission is complete. / Xerox Corp.

18 COPIER-COLLATOR / A copier that automatically copies on both sides of a sheet of ordinary paper, and also collates the copies, sorts as many as 50 sheets of paper into each bin of the 20-bin sorter automatically as copies are made. Copying speed of the *4500* is 45 per minute. / Xerox Corp.

19 REDUCTION DUPLICATOR / The *7700* reduction duplicator, a model that adds computer-form printing capability to the company's *7000*, features a feeder mechanism that automatically moves each fanfold page into place, copies and reduces it to 8½-by-11-in. size. / Xerox Corp.

20 COMPACT COPIER / The *3100* copier copies on ordinary, unsensitized cut-sheet paper. The first copy comes out in eight seconds and succeeding copies are produced at a rate of twenty per minute. The new copier has a cassette loader that permits changes in paper sizes. / Xerox Corp.

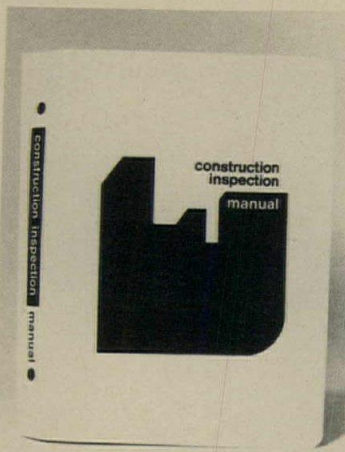
21 PRINT MAKER / *PD-160* uses "pressure diazo" method that uses no ammonia or heat. Operating off a standard 120-volt wall outlet, machine employs high-intensity fluorescent lamps, and needs no outside venting or warm-up period. / Bruning Div., Addressograph Multigraph Corp.

22 AUTOMATED COPIER / High-speed, high-volume whiteprinter *Metem 625* automatically selects correct paper width from three rolls in its magazine, determines length from original, and cuts paper precisely. / Bruning Div., Addressograph Multigraph Corp.

23 TABLETOP COPIER / *PD-30* tabletop copier uses manufacturer's odorless process. Machine can make prints from translucent originals in sizes up to 18 by 24 in. at speeds up to 22 ft per min. / Bruning Div., Addressograph Multigraph Corp.

24 HIGH-VOLUME PRINTER / A compact console white-printer with a high volume capability is a specially-designed all-in-one copy center offering synchronized printing/developing speeds up to 30 feet per minute. It can be used with either ammonia or *Dia-zol* solution. / Blue-Ray, Inc.

OFFICE EQUIPMENT



713 INSPECTION MANUAL / The revised manual, which includes a comprehensive check list for the inspector and specification writer, establishes methods and practices for the inspector, the architect, the engineer, the contractor, the specification writer, the construction manager and the owner. In addition to a new appendix, the 240-page manual consists of five parts devoted to (1) recommended duties, responsibilities and limitations of the owner, architect/engineer, contractor and inspector; (2) co-ordination of the construction project; (3) checklist of field inspection; (4) standards and codes; and (5) the construction inspector. / Building News, Inc.

714 MANUAL CALCULATOR / This 16-page booklet gives the reader the computing alternatives offered by sophisticated calculators. Written by the company the guide describes types of calculators that fall between the electronic adding machine and a large computer. The computing power of each is related so the reader can match his needs to a particular type of machine. Also, discussed in two selection guides are calculator applications in research, design, manufacturing, investment analysis, financial services and providing management information. / Hewlett-Packard.

715 COPYING DRAWINGS / This brochure contains descriptions of products and information on drawing reproduction. In addition to the products found in this brochure, there are others such as those used in copying, duplicating, microfilming. Application information is offered on drafting changes, restoring old drawings, reducing originals, microfilming, etched circuit layouts, map reproduction, phantom images, films, papers, processing chemicals and materials. / Eastman Kodak Co.

716 DRAFTING FURNITURE / A 52-page full product line catalog of drafting furniture and equipment describes flat, vertical and roll filing systems, single and coordinate group drafting tables, tracing units, art and student tables, and miscellaneous furniture and equipment. / Stacor Corp.

717 TRANSIT INNOVATIONS / The HUD report concludes that new technology offers the prospect of a variety of forms of public transport better able to compete with the private car than most existing modes. Some are described briefly. The Brief is excerpted from a series of papers presented at the third meeting of the Sector Group on the Urban Environment of the Organization for Economic Cooperation and Development (OECD) at Paris, France. / U.S. Department of Housing and Urban Development.

SITE WORK

718 GOLF COURSE BROCHURE / An irrigation company four-color brochure describing equipment and services points out that its services for golf courses cover: a survey of the course layout; a study of soil composition, prevailing winds and water supply; identification of problem areas; a proposed system design and an itemized estimate of materials and installation costs; contractor selection and monitoring the installation. The booklet also provides general information on company irrigation equipment developed specifically for golf courses. / The Toro Co.



719 CHAIN LINK FENCE / A specifications manual for chain link fence provides engineering drawings and data, and details the basic types of company's *Cyclone* fencing. / U.S. Steel Supply Div. A, I*

CONCRETE

720 STONE AGGREGATE / A 32-page publication written for engineers, architects, contractors, materials suppliers and concrete technicians discusses desirable properties for fresh and hardened portland cement concrete. It also describes the physical and chemical properties of crushed stone coarse aggregate and their affect on concrete. An up-to-date reference list and glossary of concrete terms is featured, and the manual contains considerations for the use of crushed stone as the coarse and/or fine aggregate in concrete. / National Crushed Stone Association.

721 HANDBOOK / The 384-page *PCI Handbook of Precast and Prestressed Concrete* discusses structural principles, assembly concepts, design procedures for flat slab and hollow-core structures, and thermal, acoustical and fire-resistant properties, among other things. / Prestressed Concrete Institute.

722 LIGHTWEIGHT CONCRETE / This supplement tabulates complete designs for "sand-lightweight" and "all-lightweight" concrete. Designs include all major concrete floor systems; flat plates; flat plates with spandrel beams; flat slabs with drop panels; waffle flat plates (two-way joist construction); and one-way concrete joist construction. Cost of the supplement is \$8. / Concrete Reinforcing Steel Institute.

723 FORM RELEASE / A two-color, two-page brochure has been released on a nonstaining chemical type form release agent. The brochure states the material can be used on wood, rough sawn lumber, steel, fiberglass, paper, masonite, aluminum or concrete forms for easy separation with no residue transfer. / Sonneborn-Contech Inc.

724 SUBSURFACE PROTECTION / Specification shows how reinforced concrete structures can be completely sealed and protected with a polyvinyl chloride water-impermeable membrane system at the time concrete is poured. Materials, installation and testing parameters are also detailed. / Ameron Corrosion Control Div.

725 CONCRETE ESTIMATING / A four-color brochure describing a programmable electronic calculator system for highspeed, accurate estimating of concrete construction costs is offered by the company. The system employs magnetic cards containing 288 programmed instructions. A library of magnetic cards is available, covering construction estimating for footings; foundation walls; sidewalk and curbs; interior and exterior columns and beams; shored flat slabs; piers below grade; reinforcing; stairs on fill; and slabs—on grade or suspended. / Sharp Electronics Corp.

726 NON-SHRINK GROUT / The brochure cites the basic differences of *SonogROUT*, a non-gaseous grout, and gas-forming grouts, drawing a comparison between them. *SonogROUT* is a non-metallic, non-staining, pre-mixed compound for areas previously considered unsuitable for iron filled grouts. The brochure covers several areas where the product can be used: machinery bases; patching and repairing cracks and joints; seating bolts or posts, etc. Complete specifications, physical properties and estimating information is also covered. / Sonneborn-Contech.

MASONRY

727 MASONRY REINFORCING / Masonry wall reinforcing is described with detailed specifications in the 12-page guide. Correct reinforcing is illustrated for all types of masonry wall: masonry partitions, single wythe and cavity walls, glass block walls, stone, corners, intersections, faced masonry or veneer masonry walls, and anchorage to steel, wood or masonry. New products are discussed also. / AA Wire Products Co.

METALS

723 WELDED SQUARE TUBING / The brochure compares three structural columns and shows that standard 46 ksi cold formed welded square tubing provides 28 per cent more yield strength than pipe or W shape at no extra cost, according to the company. Comparison is based on a 20-ft column length, unbraced, 108 kips concentric load, sideways inhibited. / Welded Tube Co. of America.

729 REINFORCING ANGLES / Presented is complete information on angle types and sizes. Manufactured from 16-gauge zinc-coated steel and available in 3-, 5-, 7-, and 9-in. lengths, angles are designed primarily for general utility use where wood connections are involved. / TECO.

730 CURVED METAL SHEETS / An 8-page catalog covering curved sheets for industrial and architectural applications includes complete specifications and data on the various configurations and metals available. Limitation and reference tables give the sheet widths and coverages, gauges, lengths, minimum radius possible, and type of curve. / Elwin G. Smith Div., Cyclops Corp.

more literature on page 36

FENCES & GATES
FOUNTAINS & POOLS
LANDSCAPING
PAVING & SURFACING
SITE FURNISHINGS

Landscape architect M. Paul Friedberg, in helping prepare this page in the first issue of Product Reports in 1972, noted that the mass production of well-designed site elements is increasing, with the elements themselves offering the basic building blocks to the designer seeking a cohesive, customized scheme in his open-space project. What Mr. Friedberg still presses for is the production of simple, inexpensive components that will help designers create parks.

With an understanding of manufacturing requirements such as simple tooling, Mr. Friedberg continues to design for several companies, including Timberform, represented in this section. A number of other companies are test-marketing "systems" playground equipment in an effort to penetrate the rapidly growing recreation market.

What is evident in the products available in general, and in those shown here, is the impact good design practices can have on the necessary accoutrements of outdoor spaces. Certainly, few of the products shown here are purely decorative. Almost all of them are meant to define space, light it, and carry all modes of traffic through it. Many of the products are but single representatives of broad lines of diverse elements with a single design thread and constructed for the most part of the natural materials still favored by architects.

Architectural Record and L'Architecture d'Aujourd'hui announce
the formation of The International Architectural Foundation, Inc. for the purpose of conducting . . .

An international design competition for the urban environment of developing countries focused on Manila

Desirous of helping the developing countries of the world to meet the challenges of unprecedented urban growth,

Inspired by the United Nations Resolution 3001 to hold a major United Nations Conference-Exposition on Human Settlements (Habitat '76) in Vancouver, Canada from May 31 to June 11, 1976, and wishing to contribute to its success,

The International Architectural Foundation, Inc. (IAF) has been formed for the purpose of organizing an International Design Competition open to the professions of architecture and planning throughout the world.

The IAF proposal has been described as "exciting and innovative" by Helena Z. Benitez, Coordinator, Preparatory Planning Group for Habitat '76. And Eric Carlson, its Deputy Director, has stated, "the IAF Competition has great potential for providing useful inputs to the important Vancouver meeting." In addition, prominent architects, planners and government officials around the world have expressed their enthusiasm and encouragement.

The Competition, scheduled to start in late 1974, when full details will be available to entrants, proposes to challenge the design professions to address themselves to a problem of grave and growing international concern: the human and environmental problems of *accelerating urbanization*. The challenge will be to design within a largely pre-existing urban-regional context a new and beneficent cell of urban growth—one that will foster human well-being and development and one that will be fully considerate of environmental impacts.

A site for a human settlement of 3,500 persons has been selected in the Dagat-dagatan area in the heart of Manila. This will be the relocation area for some 200,000 squatters now living in sub-slum conditions in the Tondo Foreshore of Manila. It is the

hope of the Philippines Government that the world-wide competition to design this initial neighborhood will be instrumental in improving conditions for all inhabitants of the grim Tondo area and, at the same time, bring forth ideas that will be helpful to community development in all other developing countries. To this end, the best work generated by this world-wide creative effort will be displayed at the Vancouver Conference-Exposition, featured in the world's leading architectural magazines, and published in book form.

Funds needed to meet the Competition budget will be contributed by a small number of philanthropic sources, and by interested business firms and individuals. The IAF is pleased to announce that The Graham Foundation, The International Development Research Centre (Canada), The Johns-Manville Fund, and The Asia Foundation have already pledged their financial support.

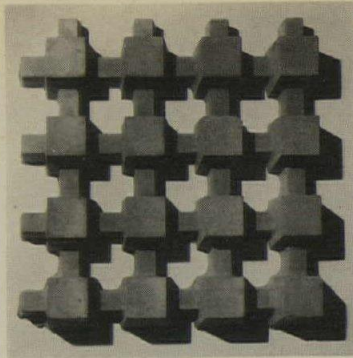
If you would like to consider the possibility of joining a small group of financial sponsors, and being identified over a three-year period with a major effort to help developing countries find creative and practical solutions to some of their crucial problems of human settlements, write (in the U.S.) Blake Hughes, The International Architectural Foundation, Inc. (41), 1221 Avenue of the Americas, New York, N.Y. 10020, or (in France) Jean-Louis Servan-Schreiber, The International Architectural Foundation, Inc., 10 Rue Lyautey, Paris 16.

1221 AVENUE OF THE AMERICAS, NEW YORK, N.Y. 10020.





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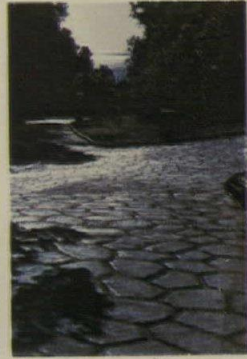
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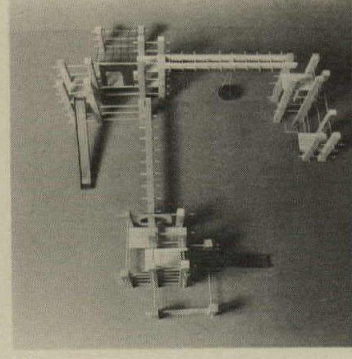
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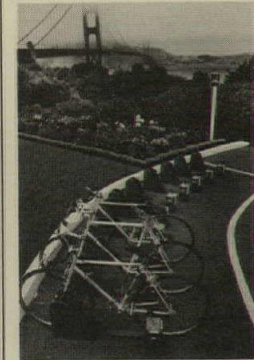
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FENCES & GATES

25 WOOD FENCE / Dowels fasten rails into double post in wood fence that is part of manufacturer's line of wood street furniture. Other items include benches and tables, bollards, signage, and fountains. / Timberform.

FOUNTAINS & POOLS

26 SCULPTURED FOUNTAIN / *Water Sculptures*, constructed of bronze and copper, are designed to be attractive with or without flow of water. Available in a variety of shapes, kits include sculpture, submersible pump, valves, manifold, lighting fixtures, junction box. / Kim Lighting Inc.

LANDSCAPING

27 SPRAYED MULCH / *Hydro-Mulch* is intended for the turf-growing technique known as hydraulic mulching. Mixed with water, seed and fertilizer, it can be quickly sprayed at high pressure over a large area to establish turf in less time and with less expense than sodding. / Conwed Corp.

PAVING & SURFACING

28 GRASS PAVER / *Checker Block* reinforced-concrete paving grid has voids through which grass can grow in parking areas. The material is cast in plastic molds, allowing fabrication near construction site. Standard color is gray, but green is available on order. / Hastings Pavement Co., Inc. A*

29 "FIELDSTONE" PAVING / *Random Stone*, a new pattern in the firm's range of concrete textures, is designed to resemble hand-laid fieldstone pavement. / Bomanite Corp.

30 PAVING BRICKS / *Metrolok* vehicular pavers of burnt brick come in interlocking H and Z shapes. Available colors are brown, flashed brown, red and buff, which may be used to demark traffic flow. / Hastings Pavement Co., Inc. A*

SITE FURNISHINGS

31 LIGHTED BOLLARD / Spun-aluminum bollard accepts either incandescent or mercury vapor lamp. Standard color for housing and acrylic diffuser is bronze, but other colors are available. The same base is used for such items as kiosks, litter baskets, and sand urns. / Bajer Industries.

32 PLAY SYSTEM / Basic components of *Cluster System* playground structures include 8-by-8-in. timbers fastened with coated steel rungs. A great number of standard configurations, as well as custom clusters, is offered, some including slides, tire swings and nets. / Timberform.

33 PLAY EQUIPMENT / Playground systems, built of red cedar, are supplied with hardware, graphics and installation instructions. / Parkitecture, Inc.

34 ASH URN / Wood ash urn, an addition to manufacturer's *Wood-forms Series* of site furnishings, is 1-ft square and 20 in. high. It is offered in redwood or red oak finishes. / Landscape Forms, Inc. A*

35 BIKE RACK / Coin- or key-operated *Bike Bank* provides steel jaws through which front of bike is inserted; when coin drops, key can be removed to lock the rack. Each unit accommodates two bicycles. / Echelon Corp.

36 BIKE STANDS / *Rally Rack* has parallel steel plates to accept front wheel of bicycle, and a pair of steel jaws that insert through back wheel for padlocking. Five models are available, two of them coin-operated. / Rally Enterprises, Inc.



Be a bulldog when you specify fence.

You can't tell everything about chain link fences just by looking at them. That's why we think you should know and specify exactly what you want. And insist that you get it.

Take terminal posts. Do you want them open or round? A round pipe can trap moisture and corrode from within; it will crimp if something runs into it. But a box-beam terminal is 20% stronger than a 3" pipe. It bonds better with concrete. And *all* surfaces are exposed—and zinc-coated for protection.

How about the way the fence fabric is attached to the terminals? What's the difference between 11 or 12 gage bands spaced 14 inches apart, and 10 gage lock loops every 3.3 inches? The difference is each loop has 1,200 pounds holding power, and the fabric is woven right through them.

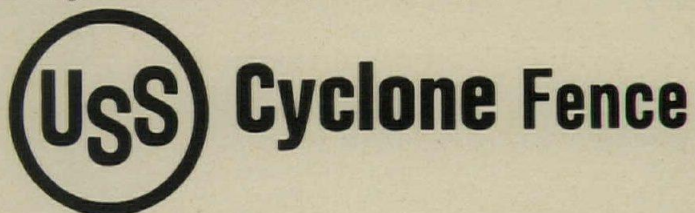
There are lots of very crucial details like this, and if you don't specify them—you won't get them. Fortunately, we've made it as easy to specify a good fence as a bad one.

For a complete set of specifications—specs that can be used as is—just mail this coupon. They're nonrestrictive. They don't even mention our name.

But it's no coincidence that CYCLONE Fence meets them in every way. It's tough. Gutsy. Lasts longer. Looks better. Takes less maintenance than any other chain link fence.

And CYCLONE Fence is local and convenient, with sales and supply points in 32 areas around the country.

CYCLONE Fence. Engineered and erected by U.S. Steel Supply.



CYCLONE Fence, USS Supply Division
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Pittsburgh, Pa. 15230.

Teach me how to be a bulldog. Send me a set of your specifications for chain link fence.

Name

Title

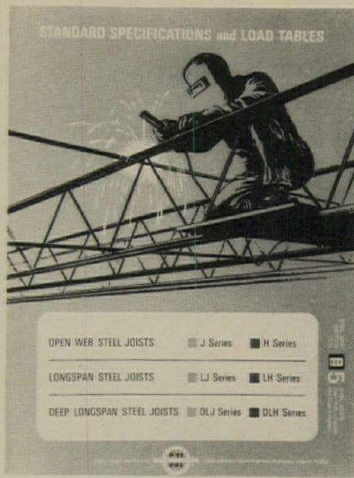
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USS and CYCLONE are registered trademarks.

continued from page 30



731 STEEL JOISTS / The 1974 edition of "Standard Specifications and Load Tables for Open Web, Longspan and Deep Longspan Steel Joists" covers specifications for materials, design and manufacture, application, handling, and erection. Mechanical properties, unit stress, connections, camber, paint, bridging, spacing and an eight-section recommended code of standard practice for steel joists are included in the booklet. / Steel Joist Institute.

732 GALVANIZING / Why steel corrodes and how galvanizing protects against corrosion are subjects discussed in a guide designed to provide a basic education in galvanizing and corrosion protection. Also included is a step-by-step discussion of the galvanizing process. Tables showing the relative corrosion rates of zinc and steel in various environments and the anticipated life of zinc coatings under various conditions are among the technical data in the booklet. / St. Joe Minerals Corp.

733 WELDED STEEL TUBING / The catalog describes and illustrates applications of structural and mechanical tubing for columns, beams, rail and highway auto carrier superstructures, highway signs, guard rails, etc. Specifications and cost savings information are included in the catalog. / Regal Tube Co.

734 STEEL JOISTS / A 44-page catalog describing steel joists in accordance with new Steel Joist Institute standards includes revised load tables for an expanded line of H- and J-series joists with spans to 60 ft and maximum depths to 30 in. Also included are full specifications on longspan and deep longspan joists with spans to 144 ft and maximum depths to 72 inches. / Armco Steel Corp.

735 METAL BAR GRATINGS / The purpose of this metal bar grating manual is to provide architects and engineers with essential current technical data concerning bar gratings and stair treads or both steel and aluminum. The information it contains reflects the practices recommended by the leading manufacturers in the industry. All design information presented in the revised edition is in conformity with OSHA standards. / National Association of Architectural Metal Manufacturers.

736 METAL LATH / A selection guide describes the various types of lath available, their sizes, weights and finishes, together with advisory notes on their typical application. Data is supplied on the maximum support spacing for the various types of lath in wall, partition and ceiling construction. Also included are descriptions of the most commonly used lathing accessories—among them expansion or control joints, corner beads, casing beads, and base screeds—again with notes on availability and recommendations concerning their most effective use. / Metal Lath Association.

WOOD & PLASTICS

737 HARDWOOD LITERATURE / To assist in selecting appropriate imported hardwoods for specific jobs, the company has prepared a number of product sheets, one covering each species. In addition to a general description of each hardwood, these sheets contain such information as color, texture, grain, luster, weight, working properties, durability, strength and end uses. / American Forest Products Corp.

738 REDWOOD EXTERIORS / A full-color brochure presents ideas for the exterior use of redwood, utilizing lumber from clear all heart to the garden, or common, grades. The eight pages illustrate completed projects, ranging from condominiums and commercial structures to remodeled buildings, outdoor amenities, lighting standards, and other accents. Architectural detail drawings on some of the buildings are shown. Color photos of patterns and grades are included along with finishing recommendations and application instructions. / Simpson Timber Co.

739 URETHANE SAFETY / Fire safety guidelines for the use of rigid urethane foam insulation in building construction recommend safety measures to be taken both in the design and during installation. The guidelines state that a suitable flame barrier should cover all surfaces of urethane foam insulation as soon as possible after installation, and that certain applications may require sprinkler protection. / Society of Plastics Industry.

740 PLYWOOD CHANGES / 1974 Product Standard changes are now included in these new design and construction publications. The new U.S. Product Standard PS 1-74 reflects changes in plywood for construction and industrial uses. "Commercial and Industrial Construction Systems (Y300)," "Residential Construction Guide (Y405)," and "Plywood Specification Guide (R820)," include the latest requirements. / American Plywood Association.

741 PLYWOOD COST CUTTER / Money-saving construction systems are illustrated in a new cost-cutter kit detailing workable ideas ranging from concrete forming to long span roof systems. They include preformed walls, acoustical floors, bonded roofs, 2.4.1 heavy timber roof decks, plywood in metal buildings, and clear spans up to 100 ft using plywood. / American Plywood Association.

THERMAL/MOISTURE PROTECTION

742 ROOF INSULATION / Information in the manual covers roof insulation selection, specifications, urethane rigid insulation boards, perlite roof insulation, fiberboard roof insulation and key points to consider in insulated roofing systems. / Celotex Corp.

743 SPRAYED FIREPROOFING / A 12-page booklet containing procedures for on-the-job inspection of spray applied structural fire protection materials discusses: the measurement of the physical characteristics of the material; and proper application. The procedures are applicable to both sprayed fiber and cementitious mixtures used on beams, columns, floor systems and related components. Visual criteria are provided for inspecting the condition of the substrate, resistance to cracking and acceptability of patching work. / Sprayed Mineral Fiber Mfg. Assocs.

744 INSULATIONS / A 16-page catalog of its complete line of industrial and commercial insulation products has been issued by the company. Covering a range of calcium silicate, mineral wool and glass insulations, as well as insulations for stainless steel and industrial sound control products, the catalog discusses products and specifications. / Keene Corp.

745 METAL BUILDING PANEL / *Insul-Lap* is an insulated, two-inch-thick exterior wall panel. It combines a urethane core, foamed in place between two metal skins with a patented interlocking joint and factory-installed gasket. The brochure contains a guide for computing the savings on heating and cooling costs which can be achieved with the use of these panels, listed by UL. / Glaros Products, Inc.

746 ELASTOMERIC COATINGS / The brochure provides answers to the ten most commonly asked questions about these coatings, according to the company which manufactures a line of rubber based coatings, trademarked *Elastron*, designed for spray application over urethane foam, concrete and masonry, wood and metal. / United Paint Mfg., Inc.

747 ROOF TRAFFIC PADS / This literature illustrates how roof traffic pads are used to provide a permanent and visually designated walkway on all types of roofing membranes. / W.R. Meadows, Inc.

748 SILICONE SEALANT / The sealant is a one-part, multi-purpose, mildew-resistant sealant especially developed for interior applications such as sealing showers/tubs, rimless sinks, and kitchen and bathroom fixtures. It can be applied readily over a wide temperature range and cures tack-free in one hour. Information concerning typical product data and application is now available. / Silicone Products Dept., General Electric Co.

DOORS & WINDOWS

749 COLD STORAGE DOORS / Described in this 16-page brochure are horizontal and vertical sliding models, sectional overhead, double acting impact, hinge, pass doors, doors for meat rail operations, fire retardant types. Power operated and manual models are available. The doors are supplied with facings of galvanized steel, aluminum, colorful plastic and stainless steel. Illustrations and descriptions of standard and optional features are included along with drawings and specifications of the doors. / Clark Door Co.

750 ENTRANCE SYSTEMS / The literature covers features, technical data and details of aluminum and stainless steel doors, windows, framing systems and curtain wall systems. / The Alumiline Corp.

751 DOOR OPERATOR / A brochure covering an entire line of automatic door operator systems is illustrated with line drawings and photographs. The 12-page booklet contains specification data and detailed dimension and installation drawings. In addition, the brochure gives floor mat details and specification requirements of the control logic for automatic door operators. / Eaton Corp.

more literature on page 44

Environmental factors and energy costs are the main concerns of the concrete industry today, but as this industry attempts to solve these problems with cement processing innovations, technological advances in concrete itself seem to be rolling right along.

According to Christiancy Pickett, Jr., a structural engineer with the Portland Cement Association, fuel-saving processes similar to those used in Germany and Japan are being implemented in the United States, reducing the energy demand by as much as 76 per cent. Even though there are spot shortages of cement, supply remains generally good, which in itself is good news when most important building materials are in short supply.

Speaking at the annual convention of the Construction Specifications Institute last June, Mr. Pickett outlined some of the design techniques and new concrete products available, or soon to be, for the designer. In light of criticism of the concrete industry and others deemed "energy intensive" he also cautioned against designing with nothing in mind but the energy used in producing the building. He pointed out that the production of all building materials, including cement, wood, steel and aluminum accounted for about 5 per cent of the energy consumed in this country last year.

However, you can save BTU's in materials production in concrete construction, according to Mr. Pickett, who advocates designing in high-strength materials. For instance, it takes approximately the same amount of energy to produce a pound of 60-grade rebar as 40-grade rebar, but much less of the 60-grade is needed to do the job. Further, high-strength concrete can improve the performance of the structure immeasurably, and results in additional rebar savings. A new PCA publication, "The Concrete Approach to Energy Conservation," offers numerous design suggestions to maximize use of energy-costly materials.

Among product developments noted by Mr. Pickett is 10,000 psi concrete, becoming more commonly used. The possibility of concrete in excess of 12,000 psi is seen by Mr. Pickett in the near future, and indeed, the Portland Cement Association is studying a new admixture which would make this a reality.

PCA has also completed testing and released two publications on punching holes in joists to allow the complete integration of mechanical and electrical systems within the depth of an ordinary pan joist or waffle slab. Research is underway to establish design standards for ductile shear walls in seismic areas. In seismic experiments on ductile joints, fiber-reinforced concrete has proven an effective, economical substitute for a conventionally reinforced joint.

Development of fiber-reinforced concrete will continue as will research into uses of polymer concrete—concrete impregnated with plastics—to meet the requirements of greater strength and durability demanded by construction.

How the hell are they going to pour concrete today!?



With Euco Accelguard.* Without worrying about rusting reinforcing or metal decking.

Now there's a concrete winter admixture you can specify with confidence. With safety, because it won't rust or corrode metal. And we can prove it with an independent testing laboratory report that removes even a shadow of a doubt.

You know all the reasons contractors want to use winter admixtures . . . save time, save money, better workability and accelerated setting time. We know you wouldn't specify an admixture because you thought they

all contribute to rusting. Now forget about the rust of the world.

Now you can safely specify Euco Accelguard. Now the contractor can work. Now all you have to worry about is not getting stuck in the snow.

Free no-rust offer! Send coupon for a copy of the Independent Laboratory Testing Report on Euco Accelguard.

*Complies with ASTM C-494. Also meets HUD minimum property standard 4901.1 Section 503.2. Approved by New York Board of Standards & Appeals Calendar No. 714-72SM.

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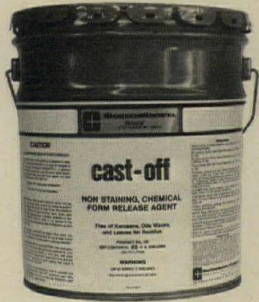
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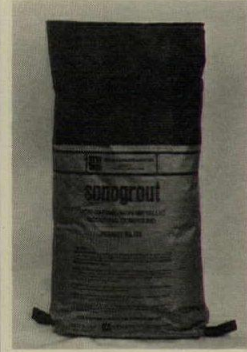
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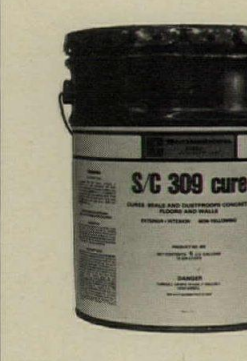
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CONCRETE FORMWORK

37 FORM LINERS / New patterns, such as weathered T&G board have been added to company's line of rigid form liners. The firm also announces a new line of flexible form liners, which allow depth of pattern, and the formation of a service for custom liner design. / Greenstreak Plastic Products.

38 FORM-RELEASE AGENT / A chemical form-release agent, *Cast-Off*, is effective on wood, steel, fiberglass, paper, masonite, aluminum or concrete forms. In addition, it supplies chemical and weather protection. / Sonneborn Building Products, Div. of Contech Inc. A*

39 COLUMN FORM / Preassembled plastic-coated plywood form has aluminum-reinforced camlock to eliminate need for bolts or ties. Cam action provides adjustable closing pressure. Available sizes range from 8 in. to 48 in. / Interform. I*

40 ELASTOMERIC LINER / Resilient rubber-like elastomeric form liner retains sharp details even after many pours, say the manufacturers, does not break deep reliefs or undercuts. Available in 25 standard designs, liner can also be provided in custom designs. / Symons Corp. A, L, I*

41 POLYSTYRENE LINERS / *Labrado* form liners, made of disposable polystyrene, can be used for tilt-up or poured-in-place construction. They are available in a variety of stone, brick, wood or abstract patterns. / Burke Concrete Accessories, Inc.

CONCRETE MATERIALS

42 FAST-SET CONCRETE / New fast-setting concrete sets within 5 to 10 minutes, according to the company, and hardens to 40 per cent of final strength within two hours. The formulation replaces normal aggregate with magnesia and a complex liquid phosphate. / Republic Steel Corp.

43 ANCHORING GROUT / *Super Por-Rok* is a non-shrink, non-metallic anchoring grout suitable for securing fixtures or setting rods and railings. Pourable grout sets in 15 minutes. / Hallemite.

44 CONCRETE ADMIXTURE / A new concrete additive, *WRDA with Hycol*, chemically controls the interaction between portland cement and water to yield higher compressive strengths and great flexural strength, along with improved finishability, says its manufacturer. / W. R. Grace & Co.

45 SLOW BONDING AGENT / Delayed bonding action of *Weld-Crete* concrete bonding agent permits application weeks ahead of placement of reinforcing steel, stressing cables or formwork, its maker says. It is suitable for interior or exterior use. / Larsen Products Corp.

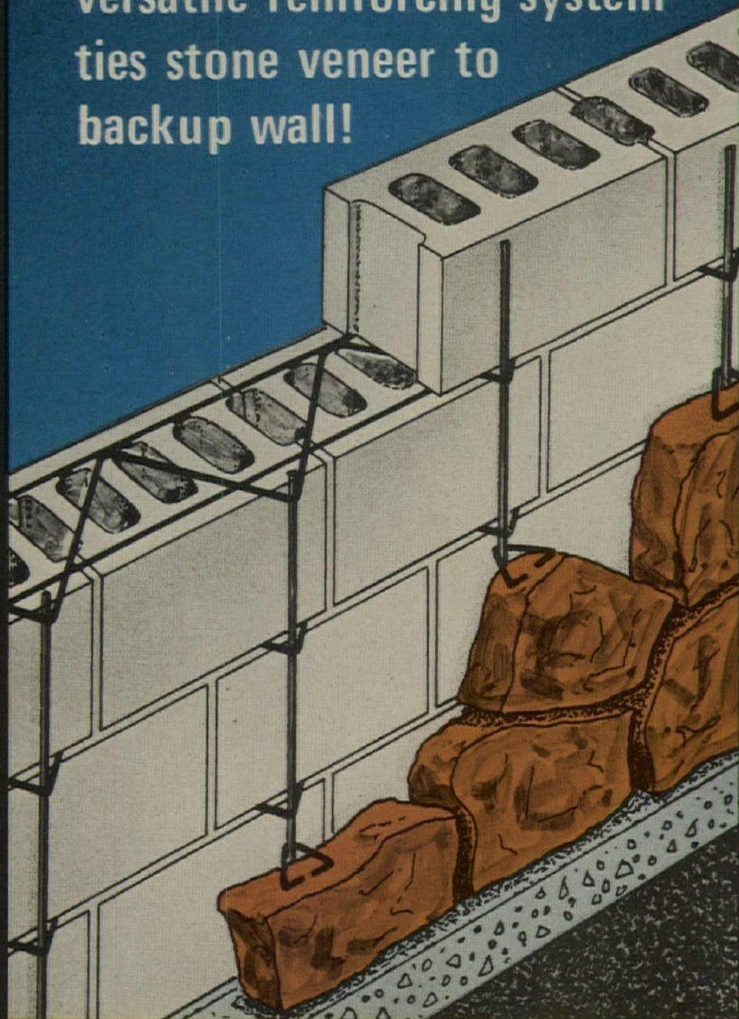
46 NON-METALLIC GROUT / *V-1 Non-Metallic Grout* expands up to 1 per cent with non-gaseous reaction to form strong, dense and impermeable joint, says the manufacturer. It can be placed within temperature range of 40 to 96 degrees F without special procedures. / W. R. Meadows, Inc. A*

47 NON-SHRINK GROUT / *SonogROUT*, non-shrink, non-metallic grout was designed to fill need for pre-mixed, non-gas-forming compound. Suggested applications include columns, bearing plates, and seating bolts. / Sonneborn Building Products, Div. of Contech Inc. A*

48 CURING COMPOUND / Non-yellowing clear acrylic *Formula S/C-309* simultaneously seals and cures freshly finished concrete surfaces. Resistant to ultraviolet discoloration, it can be used indoors or outdoors. / Sonneborn Building Products, Div. of Contech Inc. A*

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Stone-Lok makes the mason's job easier and ensures that ties can be placed in the most practical manner to meet building codes . . . and Stone-Lok also adds a TRUSS style reinforcing to the back-up wall. **GET MORE INFORMATION TODAY!!!**

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MASONRY ACCESSORIES

MASONRY RESTORATION & CLEANING

MORTAR

STONE

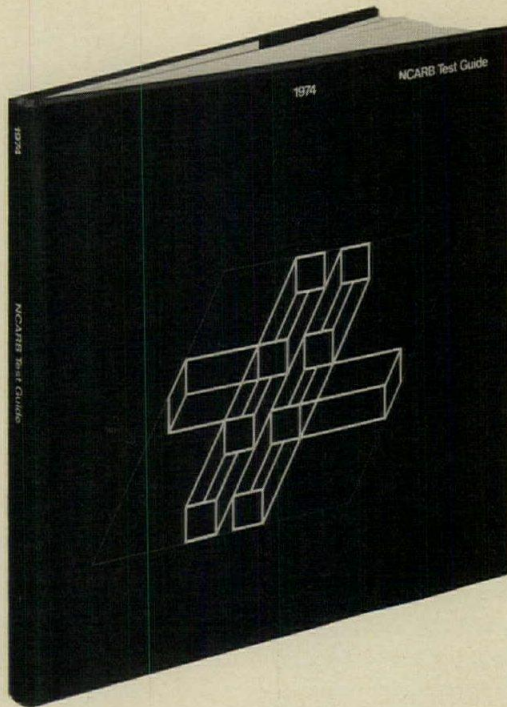
UNIT MASONRY

Although masonry is one of the oldest known construction materials, recent esthetic trends and technical improvements betoken an enduring reliance on both brick and stone for building. In its program for a symposium on masonry held earlier this year, the American Society for Testing Materials noted a continuing interest in "engineered" brick masonry, which can produce extraordinarily thin bearing walls (RECORD, Mid-August 1974, page 94), as well as other structural design improvements. Outsize and lightweight units have also increased masons' productivity, while brick panelization has encouraged the development of mortar additives for this purpose.

Panelization has also come to stone masonry. Concrete panels faced with prebonded stone can be shop-fabricated, as can smaller architectural details such as door and window frames. Stone producers retain their interest in new techniques of texturing the material, and are developing ways to improve the color and appearance of unpolished stone. Among technical innovations in the installation of stone is a system that employs mechanical fasteners in place of traditional anchors and mortars to set marble veneers; the system, in addition to increasing the speed of installation, eliminates the need for rigid spacers at the joints, since all joints are in effect expansion joints.

Despite its well-known durability, stone has proved distressingly vulnerable to modern industrial pollutants, which, when airborne, dirty the stone and which, when mixed with rainwater, corrode it. One of the products described in this section is an easily applied plastic cleaner intended for the restoration of soiled and discolored stone. Meanwhile, at the University of Louisville, geologists are testing various methods of impregnating stone with resins and petrochemicals as masonry preservatives, and we may at least hope for technical developments in pollution-resistant stone as an answer to a persistent problem.

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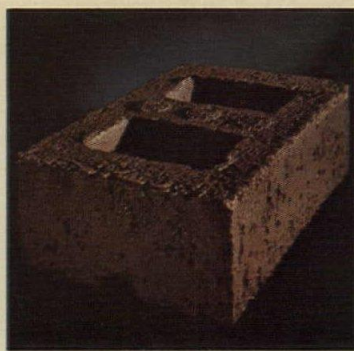
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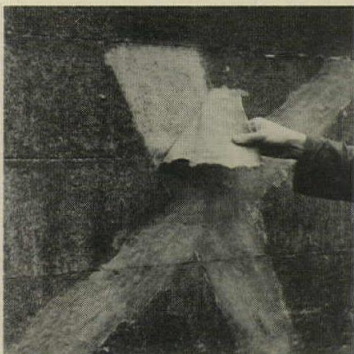
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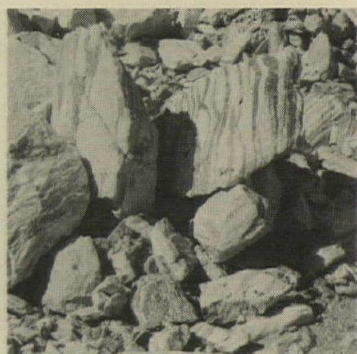
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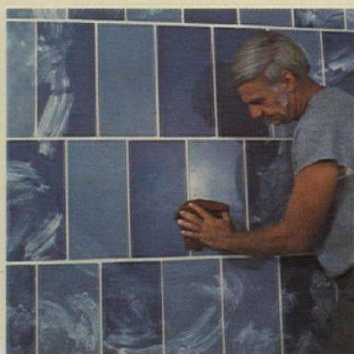
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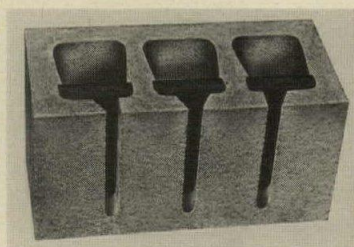
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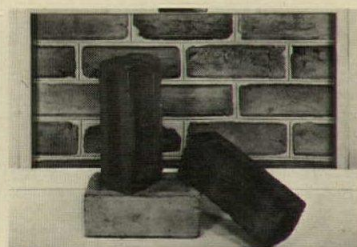
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MASONRY ACCESSORIES

49 STONE FINISH / Machine can spray epoxy and stone mixture up to 1/8-in. thick on exterior and interior surfaces to render decorative stone treatment quickly and at low cost. Surfaces that may be coated are cement, wood, metal, plastic and chipboard. / Arjon Mfg. Corp.

MASONRY RESTORATION

50 PLASTIC CLEANER / Liquid plastic is applied to the stone or concrete surface with a brush. After a few days, the resulting plastic film is pulled from the surface, bringing with it dirt and discoloration. / Netherlands Consulate General.

MORTAR

51 CONCRETE ADHESIVE / Surewall Bonding Adhesive is an acrylic polymer emulsion designed to fortify portland cement bonds exposed to severe freeze-thawing or corrosive conditions. Recommended application is as admixture for surface bonding cement. / W. R. Bonsal Co. L*

STONE

52 HONED GRANITE / To bring out color associated with polished stone, manufacturer applies "jet honing" process to thermal-finished or other textured granite. The process uses neither chemical additive nor polishing with abrasives. / Cold Spring Granite Co. A*

53 MARBLE CHUNKS / For use as rubble building stone, marble is supplied in chunks measuring from 6 in. to "man-sized." Tiger Stripe pattern has alternating bands of white and a tone that ranges from gold to dark brown. / Georgia Marble Co.

54 THIN MARBLE TILE / Markwa 1/2-in. marble tile is available in 12 colors and two sizes—8 by 8 in. or 12 by 12 in.—and in satin face finish with square edges for floors or polished face finish with cushion edges for walls. / Vermont Marble Co.

UNIT MASONRY

55 AGGREGATE BRICK / Thru-The-Wall unit is an 8-in.-deep block with a finished brick face on each side. Available in both dense and lightweight expanded aggregate, it has core channels large enough to accommodate service lines. / Rus-tique Brik International.

56 GLAZED MASONRY / Spectra-Glaze II construction blocks have new satin gloss finish. Available in 48 colors, the glaze meets USDA and OSHA requirements for permanent sanitary finish, through-wall bearing units, and fire ratings. / The Burns & Russell Co. A*

57 ACOUSTICAL MASONRY / Soundblox 2 has NRC 10 points greater than firm's earlier sound-absorbent construction block. Aluminum dividers in cavities are "opaque" to high frequencies. / The Proudfoot Co., Inc. A, I*

58 EARLY AMERICAN BRICK / Design of 1776 series of face brick is based on historical and laboratory studies "to create a truly representative brick of early America." The fired-clay units are available in several color ranges, and in both standard size and oversize. / Glen-Gery Corp.

continued from page 36

752 SCHOOL HARDWARE / A 16-page bulletin describing a range of school door hardware for vandalism protection and fire/life safety includes a report on early warning smoke detection/automatic door control, and a technical guide on hardware for school doors. / Rixson-Firemark (Can.) Ltd.

753 LOCK CATALOG / A master catalog includes basic locksets, closers and panic devices. The catalog is offered complete with dividers and binder. Also included in the line of products are electric locks and locking systems, electronic access control systems, panic exit devices, door closers, and door operators. / Eaton Corp.

754 REPLACEMENT WINDOWS / A full-line catalog featuring aluminum replacement windows includes short form specifications and detail drawings. The manufacturer claims a unit design that provides for easy inclusion of a wide variety of spandrel and panel types, materials and optional insulating glass. / Louisiana-Pacific/Weather-Seal Div.

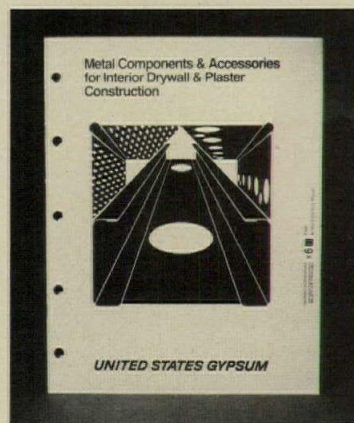
755 STEEL DOORS/FRAMES / A 16-page brochure on drywall frame and steel doors and frames provides: door selection guide; relative cost comparison figures; construction features; dimensions; hanging details; frames and anchors offered; types of labeled doors and frames available; suggested procedure for the selection of fire doors and frames; and complete specifications. The doors are available in full flush and seamless design. Special features of doors are continuous hinge and strike channel reinforcement. / Republic Steel Corp.

756 SOLAR HEAT LOAD / A folder for architects, engineers, owners and managers of commercial and institutional buildings explains the advantages of a solar heat load computer survey and report being offered by the company. To receive a computer heat load survey for an individual building, a minimum of on-site data is required, obtained by local representatives with your assistance and upon your request. Stored in the computer are data derived from the current American Society of Heating, Refrigeration and Air-Conditioning Engineers "Handbook of Fundamentals" and other professional sources. This combined information provides a print-out that indicates the amount of electricity conserved by solar shading for a given building. / KoolShade Corp.

FINISHES

757 BRONZE FLOOR / Marketed under the group tradename of *Ultra-Bronze* the products are: solid bronze, textured floor and wall tile; *Metalace* solid deep-relief wall covering and filigree open work panels. The information offered includes full installation and cleaning maintenance practices, data specifications and photos of suggested and actual installations. / Furco-text, Inc.

758 NOISE CONTROL / A brochure details product descriptions, functions, application, installation and order information for sound absorbers; barriers; damping sheets; isolators; duct silencers; and composites. Company services described include measuring noise, determining the need and providing the hardware. / Lord Corp.



759 WALL ASSEMBLY / A 36-page catalog, "Metal Components and Accessories for Drywall and Plaster Interiors," provides details on uses, sizes, styles, packaging, and weights for various steel accessories. The catalog contains separate sections for: metal lath, corner beads, trim accessories, screeds and moldings, casing beads, control joints, studs and runners, furring accessories, clips, screws, and load data. / U.S. Gypsum Co.

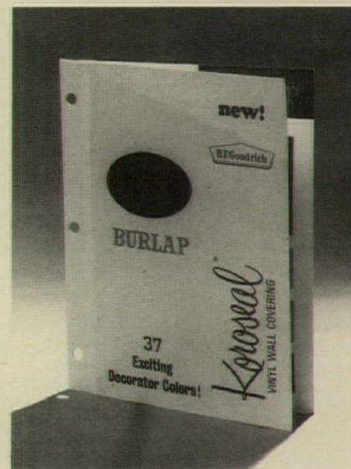
760 CARPET CUSHION / The 12-page booklet contains information on test results conducted by various laboratories and research agencies dealing with a variety of topics. Included is a discussion of the three types of carpet installation, comments on resiliency and resistance to pressure, acoustical properties, insulation properties, economical aspects, cushioning properties, pile weight savings, maintenance benefits, installation cost savings. The booklet concludes with a glossary of cushion types describing felt, sponge rubber, urethane foam and foam rubber choices. / Carpet Cushion Council.

761 EPOXY BASE COATINGS / The *Tru-Glaze-8* products, which can be applied over block, concrete plaster, drywall, etc., resist moisture, foods, oils, abrasion, staining, mild chemicals, and scrubbing. The coating, which comes in hundreds of colors and goes on by brush, spray, or roller, is described in this brochure. / Devco Paint.

762 SANITARY PANELING / Product consists of 4 by 8 ft panels laminated of $\frac{3}{32}$ in. facing of white fiberglass reinforced plastic, a thermally efficient urethane foam core and an aluminum foil vapor barrier backer. The panels are joined with lap joint. Design details and standard panel specifications are provided in this brochure. / W.H. Porter, Inc.

763 CERAMIC MOSAIC / A 16-page color brochure illustrating 44 unglazed colors and eight glazed accent colors, shows a 5 in. high trim (back-mounted built-up base) and 2 by 2 ft sheets of tile pregouted with polyurethane. The brochure also describes swimming pool and mural design services. / American Olean Tile Co.

764 VINYL WALL COVERING / Burlap texture is now available in a range of 37 colors. The 27-oz. medium duty burlap design for commercial-institutional use, is produced in a full 54-in. width. Additional information is offered in this brochure. / B.F. Goodrich General Products Co.



765 CARPET GUIDE / A brochure for specifiers of contract carpet includes a description of the company's performance certification program, the various yarn programs available from the company, installation and traffic level classifications covered by performance certification, and pictures, descriptions and specifications of most performance certified carpet lines of this company's carpet mill customers. / Dow Badische Co.

SPECIALTIES

766 PORCELAIN CHALKBOARDS / All porcelain-on-steel chalkboards are described in this brochure. Boards come in ten standard colors—all displayed in the brochure—including the "Silver Screen Gray" which can also serve as a projection screen for all types of audio-visual instruction. / AllianceWall Corp.

767 MOLDED LETTERS / An eight-page catalog describing injection molded *Plexiglas* letters in standard letter heights ranging from $\frac{1}{4}$ in. through 10 in. is available. Fourteen alphabets, and numerals where applicable, are displayed on background grids for size comparison. The letters are available in standard *Plexiglas* colors, two-tone finish for indoor use only, and metallic finish for indoor and outdoor use. Symbols are also available in sizes from $\frac{1}{2}$ in. through 13 in. / West-On-Letters, Inc.

768 PREFAB FIREPLACES / Included in this four-color literature is photography of all units, plus information on chimney installation. All free-standing, wall-hung and built-in fireplaces are shown and specifications are given. / Preway, Inc.

769 STEEL SHELVING / A 128-page catalog for users of steel shelving and storage systems, steel shop equipment and industrial furniture gives product descriptions, application and installation information, and data on shelf loading, product density, unit load capacity, floor plan and layout for steel equipment and retrieval systems. / Hollowell Div., Standard Pressed Steel Co.

more literature on page 108

EXPANSION CONTROL
FASTENERS & SUPPORTS
GRATINGS
METAL DECKING
METAL FABRICATIONS
METAL FRAMING

Architectural applications of exposed metal such as the space frame roof structure have brought about a desire on the part of specifiers for new metal finishes, including coloration. We note this development with one of the products in this division, a space frame system offered in six standard colors. Other companies are also coming to the fore with processes for dyeing almost any aluminum alloy used for exterior purposes, and specifiers were credited by one manufacturer as prompting this esthetic innovation. New finishes are, however, expected by architects and owners alike to contribute to the longevity of exposed metal products.

Metal gratings are expected by manufacturers to find extensive application in segments of the construction market showing an increase in activity: power plants, sewage and waste treatment facilities, and refineries. Today, grating is a \$50 million industry, ready to grow with these new markets, according to industry spokesmen. Only the shortage of steel is preventing an increase in sales that could reach "30 per cent overnight," according to one executive.

Although most grating is used in industrial applications where slip- and corrosion-resistance are necessary, exterior and architectural use has fostered development of a new weathering steel type; the availability of this, however, depends on steel production.

In specifying steel grating, the American Iron and Steel Institute recommends six stipulations: type of grating—welded, riveted or press-locked; depth and thickness of bearing bars; shop primed or galvanized; method of fastening to supports; over-all dimensions and/or a drawing showing the area to be covered, span and location of supporting framework; shipping instructions. If they are critical, list atmospheric conditions and any hazards.

According to Milton Van Dyke, chief engineer of IKG Industries, specifiers should follow this guide:

Study manufacturers' load tables to determine safe weight limits and proper bar size.

Do not span grating with the bearing bars parallel to supports. Every bearing bar should be held up at its ends, preferably with a metal support.

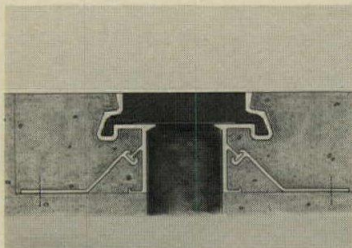
Notify the grating manufacturer of all columns, vertical bracing, duct work, piping, or other obstructions that will be located on the grating level. Cut-outs can then be neatly made.

Do not support steel grating on aluminum beams without an insulation layer between the two metals. This will prevent corrosion.

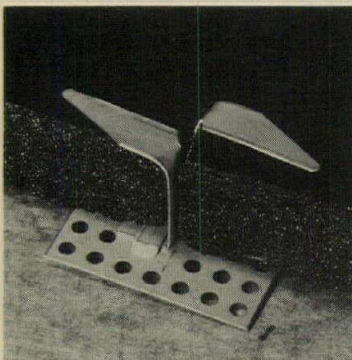
Use "close mesh" grating in pedestrian traffic areas. This grating has between-bar openings as small as ¼ inch.

Do not install gratings with cross bars on the bottom surface. With the press-lock type, inverted flexure can cause the slots to spread open and the cross bars to fall out.

Do not span grating parallel to the direction of traffic, when the surface will be used heavily for wheeled loads.



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EXPANSION CONTROL

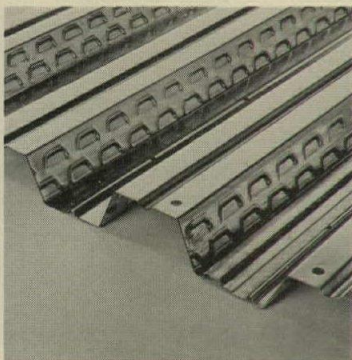
59 JOINT ASSEMBLY / *Flex-Seal* expansion joint assembly combines mechanical and chemical forces to maintain cohesion and structural support of the sealant. To assure quality control, the joint, including sealant installation, is shop-assembled. / MM Systems Corp.

FASTENERS & SUPPORTS

60 CLIP FASTENERS / *Ekoustic-Klip* fasteners, designed to secure acoustic materials, can be attached to flat, curved or corrugated surfaces of concrete, metal, wood or fiberglass with manufacturer's high-strength adhesive. Three types of clips are available. / Eckel Industries, Inc.



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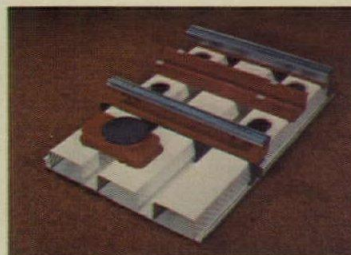
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GRATINGS

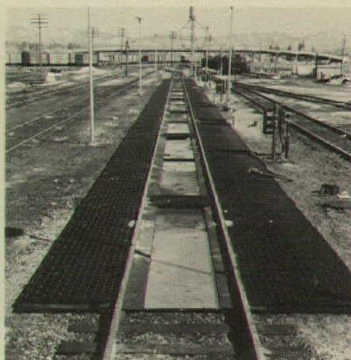
61 ANTI-SKID FLOORING / The system consists of planks, stair treads and accessories. *No-Skid* planks and stair treads are 9 in. wide and come in carbon steel (ASTM-A 446-69 Grade C), stainless steel (type 304) or aluminum (alloy 5052). / Wheeling Corrugating Co. A*

METAL DECKING

62 STEEL DECKING / *Comdek* steel decking, designed for use in composite floors, has deeply embossed indentations to assure bond of concrete and deck. Sidelap design encourages precise fitting to bays, says manufacturer, and minimizes lap leakage. / Granco Steel Products Co. A*



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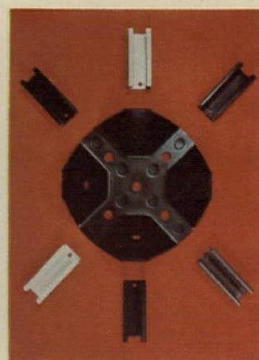


64

63 DISTRIBUTION SYSTEM / Integrated in-floor electrical distribution system has pre-punched cellular steel deck on architect's module, bottomless trench header duct, and preset inserts and fittings. / Inland-Ryerson Construction Products Co. A*

METAL FABRICATIONS

64 COLLECTOR PANS / In answer to various statutes prohibiting water pollution, a system of steel pans and aprons is designed to catch spilled diesel fuel and other railroad wastes. The modular system can be installed on new or existing tracks. / Armco Steel Corp.

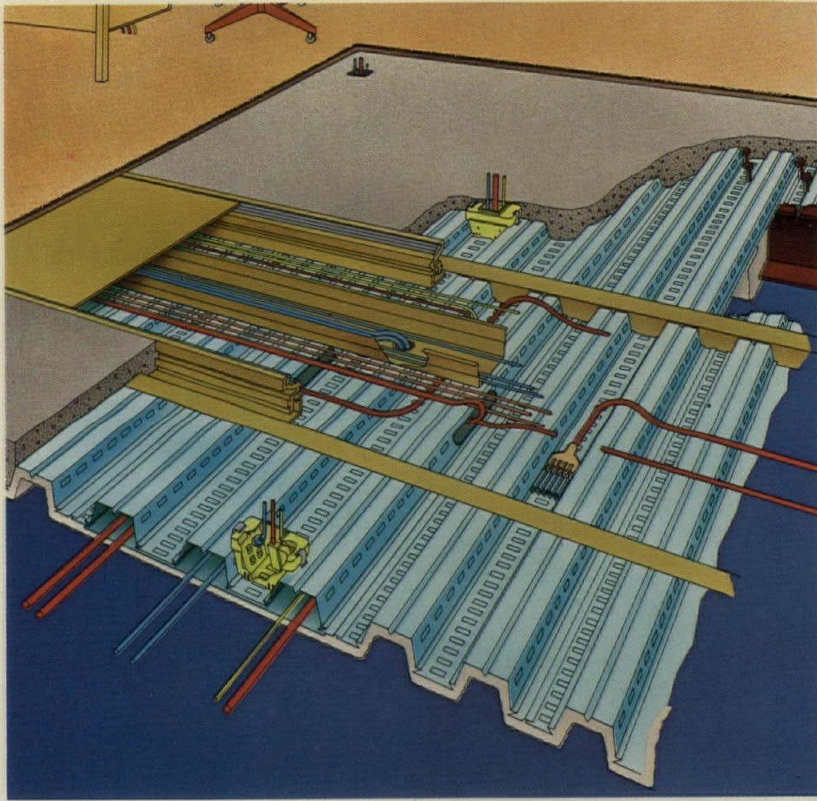


65

METAL FRAMING

65 SPACE FRAME / New baked finish is offered on *Moduspan* space-frame system. Base coat, applied by electrodeposition, is modified polyester paint containing rust inhibitor. Finish coat is available in six colors. / Unistrut Corp. A*

Robertson's Q-Floor Taproute System,



Over the life of a building, Robertson's Q-Floor[®] Taproute[®] System will save you money.

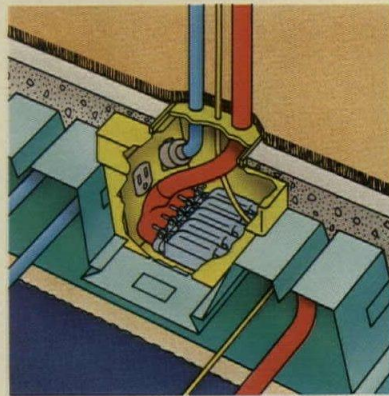
Consider this . . . an advanced cellular floor system with enough electrical capacity and maintenance flexibility to accommodate changes—year after year.

Robertson's system puts an end to those messy chopped-up floors; it minimizes the expense of interior alterations.

Proven Economy

Recent Nebraska case history: A 470,000-square-foot office building for 3,000 employees. Alternate bids were Robertson Q-Floor Taproute System with 14,000 Tapmate II preset outlets vs. a "poke-through" floor with rough-in underside junction boxes. On a \$17,000,000 total bid, there was a \$250,000 initial cost premium for the Robertson system. However, the low electrical contractor submitted a net savings of \$88 per pair of telephone and power outlets using Tapmate II instead of "poke-through." Based on an estimated 750 changes per year (1 per each 4 employees), this building manager recognized that the Tapmate II savings **would offset the higher initial cost of the advanced system in 3.8 years.** The life-cycle cost advantage is obvious.

with Tapmate II,

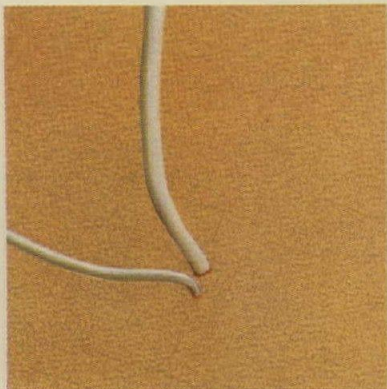


It's called Tapmate II and it's the newest innovation in electrical outlets.

With two to five times the capacity of conventional fixtures, Tapmate II is a built-in deterrent to obsolescence.

You can locate a Tapmate II every 25 to 30 square feet. Tapmate II is preset and out of sight under the carpeting. It's ready to do the job as soon as you need it, when you need it.

takes the teeth out of life-cycle cost!



We came up with a simple solution to the problem of life-cycle cost:

Anticipate the future need for greater electrical capacity and flexibility of change-over, then design that capacity and flexibility right into your floor system.

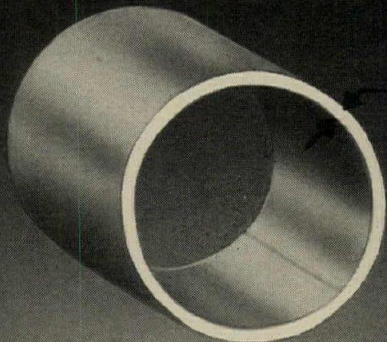
For complete information, write for technical literature, or call your local Robertson representative. H. H. Robertson Company, Dept. 36, Two Gateway Center, Pittsburgh, Pennsylvania 15222.

Robertson

46 KSI at no extra cost

why settle for less in a structural column?

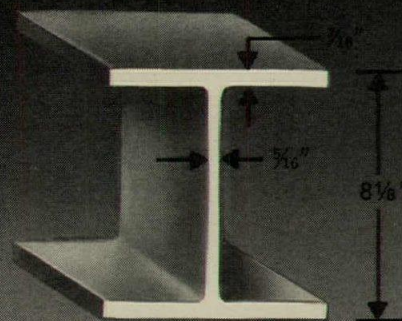
PIPE
36 ksi



8 5/8"

28.6 lb/ft

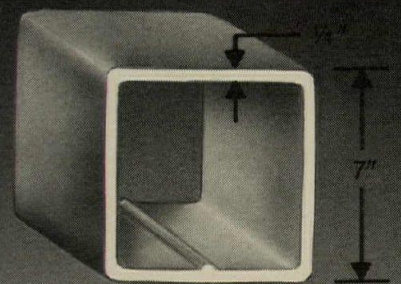
W SHAPE
36 ksi



8 3/8"

35 lb/ft

SQUARE TUBING
46 ksi minimum



7"

22.7 lb/ft

Cold formed welded square tubing weighs less than W shape or pipe structural columns. And you get greater yield strength at no extra cost. Shouldn't you be specifying square tubing for your structures?

we produce cold formed welded steel tubing in more sizes and wall thicknesses than anyone in the industry.

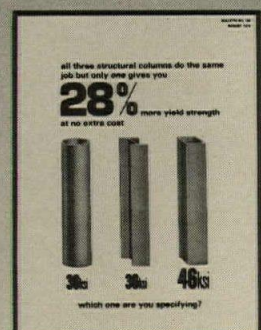


RECTANGULAR:
3" x 2" x 3/16" to 20" x 12" x 1/2"
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An Achievement in Stainless Design . . .

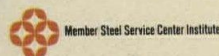
Sears Tower, Chicago. The world's tallest building at 1,454 feet. Republic stainless architectural metal products were used throughout the building.

Glass framing has a mill prebuffed finish. Wall and door panels, embossed in subtle texture design, are supplied in 2B-N finish, polished to highlight the texture. Even outside railings and flagpoles are shining stainless. Truly an accomplishment in stainless design; for beauty, durability, and cleanability.

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WOODWORK

LAMINATED SHEETS

LUMBER

PLASTIC LAMINATES

PREFABRICATED PLASTICS

PREFABRICATED WOOD

SIMULATED WOOD

Last year over 5 billion pounds of plastics went into construction, not including the billion pounds for electric wire and cable, another billion for furniture, and a billion square feet of synthetic carpeting. It has been forecast that there will be a 44 per cent increase in plastics use in construction by 1980, and a 147 per cent increase by 1985. Now the word is, according to some plastics industry spokesmen, that the door is opening to the energy-saving potentials of plastics.

One such application is the fiberglass reinforced plastic panel used in skylighting to augment electric lighting. Further, panel wall systems comprised of an aluminum grid core with translucent fiberglass reinforced plastic panels bonded to both sides can produce an insulation value of 0.40. U-factors of 0.13 or better have been reported in structures made of urethane core sandwich panels faced with plastic.

James J. Coleman, chairman of Reinforced Plastics/Composites Institute of the Society of Plastics Industry states, "plastics' major role in the construction industry will be wherever weight is a liability; corrosion is a possibility; and wherever plastics can provide a solution at less cost."

In reinforced plastics, the principal reinforcement is fibrous glass. However, as the price of such high strength fibers as graphite and carbon continues to decline, even higher strength structural composites can become economically feasible. Among other new construction uses for plastics suggested by Mr. Coleman are: wall studs made of waste product cores in plastic shells; plastic coated fibers replacing rebars in reinforced concrete; and more plastic pipe and tanks.

Research into wood products, also shown in this division is being conducted with particular zeal in the plywood industry, where certain raw materials shortages may lead to viable new products. Particle board studs may soon provide a way of using present-day waste, for example, and three-ply 1/2-inch plywood is being tested at the American Plywood Association as an alternative to five-ply 5/8-inch sheets. Approval is expected shortly.

What were once considered less desirable grades of lumber are finding their way into finish work, and rougher grades in framing are being used according to the Western Wood Products Association which reports "Stud" grade 2 by 4's shipments almost replacing the traditional three-grade sorting of Construction, Standard and Utility. Its growing popularity is obvious from the trend, and "Stud" grade is, according to WWPA, acceptable under all model codes. The advantage to mills of this grade is simplified shipping and grading, and to users, it is low cost.



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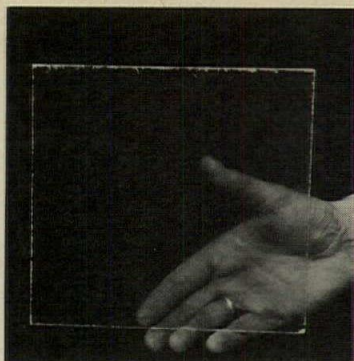
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WOODWORK

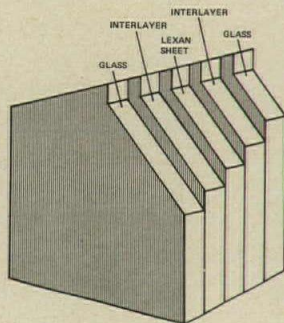
66 CARVED WOOD PANELS / *Sculpturewood* panels have deep-cut linear grooves in square, rounded or beveled shapes. Standard panels are 3/4-in. thick with an area of 2 by 8 ft, and are available in redwood, hardwoods, or prime-coated for painting. / Forms & Surfaces, Inc.

67 THRIFT-GRADE REDWOOD / Economical grade of redwood plywood paneling has face veneer containing contrasting streaks of white sapwood. Known as *Select Saw-Textured* or *Custom Ruf-Sawn*, panels are available with range of face patterns. / California Redwood Association. A, L*

68 WEATHERED PANELS / Decorative panels have look of weathered pine. The panels, 7/16-in. thick, are vinyl-coated. *Old Barn Pine* has gray tone, *Old Mill Pine* brown. / Roseburg Lumber Co.



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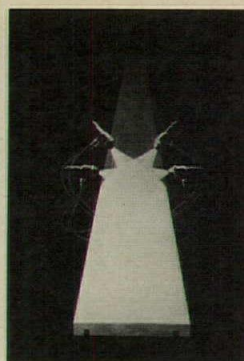
LAMINATED SHEETS

69 CLEAR FIBERGLAS / *Kal-Lite* fibreglass-reinforced plastic sheet provides insulation as well as light transmission and withstands temperatures from -30 to 250 degrees F. Suggested applications include solar collector covers. / Kal-Lite Div., Kalwall Corp.

70 SECURITY GLAZING / Impact-resistant *Lexgard* security sheet has core of manufacturer's *Lexan* plastic between two outer plies of glass laminated with interlayer. Material is rigid, will not shatter, and is dimensionally stable at high temperatures. / General Electric Co.

LUMBER

71 KNOTTY REDWOOD / Lower cost "garden grade" redwood, suggested for fences and other landscape structures, is available in three grades, all containing knots. / California Redwood Association. A, L*



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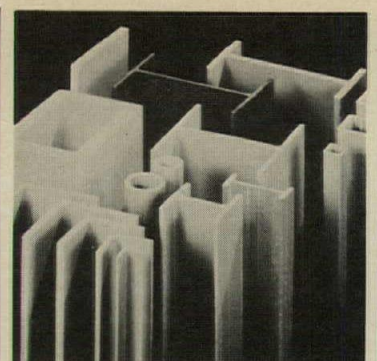
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72 PRE-PRIMED LUMBER / A wide selection of factory-primed or stained lumber products is offered. Finish choices include acrylic latex primer or 21 shades of indoor-outdoor acrylic stain. / Potlatch Corp.

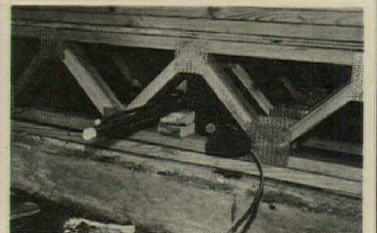
PLASTIC LAMINATES

73 DECORATIVE FRP PANEL / Indoor/outdoor paneling of *Patnel*, a fibreglass-reinforced plastic, is available in a range of standard colors and embossed patterns; custom colors and designs can be ordered. According to manufacturer, surface contains ultraviolet absorbers to keep colors bright. / Kemlite Corp.

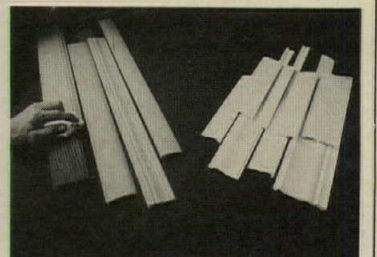
74 "LEATHER" LAMINATE / *El-dorado Leather* plastic laminate reproduces look of soft leather with earth-tone color and three-dimensional graining effect. The material is suitable for horizontal and vertical surfaces. / Formica Corp. D*



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PREFABRICATED PLASTICS

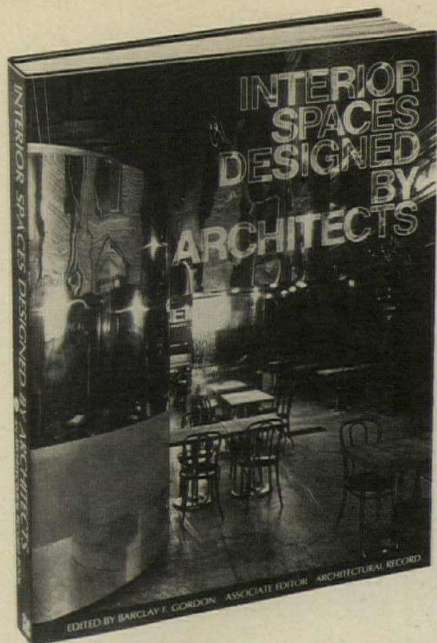
75 STRUCTURAL PLASTIC / Angles, I-beams and channel rails are among structural shapes available in *Extren*, a pultruded FRP with high unidirectional strength. Suggested applications are platforms and stairs in corrosive atmospheres or where there is danger of electric shock. / Morrison Molded Fiber Glass Co.

PREFABRICATED WOOD

76 PREFAB WOOD TRUSSES / Flat-chord *Gang-Nail EconoFloor Trusses*, intended as replacements for solid timber joists, are computer-engineered and shop-fabricated to order. / Automated Building Components, Inc. A, L*

SIMULATED WOOD

77 VINYL MOLDING / Natural-colored cellular vinyl moldings, which can be finished like wood, resist warping and can be bent without splintering. / Gossen Co., United States Gypsum.



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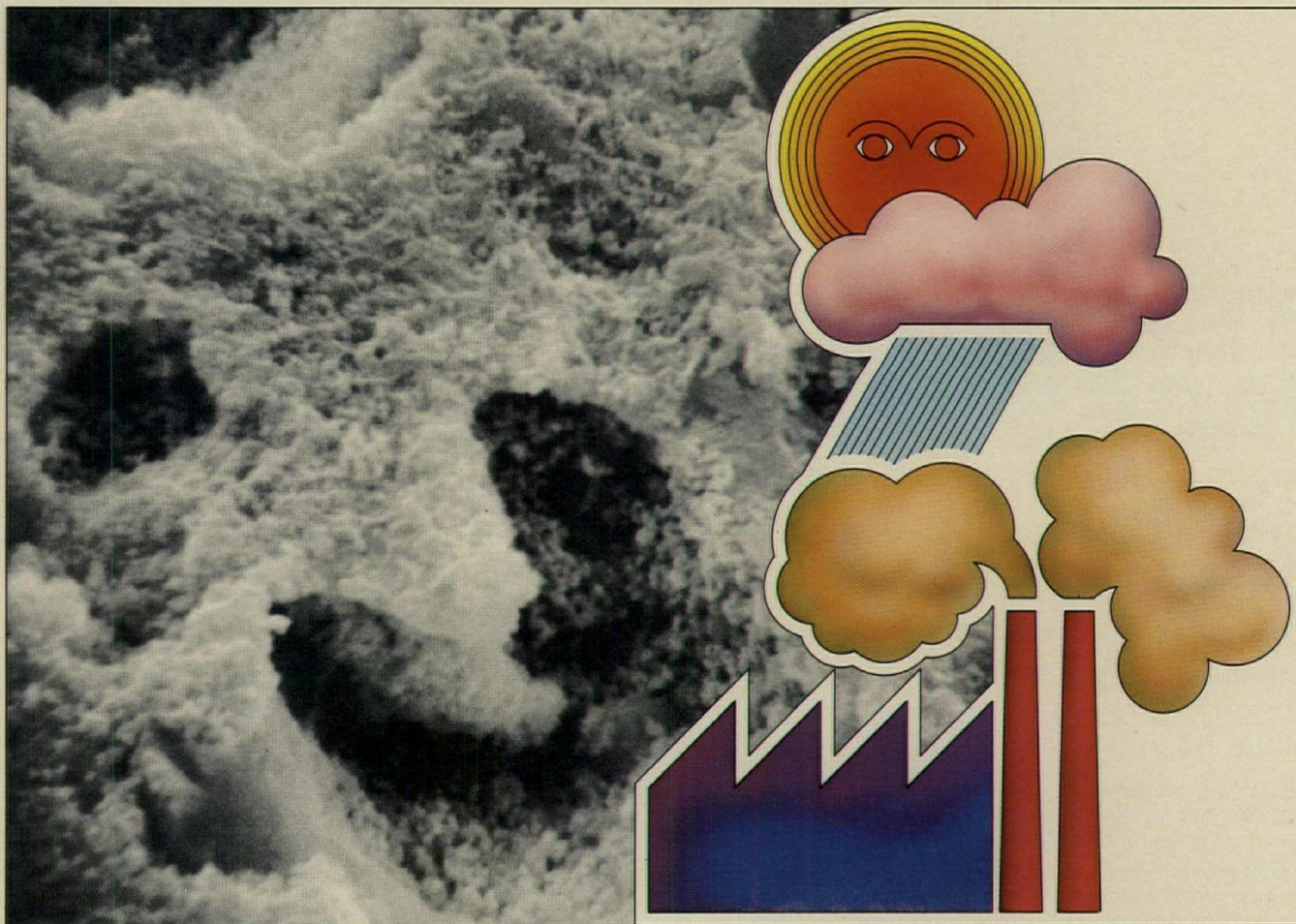
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cause flaking or loss of adhesion . . . and staining or streaking, depending on the performance of the substrate. At this point, however, an aluminum substrate helps to *protect* an organic coating because its natural aluminum oxide film resists the effects of electrolytic action. This stability at the paint-metal interface discourages flaking or adhesion loss. Painted aluminum can be drilled, punched and sawed without concern about chipping or undercutting. If you want color in the second

place, put it on aluminum in the first place. It will last. Especially if you specify an Alcoa® Super Alomalure® finish, the long-life PVF coating that offers the advantages of a super-tough fluorocarbon at a price you can live with.

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thermal and moisture protection uci 7

CLADDING/SIDING
COMPOSITE BUILDING PANELS
FLASHING
INSULATION
MEMBRANE ROOFING
METAL ROOFING
PREFORMED WALL & ROOF PANELS
ROOF ACCESSORIES
ROOFING SPECIALTIES
SEALANTS
SHINGLES & ROOFING TILES
WATERPROOFING

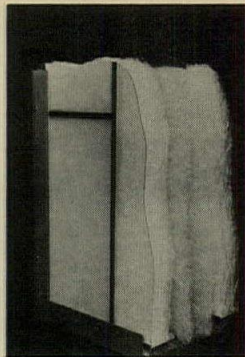
Last year's fuel crisis and current international difficulties with the oil-producing nations have triggered what appears—so far, at least—to be a lasting interest in energy conservation. Adequate insulation is obviously an elementary step to take in preserving expensively heated and cooled air. One spokesman prophesies a 70 per cent growth in the insulation industry over the next five years, basing his prediction evidently on continued concern with energy savings—and perhaps on the fact that at present only 10 per cent of American housing is insulated at all.

Certainly the energy shortage had something to do with Johns-Manville's timing in the establishment this year of an Insulation Center at Denver. The service will provide architects, engineers, builders and others with specific information on insulation for buildings, for pipes and air-handling ducts, and for such industrial installations as heating plants and blast furnace stoves. The new center will draw on the research conducted at J-M's Thermal Conductivity Lab, and has already programmed its computer to indicate precise insulation thicknesses required for metal buildings and pipes and to study refractory materials; other computer programs are projected.

Meanwhile, cellular plastic insulations have come under intense scrutiny by the Federal Trade Commission. At the end of July, the FTC, the Society of the Plastics Industry and 25 plastics manufacturers agreed to a plan under which manufacturers of cellular plastics insulation will publicize the characteristics of the material in fires and alert consumers to their dangers. The manufacturers and the SPI also agreed to establish a \$5 million research program to study the flammability of cellular plastics and to develop safer ways to use them. It is, of course, far too early to judge the possible impact of this research, but one can certainly imagine that some changes and improvements in foamed insulation will result.



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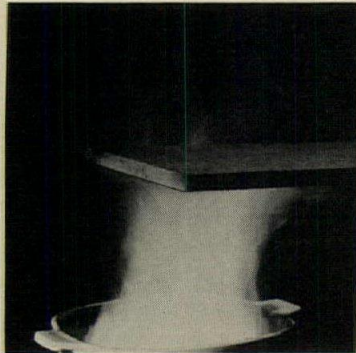
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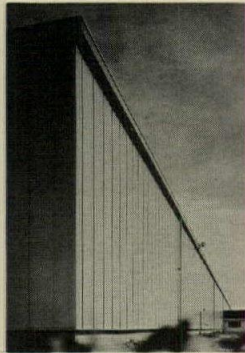
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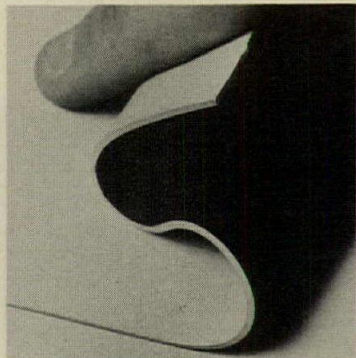
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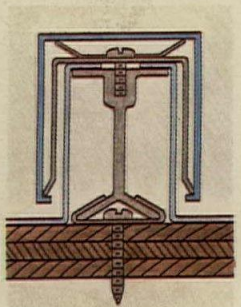
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CLADDING/SIDING

78 CYPRESS SIDING / Manufacturer's line of rough-sawn cypress plywood siding is offered with improved clarity and accuracy of grain pattern. The 4-by-8-ft panels are available in three surfaces—plain, Texture-1-11, and RB&B. / Boise Cascade Corp. A, L*

COMPOSITE PANELS

79 FIRE-RATED PANEL / Fire-retardant structural fiber-board, *NCFR Board*, has UL-tested flame-spread rating of 10, fuel-contribution rating of 5, and smoke-development rating of 0. Available in range of sizes from 4 by 8 ft to 8 by 12 ft. / Homasote Co.

80 PORCELAIN PANELS / Intended as a substitute for galvanized-steel back-up sheets, *Vit-Core* porcelain-finished panels are available in an eggshell color that can be painted if another color is wanted. / Alliance-Wall Corp. A*

81 INSULATING WALL / For its new *Solar Control System* of light-transmitting walls, the manufacturers claim an insulation value of 0.06 in an 11-in.-thick panel. To suit building's needs and exposure, transmission properties can be modified. / Kalwall Corp. A*

82 BUILDING PANEL / Insulated aluminum building panel, intended for industrial buildings, has U value of 0.11. It is available in a number of colors and in lengths up to 30 ft. / Aluminum Co. of America. A, I*

FLASHING

83 VINYL FLASHING / *Black on White* vinyl flashing material—black on one side, white on the other—is suitable for either heat reflection or heat absorption. Material is offered in 12-, 18-, 24- and 36-in. widths, and is 60 mils thick. / B. F. Goodrich Co.

84 REGLET AND FLASHING / *Rib-Lok* reglet and counterflashing system provides rigidity, weathering, and capacity to replace or repair roof without destroying counterflashing. Made of aluminum alloy, the system can be surface-mounted or installed in concrete or brick. / MM Systems Corp. A*

INSULATION

85 ATTIC INSULATION / *R-14 Reinsul* fiberglass insulation is designed to provide existing houses with additional attic insulation. Rolls are available in 15- and 23-in. widths, and the material needs no vapor barrier. / Johns-Manville. A, L*

86 INSULATION / Extrusion-spun *Premium Brand* high-density insulation is available as batts and as blowing or pouring wool; sound-attenuation batts are also available. Foil-wrapped and foil-faced materials are offered, in addition. / Rockwool Industries, Inc. A, L*

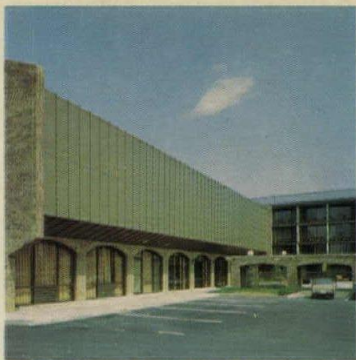
MEMBRANE ROOFING

87 SILICONE ROOF COATING / A new one-component, ready-to-use silicone rubber roof coating, specifically developed to waterproof and protect sprayed-in-place polyurethane foam insulation, meets UL 790 Class A requirements for noncombustible roof decks. / Dow Corning Corp.

88 SPRAYED ROOFING / Designed especially to protect exposed urethane foam insulation, hydrocide elastomeric roofing is sprayed on at thickness of 45 mils to provide flexible waterproof membrane. / Sonneborn Building Products, Div. of Contech, Inc. L, I*

METAL ROOFING

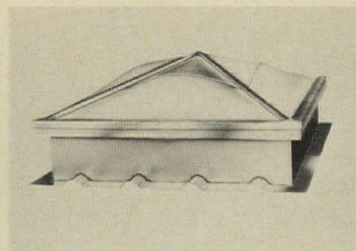
89 ROOFING SYSTEM / Prefabricated batten roofing system, suitable for sloping roofs, incorporates concealed mechanical fasteners and snap-on batten covers, and eliminates need for sealants. Available in a variety of architectural finishes. / MM Systems Corp. A*



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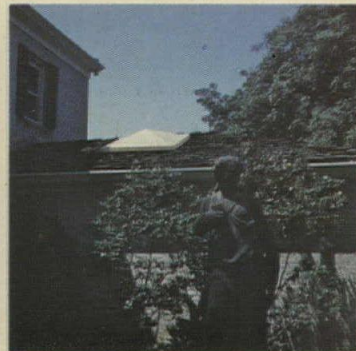
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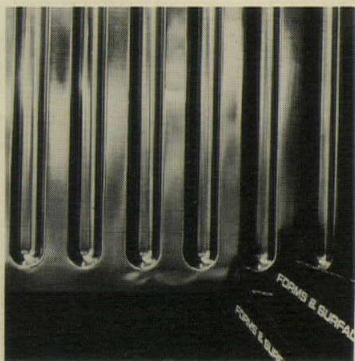
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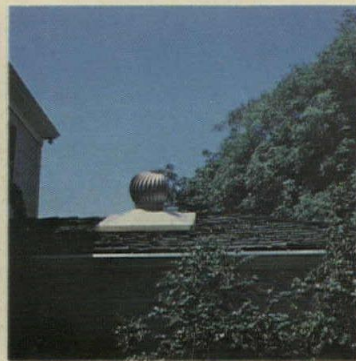
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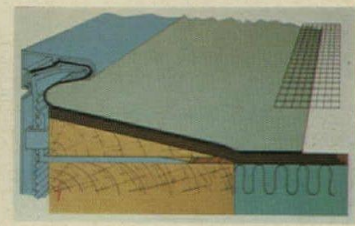
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90 FORMED BATTENS / Designed especially for mansard roof construction, formed aluminum battens are available with plastic coating or baked enamel finish. / Merchant & Evans Co. A*

91 COLORED ROOFING / *ColorKlad* roofing and flashing sheets, of 24-gauge galvanized steel, is coated with *Duranar 200*, and is available in six standard colors. Sheets are available in 36- and 48-in widths in lengths up to 144 in. / Vincent Brass & Aluminum Co. A*

WALL/ROOF PANELS

92 TRANSLUCENT WALL / The insulation value of this particular building panel is .40 U, according to the company. The basic element of the system is a structural aluminum grid core with fiberglass reinforced face sheets permanently bonded to both sides. / Kalwall Corp. A*

93 WALKWAY COVERS / Prefabricated to custom-design, walkway covers are constructed of stock components including anodized, extruded aluminum and colored acrylic. / E. L. Burns Co. A*

94 INTERIOR STEEL WALL / Corrugated steel, available in 32-in. trapezoidal-faced sheets, is designed as noncombustible interior finish material; it has a Class 1 fire-hazard rating. Color coating for *Steelinert* is USDA-approved for food-handling facilities. / Armco Steel Corp.

95 METAL PANELS / Embossed metal panels, offered in a number of patterns, are offered for walls, ceilings, doors, etc. The panels are available in solid bronze or copper, with patina, or in stainless steel and aluminum. / Forms & Surfaces, Inc.

ROOF ACCESSORIES

96 FIRE VENT / Curbs matched to any metal building roof panel system are featured on this line of automatic fire vents. Complicated mechanisms, annual inspections and continuous, costly maintenance are said to be eliminated. / APC Corp. A, I*

97 DAYROUND SKYLIGHT / Fiberglass skylight is equipped with fluorescent lamps, which are activated by a sensor that turns light on at dusk; lights can also be operated by switch. Available in domes, pyramids, and continuous ribbed and nonribbed shapes. / Williams-Bermuda Corp. A*

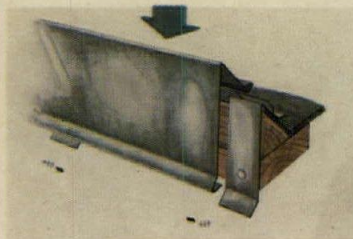
98 VENTED SKYLIGHT / Skylight has an integral molded curb that accepts almost any type of air-vent unit. Available with dampers and with thermostat that activates fan or dampers when set temperature is reached. / Williams-Bermuda Corp.

99 ROOF SIPHON / *Water Sentry System* is an automated siphoning system that removes ponded water from flat roofs. Main control unit, operating on standard power, begins pumping when water level reaches predetermined depth. / Tremco.

100 JOINT COVERS / *Expand-O-Flash* is a line of roof expansion-joint covers available for joint openings from 1½ in. to 4 in., and in lengths up to 100 ft. Two styles come with insulated neoprene bellows, the third with plastic laminate cover. / Johns-Manville. A, I*

ROOFING SPECIALTIES

101 FASCIA SYSTEM / *Tremline* fascia system, available in 10-ft lengths and in 4-, 6- and 8-in. depths, combines aluminum extrusions with elastomeric membrane to maintain watertight seal and to form a flexible, free-floating system that accommodates roof movement. / Tremco. A, I*



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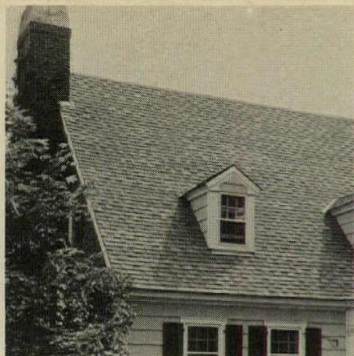
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102 PERIMETER FLASHING / Snap-Lok fascia and edge flashing, designed to accommodate thermal movement, is free-floating system with concealed anchoring clips, fasteners and splice plates. / MM Systems Corp.

SEALANTS

103 JOINT SEALANTS / THC/900 and THC/901, both two-part polyurethane sealants, are designed for joints in concrete plazas, decks and malls. THC/900 has moisture-resistant, self-levelling formulation; THC/901 has non-sagging formulation for horizontal joints. / Tremco. A*

104 ELASTOMERIC SEALANT / Self-priming, two-part elastomeric *Sonolastic NP II* can bond such materials as concrete, aluminum and glass without a primer, and resists weather, movement, water, oils, and several chemicals. / Sonneborn Building Products, Contech, Inc. A*



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SHINGLES & ROOFING TILES

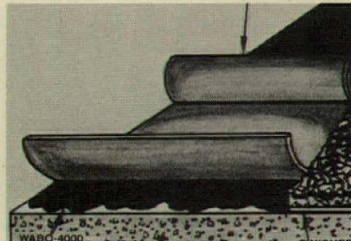
105 ASPHALT ROOFING / The *Architect 70* shingle (shown) made with two surface layers, creates deep shadow lines for a rustic appearance. Another product (not shown) is the new rugged single strip shingle manufactured without unprotected cut-outs. / Bird & Son. A, L*

106 SHINGLE PANELS / Eight-ft Western Red Cedar panels reproduce texture of hewn shingles, and are offered in natural cedar or various semi-transparent tones. Matching nails and wood corners are available. / Shaker-town Corp.

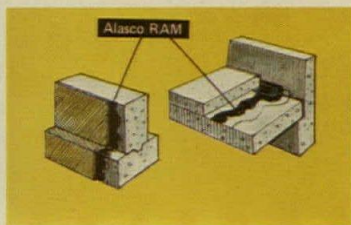
107 FIBERGLASS SHINGLE / Laminated fiberglass *Woodlands* shingles give deep shadow lines and wood-like appearance. Wide exposure (6-in. against usual 5 in.) may save as much as 20 per cent in labor costs, says the manufacturer. / Johns-Manville. A, L*



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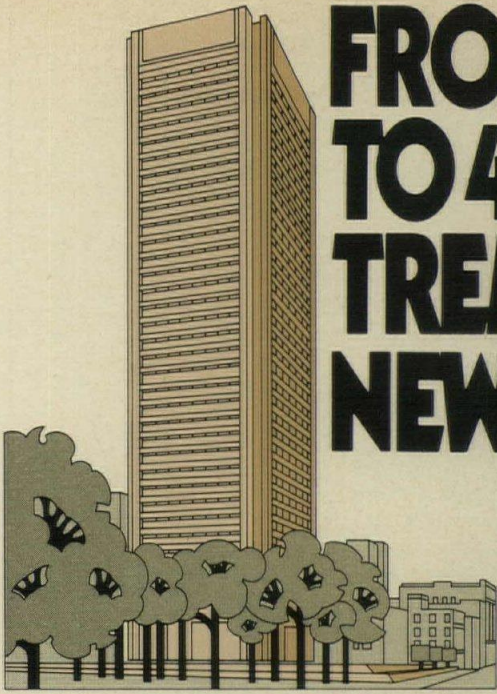
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108 THREE-TAB SHINGLE / Improved asphalt three-tab shingle uses rot-resistant fiberglass base in place of organic felt base, allowing 55 per cent increase in amount of weatherproofing asphalt used. UL Class A fire-resistance rating. / Johns-Manville. A, L*

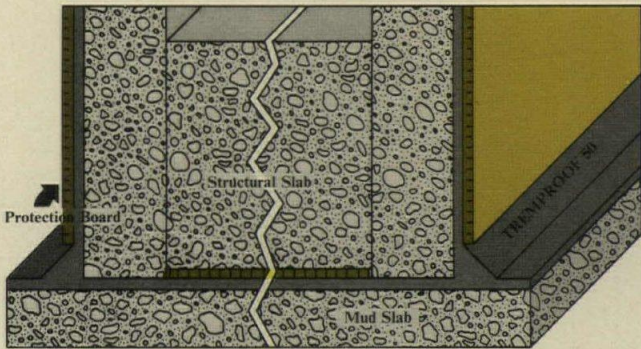
WATERPROOFING

109 DECK MEMBRANE / Bridge deck membrane waterproof system is a single-component, hot-applied PVC polymer for waterproofing bridges, ramps, parking garages, etc. With 65-lb asphalt roofing, it forms monolithic sandwich impervious to chloride attack. / Watson Bowman Assocs. Inc.

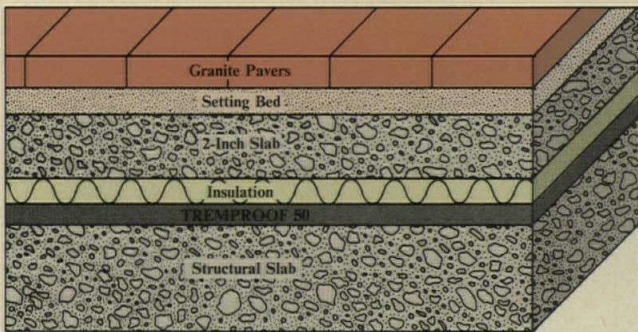
110 ASPHALT MEMBRANE / Rubberized asphalt membrane (*RAM*) is hot-applied elastic waterproofing compound designed to provide joint-free membrane on concrete surfaces. It retains elasticity even in low temperatures, say manufacturers, and self-heals minor damage. / Alasco, Inc. A*



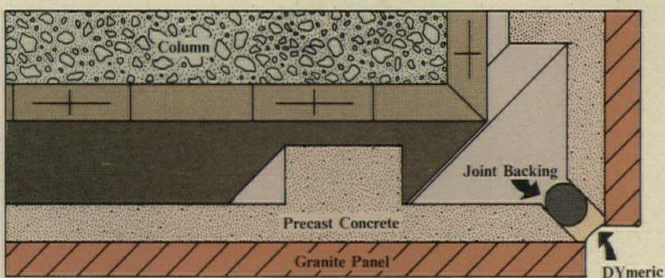
FROM 40 FEET BELOW GRADE TO 40 STORIES ABOVE, TREMCO KEEPS BALTIMORE'S NEW U.S.F.&G. BUILDING DRY.



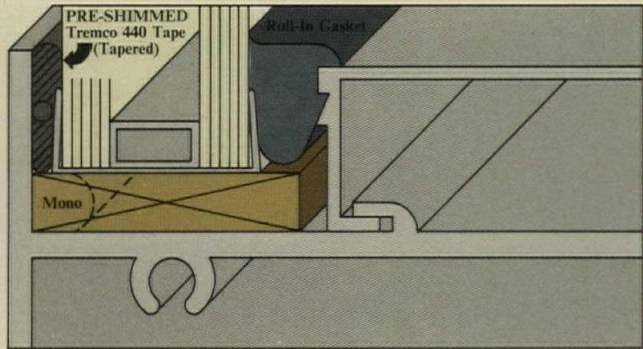
An entire city block was wrapped in a seamless blanket to keep out the saline water of the Chesapeake Bay. A 6-inch concrete working slab and 12-inch foundation walls sealed with a monolithic membrane of Tremproof 50 liquid polymer did the job. The result — no leakage problems whatsoever.



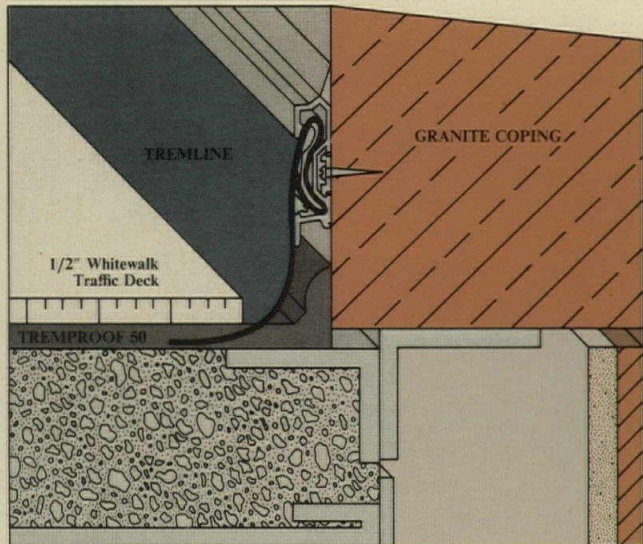
Dry plaza decks used granite pavers and Tremproof 50. There was no compromise between aesthetics and efficiency.



180,000 linear feet of precast concrete panel were caulked with Tremco polymer sealant DYmeric.



Ten miles of window glazing were done by the Tremco system. Not even the high winds off the harbor will prevent them from being watertight.



Parapet walls were no problem for the Tremline flashing system. The rest of the roof was made watertight with Tremproof 50 liquid polymer.

A complete system, one source. We solved every waterproofing problem of the United States Fidelity & Guaranty Building. We've been handling jobs like this for over 45 years. That's why we say we're first in making buildings last.

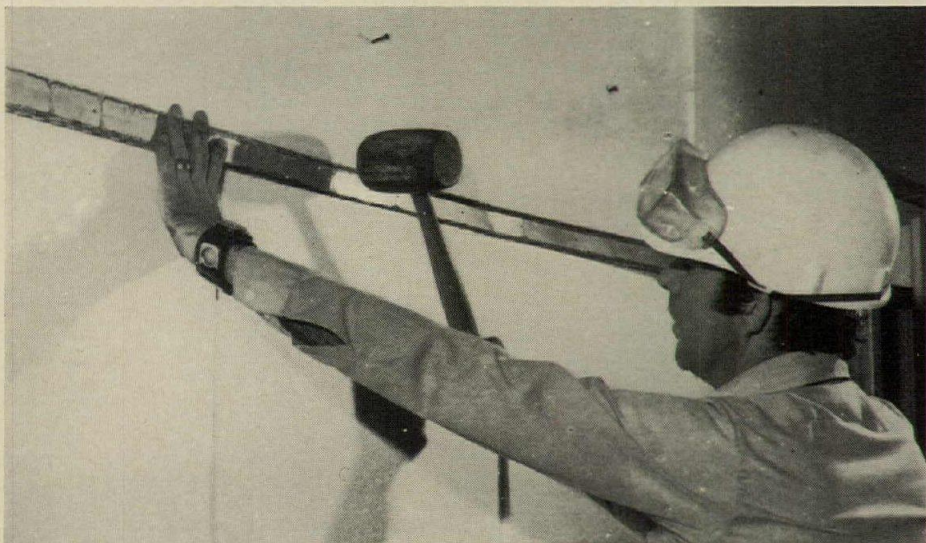
Call your Tremco rep and see firsthand what we can do for you. Tremco, Cleveland, Ohio 44104. Toronto, Ontario M4H 1G7.

TREMCO®

Zonolite Thermo-Stud...an entirely new, simpler, continuous wall insulation system.



Position ZONOLITE Styrene Foam.



Imbed THERMO-STUD channel in Foam.



Nail through Foam to masonry.

Here's a completely new, mechanical insulation system for masonry walls that are to be finished with gypsum wallboard or other interior treatments.

ZONOLITE® THERMO-STUD® It eliminates insulation shorts, providing a permanent moisture-resistant barrier.

Yet, installed costs are competitive with other, less trouble-free insulation methods.

Lightweight ZONOLITE Styrene Foam Boards are butted together against masonry walls. They're held in place with serrated THERMO-STUD channels, which are mechanically fastened to the wall.

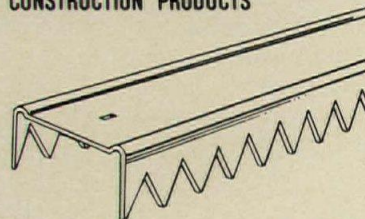
Troublesome adhesives are eliminated. Drywall can be applied immediately using self-tapping screws through the serrated channels.

Installation is so simple, yet trouble-free.

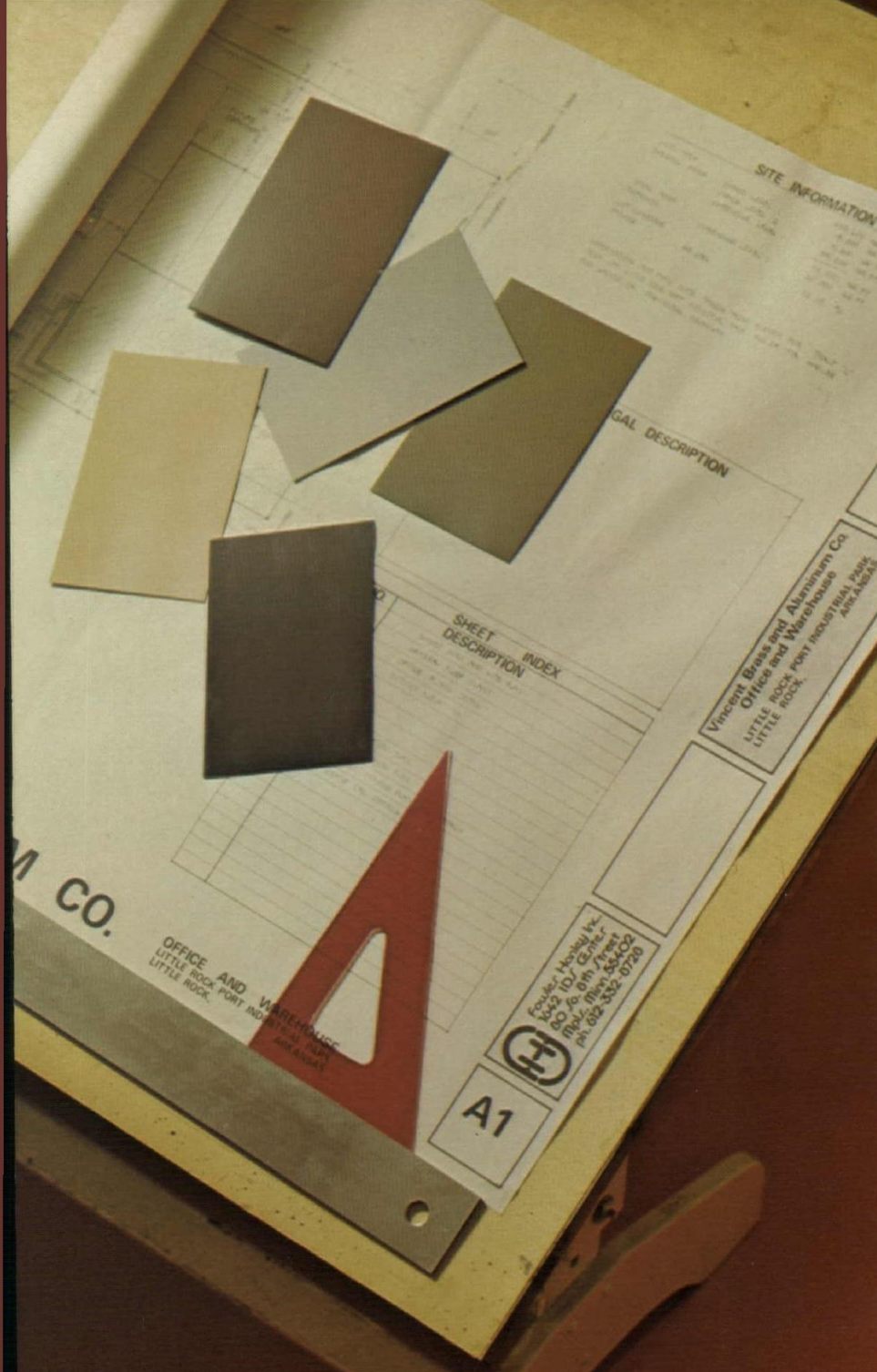
ZONOLITE THERMO-STUD meets or exceeds power company "U" value requirements of 0.10 or better for wall insulation. "R" values increase accordingly. Result: heating and cooling economies.

Get booklet SF-1 that tells everything you need to know about the ZONOLITE THERMO-STUD system. Contact the ZONOLITE sales office in your area, or write: W. R. Grace & Co., Construction Products Division, 62 Whittemore Avenue, Cambridge, Massachusetts 02140. In Canada: 66 Hymus Road, Scarborough, Ontario.

GRACE
CONSTRUCTION PRODUCTS



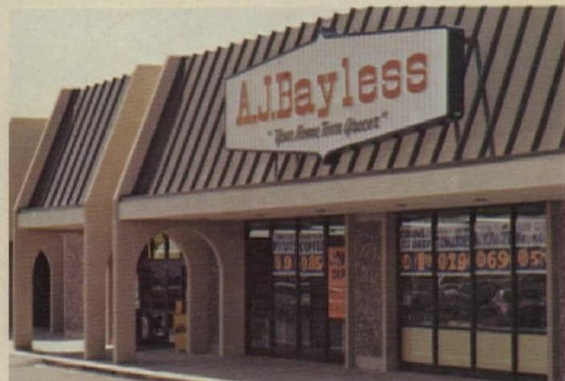
For more data, circle A17 on inquiry card



Bloomington Water Plant, Bloomington, Minn



Duluth Municipal Airport, Duluth, Minnesota



ThorCo Mall Shopping Center, Phoenix, Arizona

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ColorKlad

for Beauty, Flexibility, & Wearability



Vincent

BUILDING PRODUCTS DIVISION
BRASS & ALUMINUM CO.

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MINNEAPOLIS, MINN. 55414
CALL COLLECT (612) 378-1131

Architects across the country are specifying ColorKlad for fascia panels – standing seam and batten seam roofing – copings – and flashing. ColorKlad is 24 ga. galvanized steel sheet, roll coated with PPG's Duranar 200 paint containing Kynar, miracle resin that prohibits chalk and fade. Uniquely versatile, ColorKlad is easily shaped and formed, and extremely economical.

Six architecturally-preferred colors are warranted, in writing, for a 20-year period. Plan on ColorKlad for your next project! Write for new color brochure with installation photos.

COLORKLAD AVAILABLE FOR IMMEDIATE SHIPMENT IN ALL STATES & CANADA

For more data, circle A18 on inquiry card

J-M puts it



A J-M asbestos roof saves energy.

A built-up roof can take a lot of asphalt. Or it can take a lot less. That's the one big advantage of using J-M asbestos roofing felts. It makes possible a smooth surface roof — one that doesn't need a poured asphalt-gravel protective surface. Use asbestos roofing felts and you save a lot of asphalt. Save asphalt and you're also doing your part to conserve petroleum, a vital energy source.

A J-M roof... a systems approach to quality.

A quality built-up roof is no better than its component parts. And no better than the techniques used to put them together. That's why it's so important when you specify a roof, to consider every aspect of the system, if you expect true value and lasting protection when the job is done. And that's why a J-M built-up roof makes sense. You benefit from the experience of over 100 years in the roofing business — on J-M quality in a complete line of roofing products built to work together — and on the skills of the J-M team of roofing specialists.

A J-M roof means single-source materials responsibility.

Because J-M makes everything that goes into a built-up roof, you can have Johns-Manville quality all the way — from the deck up. From vapor barrier to top dressing, you're assured of components made to go with each other. And when those materials are applied in accordance with J-M specifications, the result is "from-the-deck-up" dependability. Plus, another important benefit: Clear-cut responsibility for the performance of the materials used in the finished assembly. And that can be a real advantage in case follow-up is needed after the roof is completed.

all together.



SPECIFYING A ROOF IN A PERIOD OF RISING PRICES.

Because of the energy crisis, prices of all petroleum-derived products—and that includes the bitumen used in a built-up roof—are rising. As a result, a roofing manufacturer cannot guarantee prices for as long a time as normally transpires between the submission of a quote and shipment of materials to the job. For that reason, it is imperative that the specifier and building owner alike allow for that situation and accept the inclusion of escalation clauses in bids. This gives the contractor the flexibility to adjust prices over which he has no control and enables him to make a fair return on a job bid in good faith.

J-M Asbestogard Vapor Barrier System—an unexcelled start for an insulated built-up roof assembly over metal decks.

If conditions warrant a vapor barrier, make sure the one you use is a good one.

It should permit no water vapor to pass through it. Should be simple to apply. Promise long life. Enhance roof stability. Meet Factory Mutual Requirements for Class I Construction.

Asbestogard vapor barrier applied to the steel deck with cold-application Asbestogard adhesive and followed with a solid mopping of asphalt to secure roof insulation,

provides all these advantages.

Asbestogard Felt is made with long, high-grade asbestos fibers and parallel fiber glass yarns for toughness and tear resistance.

It unrolls easily, stays flat in the wind, doesn't wrinkle. And Asbestogard won't burn through when hot asphalt is applied.

Start your roof installation with the J-M Asbestogard Vapor Barrier System and you'll have J-M quality and dependability from the deck up.

For assistance of any kind with a built-up roofing problem, contact your J-M district sales office. Or write: Johns-Manville, Box 5108, Denver, Colorado 80217.

**The
single-source
built-up roofing system.**



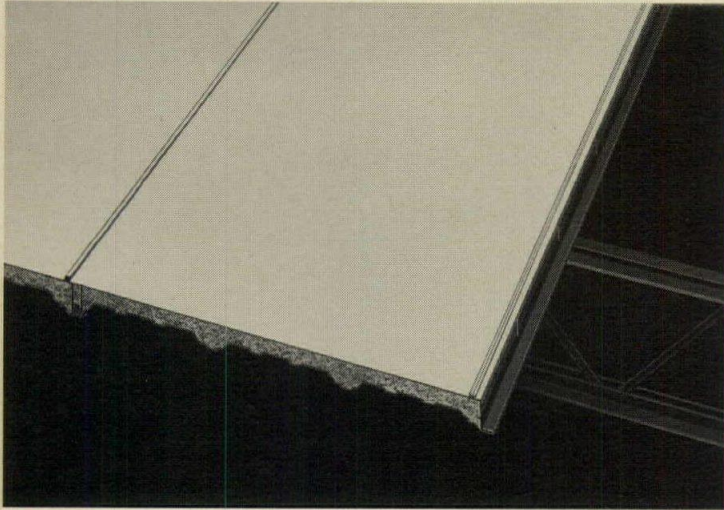
Johns-Manville

For more data, circle A19 on inquiry card

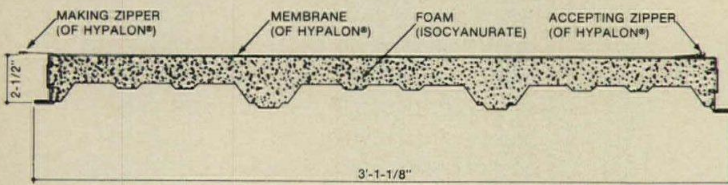
PARMA ROOF

Features

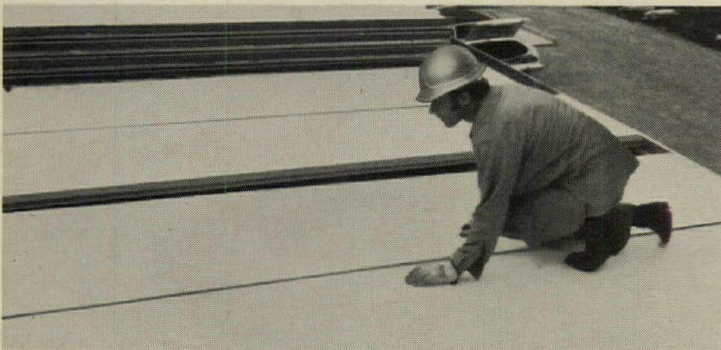
Total System



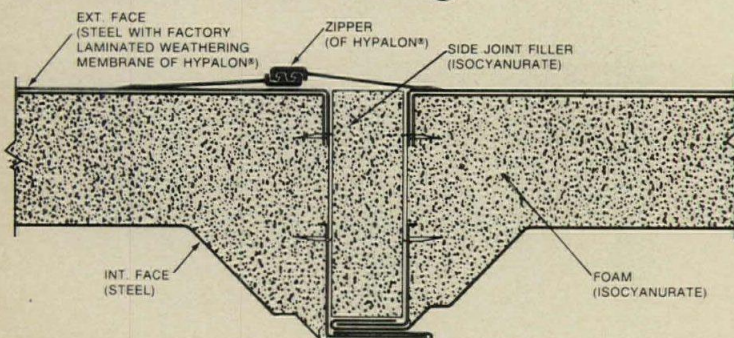
Superior Weather Membrane



Composite Panels



Positive Joint Sealing



Advantages

All the various components of the conventional "built-up" roof are "built-in" to the Parma Roof.™ That means no separate design or specification details are required for deck, insulation, weathering membrane, flashing or trim. You simply specify live load and joist spacing, and state your trim preference. And, because Parma Roof is a total system, you have only one supplier responsible for total roof performance.

All weather surfaces of Parma Roof panels are made of Hypalon,** which has proven virtually impervious to weather problems that threaten conventional membrane materials. It actually gets stronger under prolonged exposure to the sun. The Hypalon membrane and integral joint sealing closure are heat welded to the panel, and enable each panel to "float" independently under expansion and contraction while maintaining a continuous, uninterrupted weather shield over the entire building.

Composite design, engineering and manufacturing of roofing components mean predictable performance and assured quality for the total roof. And that is what you get when you specify Parma Roof. Not a hodge-podge of roofing materials to be built-up on the job... but composite panels of deck, insulation, weathering membrane and joint sealing built-in at the factory. When installed on the job, these panels form a continuous, uninterrupted weather shield over the entire building. And the Parma Roof weighs less, too... almost 80% lighter than conventional field-built roofing.

The unique zippered closure of the Parma Roof system gives a positive seal so that panels, joints and flashing become a single unit. This feature makes Parma Roof a *dry system*, requiring no mastics or sealants. And there are no exposed metal surfaces or fasteners to worry about. This means that Parma Roof can be installed in any kind of weather... and faster than conventional roofing systems, too.

*Patent Applied For
**Hypalon® is a Registered Trademark of E. I. duPont deNemours & Co. (Inc.)

offering benefits never before available in a roof system.

Credentials

A new product for building construction is only as acceptable as the credentials it carries. Parma Roof was designed with building codes in mind, and has been exhaustively tested for conformance with current standards applicable to roofing products. All of the results listed have been substantiated by actual tests witnessed by an independent laboratory.

1. Fire Hazard Classification (UL 723, NFPA 255, ASTM E-84)

Test	Results		
	Top Surface	Core	Interior Surface
Flame Spread	75	25	25
Fuel Contributed	0	5	0
Smoke Developed	500	200 to 300	45 to 200

2. Fire Test of roof coverings (NFPA 256, ASTM E-108, UL 790) Results: Class B
3. UL test for uplift resistance of steel roof deck construction Results: Class 60
4. Load Span Test (ASTM E-72)

Type Load	Results	
	5' Span	6.5' Span
Wind Uplift	37 psf	28 psf
Live Load	76 psf	41 psf

All loads shown include a 2.5 safety factor.

All live loads have deflection of less than L/240.

5. Impact Resistance (ASTM E-72)
Results: Panel was tested at 5' span with 60 lb. load dropped from height of 30" with no failure.
6. Extreme Temperature Test.
Results: Panels withstood temperature change of 200 degrees F. with full design load.

In addition to the above credentials, Parma Roof can boast of a .09 U Factor. This is a calculated value for the total roof system.

For more data, circle A20 on inquiry card

Benefits

A new construction product can have all the features, advantages and credentials in the world, but unless they can be translated into tangible benefits for the building designer, contractor and owner...they don't mean a thing. Parma Roof is a "Composite Roof System," and its benefits are derived from those three letters, C-R-S...Conserve, Reduce, Simplify.

Compared to conventional built-up roofing systems, Parma Roof...

- **Simplifies** the job of designing, specifying and installing the roof.
- **Reduces** the delays, damage and costs associated with the on-the-site manufacturing of built-up roofs.
- **Conserves** the time, energy and money which can be lost through roofs that do not have predictable performance built in.

PARMA ROOF

...All things a roof has never been before.

Send in our coupon today and let us prove why Parma Roof is "the most significant roofing advance in 50 years."

COMPOSITE SYSTEMS		ARPR
A Division of Star Manufacturing Company Box 94910 Oklahoma City, Oklahoma 73109		
Please Send: <input type="checkbox"/> PARMA Roof brochure <input type="checkbox"/> Design and specification kit.		
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Position or Title _____		
Firm Name _____		
Street Address _____		
City _____	State _____	Zip _____

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**RECORD HOUSES
AND APARTMENTS**

The annual mid-May issue devoted to the year's best architect-designed houses and apartments. Nearly 44,000 architect and engineer subscribers... plus distribution to 20,000 Sweet's-qualified builders and 4,000 Sweet's-qualified interior design offices.



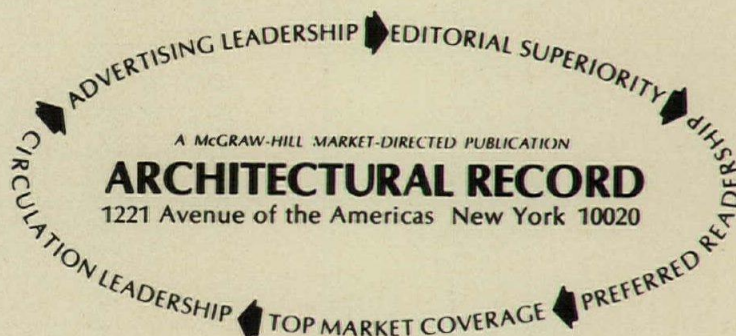
**ENGINEERING
FOR ARCHITECTURE**

To be published initially in mid-August 1974 and annually thereafter. A survey and analysis for architects and engineers of the most significant current developments in engineering for buildings. Bonus coverage of newly active building engineers.



PRODUCT REPORTS

The annual mid-October round-up of the most interesting new and improved building products. Organized by the Uniform Construction Index, this "product file on the drawing board" provides a quick up date of out-of-date catalogs and literature.



Sanspray, the beautiful alternative.

Sure, concrete and masonry are OK. But you know what they cost. Not to mention how much trouble they are.

You have a beautiful alternative. Sanspray®. A plywood siding with decorative stones bonded onto it.

So you can forget about cement trucks or heavy pre-cast panels. Sanspray is light and easy for men to handle and install on the job site. Sanspray panels cut readily with a power saw and they go up easily with a glue gun or a hammer and nails.



Sanspray is durable. The substrate is 3/8" exterior grade plywood. (Sanspray Shadowline™ is bonded to 5/8" plywood.) In fact, it meets the requirements of FHA/HUD and the major codes for single-wall applications.

Sanspray doesn't need finishing and is virtually maintenance-free. (We're sure. We

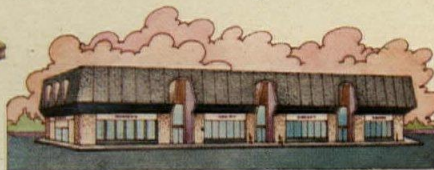


tested it in all kinds of climates for ten years.)

Sanspray comes in Regular, Large and Jumbo size aggregates. And Sanspray Shadowline, which is a regular aggregate panel with vertical grooves spaced eight inches on center.

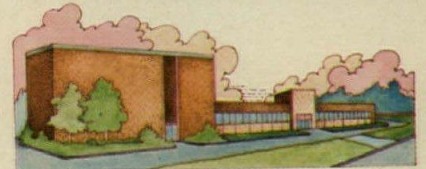
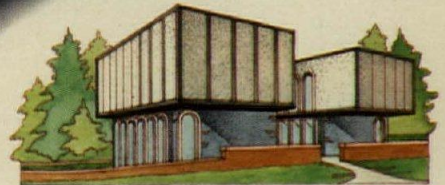
It comes in eight rich colors. Like Salt and Pepper, Gaelic Green, Monterey Sand and Tangerine.

So it gives you a lot of ways to make a lot of things beautiful.



Homes for instance. (It's a natural for a Tudor.) Townhouses and condominiums. Stores and shopping centers. Factories and

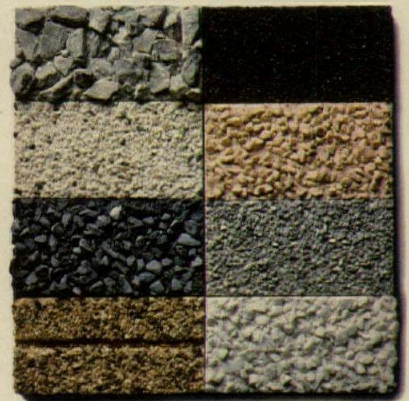
industrial complexes. Medical centers and hospitals. Schools and universities. Use it outside. As a siding, skirting or facade. Or use it



inside. In lobbies, waiting rooms and public rooms.


In fact, for just about anything you want to make beautiful, you should use Sanspray, the beautiful alternative.

Find out more about it at your U.S. Plywood Branch Office.



**EXTERIOR
CLADDING BY
U.S. Plywood**

777 Third Avenue, New York, N.Y. 10017

 **U.S. Plywood**
Division of Champion International

For more data, circle A21 on inquiry card

THE ULTIMATE IN ENTRANCE SECURITY!

Meets or exceeds all local and national residential crime prevention requirements.

Now available for commercial buildings . . . deadbolt security for labeled fire doors *including* egress doors.* In today's market, lock security is of vital concern to all tenants and building owners. Let Schlage G Locks provide your answer to this concern.



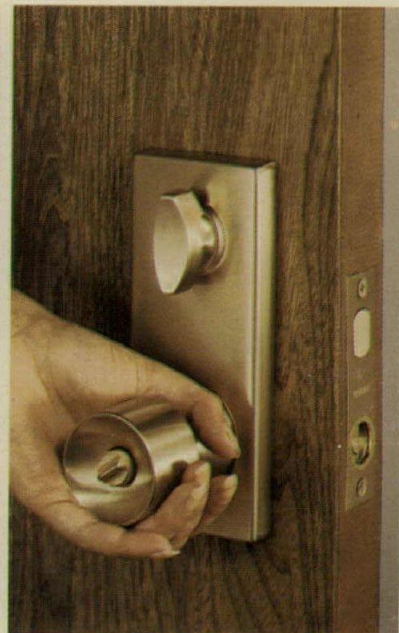
SECURITY DEADBOLT

Twist the thumbturn or the key and you can hear and feel the security of a full inch of deadbolt slam into the locked position. A concealed hardened steel roller insert makes the bolt virtually saw-proof.



FREE-SPINNING OUTSIDE KNOB

When the button on the inside knob is pushed or turned, the outside knob spins freely, frustrating burglars who attack knobs with wrenches or pliers. Key cylinders are recessed into the door making them invulnerable to wrenching.



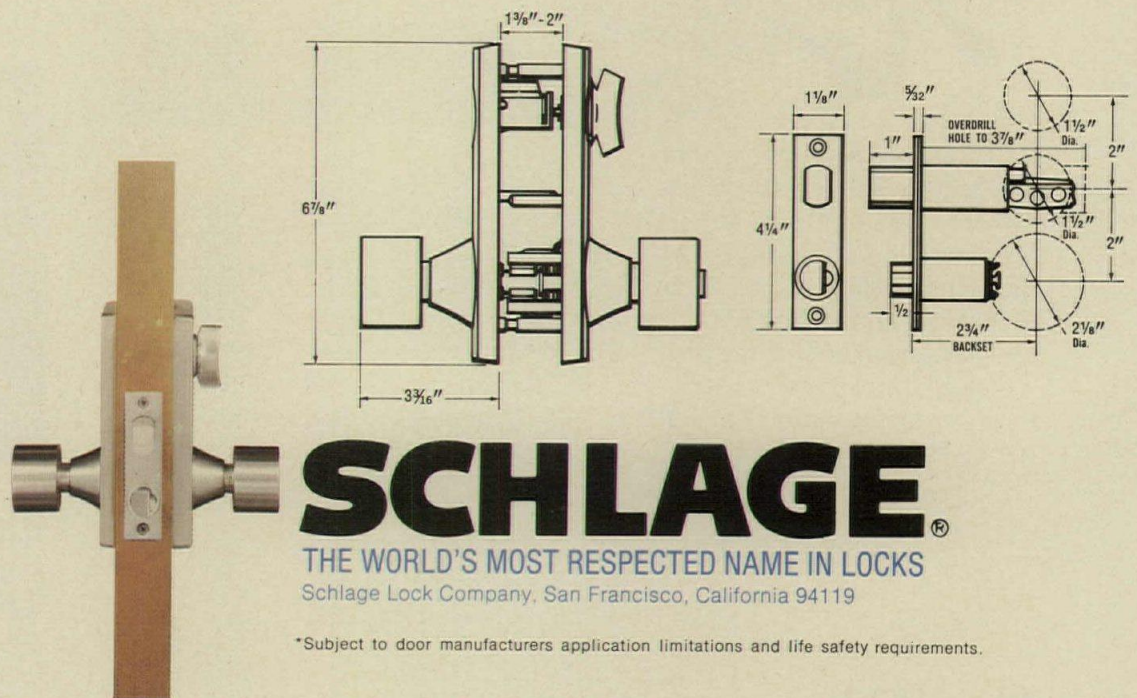
PANIC-PROOF SAFETY AT ALL TIMES

For immediate emergency exit, simply turn knob in either direction or use thumbturn to simultaneously retract both bolts. For convenience, only one hand and one operation are required to open door from either outside or inside.



DOUBLE LOCKING SECURITY

When door is closed and locked by use of the button-in-the-knob, the lock deadlocks, preventing entry by "shimming" with a credit card or similar burglar tool. With bolt thrown, by turn or key, the door is double locked.



SCHLAGE®

THE WORLD'S MOST RESPECTED NAME IN LOCKS

Schlage Lock Company, San Francisco, California 94119

*Subject to door manufacturers application limitations and life safety requirements.

For more data, circle A22 on inquiry card

doors and windows uci 8

ENTRANCES/STOREFRONTS
GLAZING ACCESSORIES
HARDWARE & SPECIALTIES
METAL DOORS & FRAMES
METAL WINDOWS
SPECIAL DOORS
SPECIAL WINDOWS
WINDOW/CURTAINWALLS
WOOD/PLASTIC WINDOWS

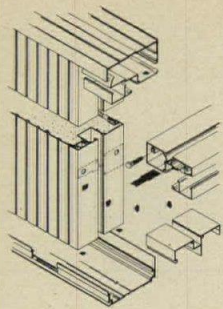
The May 1974 RECORD editorial on energy conservation standards referred to concern among glass manufacturers for what they feel is an "unquestionably negative" view on glass as it relates to the energy situation. Speaking on the role of high-performance glass in energy conservation, PPG Industries officials have said, "we are under attack from so many sources that we are having trouble dodging all the arrows—and this problem is having a profound influence."

The fact of the matter is the glass industry has been and continues to be a group most responsive to the architect and the pressures he is under. At present, according to PPG Industries, there are more than 100 high-performance glass products on the market, and new energy-saving products and glass-design concepts are continually being developed. What the glass industry wants to make clear to the architect and other design professionals is that they have a choice. They can design for energy savings either by reducing window size or by selecting the proper high performance glass.

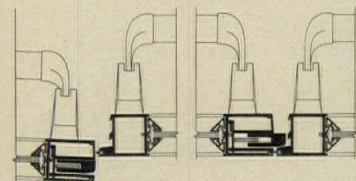
Because architects often criticize manufacturers—often for good reason—for a lack of comparative product data, it is worth emphasizing here that several large manufacturers of glass maintain elaborate services for evaluating and selecting the most effective and economical glass for a particular building. Manufacturer-provided computer programs that emphasize life-cycle costing not only acknowledge the glass industry's awareness of this increasingly important consideration, but suggest a capability to anticipate and prepare for increasingly stringent performance requirements. Energy budgets, life-cycle costing and energy efficiency are some of the new realities facing the glass industry which appears in a strong position to meet them. Innovations are abundant.

PPG Industries recently introduced a single-glazed reflective glass into the residential market, something we suggested on this page two years ago. Now that double-glazing dominates the commercial construction market, the industry is now saying, why not triple- or even quadruple-glazed units? Certainly, the economic barriers to this sort of product development have been trampled by runaway energy costs.

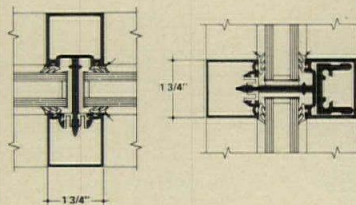
The hardware portion of this division corroborates research that manufacturers desire to improve electro-mechanical security devices, and special doors for industrial applications include a cold storage unit rated for fire door service as well.



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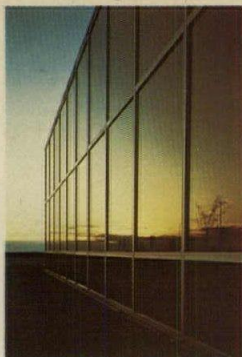
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ENTRANCES/STOREFRONTS

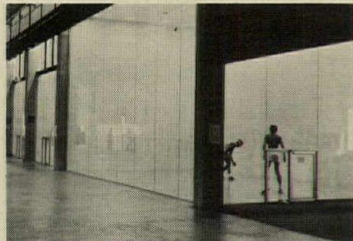
115 PREFABRICATED PANELS / Each 4½ in. deep panel mullion unit consists of an exterior aluminum surface, a rigid insulation core of polyurethane foam, and an interior surface of gypsum board to be finished as desired. / Kawneer Co. A*

116 CONCEALED PANICS / A concept for increased security in pairs of doors with concealed panic exit devices features a retracting astragal bar which closes the gap between door stiles, blocking the insertion of wire hooks to trip the crash bars. / Kawneer Co. A*

117 STOREFRONT / The system uses ¾- or 1-in. insulated glass with an adaptor for transition to ¼-in. glass. Clear, bronze and light bronze finishes are available as well as painted finishes in medium bronze, dark bronze, charcoal bronze, black and white. / Amarlite/Anaconda. A*



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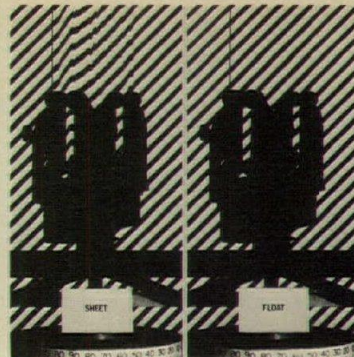
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GLAZING

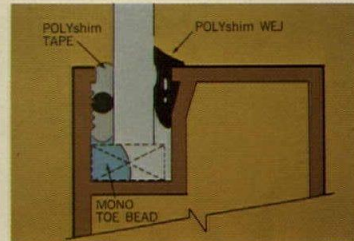
118 REFLECTIVE GLASS / *Solarban 485 Twindow* reflective insulating glass has a bronze reflective film, and is said to be less expensive than reflective insulating units having a neutral film, one bronze glass and one clear glass pane. / PPG Industries, Inc. A,L*

119 GLASS-WALL DESIGN / The use of tempered glass, or ¾ in. heavy duty annealed glass as protective/visual partitions is recommended for a number of sports facilities, such as this handball court. / Libbey-Owens-Ford Co.

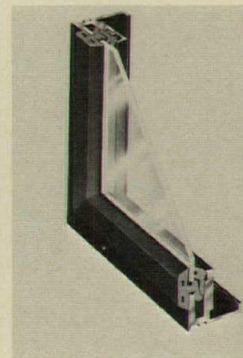
120 SUN CONTROL FILM / Reflective sun control films in gold, smoke and bronze are applied to the inside of windows to reduce buildup of solar heat, and do not interfere with visual properties of glass. The new gold film repels up to 75 per cent of the sun's heat. / 3M Co.



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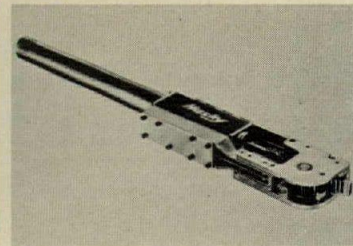
123

121 FLOAT GLASS SHEETS / The manufacturer has expanded his product line of float window glass to include special stock sizes in both single and double strength thicknesses. / Ford Motor Co. A, I*

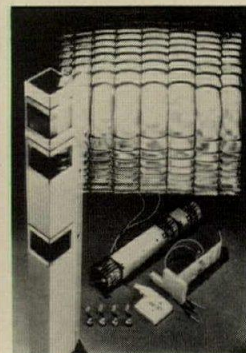
GLAZING ACCESSORIES

122 GLAZING SYSTEM / Product combines an elastic pre-shimmed tape, a neoprene compression gasket, and an adhesive sealant at critical points. System permits inside glazing. / Tremco A*

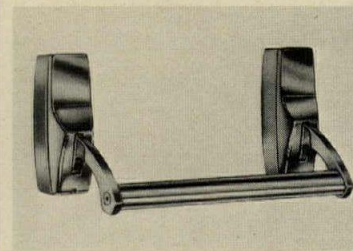
123 GLAZING SYSTEM / *Wej-Grip* is a structural gasketing system for glazing fixed lights of glass and panels in curtainwalls. It permits straight-in glazing the year round, and patented design is said to resist gasket rotation or roll-off, while allowing for normal movement. / Tremco. A*



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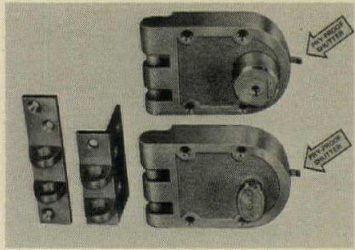
126

HARDWARE & SPECIALTIES

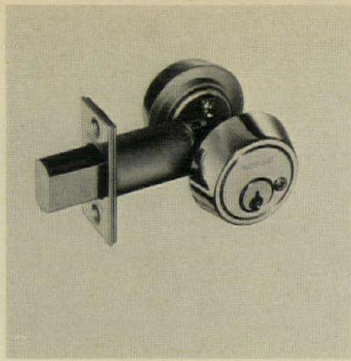
124 CONCEALED CLOSER / The *Husky* concealed overhead door closer is backed by a two-year warranty promising replacement of defective closers with newly manufactured units. It is designed for use with double acting doors or center hung single acting doors. / Kawneer Co. A*

125 NO-MAT DOOR OPENER / Mounted in a protective aluminum housing at the door jamb, *Multiscan* defines an area of control by transmitting a pattern of pulsed infrared light. Persons within detection range reflect light to a receiver, which amplifies it to operate the door. / Kawneer Co. A*

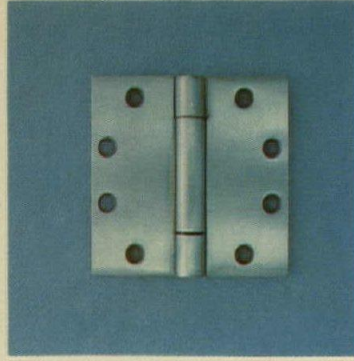
126 SELF-DOGGING EXIT UNIT / Used in conjunction with a continuous circuit monitoring hinge, this modification to standard exit devices can automatically dog an exit device using the force of the first person through the door. / Hager Hinge Co., A,I*



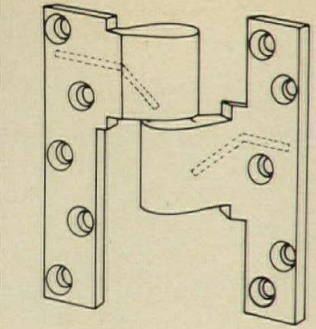
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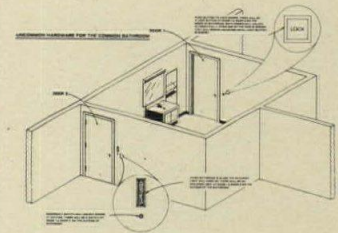
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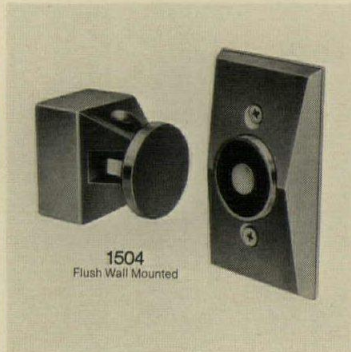
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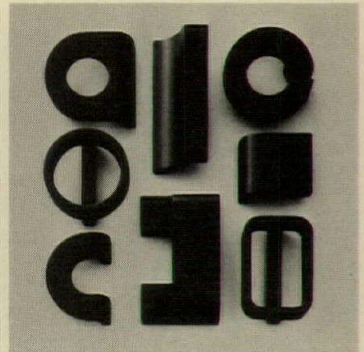
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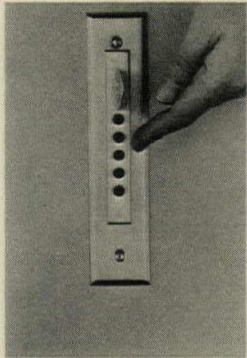
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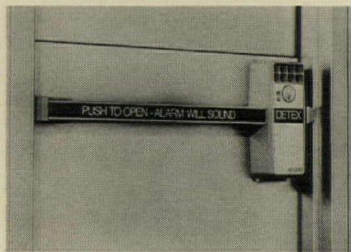
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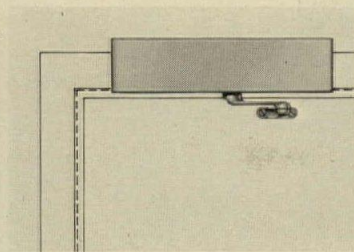
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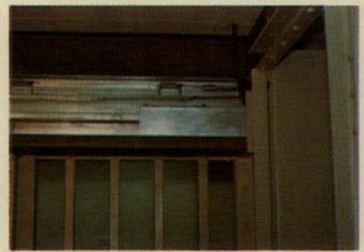
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138

127 CAST-BRONZE DEADLOCK / A new triple-threat deadlock series is cast of solid bronze and may be used on wood or metal doors. It is available in either single or double cylinder models, each available with either flat or corner strike. / S. Parker Hardware Mfg. Corp. A*

128 ELECTRONIC LOCK / This system is designed to control common bathrooms in institutions. As the patient enters, he pushes the switch next to his door to lock both doors. When the patient leaves, he turns the lock handle and both doors become unlocked. / Hager Hinge Co. A,I*

129 PUSHBUTTON LOCK / After the correct combination is pressed, the knob can be turned to activate the single pole, double throw switch. When one releases the knob, it automatically returns to the original locked position. / Simplex Security Systems, Inc.

130 DEADBOLT SERIES / Recommended for commercial and residential applications the stainless steel bolt with hardened steel roller has a 1-in. throw. A wrought brass or bronze cylinder ring is used. / Schlage Lock Co. A,L*

131 DOOR HOLDERS / Electromagnetic door holders can be activated by a fire alarm or smoke detection system, or by pushing a remote button. On walls, they can be flush or surface mounted. Floor mounted models are available. / Edwards Co.

132 DOOR ALARM & LOCK / Designed to monitor emergency exits against unauthorized use and to ensure immediate egress in case of an emergency, product will fit wood, aluminum and steel doors. It is prewired and powered by a heavy-duty 6-volt battery. / Detex Corp.

133 SPRING HINGE / UL-listed for all labeled fire doors 3 by 7 ft by 1 1/4 in., up to 160 lbs, the spring hinge has a concealed bearing, which absorbs vertical and lateral thrusts. Factory pre-set and permanently assembled, it fits standard 4 1/2 in. butt mortise. / The Stanley Works A*

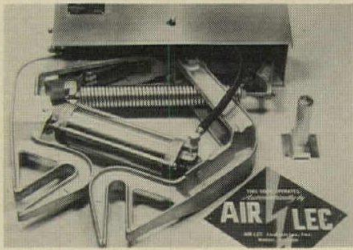
134 ROLLING DOOR RELEASE / For closing rolling fire doors automatically when activated by smoke or heat detectors, or by a central fire control system, the product has positive vibration-proof latching, releases only in presence of smoke or heat. / Cornell Iron Works, Inc. A,I*

135 HYDRAULIC DOOR CLOSER / With an electro-hydraulic mechanism permitting unlimited hold-open positions up to 180 degrees on surface mounted models, closers are said to be failsafe. UL-listed. / LCN Closers. A*

136 HEAVY-DUTY DOOR PIVOT / With concealed and surface hardened steel pins, the pivot is for use with doors hung on 3/4-in. offset floor closers or pivot sets. It is available in aluminum, bronze, and steel, with standard and plated finishes. / Rixson-Firemark, Inc. A*

137 DOORPULLS / Massive doorpulls are available in bronze, nickel silver and aluminum. A variety of finishes is available. / Forms & Surfaces.

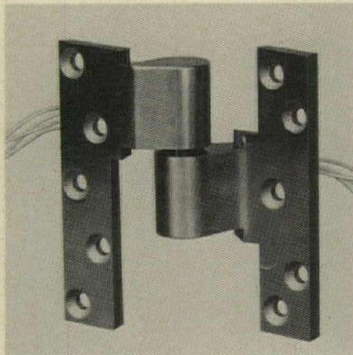
138 DETENTION DOOR CLOSER / The device consists of a mechanical linkage and motor which work to prevent slamming. Variable speed control permits smooth, relatively silent cell door operation. The device can be used on new or existing doors. / Southern Steel Co. A*



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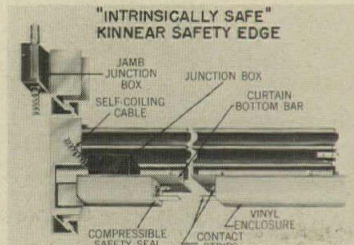
139 DOOR OPERATOR / Inertia-type pneumatic door operator, designed for large sliding doors, is now constructed of aluminum to reduce weight and to offer increased resistance to corrosion. / Air-Lec Industries, Inc.

140 DOOR HARDWARE / Designed for use on custom-built bifold doors, preassembled hardware components can be quickly installed with screwdriver. Suitable for any 1/8- or 1/4-in. panel or mirror, the product is 24 in. to 72 in. wide and up to 8 ft high. / L.E. Johnson Products. A*

141 ELECTRIC PIVOT / E-M19 electric door pivot allows wires to pass from door frame to interior of door in wholly concealed installation that prohibits tampering. Self-aligning pivot is mounted with standard screws. / Rixson-Firemark, Inc. A*



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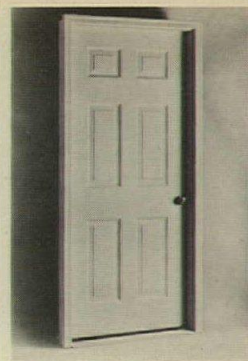
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METAL DOORS & FRAMES

142 METAL ENTRANCES / Doors featuring textured panels inlaid between 1-in. wide door stiles are offered in a number of standard designs, with custom designs available. The inlaid panels, bonded to an aluminum sub-frame, are reinforced with a honeycomb core. / Kawneer Co. A*

143 ROLLING DOORS / Electrically or pneumatically activated, the device is a combination of a safety strip and a compressible weatherseal mounted along the bottom edge of the door, causing the door to automatically stop and reverse if obstructed. / Kinnear Corp. A*

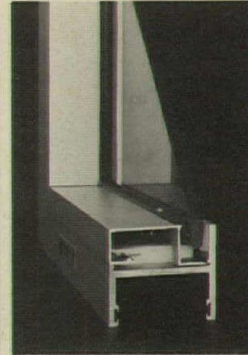
144 BIFOLD CLOSET DOORS / Fabricated of textured steel, two models are offered—the "Kent" (pictured) has sculptured panels. The "Tyler" has a combination of both panels and louvers. / National Industries Inc.



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147

145 ENTRANCE DOORS / Insulated steel entrance doors are embossed to reproduce appearance of traditional paneled doors in the *Williamsburg* model. Matching model is available in steel bifold closet door. Doors are prehung with wood framing. / General Products Co., Inc.

METAL WINDOWS

146 THERMAL WINDOW / Single-hung aluminum window has structural thermal barrier of polyurethane. Locked-in block and tackle balance system, positive drainage sill, full weatherstripping and screening are featured. / Acorn Building Components, Inc. A*

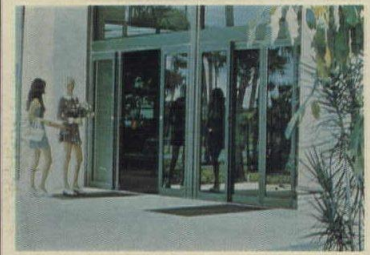
147 KNOCK-OUT GLAZING / Designed to enable firemen to enter, a "knock-out" glazing system for non-glass products utilizes pre-tensioned clips in combination with dry glazing components. It can be adjusted to various wind loads and vandal resistance. / Wausau Metals Corp. A*



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150

148 INSULATED WINDOW / A double-hung insulated window with a heavy aluminum frame on the outside and rigid vinyl frame on the inside is said to eliminate the need for storm windows. Top and bottom sash can be tilted in or removed. A burglar-proof sash latch is included. / Thermal-Barrier.

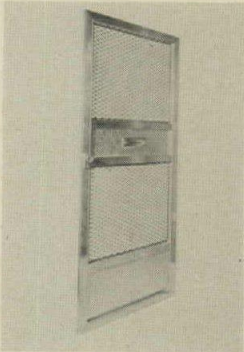
SPECIAL DOORS

149 FIBERGLASS DOOR / Model 657 industrial door was tested under simulated wind velocities of 120 mph which failed to damage the door. Pebble-grain fiberglass panels are said to minimize weather erosion. / Jim Walter Door, A/I*

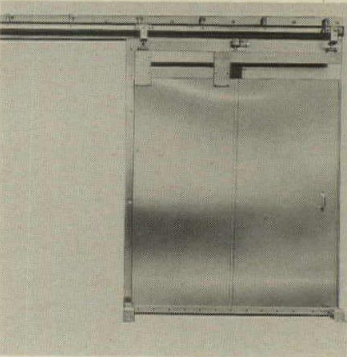
150 AUTOMATIC DOOR / *Magic-Slide* door operator is said to be a lightweight all-electric modular unit with solid state components, requiring 3-bolt installation to operate. It needs no pneumatic or hydraulic lines, and operates on 115-volt power. / The Stanley Works. A*



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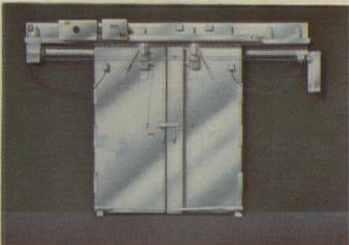
151 MIRROR CLOSET DOOR / A four panel all-mirror door features heavy-duty cleats holding the mirror panels to steel bifold doors. Doors and shelves are electro-deposited with enamel providing a mar-resistant finish. Doors are fabricated from 24-gauge steel. / Kinkead Industries Inc.

152 HEAVY-DUTY DOOR / An all-metal, heavy-duty screen door (or combination stormscreen door) provides insulation, protection against vandalism and is intended for Housing Authority type applications. It is custom-made for each installation. / Season-all Industries, Inc.

153 COOLER ROOM DOOR / A single leaf horizontal sliding manually-operated track door for cooler room operation is used where stored items are transferred on overhead rails. Door is filled with 3 in. of polyurethane insulation with a K factor of 0.135 at 75°F. / Jamison Door Co.



154



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156

154 TELESCOPING DOOR / Power operated metal door for heavy duty, high frequency industrial use telescopes compactly overhead with no counterbalancing springs. It is adaptable to any remote control device. / Inland-Ryerson Construction Products Co. A,I*

155 COLD STORAGE FIRE DOOR / Bearing a UL Class A, 3-hour fire test label, the door is galvanized steel-clad with neoprene seals. It is available in double or single horizontal slide models, manually or power operated. / Clark Door Co., Inc. A,I*

156 INDUSTRIAL DOOR / This shatter-proof vision panel is mounted to a rubber, flexible sub-frame, flush with the door facing and extending to the door nosing. All doors are custom-engineered and available in seven colors. / RubbAir Door. A,I*



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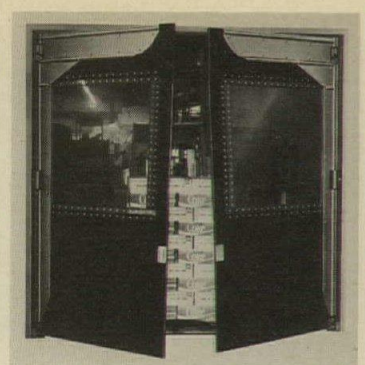


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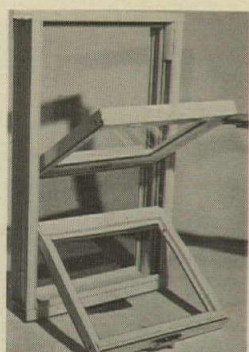
157 BRONZE DOORS / Bonded Bronze doors are available in six types of assemblies. Castings may be selected from a range of sculptured textures and designs. / Forms & Surfaces.

158 MIRRORING DOORS / By-pass wardrobe door is faced with mirrors in anodized aluminum or bronze surround, and has roller mechanism at bottom with nylon glides at top for smooth operation. Shatterproof mirrors are available in 3/16-in. or 1/4-in. plate glass. / Fred A. Martin Co.

159 ADJUSTABLE SCREEN / Sliding screen door with adjustable panel fits any standard door height from 77 3/4 in. to 81 3/8 in.; it is available in widths of 30, 36, 48 and 60 in. Door has fiberglass mesh screen and gray baked-enamel finish. / Empire Metal Products Corp.



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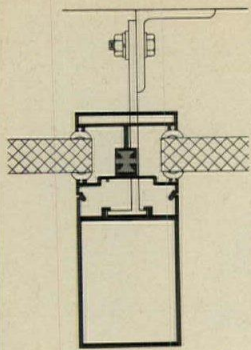
160 TRAFFIC DOOR / Centaur '74 impact traffic door is provided with large vision area and with rubber panels to increase impact absorption. Self-closing doors are provided with magnetic catch. / W. B. McGuire Co., Inc.

SPECIAL WINDOWS

161 TILTING WINDOW / This all-aluminum replacement window features two sashes which tilt or can be completely removed for cleaning. Each window is custom-made and installed from inside the building. / Season-all Industries, Inc.

162 SECURITY WINDOW / Color selection in permanent finishes, including thermo-setting acrylic enamel is offered, with concealed tool-resisting steel bars in head sill, jamb and top rail of each sash. Concealed, continuous operating mechanism protects gears. / Southern Steel Co. A*

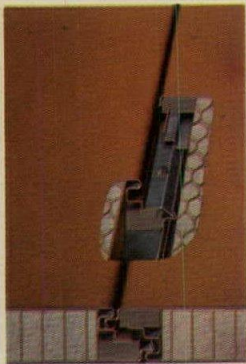
*Included in 1975 Sweet's Catalog File(s).



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WINDOW/CURTAINWALLS

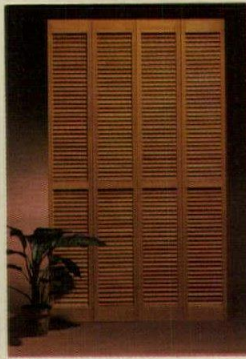
163 INSULATED CURTAIN WALL / The new high rise *SW-8901 Stickwall* system features in each glass framing member a solid separation of PVC plastic that breaks contact between exterior and interior aluminum for improved thermal performance. / Kawneer Co. A*

164 HORIZONTAL MULLION / A stock glass-framing horizontal mullion that opens for ventilation, yet provides for size adjustment by the installing dealer, has the same exterior appearance whether open or closed. Stock in bronze or clear anodized finishes is available. / Kawneer Co. A*

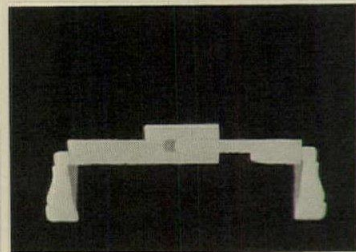
165 CURTAIN WALL / This system will span floor to floor without exposed studs or girts. Flat panels measure 2 or 3 in. thick, 24 or 30 in. wide, in lengths to 30 ft. The honeycomb core with perlite fill gives a "U" value of .20 Btu. / H. H. Robertson Co.



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166 FRP CURTAIN WALL / Curtain-wall system consists of pre-glazed fiberglass-reinforced modules that bolt directly to angle irons without additional structural support. Modules can be molded to meet architect's styling requirements. / PPG Industries, Inc.

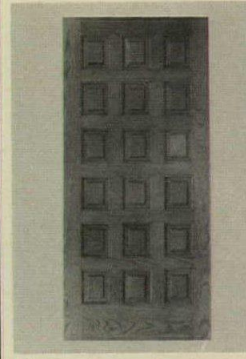
WOOD/PLASTIC DOORS

167 WOODEN BIFOLD DOORS / Instead of 1½ in. thickness, this bi-fold measures 1⅜ in. thick, increasing the rigidity of the door. Either two-door or four-door, units come assembled with concealed hinges. Louvered panel and spindle doors are offered in a range of sizes. / E.A. Nord Co. L*

168 DOOR TRIM / Packaged door jamb and molding is vinyl-wrapped. Available in several woodgrain finishes and white, the trim comes in sizes to accommodate all standard door openings. / Contact Lumber Co.



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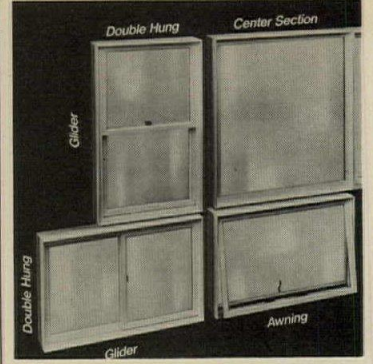


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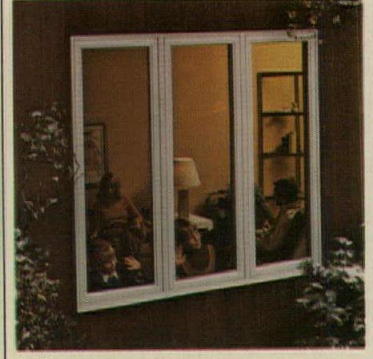
169 WOOD SLIDING DOOR / Sliding wood-framed doors are treated with toxic water repellent. Units are glazed with 1-in. insulated tempered safety glass. For fixed panels, a fastening device prohibits outside removal. / Hurd Millwork Co.

170 HARDWOOD DOORS / Manufacturer now offers paneled doors in ash, birch, mahogany, oak and walnut. Available in thicknesses of 1⅜, 1¾ and 2¼ in., the doors are custom-assembled. / Sun-Dor-Co. A*

171 VINYL-VENEER DOORS / Pre-hung doors are constructed of vinyl film laminated to particleboard. Available finishes include walnut, oak and maple woodgrain and white. / Permaeener Corp.



172



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174


WOOD/PLASTIC WINDOWS

172 WINDOW SYSTEM / The *LP-X* double-hung unit can be turned on its side and, with a change of hardware and liner, becomes a glider unit. Turned 90 degrees, it becomes an awning unit. All windows are fully tested and rated Class A. / Louisiana-Pacific Corp.

173 WOOD CASEMENT / These all-wood windows feature an exterior finish of preservative, primer, acrylic enamel and top coat, all fused into one. Interior wood is unfinished. Insulating glass is set in a vinyl gasket. Window comes with bronze hardware. / Caradco Window & Door Div.

174 SLIDING WINDOW / All-wood sliding window with oak sill track has removable sash to facilitate washing. One light is stationary, allowing installation without auxiliary corner bracing. / The Malta Co.

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The Meadows is a rustic townhouse community catering to middle income families.

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That's why the architect specified Andersen™ Perma-Shield® Gliding Windows.

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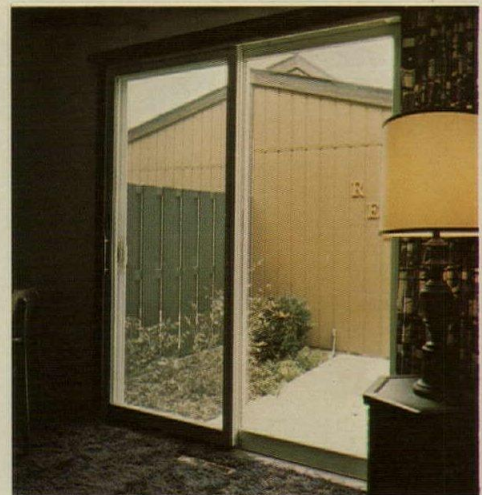
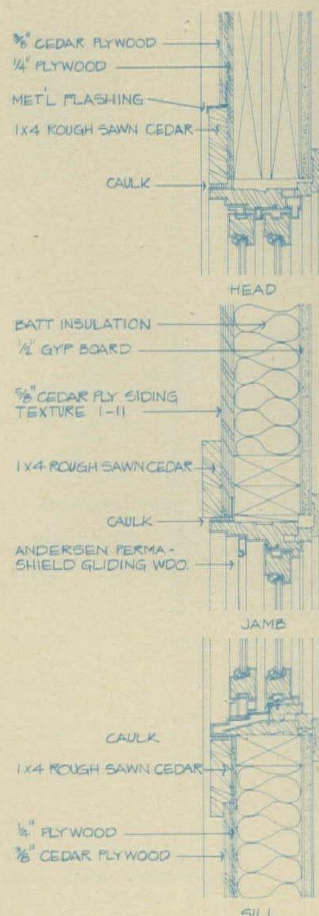
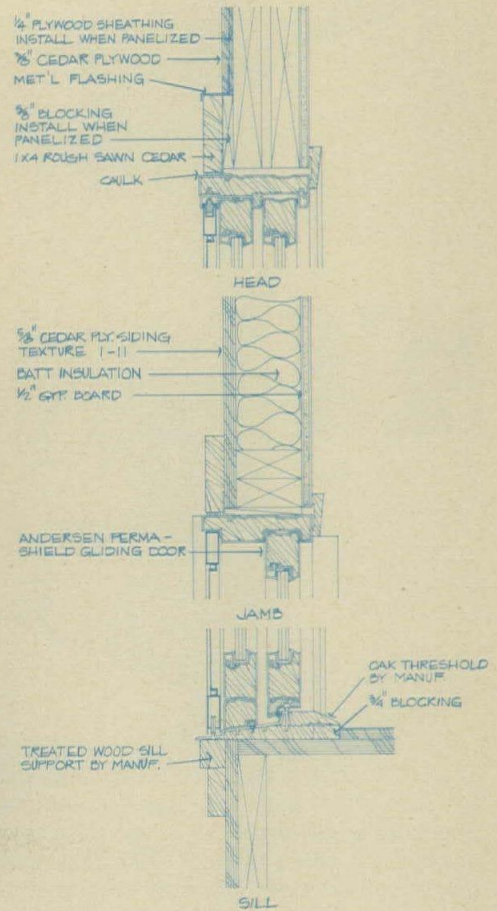
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With double-pane insulating glass, they eliminate the bother of storm panels. Cut conducted heat loss through the glass by up to 35% (compared to single-glazing).

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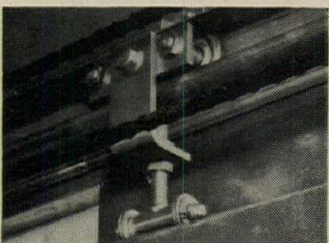
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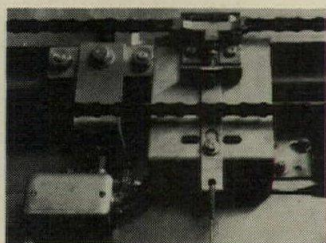
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Shims simplify track leveling.



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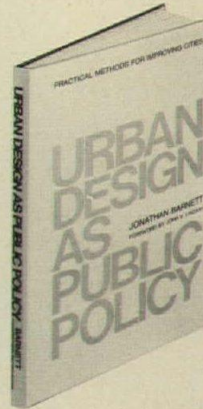
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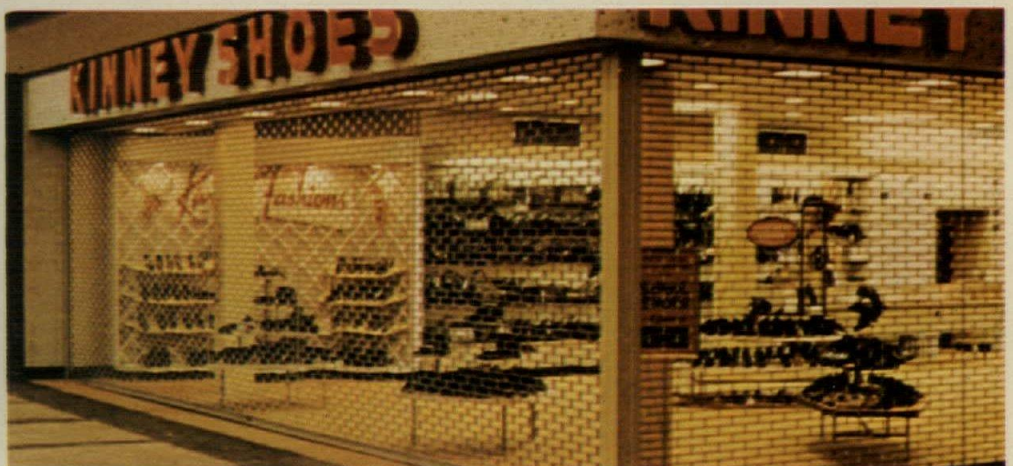
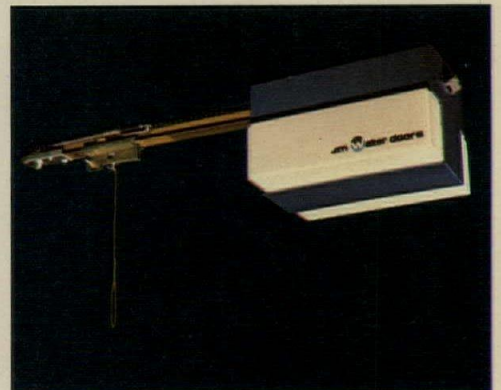
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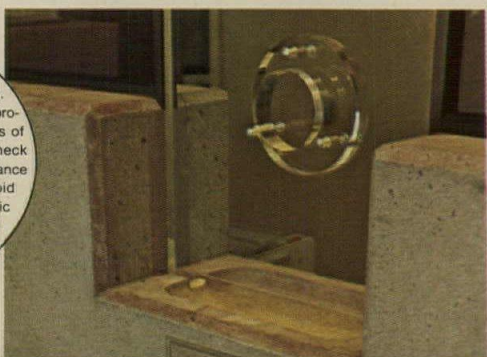
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it resists breakage, controls
glare and conserves energy.
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*Building codes limit areas of plastic
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considerations must take into account
the combustibility of Plexiglas.*

Martin Luther King Elementary School
Pittsburgh, Pa. (above)
Architects: Liff, Justh and Chetlin
Pittsburgh

Suffolk Franklin Savings Bank
Boston, Mass. (left)
Architects: Bastille-Neiley
Boston

Beach Cottage, Harvey Cedars, N.J. (right)
Architects: Murphy Levy Wurman
Philadelphia, Pa.



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Luxury Solid Vinyl Floors don't have to cost more

With the high cost of building or remodeling today even the basics sometime seem to be priced as luxuries. Not so with Nafco Vinyl Floors. You can actually buy some Nafco Solid Vinyl Tiles at prices less than a decade ago. Take MAJESTIC SLATE, for example. This richly translucent flagstone design with its natural stone texture is priced about the same as many ordinary vinyl asbestos tiles. Nafco makes an extraordinary range of beautiful and practical vinyl floors in both tiles and six-foot wide rolls. Prices range from the very economical to the somewhat expensive.

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ACOUSTICAL TREATMENT

CARPETING

CEILING SUSPENSION SYSTEMS

GYPSUM WALLBOARD

PAINTING MATERIALS

PREFINISHED PANELS

RESILIENT FLOORING

SPECIAL COATINGS

SPECIAL FLOORING

TILE

WALL COVERING

WOOD FLOORING

Government action has figured heavily this year in activities of manufacturers in the finishes division. On July 29, 25 makers of foamed or cellular plastics—used in many insulation and furniture cushioning products—signed a provisional consent agreement with the Federal Trade Commission, agreeing among other things to halt advertising of these products as self-extinguishing. In fact, FTC alleged the products burn intensely, producing dense smoke and high temperatures. (RECORD, News Reports, September, 1974.)

According to an ARCHITECTURAL RECORD survey among manufacturers of finish materials, 40 per cent reported some government body as a major influence on product development in this area. Among government entities mentioned were: General Services Administration, Environmental Protection Agency, HUD, FTC, HEW, OSHA and the Consumer Products Safety Commission. Speaking on the subject of vinyl chloride, one manufacturer said that vinyl wallcoverings could become more costly, possibly scarcer, and could be eliminated if regulations are too stringent.

They are getting more stringent all the time. Paint manufacturers have—since legislation in 1973—been reducing lead content to a prescribed level of 0.5 per cent of the pigment content, and will have the level down to .06 per cent by January 1, 1975, when new regulations go into effect. This applies to all paints which could be used by the consumer. Metal primers have been unofficially granted an exemption. Reducing lead content has placed pressure on manufacturers to compensate for the properties offered by lead, which include brighter colors and certain drying qualities. Organic pigments have been substituted for lead, but the result is a transparency which may only be compensated by additional coats of paint.

Anticipated legislation, according to one paint industry spokesman, means many companies are researching the potentials of water-base paints, looking toward the day when all paints will contain no volatile solvents. Water-based inhibitive primers, tile-like epoxies, and their performance in cold weather are all areas of research now under way.

In carpeting, the trend continues to manufacture from synthetic fibers; acrylics and nylon are nearly evenly represented in this division this year. There is evidence of manufacturer concern that man-made fibers approximate a natural fiber esthetic and survey respondents felt architects prefer wool fibers over synthetic, the woven type over tufted (the latter supported by RECORD research). One manufacturer suggested that if nylon shortages continue, more development efforts will be made in the polyester and propylene fields.



Palm Harbor General Hospital, Garden Grove, California. Architect: Widom/Wein & Associates, Los Angeles, California. Sculptured metal facade by Warnel Corporation, South El Monte, California. Coil Coater: California Finished Metals, Inc., Cucamonga, California.

4-10

Just what the doctors' architect ordered: DURANAR 200® coatings from PPG.

The Palm Harbor General Hospital in Garden Grove, California, got a beautiful, durable exterior and still stayed within the budget. How? By incorporating a sculptured metal facade by Warnel Corporation, prefinished with a DURANAR 200 fluoropolymer coating from PPG.

Sculptured metal facades provide a fantastic array of truly beautiful textures and effects, while reducing the weight of exterior walls with commensurate savings in framing. And DURANAR 200 coatings give the metal the

minimal-maintenance beauty and extended durability characteristic of other, more expensive fluoropolymer finishes.

The secret of DURANAR 200 coatings lies in PPG's patented combination of remarkably durable resins, together with pigmentation techniques that assure maximum color durability. It can give your medical center—or any building—a very healthy skin.

For information on DURANAR 200 coatings, see Sweet's Architectural or Industrial Construction

Files 9.10/PPG or contact: Market Manager, Coil Coatings, PPG Industries, Inc., Dept. 13S, One Gateway Center, Pittsburgh, PA 15222.

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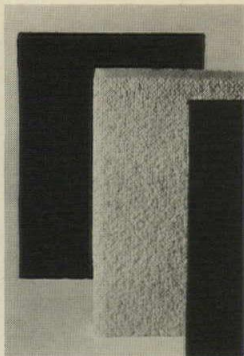




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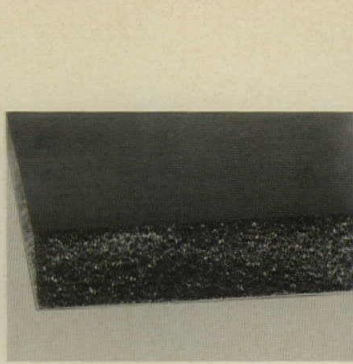
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ACOUSTICAL TREATMENT

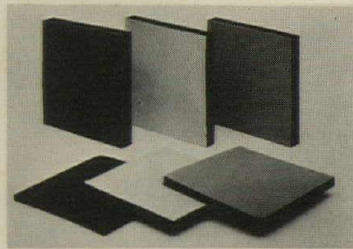
176 ACOUSTICAL WALLS / New *Vicracoustic Monolithic* wallcovering system combines densely-matted fiberglass batting with the manufacturer's perforated heavyweight vinyl wallcovering. Acoustic panels with 1-in. cores have NRC of .80 to .85, according to ASTM tests. / Dayco Corp.

177 CEILING PANELS / *Celestial* ceiling panels, of mineral wood fibers, have pattern of random fissures designed to resemble travertine. Panels are available in both standard and lay-in panels. / Conwed Corp. A, I*

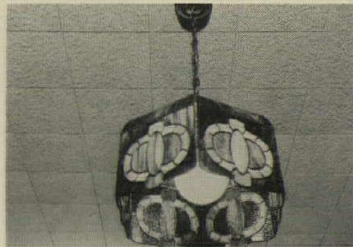
178 ACOUSTIC FOAM / Lightweight *Coustifoam 3D* is a sound-absorbing foam for middle- and high-frequencies. Suggested architectural applications include walls and baffles. Flexibility allows forming to compound curves. / Ferro Corp.



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179 ACOUSTICAL FOAM / Manufacturer's *Tufcote* acoustical foam is newly available with *Tedlar* PVF-film facing, which increases material's resistance to weather, chemicals, solvents and stains. Film is available in transparent or pigmented forms. / Specialty Composites Corp.

180 SOUND-ABSORBING FOAM / *Cousti-Headliner* has layer of high-noise-absorption polyurethane foam bonded to facing of reinforced PVC film with leather-grain texture. Standard colors are white, black and beige, available in standard thicknesses of ½ in. and 1 in. / Ferro Corp.

181 ACOUSTICAL TILE / Tiles are available 12 by 12 by ½ in. with bevel edge. They meet Class III frame spread requirements of AIMA as well as Class 200, Federal Specification SS-S-118a. / Simpson Timber Co. A*



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182 ACOUSTICAL TILE / Panels are made from mineral fibers with binder added to provide an incombustible, sound absorbing product which features a random deep fissured pattern. The surface has a factory applied white finish. / Conwed Corp. A, I*

183 ACOUSTICAL PANELS / These ceiling panels are composed of mineral fibers and binder molded to form noncombustible lightweight units with high acoustical properties. / United States Gypsum Co. A, I*

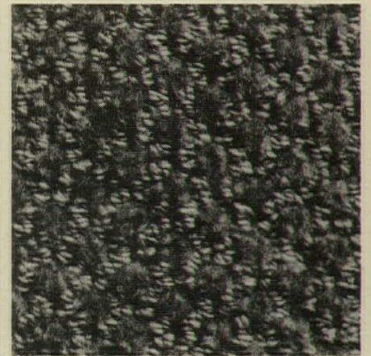
184 ACOUSTICAL CEILING / Fiberglass ceiling panels 5 by 5 ft are offered in three textured designs, with a vinyl film surface that is light-reflectant and soil-resistant. *Span-Acoustic* is said to absorb up to 80 per cent of room noise. / Johns-Manville. A*



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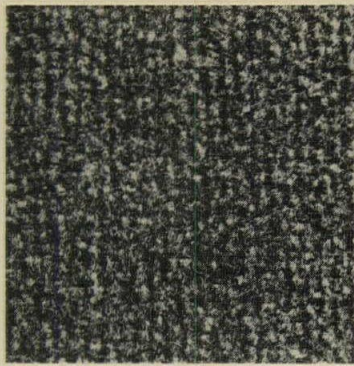
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CARPETING

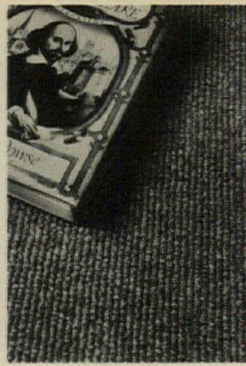
185 TUFTED CARPET / Two tufted commercial grades made of *Herculon 4* polypropylene are six-ply level loop carpets in multicolor tweeds, differing only in the backing material used. "Robust" has a jute backing, while "Robust Deluxe" has high-density foam. / J. P. Stevens Co. Inc.

186 HEAVY-DUTY CARPET / A collection of 15 heavy-duty, woven acrylic-nylon carpets is available in a range of custom colors. The carpets are made of a 70 per cent acrylic-30 per cent nylon yarn, and have a built-in fire-retardant sponge rubber cushion. / Commercial Carpet Corp.

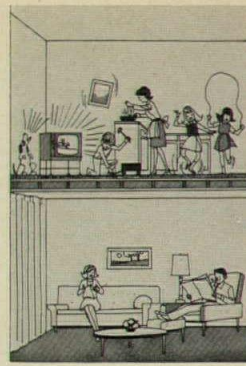
187 HEAVY-DUTY CARPET / "Revelation," a tough, heavy-duty carpet has a coarse textured pattern to its cut-and-loop construction. It is a woven-through-the-back velvet of 69 per cent acrylic, 29 per cent nylon and 2 per cent other for static protection. / J. P. Stevens & Co., Inc.



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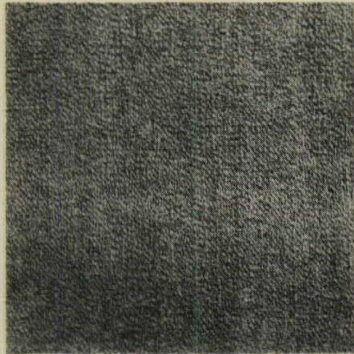
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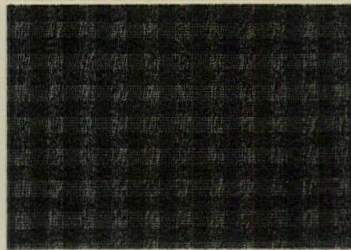
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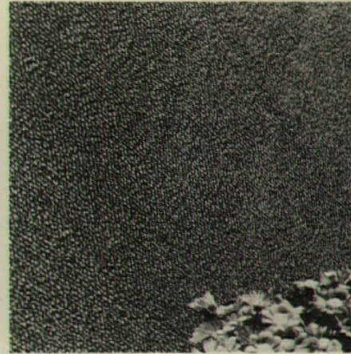
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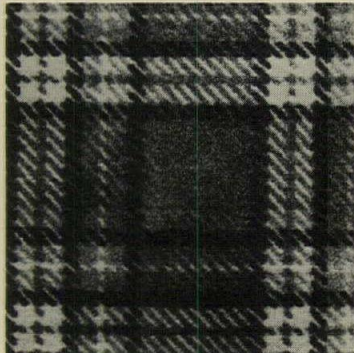
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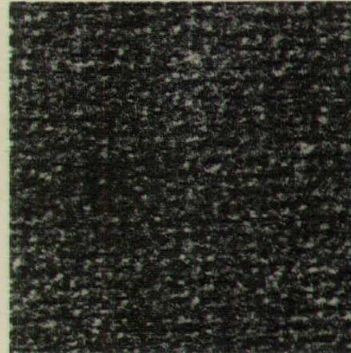
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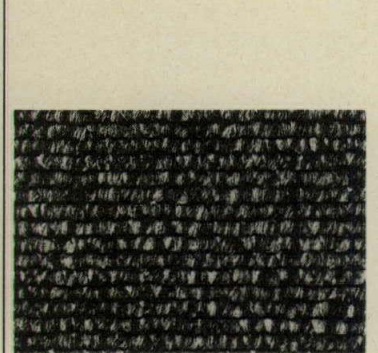
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188 CUT PILE CARPET / A multi-color cut pile carpet designed for use in heavy traffic areas is a blend of 69 per cent acrylic, 29 per cent nylon and 2 per cent other for anti-static control. "Cameron" is available in 12-ft widths, in ten color combinations. / J. P. Stevens & Co., Inc.

189 "VELVET" CARPET / "Noranda" is a cut pile velvet carpet made of 69 per cent acrylic, 30 per cent mod-acrylic and 1 per cent antistatic fiber. A thick, woven carpet, "Noranda" comes in 12 ft widths, in six colors. / J. P. Stevens & Co., Inc.

190 PLAID CARPET / Carpet in *Scottish Plaid* patterns has cut pile with 22-oz face weight and primary backing of moisture-proof polypropylene. Available in five colors. / Wellco Carpet Corp. D*

191 HEAVY-DUTY CARPET / *Pound Wise* polyester carpet has 54-oz face weight, primary backing of polypropylene and secondary backing of jute. Available in 12 colors. / Wellco Carpet Corp. D*

192 CHECKERED CARPET / *Almont* carpeting is woven with 3-ply *Antron*, continuous filament nylon designed to control light and so reduce visibility of soil. Through-the-back velvet weave produces cut-and-loop checkerboard pattern. / C. H. Masland & Sons. D*

193 HEAVY-DUTY CARPET / Heavy-duty 42-oz. *Rushmore* carpet is woven of *Zefran CR-4* blend with anti-static properties. Available in 12 colors. / Roxbury Carpet Co.

194 CARPET PADDING / *Acousti-Gard* sheets provide both resilient carpet padding and sound absorption. Padding is made of closed-cell polyethylene foam backed by a layer of sound-damping mastic. Sheets have non-slip backing, need no adhesive or fasteners. / Globe Industries, Inc.

195 TWEED CARPET / Tweed pattern of *Causeway* carpet is achieved with weave of three-colored commingled yarn of continuous filament nylon. Available in 12-in. width and in six colors, carpet is appropriate for light commercial or residential use. / Armstrong Cork Co.

196 MULTICOLOR CARPET / Multicolor *Cameron* cut-pile carpeting is designed for use in heavily trafficked areas. Fiber is blend of acrylic and nylon with 2 per cent *Zefstat* to control static. Available in 12-ft width and in 10 color combinations. / J. P. Stevens & Co., Inc.

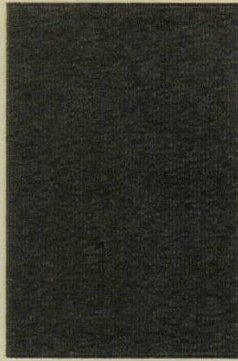
197 CARPETING / *Executive Berber* coarse-spun carpeting of acrylic yarn is available in 12 colorways ranging from light beige to dark brown, in solids and stripes. Offered only in 12-ft widths, carpet has rot- and mildew-proof backing suitable for exterior use. / Deering Milliken Carpets, Inc.

198 CARPET SQUARES / Fusion bonded and computer injection dyed, the free-lay tile system is 100 per cent *Antron*, available in seven designs. / Deering Milliken, Inc.

199 HEAVY-DUTY CARPET / Constructed of 100 per cent *Olefin* for low static yield, *Berberia* has an excess of 10,000 denier. It is offered in five natural wool heather tones and carries a five-year wear-rated guarantee. / Sweetwater Carpet Corp.



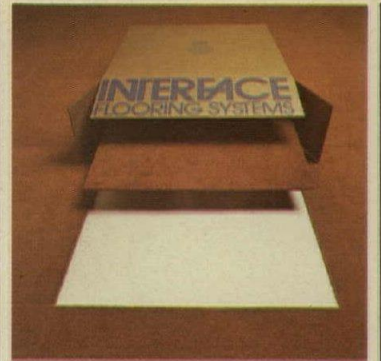
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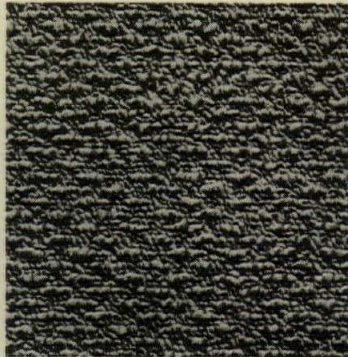
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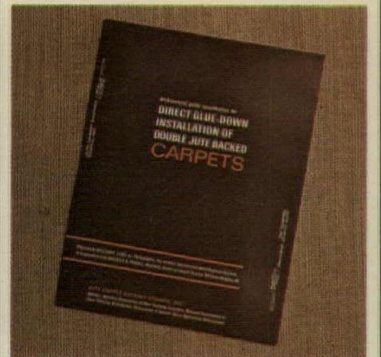
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200 PVC THRESHOLD / Flame-resistant, resilient vinyl carpet divider-saddle ranges in widths from 1 to 6½ in., in lengths up to 12 ft and heights from ¼ to ¾ in. in custom colors. / Mercer Plastics Co., Inc. A, I, D*

201 CONTRACT CARPET / Textured ⅜ gauge carpet that is made of stock-dyed *Acrilan* acrylic fiber, this carpet has been designed for use in high traffic areas and will be available in 12 tri-color patterns in 12 ft widths. Backing can be polypropylene or hi-density foam. / Burke Carpet Mills.

202 COMMERCIAL CARPET / "Capital Assets" is a collection of nine styles of heavy-duty carpet. Special colors and textures can be prepared to client's specs including varying face weights and special widths. Shown is *Hai Yen' Vectra Olefin*, in 11 colors. / Wellco Carpet Corp. D*

203 VELVET WEAVE CARPET / *Antron* continuous filament nylon, pre-dyed and woven in a stria cut and uncut texture, is stocked in standard colors, 12 ft width. With built-in static control, the carpet meets HUD/FHA requirements for heavy traffic. / C.H. Masland & Sons. D*

204 TREEBARK-FIGURE CARPET / A ⅝ in. gauge pattern of 52 per cent continuous filament nylon and 48 per cent continuous filament solution dyed polypropylene, *Tuf* is available in six color combinations. / Jorges Carpet Mills, Inc. A*

205 HEAVY-DUTY CARPET / Carpets have pile yarns of continuous filament *Anso* nylon. A conductive element has been added to the pile to reduce generation of static electricity. It is available in 15 colors. / Burlington House Carpets.

206 BURR-BURR LOOK / Carpets range from tight level-loop construction to the "handcrafted" rope-yarn look, in either 100 per cent *Acrilan Plus* or 100 per cent wool face yarns. All will be stocked in 12 ft width in six to eight colors. / Custommills.

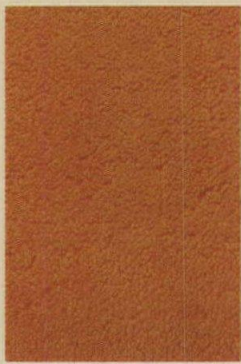
207 NUBBY TWIST CARPET / "HighMark" is made of 100 per cent *Anso* continuous filament nylon with anti-static control and a five-year wear guarantee. Available in 11 colors, it is said to exceed FHA ratings for heavy traffic. / Wellco Carpet Corp. D*

208 WOOL CARPET / Available in four natural wool tones and nine multi-color effects, carpet features heavy four-ply nubby yarns in dense level-loop construction. / Philadelphia Carpet Co.

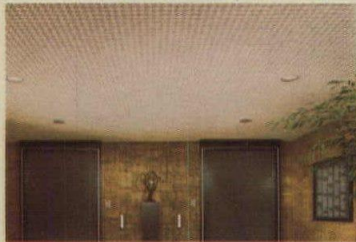
209 CARPET MODULES / Free-lay, dense-pile carpet tiles manufactured by fusion bonding *Anso-X* nylon into a vinyl backing offers static rating of 0.09KV. No gluing is required for installation. Fiberglass reinforcement provides dimensional stability. / Carpets International-Georgia, Inc.

210 JUTE-BACK GUIDE / A revised architectural guide details the role of jute carpet backing in the direct glue-down method of non-pad carpet installation. Also, case histories documenting experience with the system are included. / Jute Carpet Backing Council, Inc.

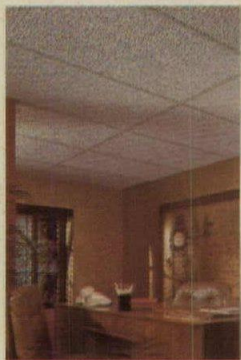
211 BERBER-LIKE CARPET / Berber texture shown here is a mix of beiges, grays, blacks and browns designed in multi-level bulky loop texture woven in a thick, dense pile of all-acrylic yarns. / Karastan Rug Mills.



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212 PLUSH / Plush in second generation Anso nylon fiber is offered in 50 colors from black, white, gray and brown neutrals to pastels. The piece-dyed carpet, which carries a five year Anso-wear guarantee, has a woven synthetic backing. / Allied Chemical Corp.

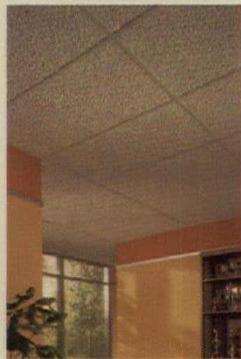
CEILING SUSPENSION

213 MINERAL FIBER CEILING / A deep sculptured ceiling design called Grandshire featuring a houndstooth pattern will be available in 12 by 12 by 3/4 in. K4C4 tiles. / Armstrong Cork Co. A*

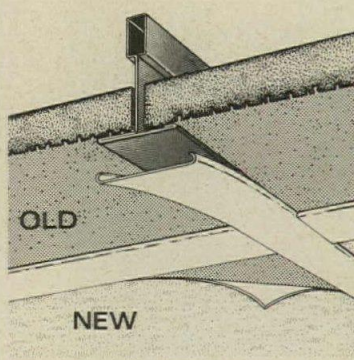
214 ROUGH TEXTURED PANEL / A rough textured acoustical lay-in panel for exposed-grid ceilings is a mineral fiber ceiling board called Boldface. It is available in 24 by 24 in. and 24 by 48 in. lay-in panels and 24 by 48 in. tegular lay-in panels. / Armstrong Cork Co. A*



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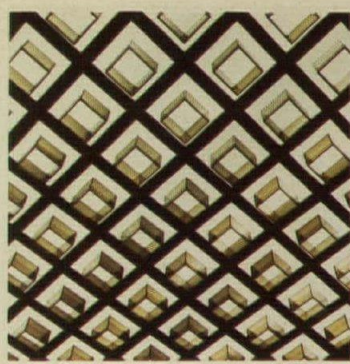


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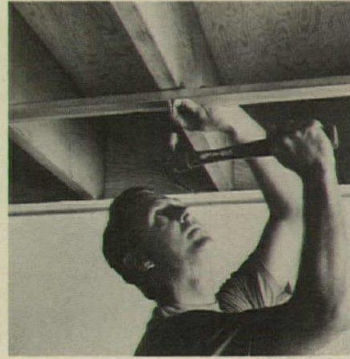
215 SCORED CEILING TILES / An acoustical lay-in ceiling system called Second Look that provides the appearance of either 12 by 12 in. or 24 by 24 in. units at slightly more than regular board price is made by tegularizing the 2 by 4 ft board's center and edge. / Armstrong Cork Co. A*

216 DURABLE CEILING / An acoustical lay-in panel called Armatuff features a mineral surface applied to standard mineral fiberboard to provide an over-layer that is highly resistant to abuse. Installation requires an impact clip and concealed tee spline. / Armstrong Cork Co. A*

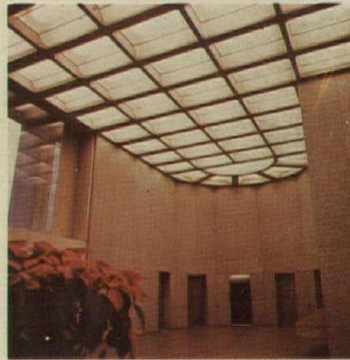
217 CEILING RESURFACING / Acousti-Face 200 system allows resurfacing of soiled acoustical tiles and rusted grids without disruptive construction. Components include rigid vinyl cap for old tee-runners and new white vinyl surface. / National Ceiling Resurfacing Corp.



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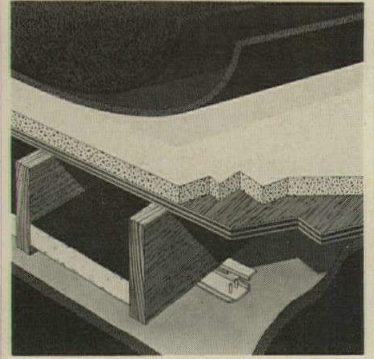
218 ILLUMINATED CEILINGS / Cubus features 2 in. deep by 3 in. square floating cells of solar bronze plastic. The cells float within black squares imprinted on clear prismatic acrylic, or octagonal surrounds on white diffuser plastic (not shown). / Neo-Ray Lighting Systems, Inc.

219 FURRING CHANNEL / The company has developed a new method of attaching its Chandelier ceiling tiles to plaster, dry-wall or exposed joists—eliminating wood furring strips. The system accommodates either 12-by-12-in. tiles or 1-by-4-ft units. / Armstrong Cork Co.

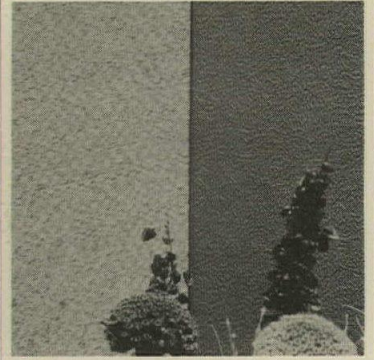
220 LIGHT COFFER DOORS / For poured-concrete coffered ceilings, the doors enclose lighting and mechanical equipment. They are made in sizes and shapes to accommodate given coffer dimensions, and consist of glass or plastic in bright or satin finished aluminum frames. / Neo-Ray Lighting Systems, Inc.



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221 CHROME CEILING PANELS / Modular panels may be installed horizontally, sloped or in undulating configurations. Integrated lighting can be provided. / Neo-Ray Lighting Systems, Inc.

GYPSON WALLBOARD

222 UNDERLAYMENT BOARD / Product is designed for application over plywood subfloors in low-rise garden apartments and other residential wood-frame construction. It has a 1-hour fire rating and, combined with gypsum panels, exceeds HUD sound requirements. / U.S. Gypsum Co. L*

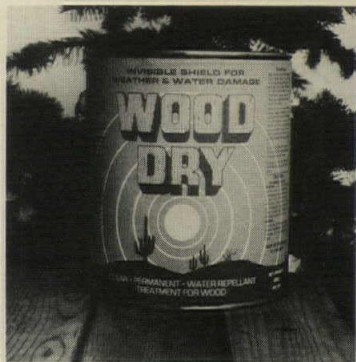
223 GYPSON WALLPANELS / Faced with deeply embossed vinyl factory-laminated to the fire-resistant gypsum core, these panels are used for permanent and moveable partitions, and in remodeling. Fire rated wall assemblies are possible. Tweed pattern is new. / U.S. Gypsum Co. A, D*



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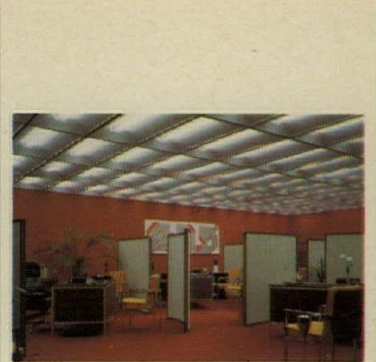
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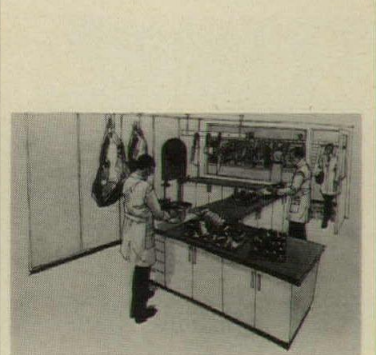
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PAINTING MATERIALS

224 TRANSPARENT STAINS / These stains contain 5 per cent pentachlorophenol, an ingredient that protects wood against insects and decay. Stains are said to be trouble-free, never crack, peel or blister, and assure excellent results on all types of wood. / Samuel Cabot Inc. A, L*

225 BARN BOARD STAIN / *Barn Board Stain* is dark and has a weathered look, a very transparent stain that accents the variations and irregularities of the wood surface. This stain may be used on all types of wood, and is most effective for vertical siding. / Samuel Cabot Inc. A, L*

226 WOOD TREATMENT / *Protex Wood Dry*, a clear, colorless wood treatment, is not a sealant but rather acts chemically to reduce water absorption. The nontoxic material can be applied by spraying or brushing on-site or by dipping off-site. / Cyclo Sciences, Inc.

227 WHITE METAL PRIMER / A white rust inhibitive metal primer formulated for use on interior and exterior iron or steel surfaces is designed for both maintenance and new construction applications. The formulation eliminates lead pigments. / PPG Industries. A, I*

228 ACRYLIC LATEX FINISH / Formulated for use on new hardboard and painted surfaces, the product is available in 22 stain-matched colors. / Olympic Stain. A, L*

229 SEMI-GLOSS ENAMEL / A lead-free, solvent-free latex finish that can be applied directly to aluminum, galvanized iron and masonry and to properly primed steel, iron and wood is designed for interior and exterior use, and in a range of colors. / The Sherwin-Williams Co. A, I*

230 STAIN-PRESERVATIVE / *Cuprinol* is available in 20 colors in semi-transparent and solid color stains for exterior wood protection against water, mildew and fungus. It prevents fading and can be applied over unprimed wood. / Darworth Inc. A, I*

231 ANTI-RUST COATING / These coatings are said to protect metal with acrylic resin and rust inhibitive pigments. Coatings dry to the touch in 15 minutes and recoat in an hour. They resist fumes, abrasion, heat, spillage and spray. / Rust-Oleum Corp. I*

PREFINISHED PANELS

232 HARDBOARD PLANKS / A 10-ft plank series is now available in five woodgrain and four designer finishes with harmonizing moldings. The 16 in. by 10 ft planks are installed with metal clips and wallboard adhesive over old walls or new framing. / Marlite Paneling. A, I*

233 OPEN-OFFICE SYSTEM / This open plan package consists of a fully integrated ceiling, acoustical wall panels and screens, resilient flooring and carpeting, and a sound-masking system, distributed and installed by the company's contractors. / Armstrong Cork Co. A*

234 SANITARY PANELS / Designed to meet the requirements of meat- and food-processing areas, as well as cold-storage plants, fiberglass-reinforced polyester panels are waterproof, do not support mold or retain odors, and can be steam cleaned or washed. / Marlite Div., Masonite Corp.

235 SOLID OAK PLANKS / *English Channel Oak* has been added to manufacturer's line of solid hardwood wall planks. Planks are 3/4-in. thick, available in random widths and lengths, and finished with two coats of baked-on alkyd urea. / Potlatch Corp.



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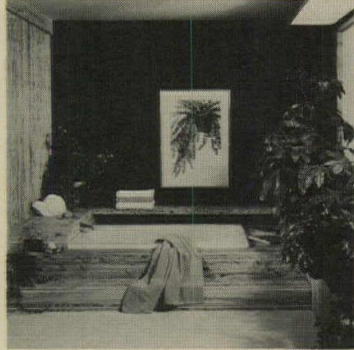
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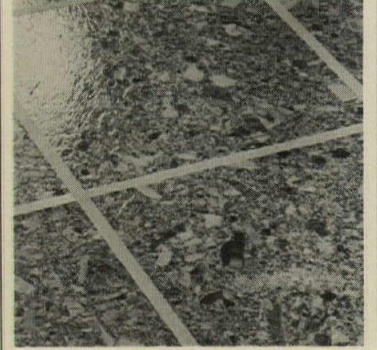
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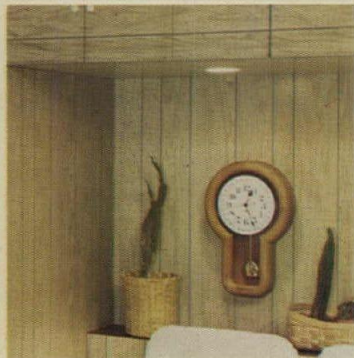
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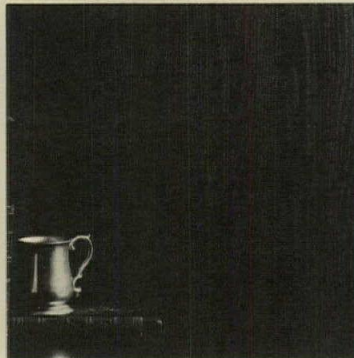
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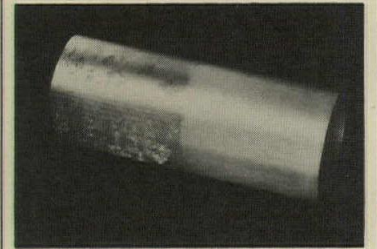
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236 TEXTURED METAL / Manufacturers use their *Bonded Bronze* process to cast large textured metal panels that faithfully reproduce original sculpture. Designs are also available in copper, nickel, silver or aluminum. / Forms & Surfaces.

237 "SLATE" LAMINATE / Decorative plastic-laminate paneling, *Panelyte Slate*, reproduces appearance of Appalachian slate. It is available in black or natural. / Evans Products Co.

238 HARDWOOD PLYWOOD / Produced in four colors "Ticonderoga" prefinished paneling is available in 4 by 7 ft and 8 ft sizes in both and $\frac{5}{32}$ in. thickness. / U.S. Plywood. A, L, D*

239 OAK GRAIN PLYWOOD / In four oak tones panels are available in both 4 by 8 ft and 4 by 7 ft sizes, in $\frac{1}{4}$ and $\frac{5}{32}$ in. thicknesses. The lauan plywood panel edges are beveled and colored to match face grooves, which are positioned for nailing on 16-in. centers. / U. S. Plywood. A, L, D*

240 TEXTURED PLYWOOD / Paneling has a deeply-grained, distressed surface, abraded with open knots and other characteristics of weathered wood. The panels are $\frac{1}{4}$ in. thick, in 4 by 8 ft sizes. / U.S. Plywood. A, L, D*

241 HARDBOARD PANELS / Available in six woodgrain patterns with double-beaded grooves, panels resist peeling, discoloring and denting, and can be cleaned with a damp cloth, according to the company. / United States Gypsum Co.

242 HARDBOARD PANELING / V-grooves spanning each 4-by-8-ft panel at irregular intervals create an effect of individually installed planks. A 48-ft long wall can be installed before there is duplication of panel design. Three wood tones are included in the *Forester* series. / Masonite Corp. A, L, D*

243 DECORATED ALUMINUM / Paneling made by a photo-etching process permits pattern, design or line art to be reproduced in a variety of colors on panels in sizes up to 4 by 8 ft. Photographs may also be duplicated. / Permaloy Corp.

RESILIENT FLOORING

244 VINYL ASBESTOS TILE / *Clardon* offers intricate scrollwork in two-color embossing for a continuous pattern, wall-to-wall look. The tile may be installed in residential and light traffic commercial areas. Available in four colors, $\frac{1}{16}$ in. gauge, 12 by 12 in. size. / Azrock Floor Products, A, L*

245 INDOOR/OUTDOOR VINYL / For roofs, floors and decks, vinyl sheeting retains its color without shrinking or rapid aging and can be welded for seamless installation. It is available in skid-resistant and smooth finish in a variety of marbled and plain colors. / Lonseal, Inc.

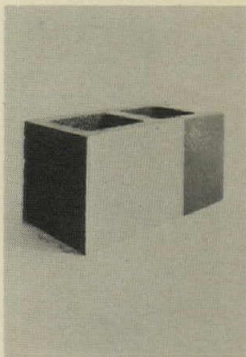
246 SOLID VINYL TILE / Solid vinyl tiles with a "never-wax surface" are 12 by 12 in., $\frac{1}{16}$ in. thick. They have a self-adhering back and come in ten colors with slate-like texture. / National Floor Products Co., Inc. A, L, D*

SPECIAL COATINGS

247 ALUMINUM SEALER / *Coricone 1200-M* wipe-on sealer dries to the touch within one minute of application. The cost is less than 1 cent per square foot, and the sealer leaves a subsurface seal that protects against weathering, contaminants, and industrial air pollution. / Coricone Corp.



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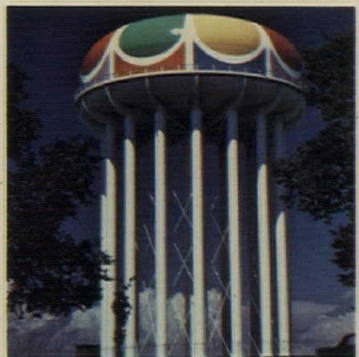
248 MASONRY SUBSTRATE / A high-profile coating for masonry substrates has been developed to meet both Type I and Type II classifications of Federal Specification TT-C-555B for interior and exterior masonry. / Glidden Maintenance Coatings.

249 EPOXY-ENAMEL COATING / These two-component enamels combine the resistance properties of epoxy and polyester enamels, and may be applied in high humidity areas. For substrates such as gypsum wallboard, it is available in a range of colors. / Glidden Maintenance Coatings.

250 FIBERGLASS WALL FINISH / A flexible wall covering with a Class A fire hazard classification can be applied to any rigid surface and cures like cement. / Wall & Floor Treatments, Inc. A, D*



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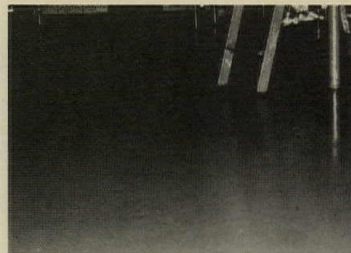
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251 FIRE HAZARD COATING / A high-build flat coating, the product is designed for spray application on unpainted interior gypsum panels, plaster or masonry surfaces. No priming necessary. It offers a flame spread rating of 20. / U. S. Gypsum Co. A*

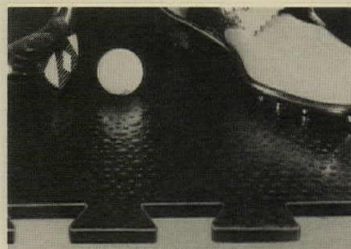
252 POLYURETHANE COATING / For steel, aluminum, galvanized steel and concrete, coating provides a bright protective finish with gloss and color retention for a minimum of 10 years. Available in gloss and lustre finishes, *Endura-Shield* resists abrasion and chemicals. / Tnemec Co., Inc. A, I*

SPECIAL FLOORING

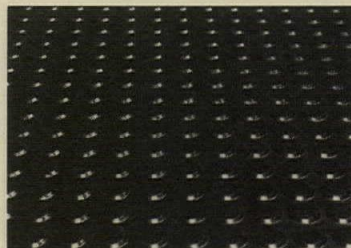
253 SEAMLESS FLOORING / *Lexite Granular Carpet*, a seamless epoxy flooring, consists of base coat, quartz granules, and clear top coat. According to manufacturers, it provides slip-resistant surface when wet, greasy, or soapy, and can be used indoors and outdoors. / Metalcrete Mfg. Co.



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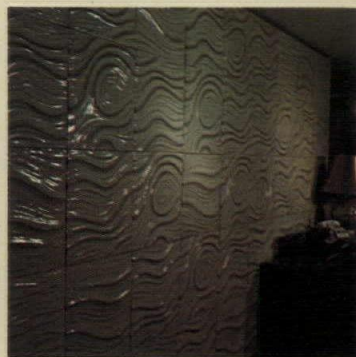
254 NON-SLIP SURFACING / Epoxy-based *Shur-Tred* surfacing offers positive traction wet or dry for rubber- or leather-soled shoes. Usable both indoors and outdoors, applications include such facilities as bottling plants and canneries, as well as walkways and locker rooms. / Permaflex Products Co.

255 PROTECTIVE FLOORING / *Pro-Lok* is a hard rubber tile with interlocking tabs to facilitate installation. It is intended for use in such areas as ice rinks and football locker rooms, where cleats and blades may damage floor. Surface also protects cleats and blades. / Pawling Rubber Corp.

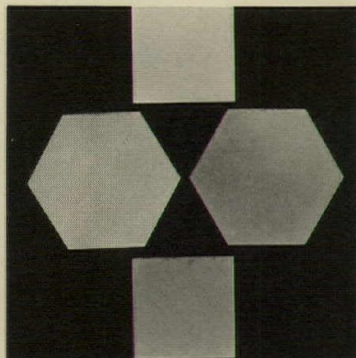
256 RUBBER UNIT PAVER / Flooring is made in sizes from 12-by-12 to 40-by-40 in. square. Colors are red, yellow, gray, green, brown, blue, and black. Total thickness exceeds 5/2 mm. / Hastings Pavement Co., Inc. A*



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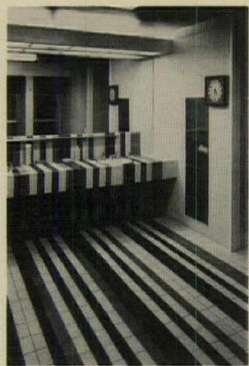
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TILE

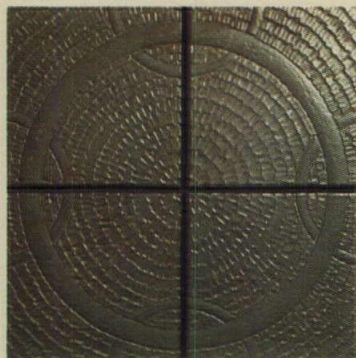
257 RUSTIC CERAMIC TILE / This line features ten colors ranging from earthtone to fiery glazes. Also included in the line is an unglazed brick red color. Sizes include units 4 by 4 in., 4 by 8 in., and 8 in. hexagon. / United States Ceramic Tile Co. A, I*

258 CERAMIC WALL TILES / *Waves* is new pattern in manufacturer's series of ceramic wall tiles. The 18-in. units come in four patterns, arranged to produce different design for each wall. The material is suitable for interior or exterior use. / Design-Technics Ceramics, Inc. A*

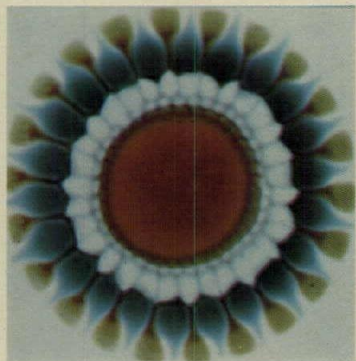
259 PAVING TILES / *Esplanade* silicon crystal floor tiles are offered as 6-by-6-in. squares and 8-by-8-in. hexagons. Six colors are available. / Continental Cement Products.



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260 CERAMIC TILE / The "Terra Grande" palette ranges from glossy reflective surfaces to semi-matte textures. Five rectangular sizes range from 2 1/4 by 8 in., to 4 by 9 in., offered in 16 colors. / Interpace Corp. A, D*

261 CERAMIC TILE FLOOR / The large pattern which features big and small intersecting circles within a larger field of concentric circles is formed by 12-by-12 in. pieces. "Radiance" is available in eight colors. / Interpace Corp. A, D*

262 HAND-PAINTED TILE / One of a kind, all are said to be typical in color and variety. The same designs are made also in round tiles. Each tile is 6 in. across supplied unbacked for walls, splashbacks, countertops and swimming pools. / Arango International.



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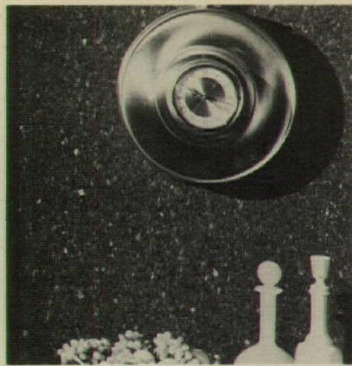
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263 IMPORTED GLASS TILES / From France, highly impervious hardened glass tiles are suggested for uses ranging from bathrooms and kitchens, to wall surfacing in subway stations. The tiles are said to be nearly indestructible. Design services are offered for special motifs. / Briare Co.

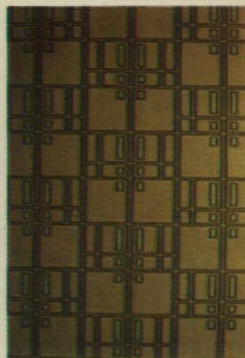
264 GLASS FLOOR TILES / "Concept 75" hexagonal floor tiles from France are made of hardened glass, and are extremely durable and impervious. Offered in six color combinations, the tiles are approximately 5 1/2 in. from flat to flat, and 3/8 in. thick. / Briare Co.

WALL COVERING

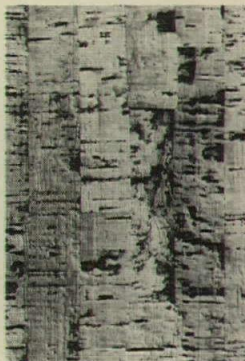
265 SILK-SCREENED MURALS / Each of the 11 murals in the *Metamorphosis 21* series is available in a number of colorways, silk-screened on flat or glossy vinyl, mylar, or plain or mirrored acrylic. The mural "Think the Magic Word" is shown. / The Jack Denst Designs, Inc.



266



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266 CORK PANELING / A 3/32-in. prefinished veneer of dark Portugese cork is factory laminated to a substrate of basic 1 5/32-in. structural insulation board, providing a tackable surface. Available in nominal 4 by 8 ft size. / Homasote Co.

267 VINYL WALL COVERING / Imported from France and designed by Pierre Cardin, product is washable, pre-pasted and pretrimmed. Design shown here is "Mini Ecaille." Same design is available in larger scale. Roll width is 21 in. / Wall Trends International.

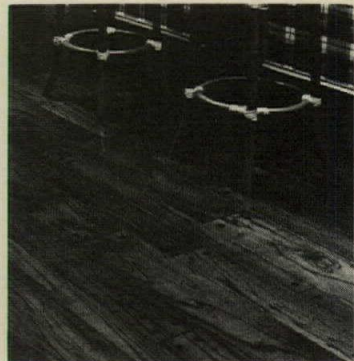
268 NATURAL CORK WALL / A fire-rated wall covering of deeply textured natural cork is available in ten patterns, and has a washable acrylic finish. Custom sizes up to 12 by 4 ft, as well as precut panels and inserts, are available. / Expanko Cork Co.



269



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269 PLANK WALNUT / Using 4 in. wide strips of walnut, the planking features both flat-cut and quartered veneer finishes. / Champion International. A, D*

WOOD FLOORING

270 PLANK FLOORING / *Homestead Oak* plank flooring is wire-brushed for antiquing and prefinished in brown. Random length planks have beveled edges and ends. / Bruce Flooring.

271 WOOD PLANK FLOORING / *Village Plank* is an oak plank flooring that can be laid over concrete or any dry flat surface, without the use of screeds or subfloors, using a newly developed adhesive. / E. L. Bruce Co., Inc. A, D*



Architects: Minoru
Yamasaki and Associates,
Troy, MI; Emery Roth
& Sons, New York.
General contractors:
Tishman Realty &
Construction Co.,
New York.

Jute fills tall orders

All tufted carpets in World Trade Center public areas have Jute-on-Jute backing. Carpets meet stringent safety codes.

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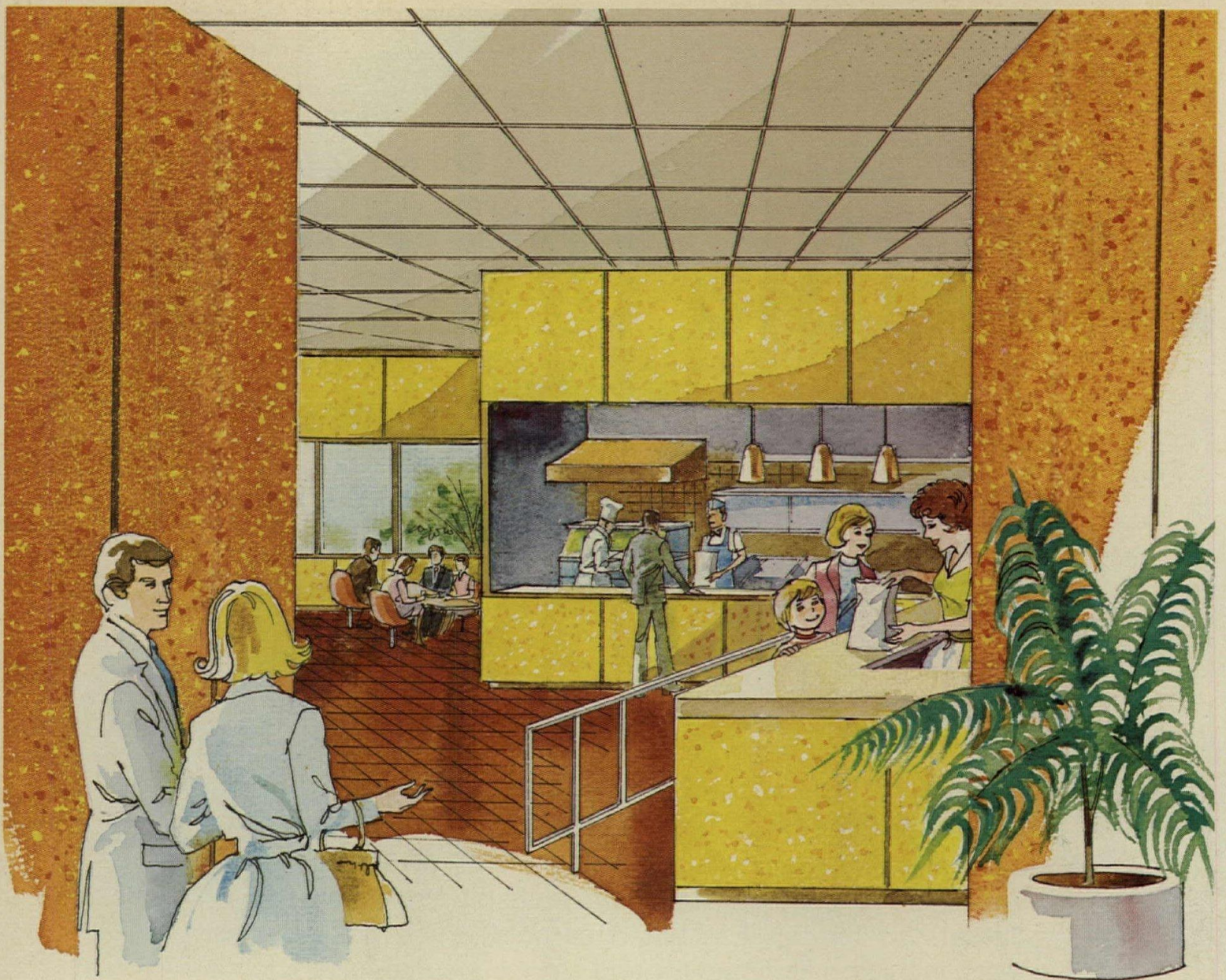
For the safety, performance and quality you want in tufted carpets, make it Jute for both primary and secondary backings.

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For more data, circle A30 on inquiry card

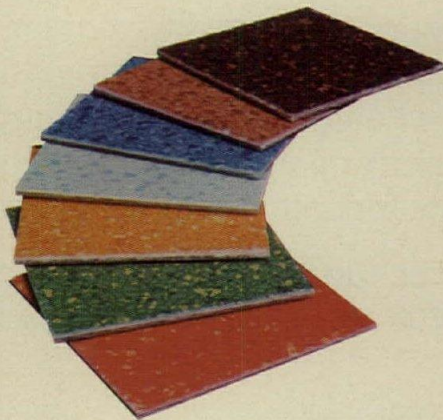


PATNEL* decorative paneling **Versatile, Durable, Cleanable**

One fip wall panel that serves *all* purposes for fast food chains and restaurants. It's warm and festive and lends color, cheer, and atmosphere to dining, customer, and service areas. It's tough, stain resistant, easily cleaned, and stands up to daily wear and tear in kitchens and work areas. It repels grime and grease . . . stays bright, colorful, and new looking.

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PATNEL paneling is offered in a wide variety of standard colors and patterns.



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PATNEL paneling—easy to install, easy to clean, easy to maintain. This “go everywhere” panel provides the design and decorative versatility you need.

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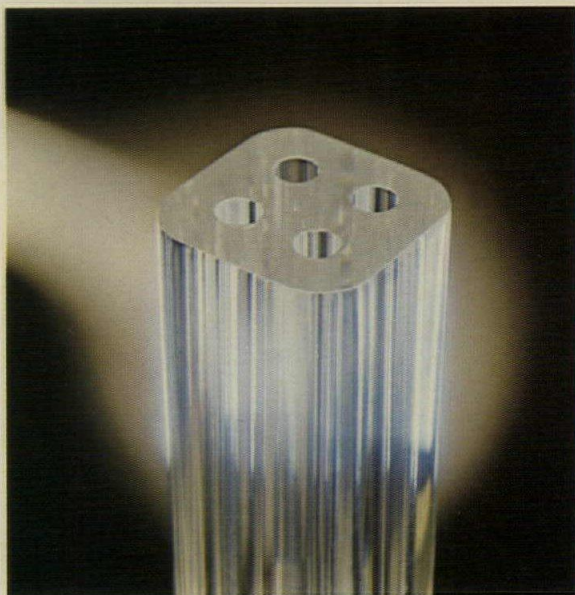
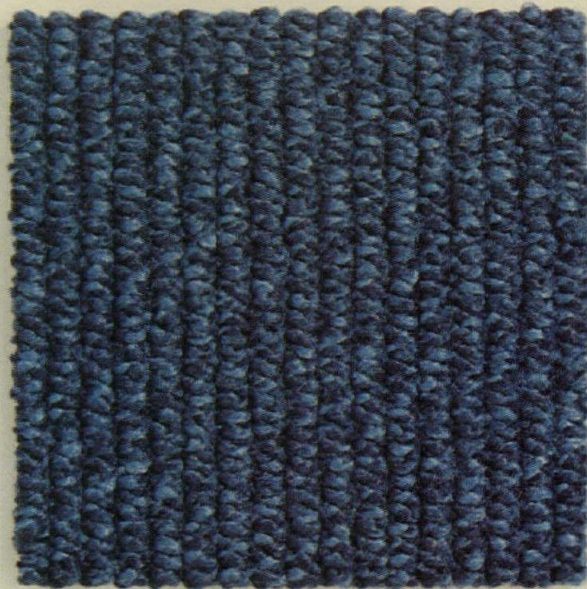
*PATNEL paneling is manufactured exclusively by Kemlite Corporation, Joliet, Illinois.

For more data, circle A31 on inquiry card

to be in Antron[®] nylon. look to last.

General Telephone & Electronics Corporation wanted commercial carpet that didn't look commercial, a style to complement the distinctive architecture of their new world headquarters in Stamford, Conn. At the same time GTE wanted to take full advantage of the long-term appearance retention inherent in carpet with pile of Antron* nylon. From the wide variety of styles now available in "Antron" they specified this ribbed-texture construction in four custom colors for a total of 35,000 sq. yds.

NEW: "Antron" III nylon for static control is now available in selected styles.



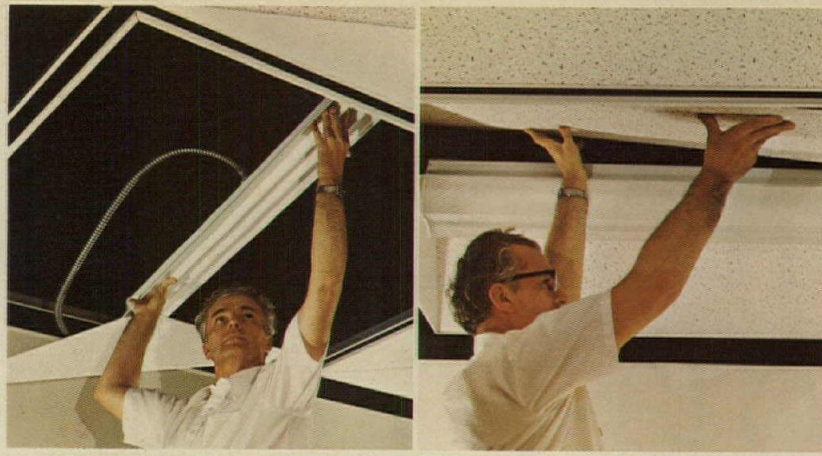
What you see is what you'll get for a long time. "Antron" is a soil-hiding carpet fiber. It is the leading commercial carpet fiber brand with more than twice the available styles in "Antron" than those made of the next brand. Its ability to diffuse light helps blend soil concentrations into the overall look of the carpet (normally they would show up as spots). Also, being nylon, "Antron" gives carpet exceptional durability and crush resistance.

How "Antron" keeps carpet looking fresh. Its filament structure is remarkable, as simulated in this greatly enlarged model. The four microscopic holes scatter light to minimize rather than magnify the dulling effects of soil, while maintaining an attractive, subdued luster. This property of the fiber, together with its outstanding wearability, helps the look of the carpet to last.



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*Du Pont registered trademark. Du Pont makes fibers, not carpets.



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We call our new integrated ceiling system "The Energy Saver" for two reasons.

First, because it saves human energy at the time of installation.

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to see better than with conventional lighting systems, while consuming less electricity.

The scientifically-designed Percepta® luminaires practically eliminate veiling reflections, making every footcandle of light more effective. This significantly reduces power consumption. In fact, The Energy Saver Ceiling requires only 2 watts per square foot!

See your local Holophane representative. He has dramatic proof of The Energy Saver's benefits.

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Division, Johns-Manville Sales Corporation

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California home; Designer: Russell Forester, La Jolla, California; Cabot's Stain Wax on all interior woodwork

Cabot's STAIN WAX



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- Send color cards on Stain Wax and Interior Stains
- Please send Cabot's handbook on wood stains

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The next great advance in school noise control.

Meet the twice-as-quiet locker. It's Republic's new Low Decibel (LD) Locker, latest idea in the product advances that are helping you achieve low noise level school interiors.

You can specify it now to reduce noise just as you've specified carpeting, acoustic ceilings, insulated wall panels, floor tile, furniture glides, and the rest.

The old locker door slam-bang is gone. Along with the clatter.

An air-cushioned rubber bumper absorbs the impact (and the sound) of door closings and door slams. Reinforced panels are filled with sound-deadening material. The LD Locker cuts noise pollution.

Metal-on-metal noise caused by standard latch bars is gone, too. LD Lockers feature a new latching system. Quiet latching.

And, this new one looks like no other locker because we have ventilation without front louvers. The locker looks

smart, contemporary, styled for open classroom design. 19 standard colors.

Actually, you've got to **not** hear it to believe it. Send the coupon for a recording of comparative quietness.



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I want to hear all the noise your new locker doesn't make. Please send () cassette tape () 45 rpm record and complete data on Republic Low Decibel Lockers.

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City _____

State _____ Zip _____



specialties

uci 10

CHALKBOARDS
LOUVERS & VENTS
FIREPLACES
GRILLES & SCREENS
IDENTIFYING DEVICES
PARTITIONS
STORAGE SHELVING
TOILET/BATH ACCESSORIES
WARDROBE SPECIALTIES
TELEPHONE ENCLOSURES

Signage, a large section within the specialties division, has in the past presented numerous problems of integration with architectural design goals, and more than one architect has returned to his completed building to find his coordinated graphics augmented with hand-letter cardboard signs posted where users of the building have found inadequate directions.

The array of identifying devices shown in this division this year points to a concerted effort on the part of signage manufacturers to assume more responsibility for guiding the architect through the hazardous process of anticipating user needs in signage. These design services should be welcomed by architects, particularly when they are offered for such complex buildings as hospitals. One company represented here, Jas. H. Matthews & Co., provides a thorough evaluation of plans, pinpointing all the signage requirements first, and then offering the coordinated physical package. Usually, an on-site inspection is conducted by the company; a list of signage, and detailed drawings and construction information comprise the Matthews service, for which there is a fee.

As manufacturer services become more refined, technical and expert, there is every reason to believe they will be sold rather than given away.

The partitioning shown in this division features two types of improvement, acoustical and portability. This industry continues efforts to deal with the seemingly irreconcilable goals of soundproofing space with enclosures that must fold or in other ways be repositioned regularly.



MATTHEWS Identification Systems

- Craw Clarendon Book
- Craw Clarendon
- Craw Clarendon Condensed
- Garamond Regular
- Garamond Bold
- Helvetica Regular
- Helvetica Medium
- Microgramma Extended
- Microgramma
- Bold Extended
- Optima
- Optima Semi-Bold
- Palatino
- Palatino Semi-Bold
- Stymie
- Stymie Medium
- Univers 55
- Univers 65
- Univers 67

comprise the complete collection of Matthews Letterstyles.

From the unique selection of Matthews Letterstyles: Palatino and Palatino Semi-Bold, a modern serif face in two stroke weights now available in

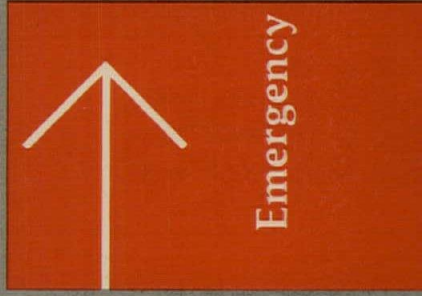
- 1 **Matthews Pressure-Sensitive Legends** die-cut from vinyl
- Matthews Fiber-Reinforced Polyester (FRP)** surface mounted and projected wall or ceiling mounted signs,
- 3 **Post & Panel Assemblies,**
- 4 **FRP Monoliths**

Matthews Metal Letters (not shown) cast bronze or aluminum, out-cut aluminum, fabricated aluminum or stainless steel.

Interior and exterior signage systems can now be visually coordinated by specifying any of the Matthews Letterstyles in any of the signage mediums listed at left.

For more data, circle A37 on inquiry card

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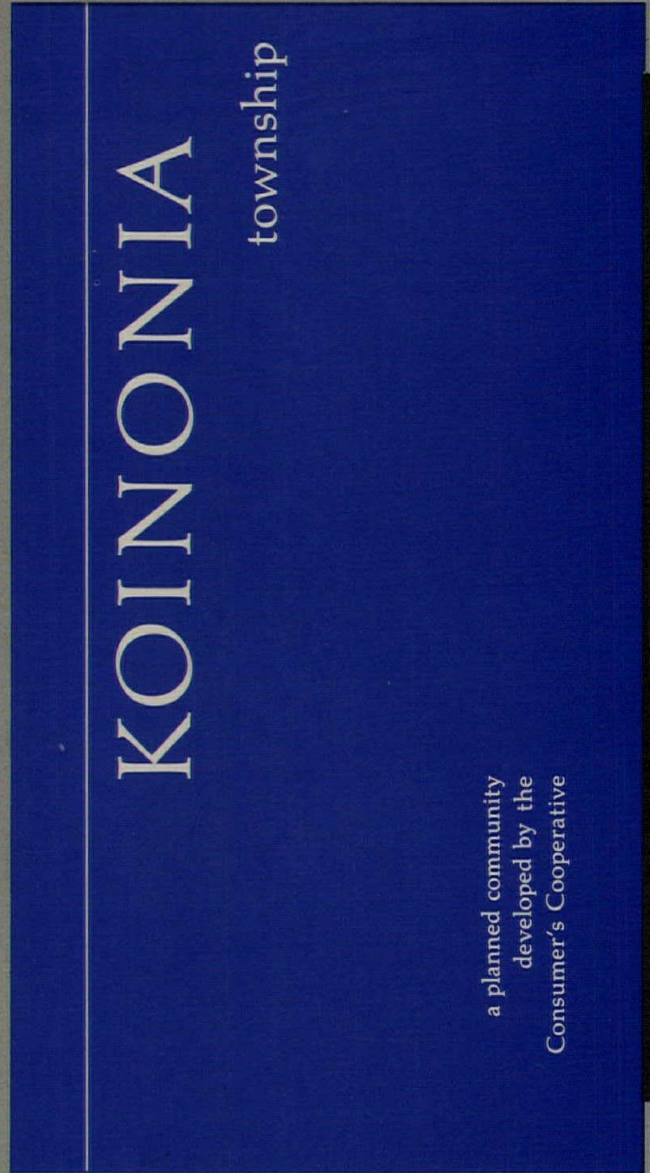


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EXIT
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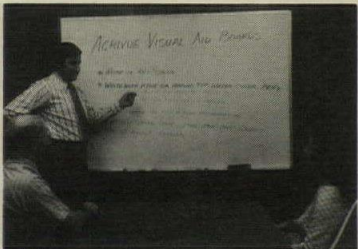
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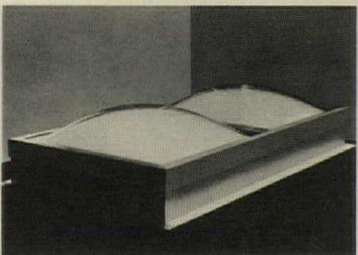
a planned community developed by the Consumer's Cooperative



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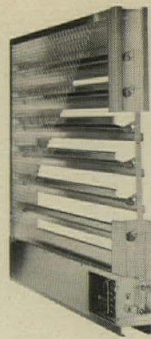
CHALKBOARDS

273 WRITING WALL / *Rite-On, Wipe-Off* writing boards combine porcelain walls and marker pens to allow easy erasure without dust. Wall can be used with any partition system. / AllianceWall Corp. A*

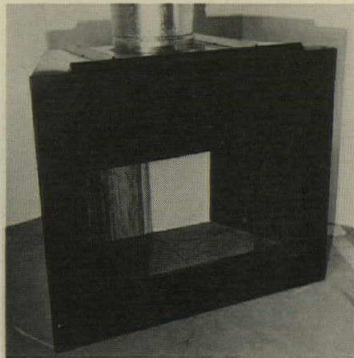
274 CHALKBOARD / White acrylic *Acrivue* board can be written on with chalk, grease pencil and felt-tip markers, and can serve also as projection screen. Chalk tray is included. / Swedlow, Inc.

LOUVERS & VENTS

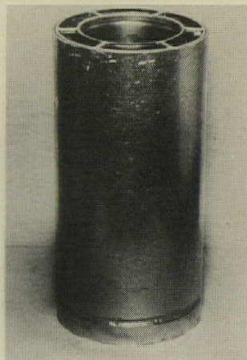
275 DROP-OUT VENT / Double acrylic dome, called *Pyrodome*, intended as low-cost smoke and heat vent, is designed to drop out in less than five minutes at less than 500 degrees F when subjected to standard Factory Mutual fire-exposure test. FM approved. / Wasco Products, Inc. A*



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276 WALL LOUVERS / Wall louver is adjusted by 120- or 240-volt motor. Operator package can be removed through interior access panel for servicing, eliminating need to remove louver from wall opening. / Airlite Co. A, I*

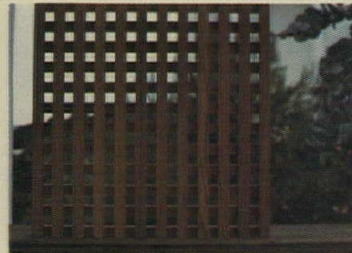
FIREPLACES

277 BUILT-IN FIREPLACE / Low-profile built-in fireplace has heavy-duty 18-gauge construction, face-frame venting for conduction of warm air, and 8-in. triple-wall flue. Over-all measurements are 46-in. width, 38-in. height, and 24-in. depth. / Western Fireplace, A.R. Wood Mfg. Co.

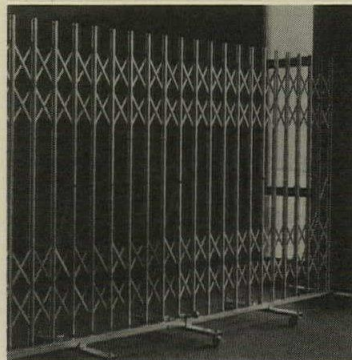
278 CHIMNEY / The manufacturer has expanded his line of all-fuel, triple-wall chimneys to include an 8-in. model. A full line of fittings accompanies the new model. / General Products Co.



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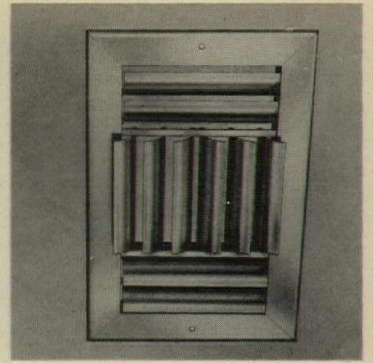
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279 FIREPLACE / *Econo-Fire Free-standing Fireplace* burns coal, wood or charcoal, and accommodates gas logs. The unit has double-wall construction on back, bottom and top, and a 24-in front opening. / United States Stove Co.

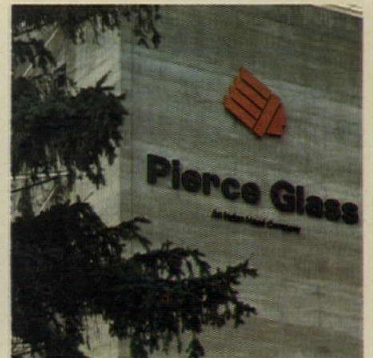
GRILLES & SCREENS

280 WOOD GRILLES / Solid panel is sculptured as grille: linear grooves are cut horizontally one side, vertically on the other to produce wood grid. Available in redwood, hardwoods, or prime-coated for color finish. / Forms & Surfaces, Inc.

281 PORTABLE GATE / Folding gate is mounted on heavy-duty swivel casters for portability; "pressure-lock" system eliminates need for floor anchors. Standard models are designed for padlock, but cylinder locks are available. Available in four sizes. / List Industries, Inc.



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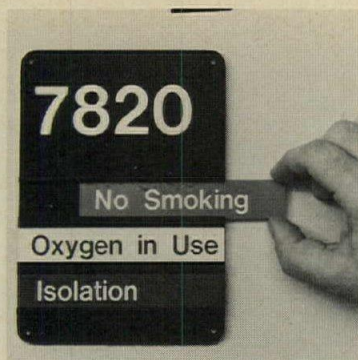
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282 FILLER PANEL / Applications for manufacturer's anodized aluminum filler panels have been expanded to include his aluminum curved-blade ceiling diffusers, with 1-, 2-, 3- or 4-way throw. The panel has been used chiefly with manufacturer's directional ceiling diffusers. / Lima Register Co.

IDENTIFYING DEVICES

283 COORDINATED SIGNS / Manufacturer offers a selection of lettering styles in a variety of materials—fiberglass, metal, pressure-sensitive legends, plaques and tablets, post-and-panel assemblies and monoliths—for coordinated interior and exterior sign systems. / Jas. H. Matthews & Co. A*

284 GRAPHIC STRUCTURES / Reinforced plastic cubes and panels provide a background for directional and informational signage. They are offered in a range of sizes and colors, both standard and custom. / Group Artec.



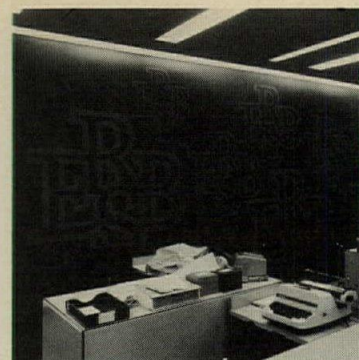
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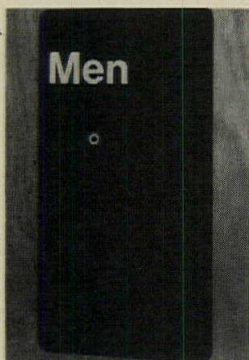
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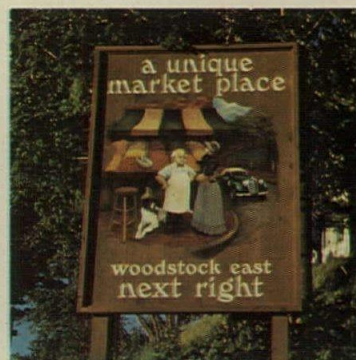
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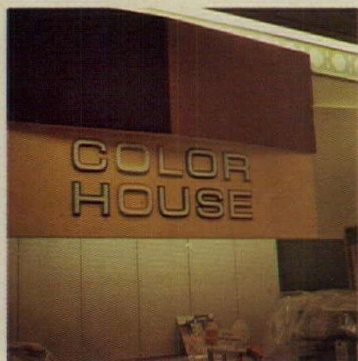
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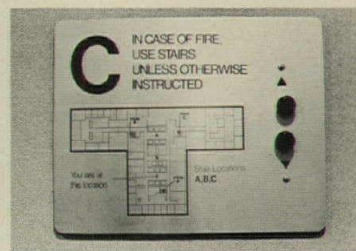
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285 HOSPITAL SIGNS / For use on patient-room doors, aluminum plaques receive a variety of changeable plastic inserts. The system is offered in a number of typstyles and background colors. / The Supersine Co. A*

286 PUSH PLATES / Aluminum push plates incorporate die-raised letters for informational signage, as well as tactile signals for the blind. / The Supersine Co. A*

287 LIGHTED LETTERS / Improved lens design increases brilliance of *Letter-lite* 30 per cent, according to its manufacturer. It is available with green, red, amber and blue as well as clear lenses. / Lashmar Div., Lake Shore Markers, Inc. A*

288 SIGN LAMINATE / A new line of *Micarta* engraving stock for signs and nameplates is available in three finishes—plate satin, gloss and velvet—and a range of colors and wood-grain finishes. / Westinghouse Electric Corp.

289 CUSTOM DIRECTORIES / Floor-standing directories, available in a variety of wood and metal finishes, are custom-made; model shown has natural finish light oak case with black enameled steel frame and interchangeable listing strips. / Best Manufacturing Co.

290 DIMENSIONAL LETTERS / Cast polyester letters, suitable for both interior and exterior applications, are available in more than 30 different type styles and in a range of sizes. Bronze and aluminum dimensional letters are also available. / Art Products Co. A*

291 ALUMINUM SIGNS / Lightweight aluminum signs are finished with baked enamel; other color finishes are also available in the manufacturer's sign systems. / Andco Industries Corp. A*

292 HAND-CARVED SIGNS / Carved, painted, and gold-leafed signs are made to order as are such "special effects" wood carvings as display plaques, doors and trim. / Vermont Hand Carved Signs.

293 FIRE SIGNS / Building evacuation plan is imprinted directly on aluminum elevator-button plaque with metalphoto process. Available with black or clear anodized finish with legend in reverse color. / Martin Visual Products Corp. D*

294 SUPERGRAPHICS / Firm's service includes silk-screen transfer of custom designs as wall graphics on-site. / Martin Visual Products Corp. D*

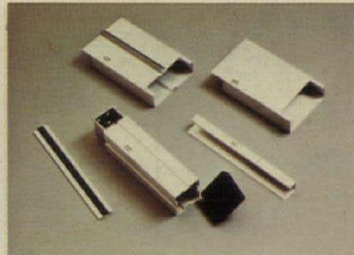
PARTITIONS

295 CARPETED PANELS / Portable carpeted *Air-Wall* partitions can be positioned at will; when they are in position, valve injects air to push cornice-type cap against ceiling. Available in a range of colors. / Richards-Wilcox Mfg. Co. A, D*

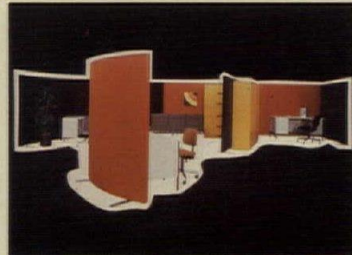
296 TRANSPARENT SCREENS / *Vision Screens*, glazed with medium gray acrylic, provides visual communication between adjoining work areas. Partitions are available in widths of 14, 20, 32 and 46 in., and in heights of 61 or 84 in. to match solid screens. / Hauserman, Inc.



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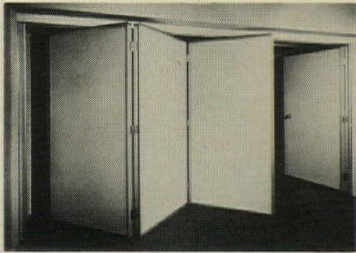
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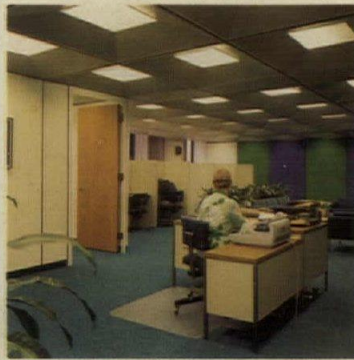
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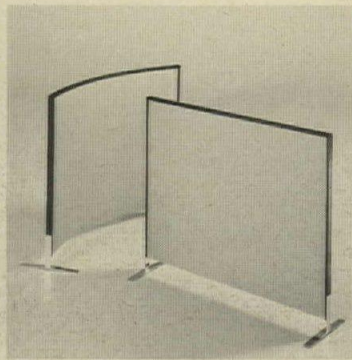
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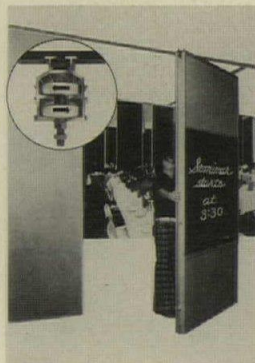
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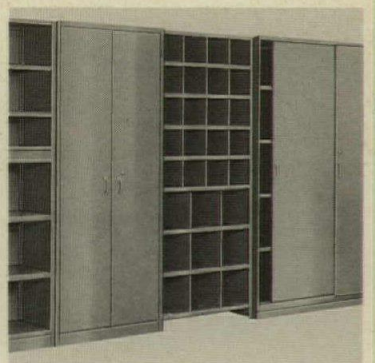
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297 FOLDING PANELS / Wood folding partitions are available with option *Trakseal* acoustical treatment, which achieves sound transmission class 30 rating per ASTM E90-70 testing in 14-by-9-ft opening. / Panelfold Doors, Inc. A*

298 ACOUSTICAL WALL / Top-supported operable wall is available with sound transmission class rating of either 31 or 40. / Panelfold Doors, Inc. A*

299 BATTENLESS PANELS / Demountable partition system eliminates battens; flap of vinyl surface material along long end of panel is folded over fastener, held in place with spline pressed between panels. Panels are gypsum board faced with vinyl. / Gold Bond Building Products.

300 PARTITION SYSTEM / *Contempo-Wall 2500* system uses scaled-down hardware—posts, glazing and flush rail covers, and trim—to improve appearance and reduce aluminum use. Extruded vinyl glazing rail is keyed into aluminum component. / Gold Bond Building Products.

301 ACOUSTIC PANELS / To accent his standard steel partitions, manufacturer provides sound-absorbing panels wrapped in jute fabric. *Accent Acoustic* panel, with noise reduction coefficient of .55 is cellulose pulpboard; *Sound Grabber*, rated at .95 is fiberglass. / Hauserman, Inc.

302 SLIDING PANELS / *Navigator* sliding partitions operate with two-wheeled carrier that reduces friction, according to its manufacturer, and allows easy movement through track intersections and around corners. / Hough Manufacturing Corp. A*

303 OPEN-OFFICE SCREENS / Portable *Acoustical* screens are designed to offer sound absorbency and fire resistance as well as visual privacy in open-plan offices. Both straight and curved screens are available in different heights and widths and in a range of colors. / InterRoyal Corp. D*

304 PORTABLE DIVIDERS / Aluminum-framed Series 800 and 900 dividers are available in 20 sizes, straight and curved, and in a range of colors and fabric textures. Series 800 has noise absorption rating of .85, and both are available in fire-retardant materials. / Conwed Corp.

305 ECONOMY PARTITION / Low-cost *Lo-Wal* system of slim profile panels and connecting columns is offered in heights of 58 in. and 70 in. and in three widths. Panel slots accommodate industry-standard brackets for shelves, work surfaces, or decorative panels. / The Mills Co. A*

306 PARTITION GLAZING / Constructed primarily of aluminum, and affixed to steel studs, this holding system can meet glazing requirements for any standard dry-wall fixed partition. It is available in full-height models or door- and rail-height types. / Kaiser Gypsum Co., Inc. A, I, D*

STORAGE SHELVING

307 MOBILE STORAGE / *Compactus* shelving system moves on tracks to reduce storage area needs. The system is available with motorized semi-automatic operation, or with manual operation requiring only 5 lbs of pressure to move 1000 lbs. / Powers Regulator Co.

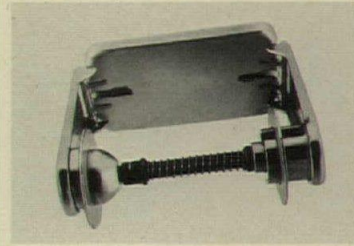
308 CABINET DOORS / Swinging or sliding doors, both provided with cylinder locks, convert manufacturer's shelving into cabinets. Swinging doors are supplied as one-piece units in welded frame that hooks into shelves; sliding doors can be installed without screws. / Aurora Steel Products.



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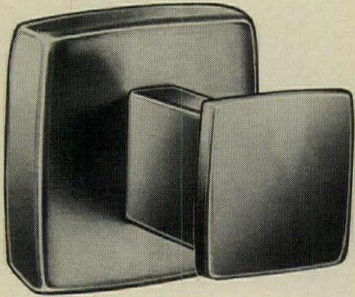
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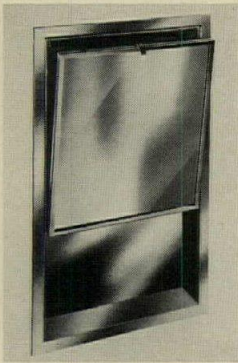
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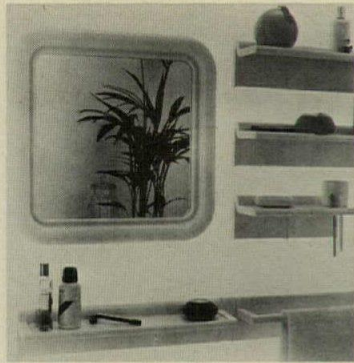
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TOILET/BATH ACCESSORIES

309 BASIN ACCESSORIES / Back Service Accessory Console provides towel dispenser, waste receptacle and soap dispenser factory-installed in laminated plastic container that is recessed in wall behind lavatory. / RAR Reserv-A-Roll Co. A*

310 BATH ACCESSORIES / New series of stainless-steel institutional bathroom accessories includes soap dish, grab bar with soap dish, toilet paper holder, utility shelves, towel bars, towel ring or pin, toothbrush holder, and robe hooks. / Bobrick Washroom Equipment, Inc. A*

311 WASHROOM UNIT / Designed especially for patients confined to wheelchairs, multipurpose washroom unit has tilting mirror held in place by magnetic strip on door front. Casing is satin-finish stainless steel. / The Charles Parker Co. A*

312 ACCESSORY DOORS / To provide color in washrooms, stainless-steel recessed accessories are furnished with laminated plastic doors 3/8-in. thick; core is 3-ply resin-impregnated wood. Available in 30 colors and wood grains. / Bobrick Washroom Equipment, Inc. A*

313 HAND DRYER / Stainless-steel cover of semi-recessed electric hand dryer projects only 3 in. The fixture, which has 40-second time cycle, is also available as a hair dryer with 3-minute cycle. / Electric-Aire Corp.

314 BATH ACCESSORIES / British-made line of bathroom accessories from Crayonne Ltd. is made of polished, scratch-resistant ABS plastic. Modular items include mirror, shelf, towel rail and toilet paper holder, and are available in blue, pink, beige and white. / Janus 2 Inc.

315 TISSUE HOLDER / Vandalproof toilet paper holder, designed for institutional applications, has constant adjustable roll tension with patented locking device to discourage theft and vandalism. / Bradley Corp.

316 HAND DRYER / To discourage tampering, blower unit of *Fastaire HD03* electric warm-air hand dryer is mounted behind partition, and only cast-aluminum nozzle with integrated start button is exposed on lavatory wall. / Humphrey, Inc.

317 TOILET PAPER HOLDER / Stainless-steel toilet paper holder has locking cover that hinges from the bottom for easy filling. The holder, which provides controlled delivery to discourage waste, comes in single- and dual-roll models. / Charles Parker Co.

318 BATHROOM CABINET / *Broadview* bathroom cabinet is now available with antique gold or silver finish. Cabinet has two sliding mirrors in wall-mounted anodized aluminum frame and track, and is available in mirror widths up to 60 in. Cosmetic lights are optional. / Miami-Carey.

WARDROBE SPECIALTIES

319 HAT RACK / Curving walnut hat rack tops mirrored chrome coat rack in a new addition to manufacturer's line of office valets. Solid walnut tee-top hangers are held in molded nylon receptacles. / Vogel-Peterson Co. A, D*

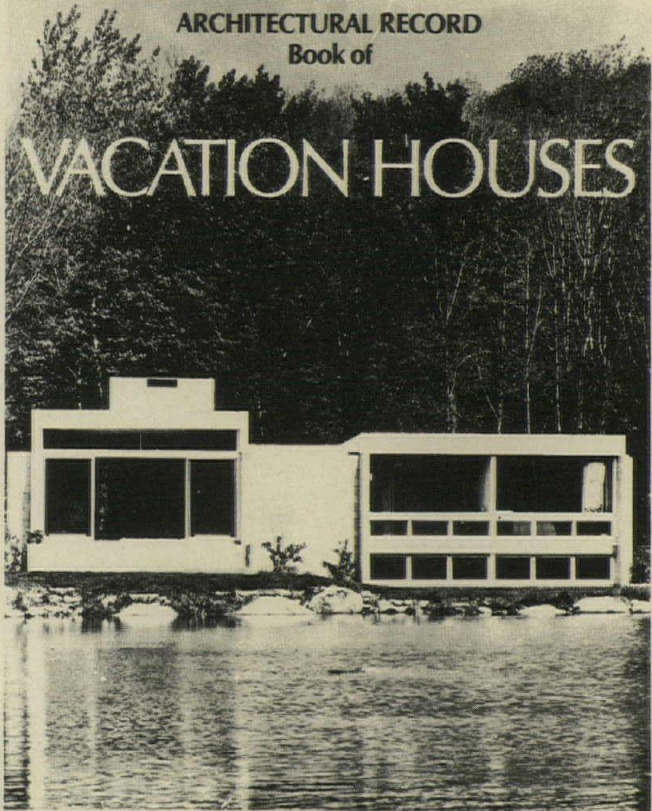
TELEPHONE ENCLOSURES

320 WHEELCHAIR BOOTH / The *ADCO 120 diplomat* phone enclosure can be converted in the field to meet wheelchair standards. The booth mounts at standard height and phone is positioned so that it is easily reached by wheelchair callers. / Acoustics Development Corp. A*

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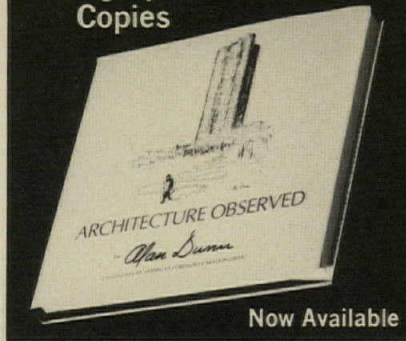
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continued from page 44

770 SIGNAGE / A series of signage catalogs is arranged so that architectural design firms can provide coordinated signage on any project. Catalogs are said to explain various materials and construction details that can be used, and contain flexible layouts and specifications. / The Supersine Co.

EQUIPMENT

771 COFFEE BREWERS / Condensed information on performance and specifications for the full line of coffee brewers and electric warmer stoves describes automatic models for connection with plumbing; and those not requiring it. / Bunn-O-Matic Corp.

772 CENTRAL VACUUM / This new 32-page booklet provides information on layout, installation and maintenance of a central vacuum cleaning system. / Wal Vac, Inc.

773 PATIENT-SERVICE / A 16-page color catalog describing a line of patient-service wall systems covers installation, general patient-care designs, intensive care/cardiac care, and special care. Also illustrated in the catalog are wardrobe cabinets; shelving; bedside cabinets; storage cabinets; compact, flushable lavatories; plus examination, overhead and arm extension lights. / American Sterilizer Co.

774 UNDERCOUNTER / A portfolio details a line of metal undercounter equipment and contains specifications, a color chart showing 16 standard baked enamel finishes, a general information sheet, and 17 indexed pages of engineering drawings illustrating each component. All components are constructed of steel with anodized satin finish aluminum flush pulls. Security features include standard four pin tumbler locks which accept paracentric keys. / Security Corp.

775 GREASE FILTERS / Included in the publication is a selection chart indicating the proper size filter for any hood, depending upon the air movement desired and the static pressure requirements of the system. Recommended filter sizes are shown according to cubic feet per minute specified and static pressure. The brochure also cites international, national, and regional approvals and recommendations which have been received by the company. / Flame Gard, Inc.

776 HOSPITAL PARKING / This publication has as its purpose the detailed analysis of traffic problems facing hospitals, particularly parking. It is directed to hospital administrators, public officials, drive-in engineers and planners, and is based on data largely extracted from individual traffic studies at hospitals. Six hospital and traffic variables were used to compute regression equations for parking demand estimation. The publication is being distributed without cost. / The Eno Foundation.

777 DRIVE-IN BANK / A 16-page "Drive-In Banking Design Guide" provides planning and layout data for new drive-in facilities and upgrading of existing facilities. Its scope includes suggested drive-in layouts to guarantee maximum efficiency and congestion-free operation. Products manufactured include drive-in banking electronic control systems and signalling devices, closed circuit TV customer identification systems, etc. / Elec-Trotec, Inc.

778 INTRAVENOUS SYSTEMS / Descriptive material on a line of cubicle tracks, curtains and I.V. hardware is contained in this folder, including data on mono- and duo-rail intravenous support systems, cross sectional views, mounting data and specifications. In addition, this brochure contains information concerning in-ceiling, to-ceiling and dropped-from-ceiling cubicle track mountings. All parts are depicted with materials and dimensional data. / Grant Hardware Co.

779 GAME MARKINGS / The "1974 Game Markings Handbook" features indoor game markings as well as outdoor field layouts. / The Wood & Synthetic Flooring Institute.

780 COMPACTORS / The brochure includes specifications, and unit size and space requirement dimensions as a guide to installations in new or existing buildings. The brochure also contains information about vertical rams, units suited for apartment buildings, office buildings, health-care facilities, restaurants, schools, stores, hotels and ships. / Auto Pak.

781 STORAGE EQUIPMENT / This catalog contains 144 pages picturing equipment for in-plant and warehouse transporting, lifting, dumping, hoisting, pulling, conveying, storing, and drum handling. New products such as cabinets, conveyors, slings, racks, scissor lifts, lockers and rotabins are featured. Complete prices and specs are included. / Standard Handling Devices.

782 PLANNING PARKING / A 16-page "How to Plan Parking Areas" brochure is said to provide detailed information and diagrams for planning and laying out parking facilities for maximum efficiency, control and security. Specific layout of stalls and aisles, placement of entrances and exits and actual marking and signing of the lot are discussed with the step-by-step instructions for layout planning. Parking control equipment including gates, vehicle detectors, coin and token control units, lot capacity counter control units and out clocks are illustrated and described. / Federal Sign & Signal Corp.

783 PATIENT-ROOM PANELS / An eight-page catalog describes and illustrates consoles designed for wall installation in newly constructed general patient rooms, and available in single- or double-patient models for flush or semi-flush mounting. The units permit pre-planning of medical gases and vacuum, electrical and communication systems. The prefabricated, prewired assemblies are said to reduce installation time and costs. / Ohio Medical Products.

784 INSTITUTIONAL STORAGE / Dimensions and various configurations for a standard line of base, wall, general storage, and instrument storage cabinets are included in a 12-page fold-out said to be suitable for wall-mounting and printed on durable paper stock. / American Sterilizer Co.

785 HEALTH-CARE FURNITURE / A 36-page catalog covering furniture for nursing home and health related facilities illustrates contemporary and period styles. / InterRoyal Corp.

786 RECESSED FOOT GRILLES / Included in this catalog are five styles: carpet; vinyl; abrasives; serrated aluminum; and swimming pool types. Three types of catch basins and drain assemblies are available. / Construction Specialties, Inc.

FURNISHINGS

787 AMERICAN ARTS, CRAFTS / The Indian Arts and Crafts Board has issued a directory of Native American owned and operated arts and crafts organizations throughout the United States including artist and craftsman cooperatives, tribal enterprises and non-profit Native American arts organizations. The entries give name and address of the business, telephone number and business hours, outline the major products handled by each business, and indicate if mail orders are accepted. / Indian Arts and Crafts Board, U.S. Department of the Interior.

788 OFFICE PLANNING / "Planning Principles for Effective Office Interiors" documents with case histories and shows with isometric drawings how different office planning concepts can meet the needs of accounting; customer service; data processing; engineering; order entry; personnel; sales; word processing, etc. Acoustics, lighting and wiring are discussed in terms of their present effectiveness and their adaptability to change. / Steel-case Inc.

SPECIAL CONSTRUCTION



789 FLOATING STRUCTURES / Industrial and recreational uses for floating structures are described and illustrated in a 12-page "Flotation Planning Guide." Applications shown are floating marinas, pipelines, docks, floating amphitheatres, sewage waste pump-out modules, soil erosion curtains, oil and trash skimmers (diversion and containment booms), dredgeline floats, plug work floats and pump platforms. / United Flotation Systems.

more literature on page 140

equipment

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ATHLETIC EQUIPMENT
BANK & VAULT EQUIPMENT
FOOD SERVICE EQUIPMENT
LAUNDRY EQUIPMENT
LIBRARY EQUIPMENT
LOADING DOCK EQUIPMENT
MEDICAL EQUIPMENT
RESIDENTIAL EQUIPMENT
WASTE HANDLING EQUIPMENT

Banking, industrial laundering, and the home appear from the showing in this division to be the chief beneficiaries of product development by equipment manufacturers in recent months. One irony this year is the abundance of electrical and electronic home kitchen appliances, available at a time when new home construction is at an all-time low and energy costs at an all-time high. The smooth-top range and micro-wave oven are in evidence more this year than in past issues of *PRODUCT REPORTS*, and kitchen compactors continue a new trend in waste management begun several years ago in both residential and commercial structures.

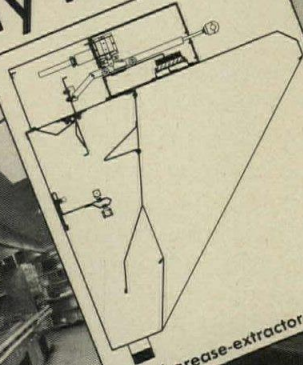
Convenience or drive-in banking trends, combined with what we two years ago called the do-it-yourself trend to minimize bank personnel, remains strong and the manufacturers of bank equipment are responding to owner and competitive pressures for more of the remote banking devices. This is also in part dictated by rising demands for security in banks, removing personnel from direct contact with the public.

Automated, computer-controlled laundering equipment is accompanied by a continuous washer that reuses 80 per cent of final rinse water for its pre-wash cycle, an environmental improvement in industrial processes that will hopefully serve as an example to others.

All the options to build kitchen ventilation precisely the way you need it.



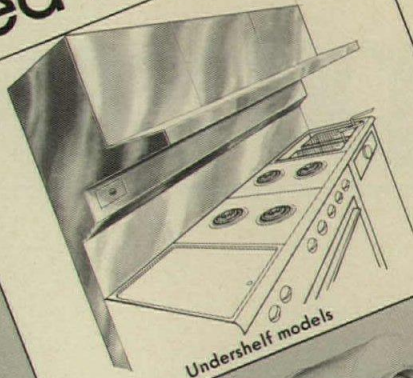
UL listed ventilators for any kitchen layout



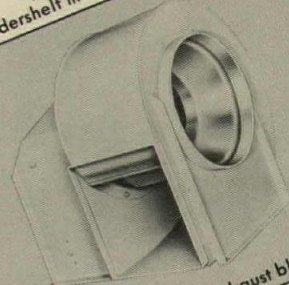
Listed grease-extractor ventilators



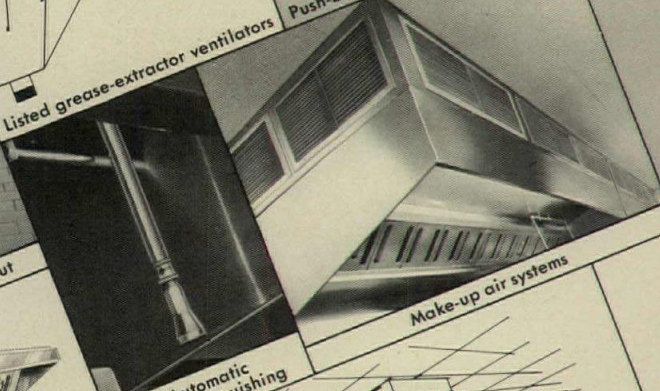
Push-button built-in wash



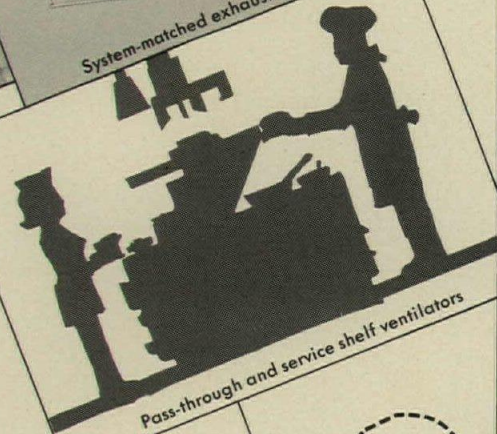
Undershelf models



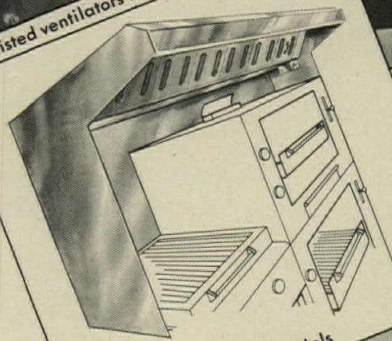
System-matched exhaust blowers



Make-up air systems

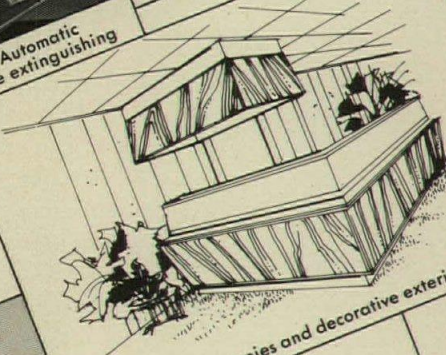


Pass-through and service shelf ventilators

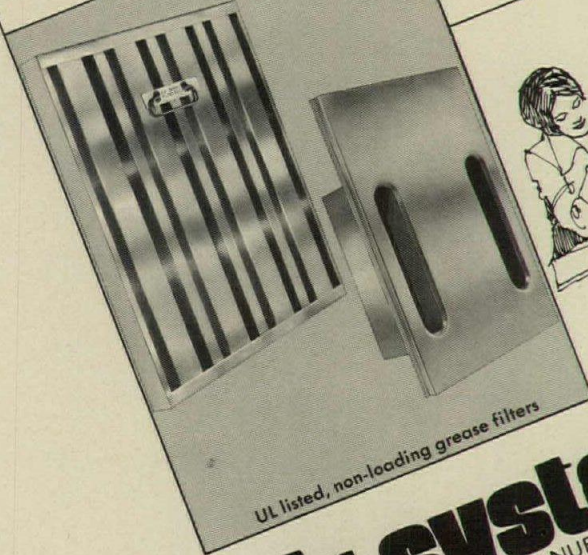


Hi-Vent models

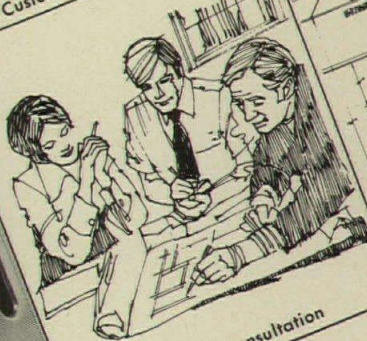
Automatic fire extinguishing



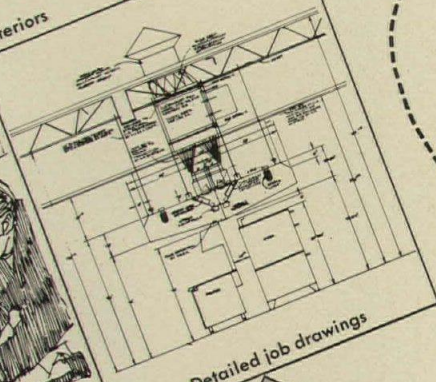
Custom canopies and decorative exteriors



UL listed, non-loading grease filters

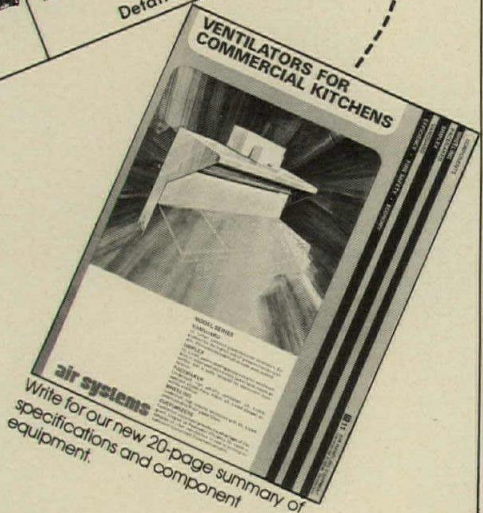


Technical consultation



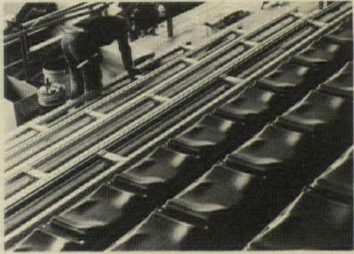
Detailed job drawings

air systems
 DIV. DOANE MANUFACTURING CO.
 1020 S. Noel Avenue, Wheeling, Illinois 60090, 312-537-6880

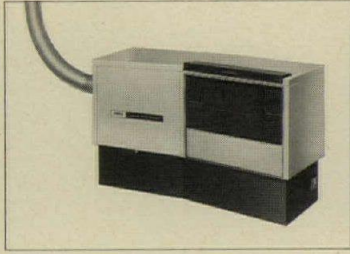


Write for our new 20-page summary of specifications and component equipment.

For more data, circle A39 on inquiry card



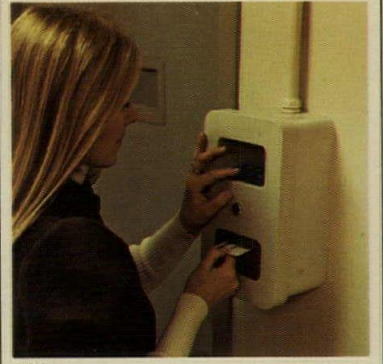
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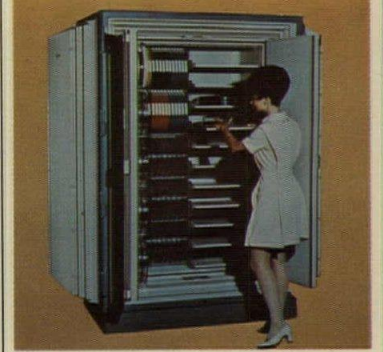
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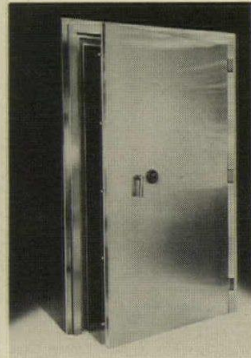
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ATHLETIC EQUIPMENT

321 STADIUM SEATS / Contoured bleacher seats of molded polyethylene are available in blue, red, green, yellow and beige. Backs and armrests are available. / Sport Seating Co.

BANK & VAULT EQUIPMENT

322 TV TELLER / *TV Auto Teller* allows customer and remote teller to communicate via closed circuit television. Transaction materials are conveyed by captive carrier in pneumatic tube. / Diebold, Inc. A*

323 DRIVE-IN BANKING / New line of *Thru-way* drive-in windows are available in three widths. Standard items are glare-reducing slanted glass and wood-grain plastic laminate counter. Package receiver, lighting control, defroster, and counter heating are optional. / Diebold Co. A*

324 PNEUMATIC SYSTEM / *Overhead Vat III* system for drive-in teller stations provides overhead pneumatic tubes to eliminate trenching or excavation in basementless buildings. System includes two-way audio communication. / Diebold, Inc. A*

325 ACCESS CONTROL / *R-40 Access Control* system requires two steps for admission to restricted areas: insertion of coded plastic card, and entry of individual identification number on 10-digit keyboard. / Diebold, Inc. A*

326 VAULT DOOR / Insulated vault door, 32 in. or 40 in. wide with a 4-in. architrave, has brushed stainless steel finish. Options include black enameled 8-in. architrave and a stainless steel back plate for door. / Schwab Safe Co., Inc. A*

327 SECURITY CAMERA / *Photoguard 35 mm* provides wide-angle lens and high shutter speeds to offer photographic coverage of bank counters. / Mosler. A*

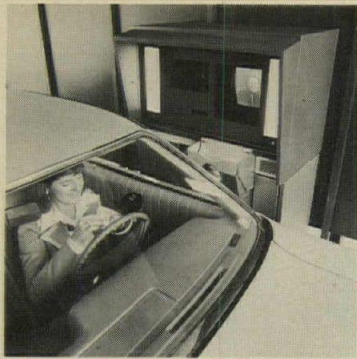
328 DRIVE-IN BANKING / Drive-up banking unit, customer's terminal in *Trans-Vista* pneumatic system, is provided with two-way audio system to allow communication with teller. / Mosler. A*

329 VAULT DOOR / *American* vault door is available in 7-in. model with 9R rating and 3½-in. model with 6R rating. Both are available with standard box or optional architrave. / Mosler. A*

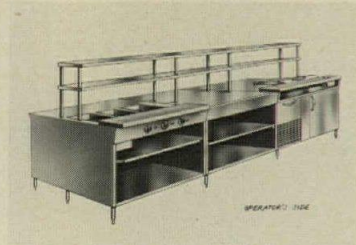
330 ACCESS CONTROL / *Accessor* system controls personnel access to restricted areas with magnetically coded identification cards. Three-component system includes a card reader, magnetic cards, and a central processing unit. / Mosler. A*

331 TAPE SAFE / To protect film and magnetic tapes against fire, theft, magnetic fields and water damage, *Tape-guard* cabinet provides safe storage. / Mosler. A*

332 COMPUTERIZED ALARM / Computer has been integrated into manufacturer's line of customer owned and operated alarm systems providing audio-visual surveillance, intrusion and hold-up detection, circuit tampering, fire alarm and environmental monitoring. / Mosler. A*



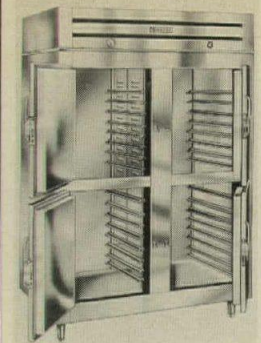
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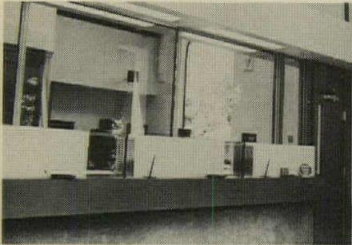
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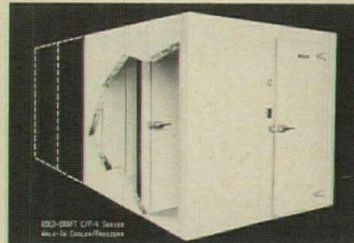
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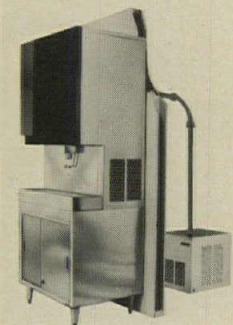
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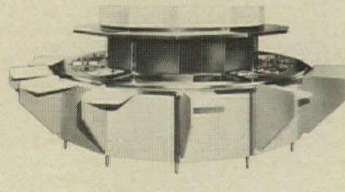
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333 DRIVE-IN BANKING / Drive-in teller station, called *TellerVue 12 PV*, part of a pneumatic tube system, is furnished with two-way television for maximum personal contact. Though system is automatic, teller can exercise manual control if necessary. / Mosler. A*

334 TELLER PROTECTION / Bullet-resistant glass guards teller in *Protected Workstation*; protection may be extended to floor to reduce bomb threats as well. Transaction tray opening is provided with protective steel plate. / Mosler. A*

FOOD SERVICE EQUIPMENT

335 ICE DISPENSER / *Scotsman FD5* flaker-dispenser produces 392 2-oz vends of flaked ice during first hour's production. Flaker can be hooked up for remote production to "pipe" ice to dispenser. / King-Seeley Thermos Co.

336 CHEF'S STATION / Steel chef's station has self-contained under-counter refrigerator on operator's side, as well as bread drawer, plate shelves and cutting board. Service side has hot- and cold-food pans. Modular components allow individual configurations. / Stanley Knight Corp.

337 LARGE WASHER / *Mark VIII* washer, designed for pans, carts, trucks, racks, etc., measures 5 ft 11 in. by 7 ft 8½ in. by 10 ft 5¼ in. Machines, which may operate up to 180 degrees F during rinse, are insulated with rigid urethane foam. / Metalwash Machinery Corp.

338 BUFFET SERVICE / A 12 ft diameter buffet service is designed for 8-10 customer stations spaced around the rotating stainless steel top. A portion of the counter rotates through the kitchen area. Speed of rotation is adjustable. / B/W Metals Co.

339 COMPACT CUBER / The *CT* series icemaker is now approved by the National Sanitation Foundation. This line of compact cubers produces a guaranteed daily capacity of 200 lbs of cubes. Dimensions are 28¾ in. wide by 28 in. deep by 39 in. high. / Kold-Draft Div., Uniflow Mfg. Co. A*

340 MODULAR WALK-INS / Units with 6 in. corners are said to be easy to install. They have a full 2½ or 4-in. factory foamed urethane insulation and feature a construction system to eliminate shifting and sagging. / Kold-Draft Div., Uniflow Mfg. Co. A*

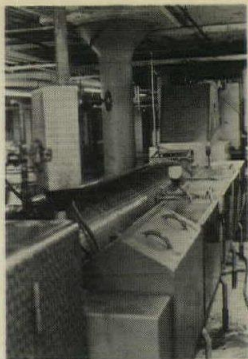
341 ICE-CUBE DISPENSERS / "Kube-Servers" are available in four models. The portable "Kube-Server" permits 120 lbs of ice to be rolled to the areas where it is needed. The stationary unit can also include water for "ice-n-water" station. / Kold-Draft Div., Uniflow Mfg. Co. A*

342 HOT FOOD HOLDER / Holding cabinet for hot foods is thermostatically controlled up to 180 degrees F. Outer walls and doors are insulated with foamed-in-place polyurethane. / Herrick Industries, Inc. A*

343 SNACK CENTER / *Dwyer 400*, measuring 22 by 48 in., includes refrigerator, electric cooking units, sink, cabinet, and roll-out cutlery drawer. Porcelain counter tops enameled body; available in sand or ebony colors. / Dwyer Products Corp. A, D*

LAUNDRY EQUIPMENT

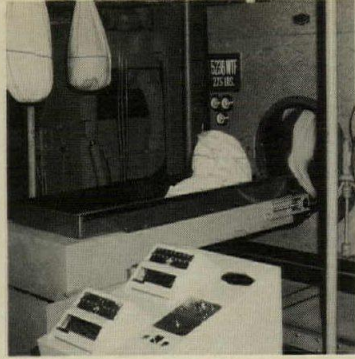
344 IRONER / *Multistar Flatwork Ironer*, designed for volume ironing, has chests and bridges of welded steel plate to prevent warping, provide superior heat transfer, and reduce steam requirements. / Renrew, Inc.,



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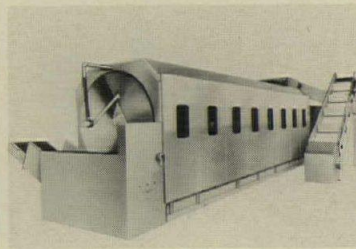
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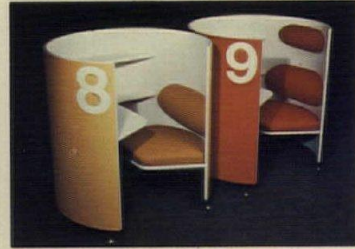
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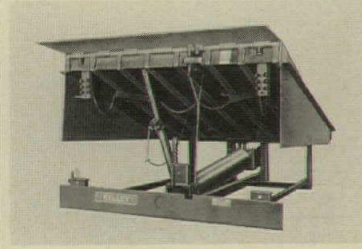
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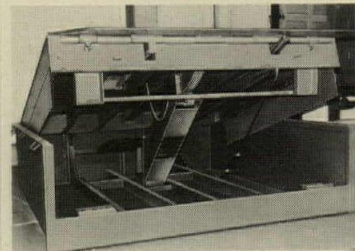
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345 CONTINUOUS WASHER / Automated continuous laundry system is provided with counterflow water system that reuses 80 per cent of final rinse water for high-velocity pre-wash cycle. / Renrew, Inc.

346 TUMBLER-DRYER / High-production system has conditioning tumbler, which discharges laundry damp-dried and shaken-out for ironing, and continuous flow tumbler-dryer, which discharges it dried. / Renrew, Inc.

347 AUTOMATIC WASHER / Designed for institutional and commercial laundries, 50-lb washer-extractor, washes up to 33 sheets or 87 towels per load, according to manufacturer. It has automated cycle and automatic supply injector. / Pellerin Milnor Corp.

348 WASHER AND DRYER / A matching pair washer and dryer now feature a new high security meter case as standard equipment. Available with stainless steel tubs and drums, both washer and dryer come in green, orange, gold, avocado, and white. / Speed Queen Div., McGraw-Edison Co. A,L*

349 BATCH WASHER / High-capacity continuous batch washer, the *Transit P-16*, has automated process controls and allows batches to be separated. / G.A. Braun, Inc. I*

350 LAUNDRY SYSTEM / *Washmaster* laundry machines, provided with a number of wash programs controlled by push buttons, also include a computerized dispensing system for liquid detergents. / Economics Laboratory, Inc.

351 AUTOMATED LAUNDRY / Programmed washing system is entirely automatic from loading through wash to unloading. Washer-extractor, controlled by computer, tilts backward to load, forward to unload. / Pellerin Milnor Corp. A*

LIBRARY EQUIPMENT

352 CIRCULAR CARRELS / Molded plywood *Carola* units measure 47 in. in both height and diameter, and sit on 3-in. adjustable glides. Bench and backrest are dacron-covered urethane foam; headrest is optional. / Risom Institutional Group.

LOADING DOCK

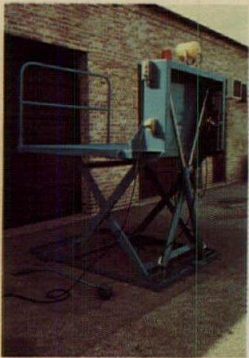
353 DOCK LEVELER / Dock leveler, seated in metal tub with curb angles, eliminates necessity of pit forming, says its manufacturer. Available with counter-balanced pull chain or in hydraulic models. / Overhead Door Corp.

354 DOCK RAMP / "A" series ramp can be welded or welded and lagged to front of dock without structural alteration. It is operated by chain handle for positioning on truck floor, and returns to storage position automatically when truck pulls away. / Serco Engineering Corp.

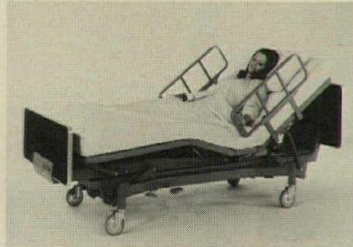
355 DOCKBOARD / Six models, all with 20,000 lbs capacity, feature stress-analyzed frame; hinge straps; patented multi-position lip latch; patented 5-position safety system (optional); patented 20-position full-range panic stops (optional); and patented traffic legs. / Kelley Co., Inc. A,L*

356 DOCK LEVELERS / This hinged-lip fully-mechanical dock leveler automatically cycles and returns to a safe, supported cross-traffic dock level position from below dock level. Capacities of 20,000, 30,000, and 40,000 lbs are offered in nominal platform sizes. / Rite-Hite Corp. A,I*

*Included in 1975 Sweet's Catalog File(s).



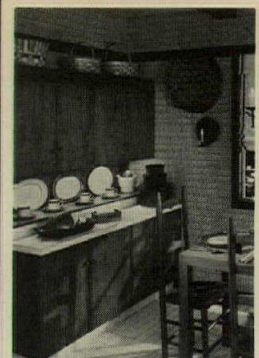
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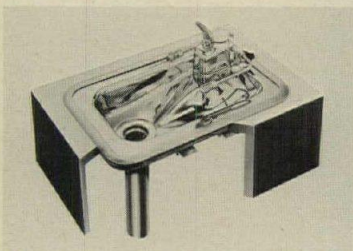
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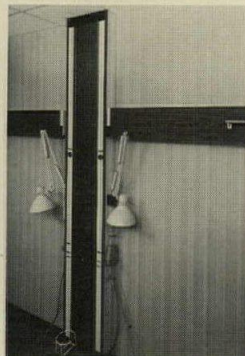
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357 SCISSOR-LIFT DOCK / Scissor-lift powered loading docks now include many standard safety features to help meet OSHA requirements. Capacities range from 800 to 20,000 lbs; more than 50 models, and varying platform sizes are offered. / Autoquip Corp. A, I*

MEDICAL EQUIPMENT

358 PATIENT-ROOM WALL / Factory-engineered wall system for hospital room provides all essential services—electrical, air, vacuum, medical gas, lighting and communications—at patient's bedside. System can be upgraded quickly for ICU or CCU. / American Sterilizer Co. A*

359 DENTAL FOUNTAIN / Stainless-steel dental fountain-cuspidor units are available in three models: 6103 with brass bubbler and twin spray rinsers, 6105 with glassfiller and twin spray rinsers, and 6101 with bubbler only. Aspirator kits are also available. / Haws Drinking Faucet Co.

360 RETRACTABLE BED / Safety sides are provided with touch controls, marked with international graphic symbols, to encourage self-help and give incentive for keeping sides up. Controls with restricted patient access are in single unit at foot of bed. / Hill-Rom Co., Inc.

361 MOBILE ISLANDS / Island-type cabinet, shared by both patients in semi-private room, is mobile, allowing it to be rolled away when space is needed for medical crisis or other reasons. Wall plug connects controls to Case System's communications center. / Normal Wood Products, Inc.

362 PATIENT-CARE SYSTEM / Care/Flex patient service module delivers power, medical gases and communication to hospital room. Module, which measures 16 in. in width and 4¾ in. in depth, can serve either single or double room. / Borg-Warner Health Products.

363 HOSPITAL CABINET / A double-access cabinet, *Nurserver* gives access to medications and supplies both from patient's room and corridor. Features include locked medicine drawer, shelves, drawers, chart holder, retractable writing surface, and vented hamper. / Powers Regulator Co.

364 WHIRLPOOL MACHINE / Portable whirlpool attachment for therapeutic baths can be used with any bathtub. Controls include timing device and adjustable flow direction, air intake and intensity. Double-insulated electrical parts and 50 gpm pump. / American Sterilizer Co.

RESIDENTIAL EQUIPMENT

365 DISHWASHER / Front-loading dishwasher is equipped with casters and thumb-operated faucet connector to facilitate mobile use and storage. With conversion kit, it can later be built in under a counter. / The Maytag Co.

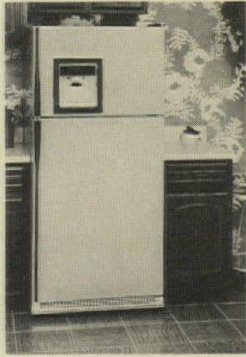
366 SHAKER CABINETS / Shaker-style kitchen cabinets are of medium-finish matched Delta Pecan wood with pewter-finish knobs. New line also includes alabaster-white steel base cabinets. / St. Charles Mfg. Co.

367 30-INCH KITCHEN / Compact unit combines two-burner electric cook top, porcelain sink, and 6-cu-ft refrigerator in fixture 30 in. wide, 29 in. deep and 43 in. high. Metal base is available in white or coppertone, and wide selection of laminate countertops is available. / Cervitor Kitchens, Inc.

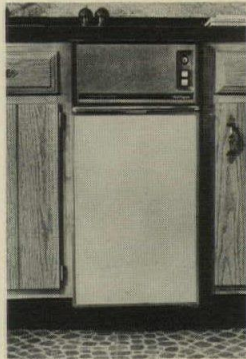
368 ELECTRIC RANGE / This smooth-top unit, either built-in or free-standing, measures 30 in. wide and features continuous-clean oven. A complete range of new kitchen appliances for 1975 has been introduced by the company. / Kelvinator Appliance Co.



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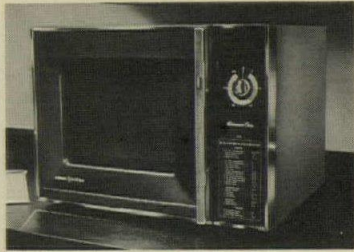


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369 DISHWASHER / The *Potscrubber II* dishwasher provides flexibility for loading odd-sized items, durable tub material, an energy-saving drying option and reversible color door panels. Snap-on water and electrical connections minimize installation. / General Electric Co. L*

370 REFRIGERATOR-CRUSHER / A top-mount refrigerator which dispenses crushed ice and ice cubes through the door holds up to 10 lbs of ice in a storage bin which is refilled automatically. Also offered are custom dispensers in 22- and 24-cu ft models. / General Electric Co. L*

371 TRASH COMPACTOR / A heavy-duty undercounter compactor is 14 $\frac{1}{2}$ in. wide by 34 in. high by 18 in. deep and features a cylindrical, door-mounted trash container that swings out of the unit for loading. / General Electric Co. L*



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372 MICROWAVE OVEN / Model *Jet 82* features a 1.04-cu ft oven, swing-away oven door and the flexibility of countertop, built-in or a roll-around cart use. It measures 15 $\frac{1}{2}$ in. high by 22 in. wide by 19 in. deep. / General Electric Co. L*

373 MICROWAVE RANGE / A 30-in. free standing model with self-cleaning oven permits three different ways of cooking in the same oven: microwave energy, conventional electricity, or simultaneous use of both. The *RE747* is available in colors. / Hotpoint. A,L*

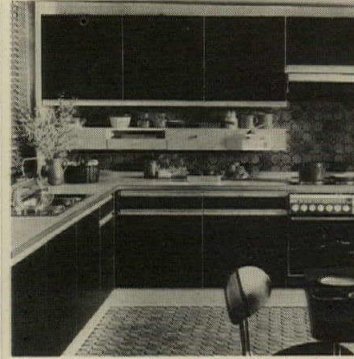
374 COUNTERTOP MICROWAVE / This microwave unit has a 1.0-cu ft capacity oven, a 25-minute timer, and push-to-cook control. / Hotpoint A,L*



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375 WASHER-COMPACTOR / A dish-pot-washer and convertible trash compactor are shown with optional tempered black glass on the heavily sound-shielded dishwasher, and with black *Lexan* on the compactor. The dishwasher has 11 cycles. / Hotpoint A,L*

376 POWER SAVER / To help reduce electrical consumption on 10 models in its new refrigerator/freezer line, the company has added a "power saver" feature said to use up to 16 per cent less electric power when the switch is in the "dry" setting. / Hotpoint.

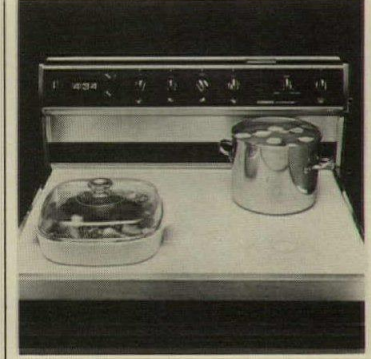
377 KITCHEN CABINETS / German-made *Tielsa Dimension No. 4* cabinets are of plastic laminate on particle wood core, and are available in sand, coffee, yellow, soft green and coral. Base and wall cabinets conform to standard U.S. dimensions. / Contemporary Systems, Inc.



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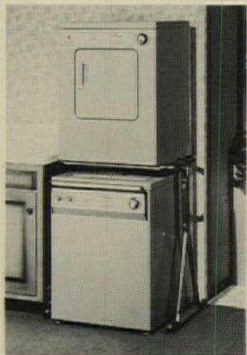
378 TRASH COMPACTOR / Trash compactor, available in free-standing or under-the-counter models, compresses and deodorizes the equivalent of three 20-gallon cans of solid waste. / Sears, Roebuck and Co. A, L*

379 BUILT-IN VACUUM / Built-in vacuum system offers choice of two motor units, 1.5 and 2.5 hp, in wall-mounted power unit. A 25-ft suction hose plugs into unobtrusive outlets. / Sears, Roebuck and Co. A, L*

380 CERAMIC COOKERS / Expanded line of ceramic range tops, available with a variety of accessories, offers three thermostatically controlled heating elements and one conventional element to provide higher heat for pressure cookers and pans that are not flat. / Corning Glass. L*



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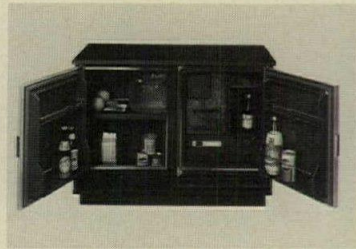


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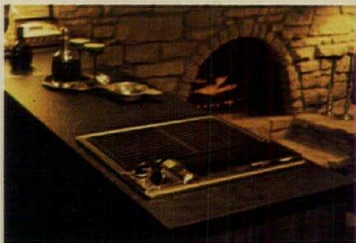
381 TRASH COMPACTOR / Model #52-3454 trash compactor is provided with cutting board top and push-button deodorant spray. Model #52-3234 can be used as either free-standing or built-in unit. / Tappan Appliance Group.

382 WASHER-DRYER PAIR / Compact washer and gas dryer, each only 24 in. wide, can be stacked. Dryer is provided with optional wheeled stand to straddle washer. Washer, set on caster, has single snap-on faucet connector for fill and drain hoses. / Whirlpool Corp.

383 BEVERAGE DISPENSER / Refrigerator door dispenses two beverages as well as chilled water and ice cubes. Dispenser compartment includes two 24-oz. containers for concentrates, which are mixed with water as they are dispensed. / Frigidaire. A, L*



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384 SMALL REFRIGERATOR / Movable refrigerator operates off 115-volt outlet, and requires no drains or water connections. The 2.65-cu-ft unit contains an icemaker. Finished in walnut-colored plastic laminate, it has matching steel doors. / Acme National Refrigeration Co., Inc.

385 INDOOR GRILLE / Two-element range top is furnished with electric grille; proximity ventilation system eliminates need for overhead hood. Appliance can be converted to ordinary range top with either glass-ceramic or conventional elements. / Jenn-Air Corp.

WASTE HANDLING

386 STORAGE CHUTE / Through-the-wall storage chutes are designed for use with interior waste and refuse compactors. Chutes can be installed in new or existing buildings. / The Tony Team, Inc.



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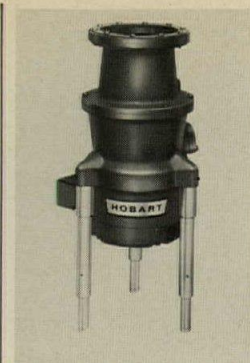


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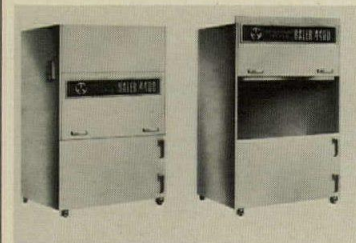
387 WASTE COMPACTOR / Ramjet RJ-75B compactor is intended for exterior installation, and has through-the-wall chute to allow interior loading. Sloping floor funnels liquids directly into receiver container. / Marathon Equipment Co.

388 REFUSE COMPACTOR / The new *Sluggo* "S" model features a deep ram and swing-out container. It operates on 115 volts and plugs into any standard grounded receptacle. Compacted bag weights of 50 to 150 lbs can be selected. / International Dynetics Corp.

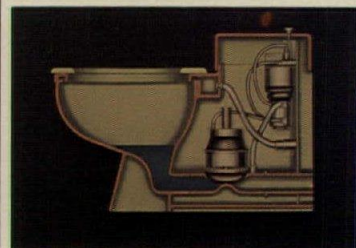
389 LARGE COMPACTOR / Large capacity refuse compactor is styled for such applications as schools, offices, restaurants, hotels and motels. Infeed opening is 21¼ by 17¼ in. to accept large items. / International Dynetics Corp.



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390 WASTE DISPOSER / Food-waste disposers are available in seven sizes, ranging from ½ hp to 5 hp. All have 7-in. throat opening that accept a variety of accessories. / Hobart Corp.

391 WASTE BALER / Model 4400 baler works off 220-volt circuit to provide compaction force of 50,000 lbs. Door, 24 by 44 in., opens automatically to facilitate loading. / The Tony Team, Inc.

392 VACUUM-FLUSH TOILET / Vacuum sewage system *Envirovac* uses air to force sewage to collection station, needs only 3 pts of water for each flushing. Toilet is vitreous china. / Colt Industries.

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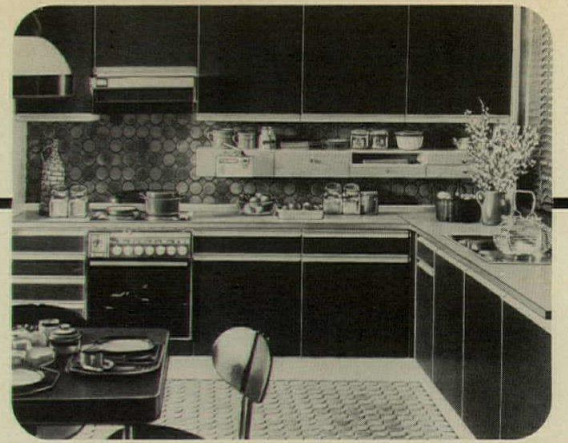
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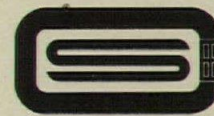


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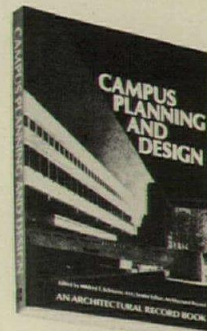


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CAMPUS PLANNING AND DESIGN

Edited by Mildred Schmertz, AIA
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- Designing the Single Building
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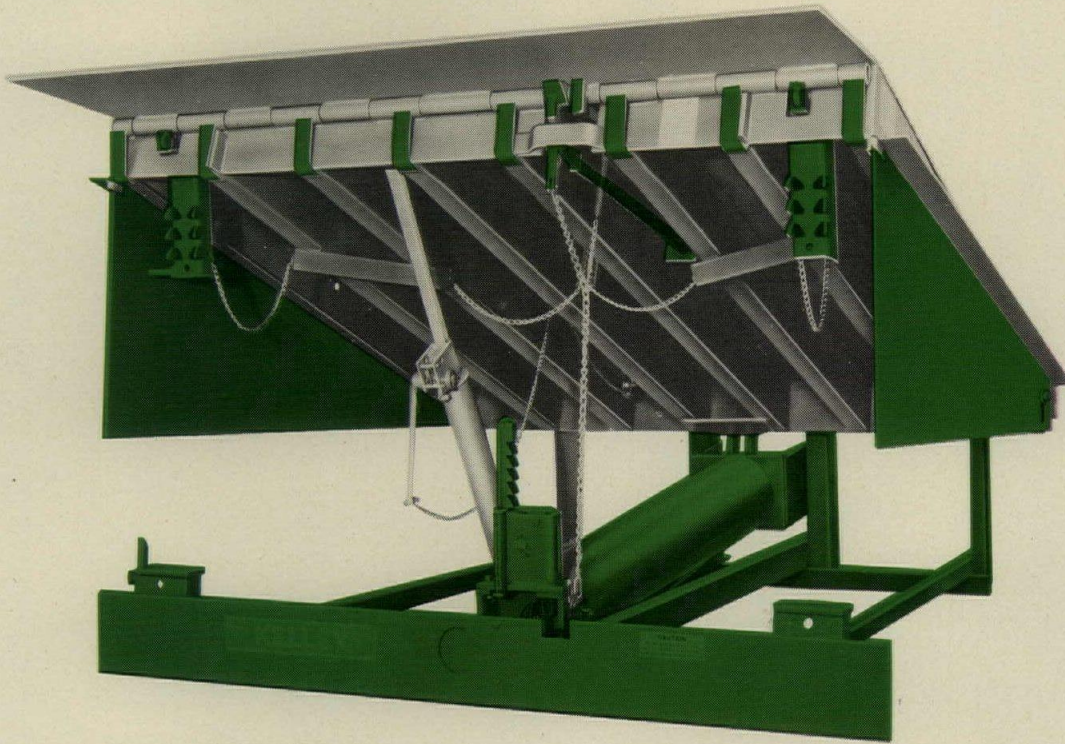
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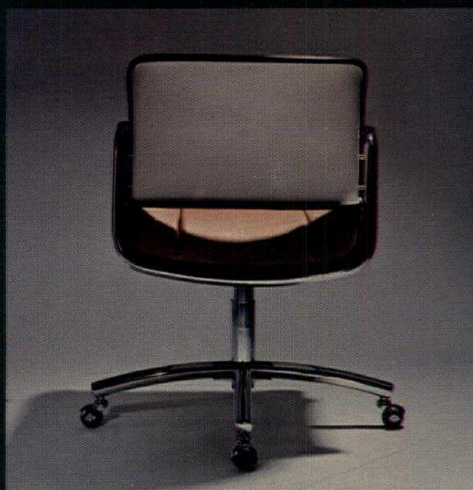


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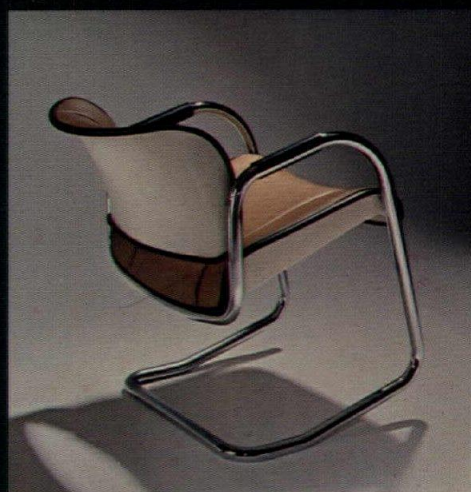
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We're honored. By the AID and NSID. Their 1st International Contract Product Design Award was presented at NEOCON 6 for outstanding design to only two seating groups, both from Harter. This one, the 2500, had also been cited by the IBD earlier.



The only other seating group honored by AID/NSID was our KOE-10. It and the 2500 Group can be seen at Harter showrooms and in fine interior installations everywhere.



Furniture Design:
Earl Koepke & Staff



Harter Corporation
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ARTWORK
FABRICS
FLOOR MATS
FURNISHING ACCESSORIES
FURNITURE
RUGS
SEATING
WINDOW TREATMENT

In furnishings, one piece of advice is echoed by the experts: Think ahead. James H. Carleton, head of a Los Angeles firm specializing in purchasing, supervisory and related services for interior furnishing projects, says designers must allow for excessive lead time with many furniture manufacturers, sometimes as much as six months. According to Mr. Carleton, who is general manager of Project Purchasing Service, Inc., a business of Welton Becket and Associates, there are two problems related to the furnishings industry.

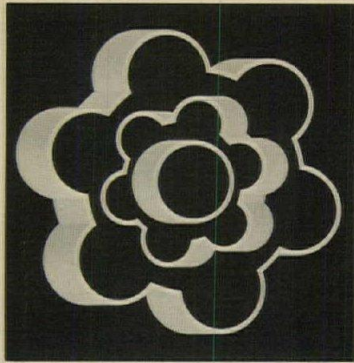
First, the problems of manufacturing open-office systems—more popular than ever—are numerous. Many components such as hardware are subcontracted by the system manufacturers, so that any delay in getting the parts is compounded along the line. These open-office furnishings are often six or more months in production.

Second, budgets are severely hampered by rapidly rising costs. A price quotation from a manufacturer which is normally valid for 90 days, may have to be revised upward by the time the client has okayed the selection and the order is ready to be placed.

A common practice today is for designers to "place an order to order" with manufacturers, meaning that once the manufacturer and number of pieces has been determined, manufacturing time is tentatively reserved by the architect, perhaps months in advance of an actual order.

The story on fabrics is just as awesome. Mill times are long now, and imported fabrics and wools are in short supply. Most architects prefer COM or special fabrics not available through the manufacturers of the furniture selected. This can produce delays in delivery since it is an almost universal policy among chair manufacturers not to begin an order without fabric in hand. To speed up delivery of upholstered pieces, more designers may be turning to manufacturer provided fabrics.

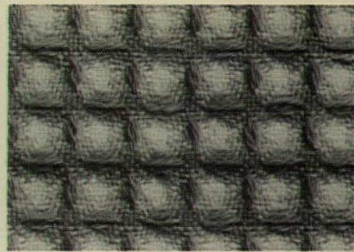
As is apparent by the products in this division, the open-office concept is here to stay, having found acceptance with most of the design professions. Therefore, refinements can be expected in these products, and they are in evidence here. One such improvement is the built-in task lighting on several systems. This should be a much copied innovation.



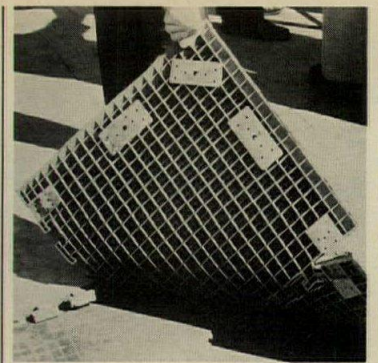
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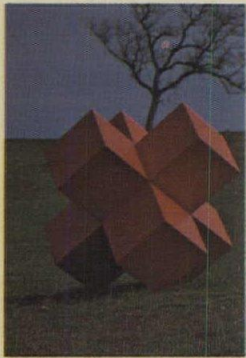
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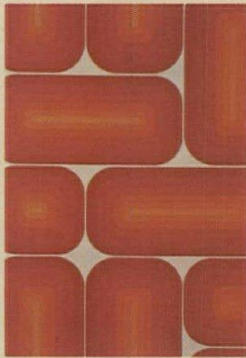
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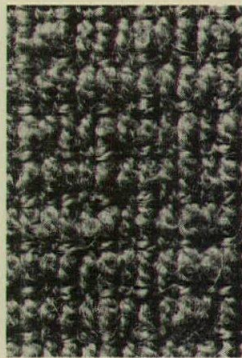
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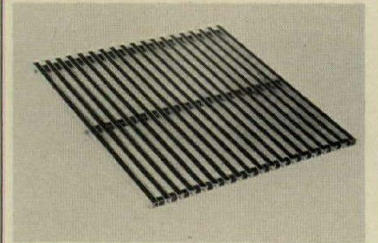
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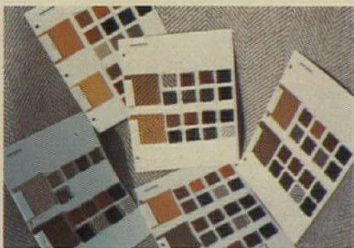
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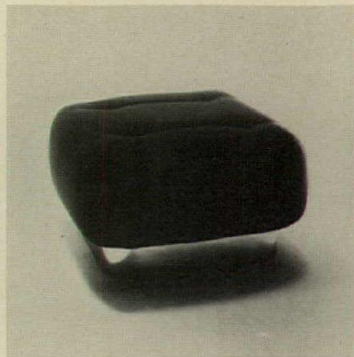
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ARTWORK

393 GRAPHICS / Each serigraph by David Gentleman is 27 by 27 in. Edition is 75. / Karl Mann Associates.

394 CUSTOM SCULPTURE / A custom sculpture from the graphic structures division of the company suggests capabilities at the disposal of architects and designers. / Group Artec.

395 CARVED MOSAICS / Sculptured wall plaques available in a range of modular sizes and designs are made by a random reassembly of 9 by 9 in. carved wood panels available in natural unfinished redwood and in other decorative finishes. / Forms & Surfaces, Inc.

396 WALL HANGINGS / These are handwoven in natural fibers such as wool, jute, flax, and hemp. / Karl Mann Associates.

FABRICS

397 GRAPHIC PRINT FABRICS / There are eight patterns featured in a total of 21 colors extending the full width of the fabric. The collection is hand printed on 100 per cent cotton with a print width of approximately 47 in. / Isabel Scott Fabrics Corp.

398 TEXTILES / Upholstery fabrics from the Netherlands, Scotland and Switzerland as well as domestic mills comprise color, texture and weave choices designed especially for the contract market. All textiles are available as cut yardage. / Group Artec.

399 ALL-WOOL FABRIC / Made in France, 56 in. wide fabric is offered in light caramel and off-white and five other colorways. It is recommended for wall-covering only. / Scalamandre Silks, Inc.

400 BOUCLE / With the look and feel of a hand weave, 100 per cent wool yarns are treated before weaving to allow the fibers to absorb color prior to transformation into cut yardage. / Stow/Davis Textile Co.

401 STRETCH WOOL / Predominantly wool, with an admixture of nylon, this fabric stretches two-ways. It is available in a wide range of colors. / Stow/Davis Textile Div.

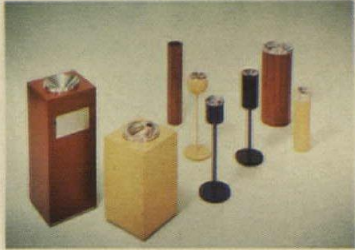
FLOOR MATS

402 SAFETY MATTING / *Safety Surface* patented rubber matting, designed to protect children against playground falls, is made of 1-in. chlorinated butyl nontoxic rubber, molded into interlocking sections. Top surface is nonslip; bottom has double honeycomb pattern. / Game Time, Inc.

403 ALUMINUM FLOOR MAT / For use in industrial plants, commercial kitchens and behind bars, mats use aluminum slats, assembled on 1/4 in. aluminum rods. Slats have abrasive strips. / Cactus Mat Mfg. Co. A*

FURNISHING ACCESSORIES

404 LATERAL FILE / Drawers measuring 28 and 42 in. wide (inside width) supplement 14-in. wide drawers. Full extension ball bearing slides are used. Twenty-eight inch lateral units will fit alongside 14-in. file, box and personal drawer in 44-in. cabinet. / Hauserman, Inc.



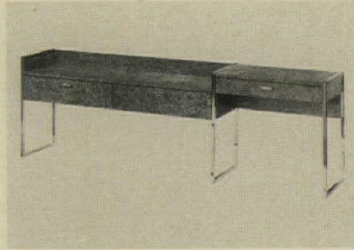
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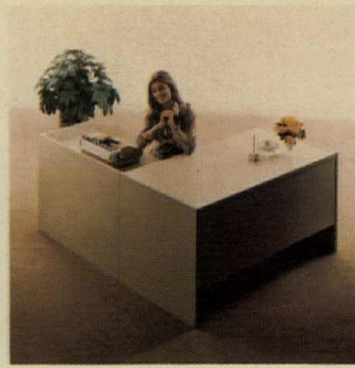
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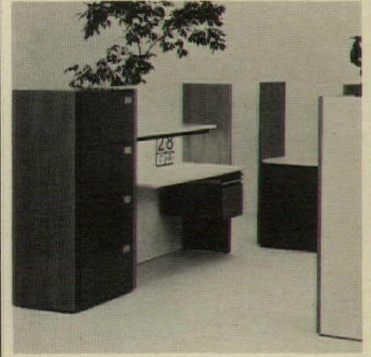
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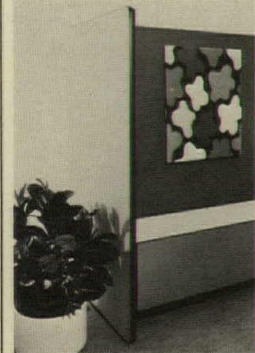
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405 BUILDING ACCESSORIES / Dual-function wall and floor stands come in eleven models, varying from rectangular, cylindrical and spherical models. Each is available in five baked burn-proof epoxy enamel colors. / McDonald Products Corp.

406 CARAFE / Available in eight metal finishes, the carafe with black serving tray has a 24 oz. capacity. / McDonald Products Corp.

407 WOOD BENCHES / Laminated redwood and laminated oak benches are offered with bonded bronze, bonded copper or colored *Formica* tops. The benches are part of a system of modular benches, planters, tables and platforms for large spaces. / Forms & Surfaces Inc.

FURNITURE

408 INNKEEPING CASE GOODS / Laminate finishes or burlwood and sled base in chrome, distressed bronze, or a wide variety of frame colors characterize this line of guest room pieces: dresser desks, night stands, luggage benches, tables and headboards. / Simmons Co.

409 MODULAR OFFICE SYSTEM / Advent comprises 12 basic units. The four major ones are an executive desk, secretarial desk, L run-off, and credenza enclosures into which storage pedestals are fitted. Furniture is manufactured in a match-grain white rift oak veneer. / Harvey Probbler Inc.

410 EXECUTIVE DESK / A mitered cube desk and its companion credenza feature hand-rubbed, satin-finish mahogany veneers set in parquet on the desk top, and mitered where pedestals join the front. The pedestals of the kneehole desk end in a plinth base. / Harvey Probbler Inc.

411 WOOD PANEL DESK / Particleboard panels with a plastic laminate finish in texture wood tones or in the light look of putty combine with steel drawers and pedestals in this series. / The HON Co.

412 EXECUTIVE TABLE / Designed by Gunter Eberle, *Gamba* is said to be maintenance free. Completely concealed glides permit leveling or height adjustment. Oak, with radius corners, and two top drawers, the table comes in three heights. / Vecta Contract Co.

413 CHROME TABLE / A glossy black top plate employs a continuous rubber "O" ring to insulate glass top from the base, which is available in four sizes. / Vecta Contract Co.

414 OFFICE SYSTEM / Computer terminal work station, word processing centers, and other technical or professional work areas are said to be created easily and economically, with standard modular components. Top surfaces are available in high pressure laminate wood. / Steelcase Inc.

415 WALL STORAGE / *The F 2 Wall Storage System* consists of a series of work walls, in various dimensions, to which work tops and steel drawers and shelves can be attached. Wall finishes match those of manufacturer's line of *F 2* desks. / Sunar Ltd.

416 ACOUSTICAL PANEL / A mod-acrylic fabric-clad acoustical panel is offered as a standard component to office landscape furniture. The panel is available in a wide variety of widths and heights in a selection of ten colors. / Modern Partitions, Inc.



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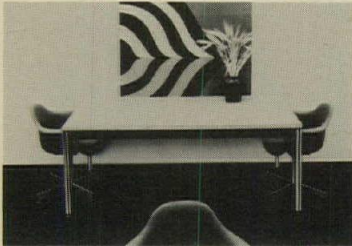
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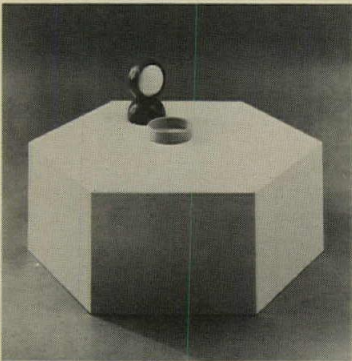
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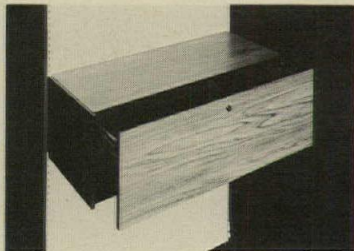
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417 CHILDREN'S FURNITURE / All furniture features rounded surfaces and lightweight design. Chairs, in four colors, are one-piece molded of sturdy, scratch and static-resistant *Luran S*. The tables combine a red high-pressure melamine insert with a white rounded frame. / Krueger.

418 TABLE LINE / The *Lineal* offering consists of mixed and folding versions, each available in round or square chrome tubular steel legs. The table tops are solid-core with current *Formica* surfaces and self or bullnose edges. / Krueger.

419 HEXAGON / A table with many angles, six to be exact, this low fiberglass table was designed to be integrated with seating poufs which are the same shape and size. / Stendig Inc.

420 BUGLE BASE FURNITURE / *Gabriel* furniture features table and chair bases in highly polished aluminum or in a white epoxy scratch-resistant finish. Table bases are offered in 15 and 29 in. heights, each in a range of diameters for specific top sizes. / Krueger.

421 OFFICE GROUP / The contemporary *AFKS II* group evolves around formed 1½ in. o.d. tubular steel frame members. The seating segments of this new line consist of fiberglass shells upholstered and available in arm chairs, pedestal desk chairs, or grouped together. / Krueger.

422 LATERAL FILE / Offered in a variety of sizes, laterals feature smooth riding suspension, individual locks and a wide choice of finishes. Cabinets bracket into panel or wall mounted uprights, also available with the system. / Reflector Hardware Corp.

423 OPEN OFFICE / *Alpha*, made from natural oak veneer, features cabinets, shelves, upholstered or plain acoustical and sight panels and other components. The group comes as a pole-supported wall system or a free-standing system. / OMNI, Div., Hoover Ball & Bearing Co.

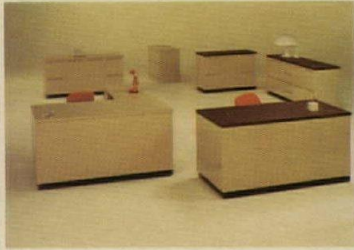
424 VERTICAL CABINETS / Offered in walnut or oak solids and veneers in two heights of 77 or 53 in., desk/work stations feature a fully extended desk top and niche with acoustical/display fabric panel, light fixture, and electrical outlets. / Myrtle Desk Co.

425 STORAGE UNITS / Available for residential use, in earth brown as well as off-white surfaces, storage elements appropriate for entertaining are available for contract use. / Interior Products Group, Inc.

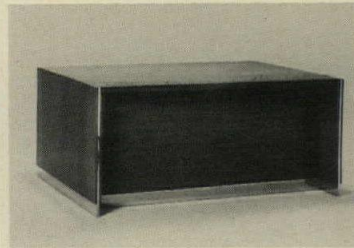
426 FILING SYSTEM / A lateral filing and storage system are dimensionally and esthetically compatible with the company's open office system. All the units are 18 in. deep and come in widths of 30, 36 and 42 in. / GF Business Equipment Inc. D*

427 OPEN OFFICE / The updated version features a cantilever desk top and storage units. The top is available in widths of 36, 48 and 60 in. and depths of 19 and 24 in. / GF Business Equipment Inc. D*

428 OPEN OFFICE / An integrated lighting system is featured, with mirror-polished stainless steel base, rift oak panels, as shown, and can be made in other woods or high pressure laminates. / JG Furniture Co., Inc.



429



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429 PEDESTAL DESKS / Plus returns and consoles, the 6000[®] Series includes over 75 desk offerings. Top materials are plastic laminates, available in twenty colors. / Corry James-town.

430 CUBE DESK / The series offers both high profile and full cube desks in several sizes with flush or recessed backs. Oak veneer is standard; end panel trim and base are available in black lacquer or mirror chrome. A credenza system is also offered. / Stow / Davis

431 OPEN OFFICE / All-steel construction is used on the desks and credenzas, with laminate tops. Baked enamel color finishes are offered. Coordinated screens are 2½ in. thick—fiberglass board, masonite and fabric construction on chrome bases. / Mar-nay-Signore.



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432 MODULAR FOAM SEATING / Arm and back components attached to all sides of basic seat/ottoman with tubular steel braces. Components are completely modular and can be linked in any configuration. Upholstery is removable for cleaning. / John Adden Furniture

433 LOUNGE / The removable upholstered frames are suspended between 1½ in. red oak butcher-block ends. The butcher-block bench/table in 1¼ in. oak complements the series. / John Adden Furniture

434 STORAGE SYSTEM / Designed to complement the company's desk line, these storage modules—including coat cabinets—feature oak veneer in various finishes. Tops come in do-skin plastic laminate, black or dark brown vinyl or matching wood veneer. / Sunar Ltd.



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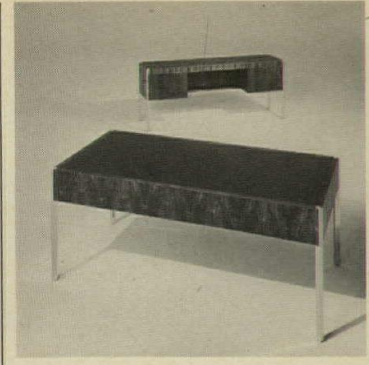


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435 BENCH WITH CUSHIONS / Constructed of 2 in. red oak butcher-block, the rails are halved and notched into the ends and support removable polyurethane cushions. / John Adden Furniture.

436 CUBE DESKS / Desks are designed straight-to-the floor with pedestals on a shadow base of mirror-brushed chrome or matte black finish. Telephone and machine cord concealment is offered. / All-Steel Inc.

437 DESK AND CREDENZA / Work surfaces float on three metal cylinders fixed in end panels. Desk is 72 by 36 in.; credenza is 72 by 21½ in. Hardwood construction is furnished. / Conwed Corp.



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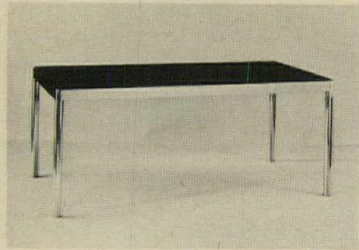


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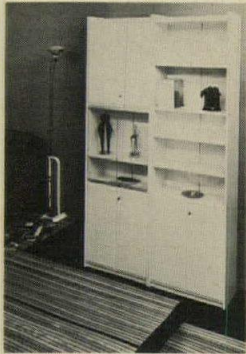
438 EXECUTIVE OFFICE GROUP / A 45 degree angle mitre treatment of the legs is featured on the 72 by 36 in. desk, with black inlay top and three shallow drawers. Chrome or bronze legs and walnut or rosewood finishes are offered. / Conwed Corp.

439 OFFICE SYSTEM / These tables, desks and cabinets are offered in a selection of interchangeable top sizes and leg heights. The aluminum die-cast legs provide supports for the interchangeable plastic storage components. / Knoll International.

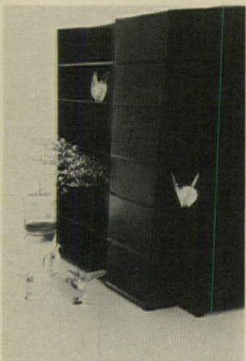
440 BUTCHER-BLOCK LOOK / It is created with man-made materials. Line includes a hostess table and desk with drawer as well as console, lamp and cocktail tables. *Fiberesin* plastic laminate surfaces are used. / U.S. Gypsum Co.



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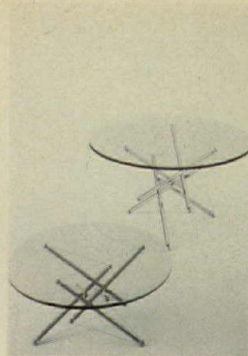


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441 TABLE / The top, set within the frame, is available in wood, marble, and leather, and can be ordered in a variety of sizes. / Scope Furniture Inc.

442 LIBRARY STORAGE / The basic body is constructed of 4 vertical elements shipped disassembled and easily locked together with exposed socket head details. Each *Olinto* element is a highly polished polyester lacquered wooden panel. / Atelier International, Ltd.

443 LIBRARY SYSTEM / Individual units are constructed of double wall bent sheet metal with ABS injected finished edge and detail members. Available in black or white enameled steel. / Atelier International, Ltd.



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444 GLASS TABLE / High and low circular glass top tables feature a base consisting of a "tensegrity" structure of chrome steel compression tubes, stainless steel tension wires and a 5/8 in. thick clear polished plate glass top. / Atelier International, Ltd.

445 WALL SYSTEM AND DESK / Work stations feature 60, 30 and 15 in. wide modules; and fabric-covered partitions attach to the module wall, serving to divide space. All units are 20 in. deep, 57 in. high, and are produced in oak veneer. / Stow/Davis D*

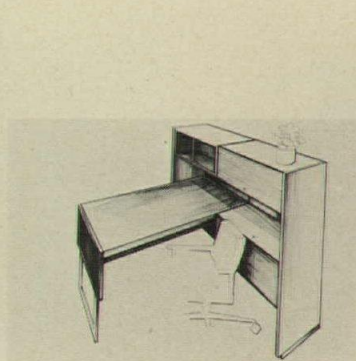
446 RECORDS CABINET / A line of cabinets is available for all phases of OSHA recordkeeping requirements, preventive maintenance, etc. according to the company. / Acme Visible Records, Inc.



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449

447 DESK AND CREDENZA / Walnut veneers and walnut solids are paired with highly polished stainless steel in this series. / Stow/Davis

448 WARDROBE-CHEST-BED / Unit incorporates a two-drawer chest, a hinged door wardrobe, a four-compartment storage section and a sleeping area featuring a spring fabricated from high carbon steel angles and steel straps. / InterRoyal Corp. A*

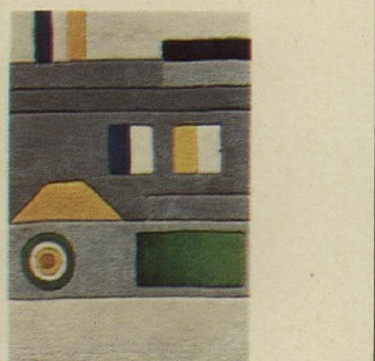
449 WORK STATIONS / In single- and double-faced 30- and 36-in. modules 60 or 84 in. high, units are finished in teak or walnut laminates. / Reflector Hardware Corp.



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450 WORK STATIONS / Available in a 30-in. depth with widths of 60 or 72 in., or in an 18-in. with widths of 60, 72 or 84 in., these stations are all white oak or walnut hand-finished with urethane oils. / Hardwood House.

RUGS

451 ALL-WOOL AREA RUG / Hand-made in Hong Kong, the rug is available to color and size specifications. / Saxony Carpet Co., Inc.

452 HAND-TUFTED RUG / A rug in 100 per cent wool features fully sheared texture (visually, a closely packed small pebbly texture). Greens, blues and yellows are held in place by use of clear tones of gray. Custom colors are available. / V'Soske, Inc.



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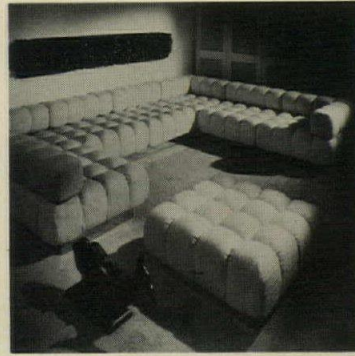
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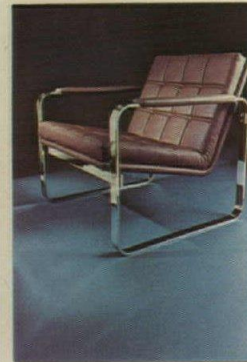
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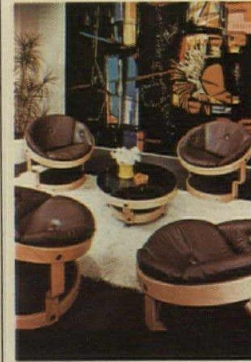
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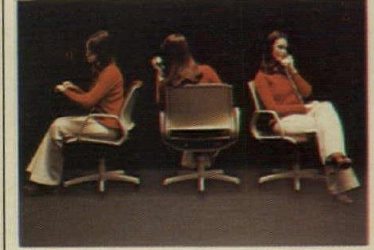
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SEATING

453 MOVABLE-BACK CHAIRS / Improved seating comfort for the office worker uses components of different sizes that conform to the individual human body. There are seven basic models, three armed and four armless, in three basic sizes. / Westinghouse Electric Corp.

454 MOLDED FOAM SEATING / A corner unit, a center armless unit, and an ottoman each may have its own base to allow flexible and mobile arrangements. The urethane foam is flame retardant and self-extinguishing. / Harvey Probbler Inc.

455 LOUNGE SEATING / The basic component of *Erasmus* lounge seating system is an armless unit of foam polyurethane and dacron cushions on a steel frame. A large number of configurations is made possible by one- and two-armed units and special corner units. / Atelier International, Ltd.

456 ARM CHAIR / A molded unitized polyurethane shell gives rigid strength to this chair, upholstered in *Scotchgarded* fabrics and vinyl. The pedestal base has free swivel. / Consolidated Burris International.

457 LOVE SEAT AND CHAIR / The wide low arm and back shell are molded in a single unit of polyurethane foam. A steel frame affixed to a laminated wood platform is placed into the mold during the molding stage, and becomes an integral part of the unit. / Harvey Probbler Inc.

458 STEEL LOUNGE GROUP / A rectangular steel bar stock frame supports the urethane sewn tufted seat and back cushions. It is available as a lounge chair, or two- and three-seater with matching occasional tables. / Thonet Industries, Inc.

459 SLEIGH-BASE CHAIR / The solid oak base frame supports a fully upholstered urethane seat/back unit. The *Contessa* is also available in an unupholstered version in an assortment of fabrics. / Thonet Industries, Inc.

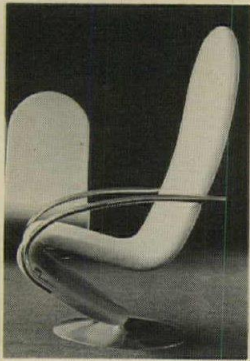
460 LOUNGE SEATING / Broad curved stretches of oak veneer bentply form the sturdy large frame. The *Andrea* can be upholstered in fabrics and vinyls. It is available as a lounge chair, two- and three-seater. / Thonet Industries, Inc.

461 LOUNGE GROUPING / Of oak veneer molded plywood, these chairs feature loose seat and back cushions of urethane, upholstered in leather, vinyl or a selection of fabrics. Chairs have optional buttons and swivel bases. / Thonet Industries, Inc.

462 STACK/GANG CHAIR / A hidden ganging device allows the leg of one chair to interlock snugly with the leg of the adjacent chair, creating a continuous row of seating similar to a lounge. / Fixtures Mfg. Corp.

463 CURVED WEDGE SEATING / A new curved wedge unit is utilized in this horseshoe arrangement upholstered in 100 per cent wool fabric. Each seating unit is composed of two parts, seat and back, which are unified with structural steel bars. / Vecta Contract Co.

464 PENTAPED CHAIR BASE / The *pentaped* base is designed to reduce size without loss of stability: 23% in. across, instead of the usual 26 in., it makes the chairs practical for use in work-stations, conference rooms and other office areas where floor space is limited. / Steelcase Inc.



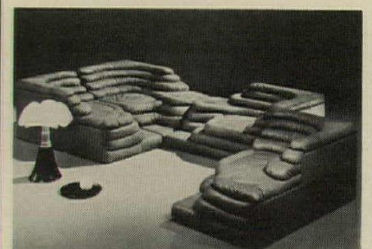
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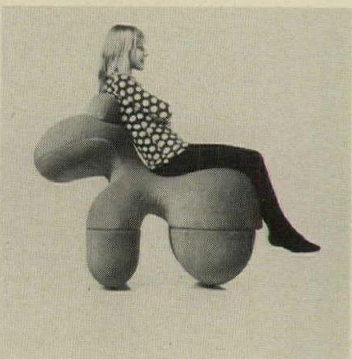
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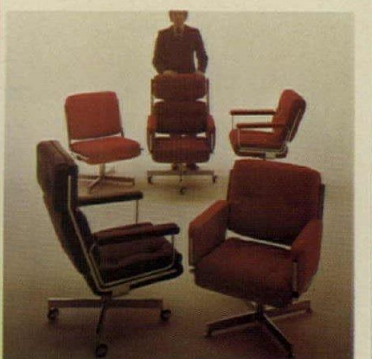
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465 CHAIR SYSTEM / The metal framed seating and table collection features a basic concept of variety in seat and back heights and coverings. Four seat heights are offered with seven back heights. Four companion tables are shown with the collection. / Fritz Hansen Inc.

466 OFFICE SEATING / The basic shell has loose seat and back cushions, either high or low back, and comes on a swivel/tilt or sled base. Available in Swiss leather or suede or a selection of fabrics or C.O.M. / Stendig Inc.

467 SWIVEL CHAIR / The seat and back are available with box tufted or plain upholstery. All versions are available with high or low back, with or without arms, and with sled or swivel tilt base. / Stendig Inc.

468 LOUNGE SEATING / Shown is a two-seater, but it is available as a one-, two- or three-seat unit, with pouf. Photographed version is upholstered in 100 per cent pure natural alpaca but it can be upholstered in leather, suedes, vinyls, wools, or C.O.M. / Stendig Inc.

469 LOUNGE CHAIR / Designed by Gino Bistagnino, this series of molded foam seating units, consisting of a lounge chair, two- and three-seat sofa is available upholstered in a selection of leathers, suedes, wools, vinyls, or C.O.M. / Stendig Inc.

470 PONY / Designed by Eero Aarnio, Pony can be upholstered in a selection of stretch velour or C.O.M. stretch fabric. / Stendig Inc.

471 CHROME FURNITURE / Furniture includes chrome arm sofa, love seat and chair. Shredded polyurethane foam filled sling type cushions, and 2-in. padded tubular arms are featured along with a choice of fabrics. / The Bunting Co., Inc.

472 UPHOLSTERED SEATING / Offered as an armchair, or two- and three-position sofa, each unit has individual and independent head rests. Construction is expanded polyurethane foam injected over a welded steel armature and padded with dacron fiberfil. / Atelier International Ltd.

473 COMPONENT SEATING / Two widths of individual arm and armless chairs on free standing "double foot" bases and tandem seating elements each on a single foot base can be ganged together. Structural parts are baked enamel tubular and strap steel elements. / Atelier International.

474 ZIGGURAT SEATING / Left and right facing units can be used together in any combination. They are covered in leather only. / Stendig Inc.

475 SOFT SEATING / Group includes a club chair plus double and triple sofa models. Cushions are overstuffed and button tufted. Closed and blade bases are available in polished stainless steel, antique bronze or smoked chrome. / GF Business Equipment, Inc.

476 EXECUTIVE CHAIR GROUP / High- and low-back models are available on casters or glides with height adjustable swivel/tilt or swivel/return mechanisms. Polished chrome base and all-steel construction are used. Cushions are upholstered in nylon, vinyl or leather. / American Seating.



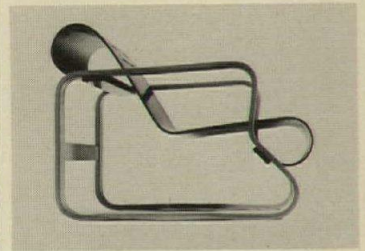
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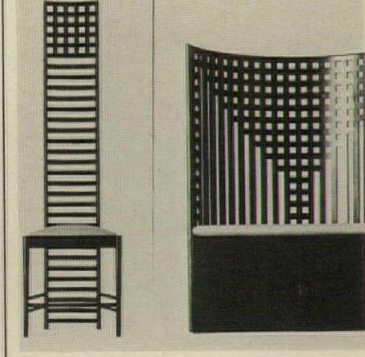
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477 SWIVEL-CHAIR SERIES / The new line includes both pedestal and tilt-swivel models in conventional or high-back designs, with or without genuine walnut arms. Chairs are available in fabrics, vinyls or leathers. / Corry Jamestown.

478 EXECUTIVE CHAIR / This chair, featured in *PRODUCT REPORTS 73* (Mid-October 1972), has been modified to include synchronized tilt of seat and back. The chair shown two years ago is the same design, but featured a single tilt movement of seat and back. / Harter Corp.

479 OFFICE CHAIRS / These executive office chairs are designed to minimize the cost of re-upholstering. Leather, Naugahyde or fabric covered cushions fit over the metal frame. The series includes a high-back chair, a low-back chair and an ottoman. / Knoll International.

480 LOUNGE SEATING / All cushions are of injected polyurethane foam. They attach to the panel structure but can be removed if desired for cleaning. They can be upholstered in vinyls and fabrics. Knock-down construction is featured. / Atelier International, Ltd.

481 TABLET ARM CHAIR / The tablet arm flips up for ease in entering or leaving oak armchair. It is removable and features a black laminate top. Chair without tablet arm can be stacked or ganged. / Harter Corp.

482 DINING SIDE CHAIR / This chair of solid oak features slatted back. Choice of natural, medium dark, or dark oak finishes is offered. / Harter Corp.

483 OFFICE SEATING / A series of desk, swivel and side chairs include a base, a continuous arm frame and the upholstery cushions. The aluminum die-cast frames are offered in either bright polished or a powder coated finish. / Knoll International.

484 PUBLIC SEATING / Fabric covered foam seats and durable, low maintenance fiberglass table and arm elements combine with ganging devices to permit many different configurations with three basic elements. Seating is available covered with fabric or C.O.M. / Group Artec.

485 MODULAR SEATING / Foam upholstery in stretch fabric is featured on three modules—an armless lounge chair, a corner unit, and ottoman. / Stow/Davis.

486 SCROLL CHAIR / This Alvar Aalto design introduced in 1929 has just been re-introduced in limited edition. Made of birch plywood, the chair is being made in Aalto's own factory in Finland, for distribution in the United States. / ICF.

487 MOLDED FOAM CHAIR / Offered in angle-arm, medium back arm, square arm and high back arm models, these chairs feature sled or pod bases in cast aluminum. Replaceable upholstery is offered, and an optional pneumatic lift provides height adjustment. / Herman Miller, Inc.

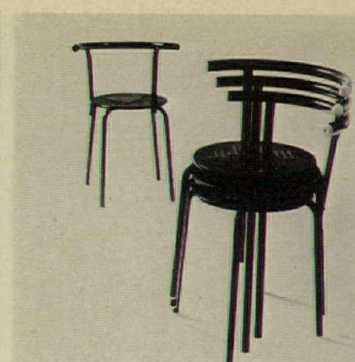
488 MACKINTOSH CHAIRS / Chairs designed by Charles Rennie Mackintosh around 1900 have been reproduced with traditional mortise-and-tenon solid hard-wood construction according to the architect's original models. / Atelier International Ltd.



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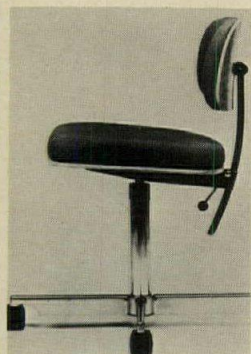
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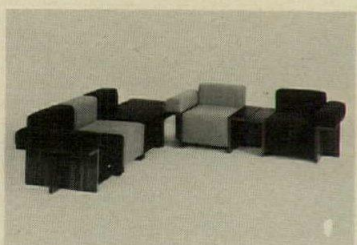
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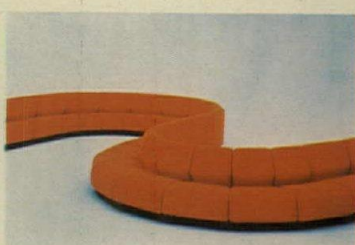
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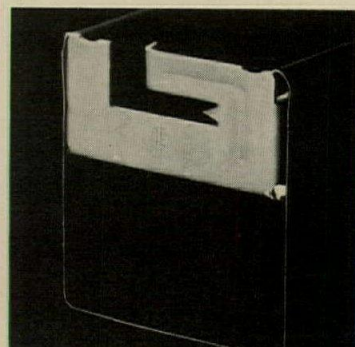
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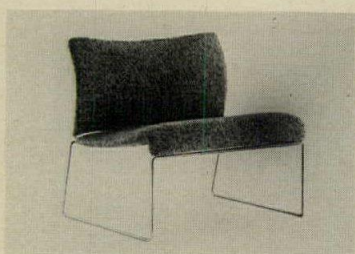
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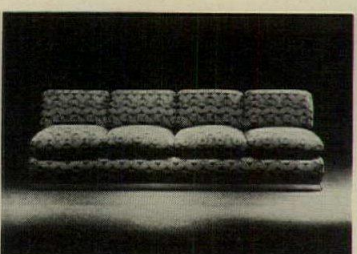
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489 OFFICE CHAIRS / The chairs have a continuous contoured molded sponge rubber frame and provide a bumper to sharp objects in the office. Options include posture back control with adjustable seat positions. The *C Series* includes secretarial and executive models. / Domore Office Furniture, Inc.

490 SECRETARIAL CHAIR / Cast aluminum base accommodates dual-wheel, nylon tired casters. Seat features adjustable height, and the upholstered portions are bolted to laminated plywood frames. / Hank Loewenstein, Inc.

491 SLING CHAIR / With sling-type removable upholstery, the chair has a continuous, chrome frame. Various versions, including arm types, are offered in fabrics, vinyls and leathers. / Architectural Supplements, Inc.

492 LOUNGE CHAIR / The shell is of molded polyamid nylon reinforced with glass fiber. It is upholstered in a choice of piped polyether, and available in white, brown, beige. / Royal System, Inc.

493 PUBLIC SEATING / This modular seating features a basic single armless unit to which a left or right walnut arm can be added. Arm measures 10 in. wide and extends the full depth of the unit. An alternate bolster is provided and a corner unit is also offered. / Marden Mfg. Co.

494 SEATING GROUP / A coordinated series of 11 basic lounge units features arm and armless versions in one to four seating units. A flush stainless steel or recessed black wood base is offered. Construction is foam rubber seat/back cushions over rubber webbing. / Helikon Furniture Co., Inc.

495 STACKING CHAIR / All-steel construction is featured on this chair available in white, mustard yellow, or orange epoxy finish. Chrome finish is also offered. Chair measures 20 in. wide, 18 in. deep, 26 in. high, with seat height of 17¼ in. / Hank Loewenstein, Inc.

496 MODULAR SEATING / Molded foam seating consists of three shapes for combination in any number of configurations. The fluted base is made of black molded polystyrene and accommodates a 4-in. square connector used to maintain the desired arrangement. Steel and plywood frame is used. / Herman Miller, Inc.

497 MODULAR LOUNGE / "Post Time" features black PVC plastic posts with aluminum caps that serve as table, sofa and planter legs. Furniture is designed in a basic 30-in. module, with additional 60-in. units. Seating can be upholstered in vinyl, leather or fabric. / The Gunlocke Co., Inc.

498 INDOOR-OUTDOOR SEAT / This is a lounge chair of urethane foam construction with weather-resistant self skin white finish. *Capitello* measures 47¼ in. wide, 30½ in. high and the seat height is 15½ in. / Stendig Inc.

WINDOW TREATMENT

499 HEAD CHANNEL / *Bantam Riviera* head channel for manufacturer's aluminum window blinds was designed to small dimensions (1 by ¾ in.) to fit small window pockets and tight angles. It can also be shaped to fit curved frames. / Levelor Lorentzen Inc.

500 WOVEN WOOD BLINDS / New patterns feature rusts, brown, beiges and creams. Patterns are a plain, over-all weave with a hemp-like texture woven with natural or walnut reeds. The yarns are beige. / Del Mar Woven Wood. A*

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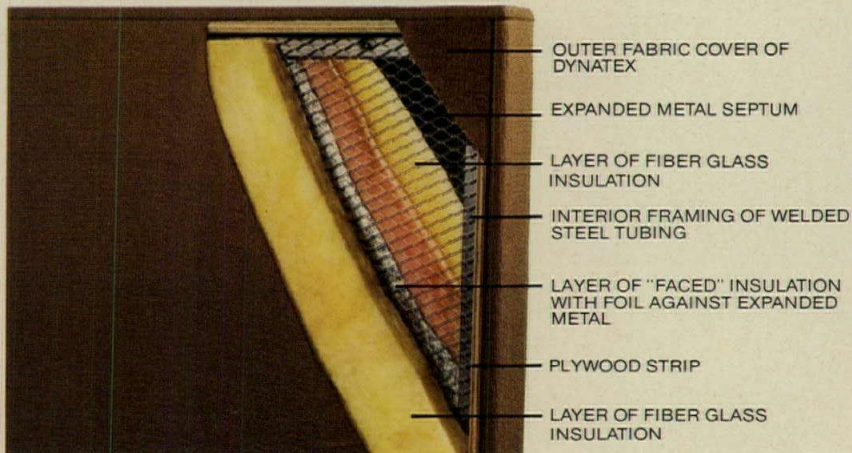
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simplify pool construction eliminate major repairs



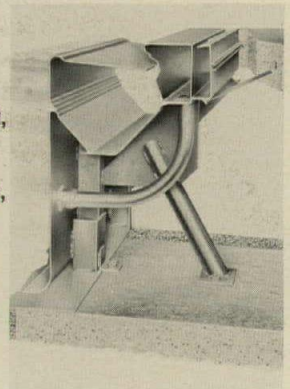
50 Meter Olympic Swimming Facility
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special construction

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INTEGRATED CEILINGS
PREFABRICATED BUILDINGS
SPECIAL PURPOSE ROOMS
VIBRATION CONTROL
SWIMMING POOLS

Pre-engineered buildings continue to find acceptance with architects and engineers, as evidenced by notable examples involving the special cost considerations of public clients. In one case announced this year, Dalton Dalton Little Newport of Cleveland and their client, the United States Postal Service, showed four prototypes for neighborhood stations, pre-engineered structures, 500 of which will be placed around the country.

Hardy Holzman Pfeiffer of New York City, leading proponents of this technology (although not to the exclusion of others in their practice) have said, in describing pre-engineered buildings, "The conventional way of thinking of architecture is in terms of sticks and bricks, but there are a whole lot of other ways.

"One of these ways is ready-made buildings that can be bought off the shelf and are movable and adaptable to a variety of functions."

The firm, in designing a new state park in New York devoted to performing and visual arts, selected timber grain silos, log cabins of the type used by many for country homes, Butler grain bins, and steel truck bodies to make enclosures for artists hired by the park to instruct.

"These buildings represent superb American craftsmanship," say the architects. "A truck body is a beautifully designed box of stainless steel. It represents one of the highest degrees of technology and sophistication used to put something together in our country."

In describing their selection of silos, bins, cabins and truck bodies, the architects say, "people must see them with their eyes and not their ears."

This unconventional and innovative approach to pre-engineered structures, combined with the economical advantages often sought by public clients and private ones alike, can prompt a larger share of the nation's construction for pre-engineered buildings.



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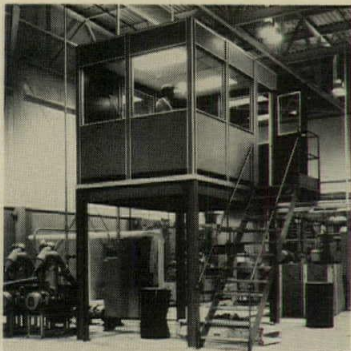
INTEGRATED CEILING

501 CEILING SYSTEM / Factory-built integrated ceiling system, incorporating luminaries, sound-control panels, air distribution equipment and suspension parts, is offered in six versions. / Johns-Manville. A*

PREFABRICATED BUILDINGS

502 TWO-STORY OFFICES / Modular components for two-story plant office structure includes integrated floor system and steel stairway as well as steel posts, vinyl wall panels, acoustical ceilings, and an electrical kit. It is available in a number of standard sizes. / National Partitions.

503 MOVABLE OFFICES / *Modular Space* plant-office system is offered in four standard sizes: 12 by 12 ft, 12 by 16 ft, 12 by 20 ft and 16 by 20 ft. Nonstandard sizes are also available, as is a choice of wall coverings and ceiling finishes. / CleCon, Inc.



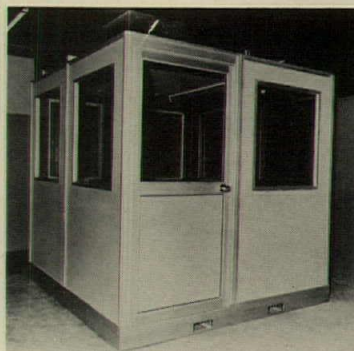
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504 HIGH-RISE OFFICE / *Vision Tower* plant offices are raised on 8-ft mezzanines to offer unobstructed view of floor activity. They are available in 24 standard sizes. / National Partitions.

505 PREFAB OCTAGONS / Paneled wood *Circle Eight Buildings*, suitable for a variety of recreational and commercial structures, are offered in two sizes—800 sq ft and 1250 sq ft. / Game Time, Inc. A*



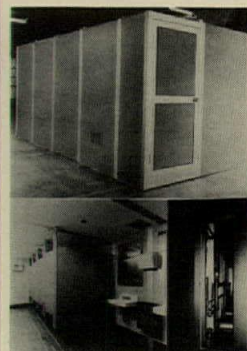
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506 PORTABLE OFFICE / Designed to satisfy OSHA noise-pollution standards, modular *Porta-Office* for in-plant use is constructed with 4-by-8-ft "sound control" wall panels. / Starrco Co., Inc.

507 OUTDOOR SHELTER / Prefabricated *Porta-Fab* buildings, to provide shelter for outdoor workers, have tempered safety glass windows and lockable sliding or swing doors. Structure and paneling are aluminum. / Keene Corp.



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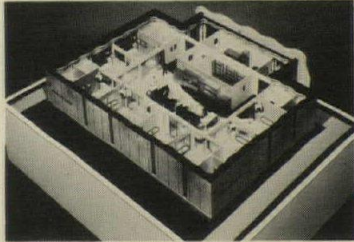


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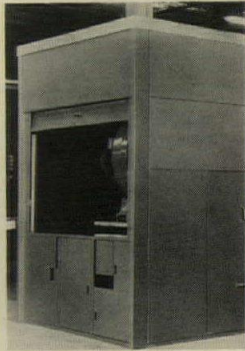
SPECIAL PURPOSE ROOMS

508 TOILET BUILDING / Pre-plumbed toilet building for plant use is built with aluminum panels and can be moved with crane or fork lift. Installation requires only a waste pipeline, water supply and electrical service line. / Starrco Co., Inc.

509 AUDIOMETRIC BOOTH / *Eckoustic Audiometric Booth*, designed to meet ANSI standards, provides acoustic enclosure for conducting hearing tests and evaluations. / Eckel Industries, Inc.



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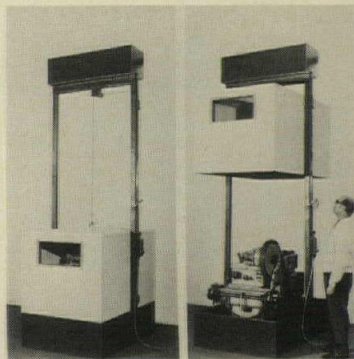
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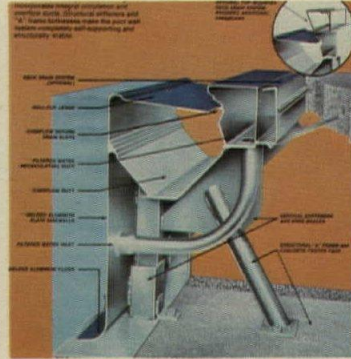
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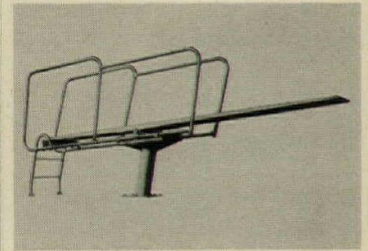
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510 SPECIAL-CARE SYSTEM / Pre-engineered building provides all equipment, fixtures, life-support products and monitoring systems for special-care facility, as well as heating, medical gases, electricity and climate control. / American Sterilizer Co.

VIBRATION CONTROL

511 ANTI-NOISE HOUSINGS / Designed to isolate excessive noise from machinery, industrial enclosures are assembled with acoustical panels. Available in hinged, uplift, and other configurations, the enclosures all have vision ports for inspection of covered machinery. / Keene Corp.

512 ACOUSTICAL HOUSINGS / Heavy-duty machine enclosures are available in modular and custom dimensions. Fabricated in steel and lined with sound-absorbing material, the housings are designed to meet OSHA noise and safety standards. / Keene Corp.

SWIMMING POOLS

513 SOLAR POOL HEATER / *Solaris* solar pool heating system can be installed on roof or on any 5 per cent incline. Water, pumped through black synthetic rubber panels to absorb stored heat, returns to pool through gravity pipe. / Burke Rubber Co.

514 LIFEGUARD'S CHAIR / Lifeguard tower is provided with tires so that it can be easily moved by one person. Available in stainless or galvanized steel, the tower has a plastic contour seat. / KDI Paragon, Inc. A*

515 POOL SYSTEM / Integral aluminum channels incorporated in pool side-wall provide water circulation ducts, overflow return to filter, filtered water return and inlets, and deck drains, eliminating need for additional piping. / Chester Products, Inc. A*

516 WATER POLO GOALS / Stainless steel and nylon net water polo goals are adjustable for any water level to meet regulation height. / KDI Paragon, Inc. A*

517 DIVING TOWERS / *Paraflyte* diving towers are available in 1-m and 3-m heights. Options include ladder guard rails and side-mounted ladders on 3-m model, and front guard rail on 1-m model. / KDI Paragon Inc. A*

continued from page 108

790 POOL FINISHING / A six-page brochure on the waterproofing and finishing of concrete masonry or Gunited swimming pools tells how to prepare the surface for a finish coat, gives waterproofing techniques, and outlines finishing systems. / Standard Dry Wall Products.

791 FINNISH SAUNA / This 400-page book deals with the genuine sauna: what it is, what it does, how it is constructed, and how it is used. The authors have considered the recommendations of the Association of Finnish Architects and the book is factual, regarding the sauna technique, both the architectural and thermal techniques. Included in the table of contents are: origins and ritual; sauna room materials; design and construction; heating, siting, layout and ancillary facilities; and prefabricated sauna and buyers' guide. / Halsted Press Div., John Wiley & Sons, Inc.

792 SPECIAL ENCLOSURES / An 8-page illustrated catalog covering environmental enclosures manufactured for X-ray, nuclear, and radio-frequency applications includes performance test data and a special section on built-in enclosures; custom designs, RF accessories, penetrations, filters and ventilation. Ray-proof protection against X-rays through panels, walls, doors, floors and ceilings as well as gamma-ray shielding in hospitals and industrial structures is also covered. / Keene Corp.

793 ALUMINUM POOLS / An eight-page brochure discusses aluminum Olympic, rooftop, therapy and reflecting pools. It also provides information on pool liners and bulkheads, and features a section on pool specifications, with photos and detail drawings. / Overly Mfg. Co.

CONVEYING SYSTEMS

794 MATERIAL HANDLING / A 12-page catalog features material handling equipment, with specifications and buying information on manually propelled lift trucks, elevating tables, and drum handling equipment. / Economy Engineering Co.

795 VERTICAL CONVEYORS / Selective vertical conveyors for transporting information, communications and materials from any floor in multi-storied structures are described in this brochure. Up to 60-lb loads can be carried at a rate of up to 20,000 lbs/hr. Features include visual monitoring of all functions from a master control panel; independent power units at each floor which eliminate load-unload strain on the chain and drive; and automatic alignment of pivoted carriers to prevent spillage from containers. The brochure shows typical system layouts and provides installation requirements, operating capacities, and specifications. / American Chain & Cable Co., Inc.

796 UNIT LOADING HANDLING / Unit load handling live-roller air-controlled accumulation conveyors and a complete line including gravity conveyors; powered roller and chain conveyors; powered curves; turns; transfers; vertical conveyors; flow rack; and a range of accessories are described. / Rapistan, Inc.

797 HYDRAULIC ELEVATORS / Unlike cable elevators, the company's hydraulic does not need a hoisting machine, supporting beams, sheaves and other equipment located above the car. Overhead clearances are kept minimum, and a penthouse is not required. The elevator car is said to be solidly supported and precisely controlled at all times for smooth up and down travel. A bulletin giving information on the characteristics of these elevators is available. / Reliance Electric Co., Houghton Elevator Div.

MECHANICAL

798 PRESSURE SEWER SYSTEM / Intended for use by municipalities; rural, suburban and resort communities; motels, trailer courts, etc., the manual outlines conditions which must be considered in system planning, construction and operation. Among subjects discussed are design, flow line sizing, friction losses, scouring velocity; line alignment, burial and slope; system pressures, power supply, controls, appurtenances and system maintenance. All data are in a form which can be included in engineering specifications, according to the company. / Hydr-O-Matic Pump Div., Weil-McLain Co., Inc.

**WATER COOLED
• ROOFTOP
AIR CONDITIONING
SYSTEMS**

TLE EVAPORATIVE CONDENSER
TLS SHELL & TUBE CONDENSER

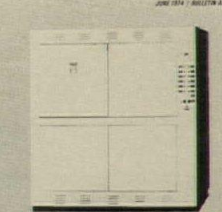
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Increases HVAC Tonnage... without additional power consumption
• Efficient and to problems of energy conservation
• Save on lower operational costs
• Eliminate power restriction problems
For an exciting experience
INDUSTRY • HOSPITALS • SCHOOLS • INSTITUTIONS • COMMERCIAL

799 ROOFTOP AC / Designed to conserve electrical energy, units are said to provide power requirement economies ranging from 20 to 29 per cent, depending upon tonnage capacities. All major components are contained within a galvanized steel cabinet internally supported with heavy, angle-steel structure. All steel frame and cabinet components exposed to condenser air and water flow are covered with insulating plastic to prevent corrosion. Self-cleaning spray nozzles are used throughout. A six-page technical brochure containing detailed information on sizes, capacities, specifications and cost-of-operation comparisons is available. / Governair Corp.

800 SHARED AC UNITS / A bulletin describing an option which permits air from one self-contained air conditioner to be divided between two rooms, includes descriptions and dimensions, examples of installations and suggestions for use in various types of structures. / American Air Filter Co.

JUNE 1974 / BRASCH-ALCO



BRASCH

**Electric
Hot Water
Boilers**

801 ELECTRIC BOILERS / A six-page bulletin describes applications, construction and specification details with selection format for engineers, contractors and owners. / Brasch Mfg. Co., Inc.

802 ROOFTOP HVAC / Units featuring capacities increased to 40 through 70 tons are described and illustrated in this 12-page bulletin. Models discussed have electric cooling/natural gas heating, electric cooling and heating, and electric cooling only. They are available in nominal cooling capacities of 40, 50, 60 and 70 tons. Equipment selection, blower performance, dimensions, electrical data and installation requirements are detailed and information on options and accessories is also included. / Hastings Industries, Inc.

803 AIR CONDITIONING / A rotary compressor—an integral component of the company's *Climator 938-1* line—is described in this brochure on models with cooling capacities from 18,000 to 60,000 Btu/h. Btu per watt or energy efficiency ratings (EER) for the entire line are given with ratings up to 11.00. Operating cost savings and installation data are discussed. / Mueller Climatrol Corp.

Single package
year round air conditioning



International's
Rooftop Series 301

301

804 ROOFTOP UNITS / A six-page brochure describes the *Series 301* single-package year-round rooftop heating/cooling units. In addition to a description of commercial application features, the brochure includes cooling and blower performance, and dimensional and physical data for specification purposes. / International Heating & Air Conditioning Div., Weil-McLain Co., Inc.

more literature on page 156

conveying systems uci 14

CONVEYORS & CHUTES
ELEVATORS
HOISTS & CRANES
LIFTS
PNEUMATIC TUBE SYSTEMS


When asked by RECORD last year what new developments they would like to see in the elevator industry, responding architects frequently listed: better control systems; tandem cabs to make better use of shaft space; improved cab designs; pre-engineered packages to reduce costs and speed delivery; more options to increase visual excitement for passengers; simple, inexpensive hydraulic models; more comparative data. Dependability, service and costs are overwhelming factors to architects.

Other more unusual ideas included: continuous cabs—paternosters—similar to those used in Europe; horizontal elevator cabs to serve as links between vertical systems and parking areas; sound signal when cab has been over-loaded; circular cabs; elevators outside conventional shafts.

Looking at the research RECORD has conducted with the largest elevator manufacturers, we find the product development efforts are concentrated in pre-engineering the products and equipping systems with solid-state and automated controls, with emphasis on operating characteristics during fires and other emergencies.

The National Elevator Industry, Inc., a trade organization, says they have for the first time been called in by the model codes groups (BOCA, ECBO and SBC) to help write a code on elevators in high-rise construction. ANSI A17-1, the current code, already covers some of the proposed requirements—for use by firemen during emergencies—according to the elevator industry spokesmen, but further requirements would involve additional communications devices between the cabs and an emergency-control center in the building.

Hydraulic elevator sales are reported on a healthy, steady increase, and one major manufacturer states it has entered the field on a large scale basis. Presumably, the hydraulic—mentioned before as an area favored for improvement by architects—will benefit from stepped-up research and development in coming years.



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a lot
going
for you.

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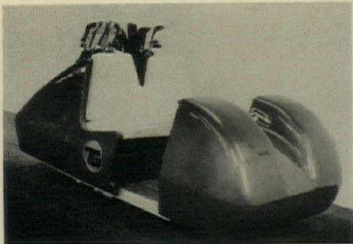
MOSLER/AIRMATIC SYSTEMS DIVISION, 415 PATERSON HAMBURG TURNPIKE, WAYNE, NEW JERSEY 07470

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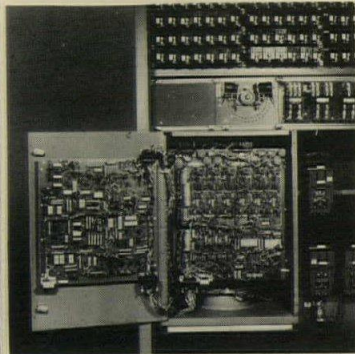
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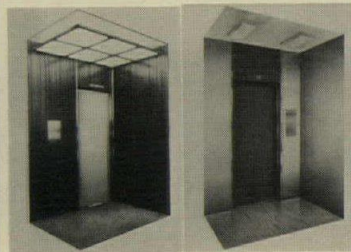
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CONVEYORS & CHUTES

519 GOLF COURSE TRAM / *Golf-glide* system moves electrically powered gliders on a buried precast concrete monorail. The gliders can be controlled either manually or remotely, and can also be programmed to operate automatically. / TransGlide.

520 POINT-TO-POINT SYSTEM / For banks, hospitals and other institutions requiring secure internal delivery, *Telelift* point-to-point system offers monitored travel of delivery containers; sensors in aluminum track alert security to interrupted service. / Mosler Airmatic Systems Div. A*

ELEVATORS

521 ELEVATOR DRIVE / *Dynaglide* drive system for geared elevators with speeds of 150 through 400 fpm reduces energy needs 10 to 35 per cent, says its manufacturer. Unaffected by a 5 to 7 per cent voltage reduction, it works at reduced speed even with a voltage drop. / Armor Elevator Co., Inc.

522 ELEVATOR CABS / New line of elevator cabs allows individualized appearance in standard units by offering a variety of mix-and-match colors and finish materials for wall panels, ceilings, and carpeting. / Otis Elevator Co.

HOISTS & CRANES

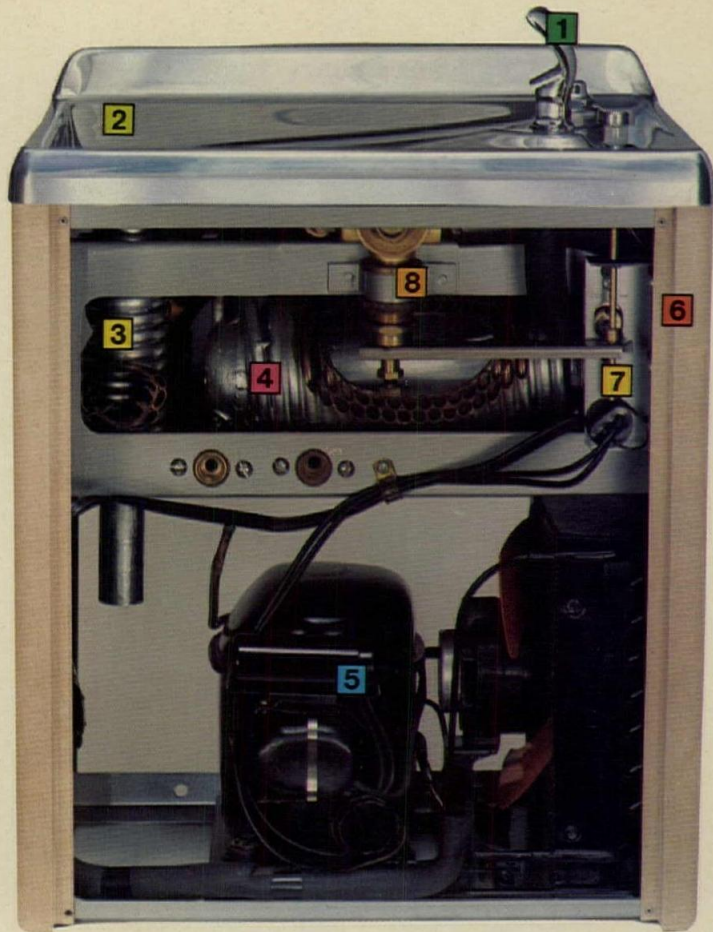
523 HOISTS / Newly offered *Centurion* hoists are available in 1/2-ton and 1-ton capacities, and with either air motors or electric motors. / Ingersoll-Rand Co. I*

LIFTS

524 HOME ELEVATOR / *Stairlift* can be installed on any straight stairway at least 29 in. wide without structural alteration. Seat has a capacity of 250 lbs, is equipped with seat belt and two arm rests, and revolves 180 degrees. / Inclinator Co. of America. A*

PNEUMATIC TUBE SYSTEMS

525 PNEUMATIC TUBE / Computer-controlled pneumatic tube *System 4000* can serve as many as 144 stations. The system also allows operators to transmit up to three carriers simultaneously. / Mosler Airmatic Systems Division. A, I*



Most water coolers look pretty much the same on the outside.

Only one looks like this on the inside.

Halsey Taylor.

Not that you'd recognize it. Very few people ever have to look at the inside of our water coolers. Including repairmen.

That's because we concentrate on what really counts—function. Besides, where could anyone get the idea that an architect specifies functional products on appearance alone?

The ultimate pay-off is a cold, satisfying drink of water. But the pay-off that counts is years of service, extremely low maintenance, quality construction—and knowing that the product you specify is as good as your own reputation.

We put a lot more into it so your customers will get a lot more out of it. Cold water included. Here's how:

- 1 Exclusive 2-stream bubbler.** Builds a large, drinkable mound of water. Anti-squirt and vandal resistant. One piece chrome-plated brass forging prevents contamination.
- 2 Cooler top.** Satin finish stainless steel, polished and buffed for beauty and ease of cleaning. Separate drain strainer removable for easy cleaning without removing cooler top.
- 3 Pre-cooler.** Incoming water line coiled around and tin-bonded to cold water drain. Boosts cooling capacity by 60%.
- 4 Cooling storage tank.** All copper, hot-dipped pure tin lining. Incoming water coil is tin-bonded to refrigerant coil to cool water before it enters tank.
- 5 Condensing unit assembly.** Hermetically sealed, lubricated for life. Automatic re-set overload protector prevents overheating. Capacitor insures compressor startup. All components designed and coordinated for top efficiency and long life.
- 6 Cabinet.** One-piece unitized body of heavy gauge bonderized steel. Baked-on enamel resists wear, moisture, heat, sunlight. Cabinets also available in stainless and vinyl-clad steel.
- 7 Dual temperature controls.** Two thermostats, primary and secondary, provide double protection against freeze-up.
- 8 Automatic regulating/operating valve.** Maintains constant stream height under line pressures varying from 20 p.s.i. to 90 p.s.i. Easy to service. Tamper-proof. Large orifices resist deposits and clogging. All parts are corrosion-resistant.

Halsey Taylor Division,
1554 Thomas Road,
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For more data, write A52 on inquiry card

AIR DISTRIBUTION
AIR TREATMENT
HEAT GENERATION
COMBUSTION EXHAUST
FIRE PROTECTION
HEAT EXCHANGERS
HEAT PUMPS
HVC TERMINAL UNITS
MECHANICAL CONTROLS
MECHANICAL SUPPORT
PIPING & SPECIALTIES
PLUMBING FIXTURES/TRIM
PUMPS & COMPRESSORS
REFRIGERATION
WATER SUPPLY/TREATMENT

With the suddenness of energy and economic belt-tightening in this country came extraordinary pressure on mechanical equipment manufacturers to respond to a new set of design criteria, and at the same time keep first costs and operating costs at acceptable levels.

In just two years, the trend to total climate control in all building types—even residential—has been substantially eroded. What is being taught in architecture schools and practiced by working professionals is a return to natural ventilation and a variety of non-mechanical solutions to problems we all thought were going to be solved by mechanical systems.

Solar energy a short time ago appeared decades away. Now there are a dozen systems on the market to heat water and space, and several major Federal and private development efforts are underway to realize a \$1 billion solar energy market potential for all building types by 1985.

In a recent RECORD survey, 53 per cent of the responding mechanical equipment manufacturers said energy and the environment were chief reasons for product-line changes, and performance improvements were said by 73 per cent to be their most significant achievements in the last two years. Among still hoped-for achievements, the manufacturers listed: more heat-recovery and heat-recycle units; extension of modular design; greater energy efficiencies; and safer, more utilitarian products.

Not only products, but sophisticated services are increasing among mechanical equipment manufacturers. One example is the TRACE program of The Trane Company, which offers a computer program said to optimize selection of heating/cooling/ventilating systems for new buildings or to evaluate existing buildings to determine energy conservation steps. Economic alternatives in terms of the owner's long-range profit goals can also be examined to determine compatible air conditioning systems.

Besides HVAC equipment, this division includes a number of products which typify splendid directions for plumbing fixture and fitting manufacturers. Design improvements this year come with several imported products, and a few that—although domestically produced—reflect European design influences.

Finally, provisions for the handicapped are being made in product lines of several drinking fountain companies. Good appearance and appropriateness for all persons is a design goal well-met on these production-line items.



Satisfying Supercritical Surgeons

Surgeons are trained to be supercritical of their work. And, their desire for perfection makes them supercritical of everything else, including the plumbingware they use and depend on.

So Eljer designed a new full line of hospital-styled plumbing fixtures and fittings to meet their most demanding needs. Besides the plumbingware shown above, you'll find more than 290 other hospital and commercial line products fully detailed and illustrated in Eljer's new "Hospital/Institutional Plumbing Fixtures and Fittings" catalog.

Hospital-styled plumbingware . . . one example of Eljer's ability to meet any commercial building need with a complete line of well-designed, quality commercial plumbing products.

If you're planning on satisfying supercritical commercial clients, you should have Eljer's new 62-page catalog on file. Send for the "Hospital/Institutional" catalog:

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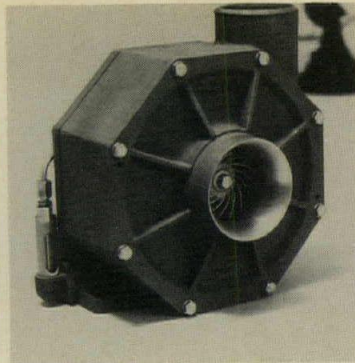
ELJER

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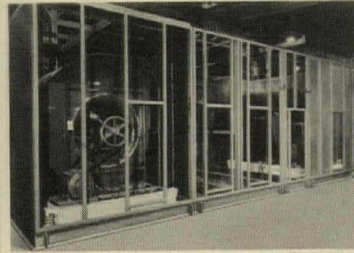
For more data, circle A53 on inquiry card



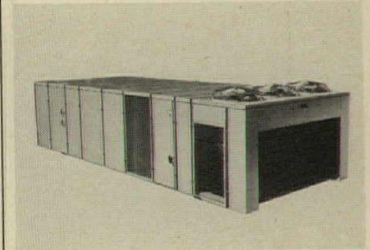
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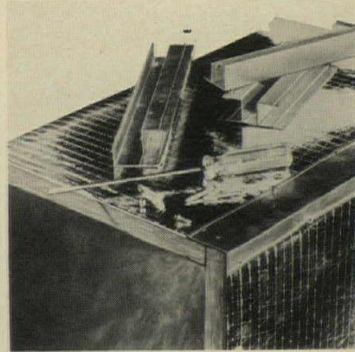
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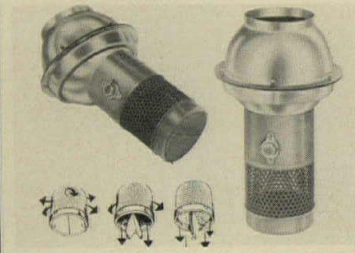
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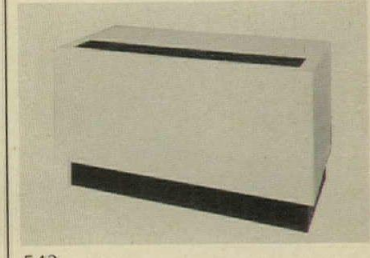
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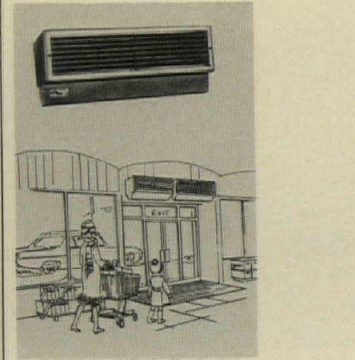
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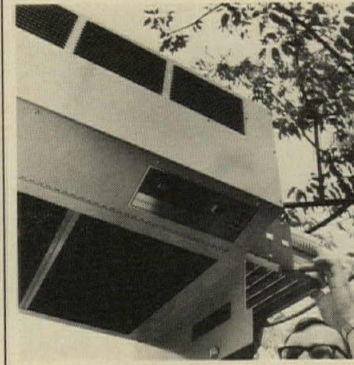
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AIR DISTRIBUTION

532 CLOSURE TAPE / New *Therm-Lock* tape provides permanent, chemical closure on aluminum-faced fiberglass duct materials. Applied like pressure-sensitive tape and heated with a household iron, closure provides joints with a shear strength of more than 25 psi. / Johns-Manville.

533 CLOSURE CHANNELS / *Fiber Grip*, a closure system of aluminum channels, also provides reinforcement and acts as a hanger. Available in four configurations, channels allow fabrication of longitudinal and circumferential joints. / Johns-Manville.

534 EXHAUST FAN / Thermostatically controlled exhaust fan, installed either on roof or in gable wall, prevents heat build-up in attic. Thermostat operates at 15-degree differential with adjustable range from 70 degrees F to 130 degrees F. / Hunter Div., Robbins & Myers, Inc.

535 LOW-NOISE BLOWER / Unit delivers up to 1000 CFM at pressures to 7 psi and vacuums approaching 12-in. Hg. Low noise levels are claimed. *CB-90* units are said to fit within a 12-in. cube and weigh less than 30 lbs. / Paxton Products, Inc.

536 WORKER-ORIENTED HVAC / *Factair* provides for the ducting and independent regulation of preconditioned air—either cooled or heated—to individual industrial stations. The system outlet is fabricated for duct sizes 4 through 12. in. / United Sheet Metal Div., United McGill Corp.

537 AIR DOORS / The air doors may be used singly or in multiples. They contain velocity and directional controls. Heavy duty motors are resilient mounted and protected by an automatic thermal overload switch. / Mars Sales Co.

538 HIGH-CAPACITY HVAC / Systems may be designed for simple heating and ventilating or for complete air conditioning. Components are mounted on a welded steel channel base, surrounded by a welded tubular steel framework, and shipped ready for installation. / Buffalo Forge Co.

539 ROUND FIBERGLASS DUCT / A preformed fiberglass heating and cooling duct for low pressure systems designed to provide thermal insulation, vapor barrier and acoustical absorption in one product is covered with a tough, scrim-reinforced foil jacket. / Johns-Manville.

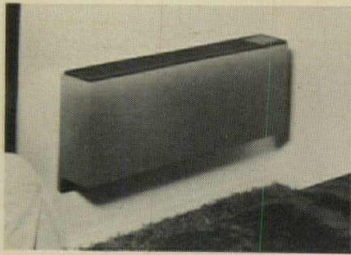
AIR TREATMENT

540 AIR CLEANER / Electronic air cleaner, which manufacturers claim removes up to 90 per cent of airborne dust, dirt, pollen and smoke particles, is recommended for restaurants as well as houses. Removable collecting plates can be cleaned in dishwasher. / Honeywell.

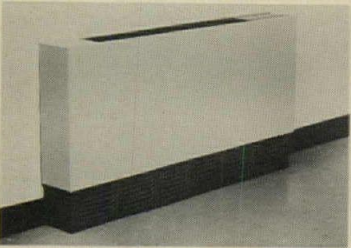
541 HEATING-COOLING UNITS / *Roofpaks* are offered in six versions—heating only, cooling only, heating and cooling, water cooling, future cooling and condensing unit section. Single-zone units range in size from 40 to 70 tons, multizone units 15 to 40 tons. / McQuay-Perfex, Inc. A, I*

542 HVAC WALL UNIT / *Weather-Twin* wall unit, housed in double, insulated casing, is available in capacities of 9500, 12,000, 13,800 and 15,000 BTU/hr cooling, and 7000 to 17,300 BTU/hr heating. Two-stage heating is standard with most sizes. / Embassy Industries, Inc.

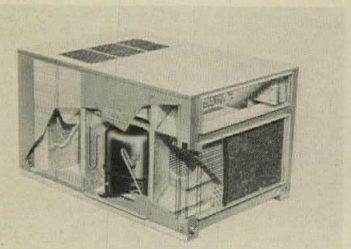
543 ELECTRIC HEATER / Suggested for large open spaces like showrooms and warehouses, unit blower electric heater heats 130 to 560 cu ft per minute, depending on model size. Wall-mounted or built-in thermostats are optional. / Hunter Div., Robbins & Myers, Inc.



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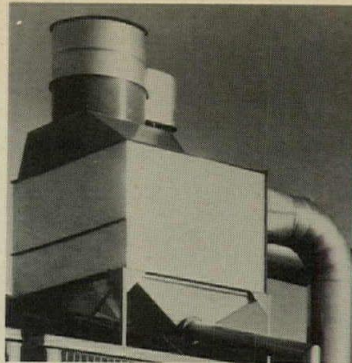


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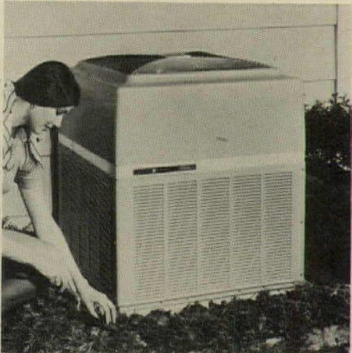
544 PACKAGED COOLING / Five models have EER's in the 7.0 to 8.0 range, and are available with seven through 18 MBH cooling capacity for use on new or existing electric, steam, or hot water systems. A standard 16 by 42 in. wall opening is required. / ITT Nesbitt.

545 TERMINAL HVAC UNIT / Packaged "hydronic" terminal air conditioners feature heating capacities ranging from 17,500 to 22,000 Btuh and cooling capacities of 8,500-11,500 Btuh at 230/208-volts. / Air Conditioning Contract Products Dept., General Electric Co.

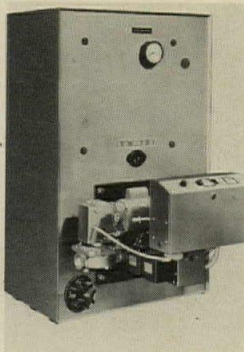
546 PACKAGED COOLING / The CHA9 ranges in size from two to five tons and has been designed for the residential replacement market. Cooling capacities begin at 24,000 Btuh and go up to 58,000 Btuh. They are U.L. listed and ARI certified. / Lennox Industries Inc. A,L,I*



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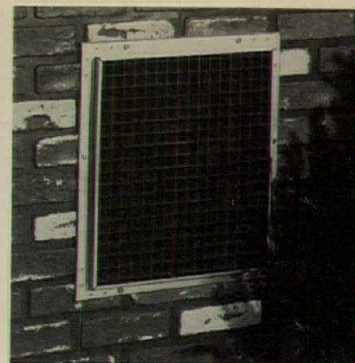
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547 AIR WASHER / The *Mistair* was developed from a lint collector line of equipment which has been used in laundries and textile plants. The air washer uses a wet spray principle to capture particles and convert them into a nonflammable mass. / ECI Air-Flyte Corp. A,I*

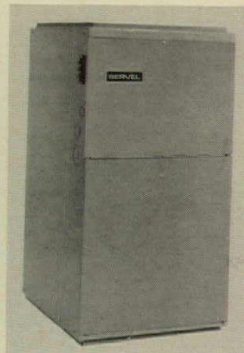
548 CENTRAL COOLING / Model TA930E with coil XA942A has a cooling capacity of 32,000 Btuh and produces 10 BTU's of cooling for each watt of electricity it consumes. It features a two-speed automatic fan. / Central Air Conditioning Product Dept., General Electric Co. A*

HEAT GENERATION

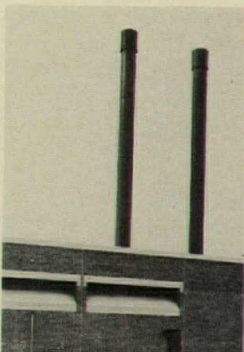
549 BOILER-BURNER UNIT / Fueled by light oil, gas, or a combination of both, No. 86 boiler-burner has forced draft firing to eliminate need for chimney. Net load range is 626,100 to 2,913,000 BTU/hr for hot water, 2250 to 10,835 sq ft for steam. / Weil-McLain Co., Inc.



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550 FLUSH VENT TERMINAL / A residential sealed combustion wall furnace with flush vent terminal features a grille made of corrosion-free aluminum neutral in color. The vent design eliminates the need for a protective vent cap, according to the company. / Dover Corp., Peerless Div.

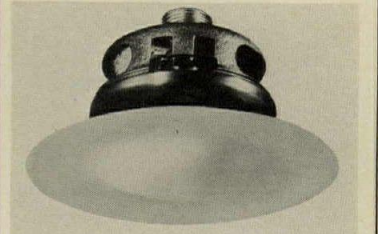
551 ELECTRIC FURNACES / Two models have been added to the line, with heating input range, in increments of 5 KW, of from 10 to 20 KW for one model, and of from 20 to 30 KW for the other. Both furnaces meet UL and NEMA standards. / Arkla Industries, Inc.

COMBUSTION EXHAUST

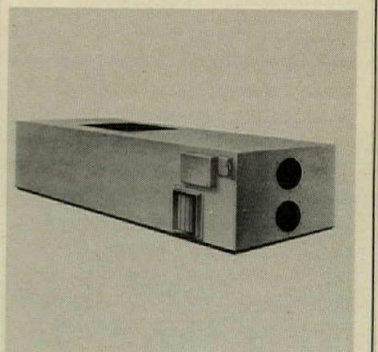
552 CHIMNEYS / Freestanding, unguied chimneys, made from prefabricated modules of refractory-lined steel, are available in standard inside diameters ranging from 10 to 72 in. Chimneys are designed to meet seismic requirements and UL standards. / Van-Packer Products Co. A, I*



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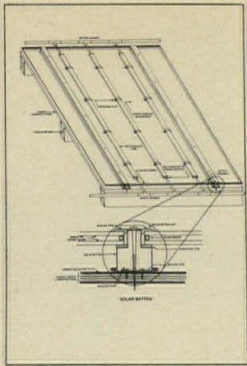
FIRE PROTECTION

553 FLUSH SPRINKLER / Flush automatic sprinkler, called *The Unspoiler*, can be completely recessed in ceiling. Four-in. cover plates, available in 16 different metallic finishes, have temperature ratings of 117, 135, and 165 degrees F. UL-listed. / Star Sprinkler Corp.

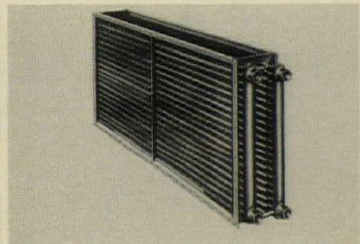
554 RECESSED SPRINKLER / A fast-operating, automatic sprinkler recessed into a ceiling and enclosed is UL-listed. The enclosure plate is offered in a variety of finishes and is attached to the sprinkler at three solder points. / Grinnell Fire Protection Systems Co., Inc.

HEAT EXCHANGERS

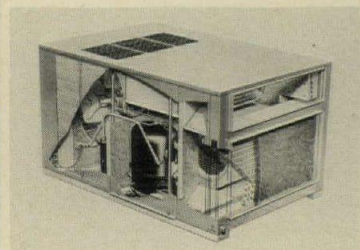
555 HEAT RECOVERY UNIT / Air-to-air heat recovery unit *Thermotran* recovers up to 75 per cent of sensible heat from process or building exhaust, says its manufacturer. Handling temperatures up to 400 degrees F, the units range in capacities from 800 to 67,200 cu ft/min. / Industrial Air, Inc.



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556 SOLAR COLLECTOR / Standard Revere building panel is adapted as solar energy collector with blackened copper sheet for heat absorption, one or two glass sheets for heat storage, and rectangular tubes for fluid circulation. / Revere Copper and Brass Inc. A*

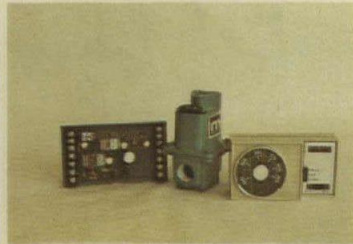
557 HEAT EXCHANGER / Run-Around Cycle system, consisting of heat-exchange coils placed in air ducts, allows remote positioning of elements and eliminates need for proximity of exhaust and supply ducts. / McQuay-Perfex, Inc. A, I*

HEAT PUMPS

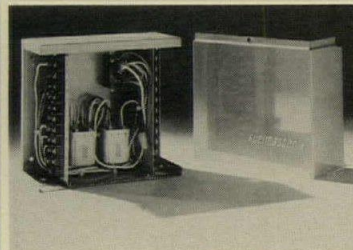
558 PACKAGED HEAT PUMP / A line of packaged heat pumps, the CHP9 series is available from two to five tons. Cooling capacities range from 23,000 to 56,000 Btuh and heating from 25,000 to 63,000 Btuh. They are U.L.-listed and ARI certified. / Lennox Industries. A,L,I*



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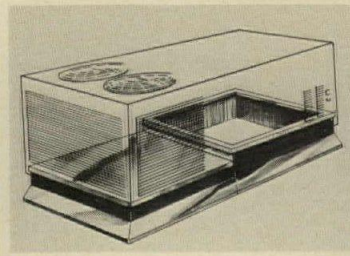
HVC TERMINAL UNITS

559 PACKAGED TERMINAL / All five models have energy efficiency ratios in the 7.0 to 8.0 range. The units are available with 7 thru 18 MBH cooling capacity for use on new or existing electric, hot water or steam heating systems. A variety of control arrangements is offered. / ITT Nesbitt A*

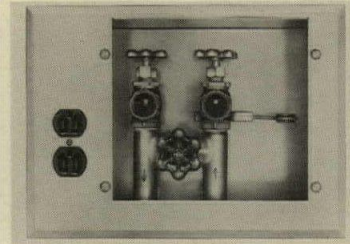
MECHANICAL CONTROLS

560 ELECTRONIC THERMOSTAT / Selectra system, an electronic gas-flame modulation system, is intended primarily for residential and light commercial space heaters. Components include solid-state electronic amplifier, modulator/regulator valve, and thermostat. / Maxitrol Co.

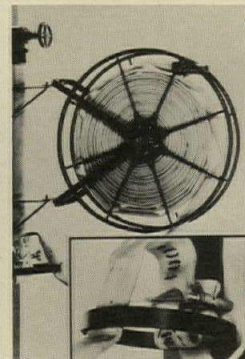
561 SPLIT-SYSTEM HEAT PUMP / A control device that automatically switches fossil fuel and electric systems to partial electric heat pump usage during mild winter temperatures is suited for the add-on or replacement cooling market. / Lennox Industries Inc. A,L,I*



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MECHANICAL SUPPORT

562 EQUIPMENT BASE / Package unit, designed to accommodate rooftop HVAC units, provides support and curb and eliminates field construction of equipment base. / The Pate Co. A*

PIPING & SPECIALTIES

563 WATER SUPPLY BOX / Said to satisfy the new Minimum Property Standards issued by HUD/FHA, this product is said to meet all plumbing codes for the connection of water conditioners also. / Guy Gray Mfg. Co., Inc.

564 HOSE REEL / Said to meet OSHA regulations, the product, for rubber lined or linen hose, permits one-man operation of fire hoses. It is UL-listed. When the hose is completely unreeled, a clip automatically releases water for a full stream in seconds. / Elkhart Brass Mfg. Co.



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PLUMBING FIXTURES/TRIM

565 KITCHEN FAUCET / All-brass valving and a 9-in. spout are featured on this single handle faucet with five year guarantee, said to exceed the warranty period for plumbing systems adopted by the NAHB. / Building Components Div., Rockwell International.

566 EUROPEAN-LIKE FIXTURES / Shown is the *Continental Bath* featuring from left to right: pedestal lavatory, toilet, and a 7-ft oval tub made of fiberglass-reinforced polyester. Fittings are furnished. / American-Standard.

567 VANITY TOP / Gold-on-white simulated marble vanity top, equipped with coordinated faucet, is 72-in. long. Oval bowl may be centered or offset, and dual bowl tops are available. / Bradley Corp. L*



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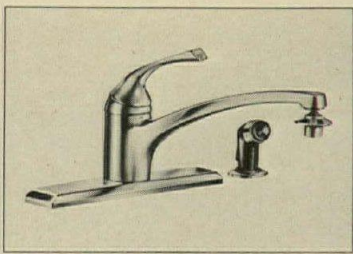


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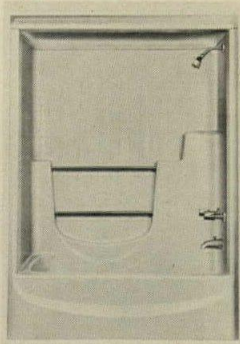
568 CHINA LAVATORY / *Vanessa*, a vitreous china basin and top, is coordinated with standard cabinet. The lavatory is offered in a range of colors, the cabinet in woodgrain plastic colored dark cherrywood or antique white walnut. / Eljer Plumbingware.

569 IMPORTED FAUCETS / From Italy, these wash basin sets with automatic drain are available with matching bidet and tub-shower fittings, compatible with U.S. plumbing. Available in eight bright colors, as well as polished chrome and gold, they will be offered this fall. / Fearless Faucets.

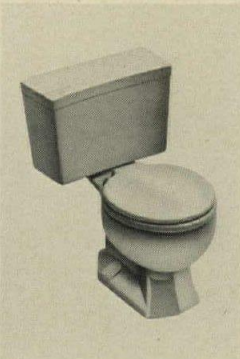
570 COLORED BATH FITTINGS / For the first time in the U.S. these Italian faucets are offered in eight bright colors and polished chrome or gold. / Fearless Faucets.



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571 KITCHEN FAUCET / A top-mount faucet with brass escutcheon is finished in heavy chrome plate and features a 10-in. high arc cast swing spout with swivel aerator. Temperature and flow are controlled in one movement of the handle. Operating parts are replaceable from above the deck. / Elkay Mfg. Co. A*

572 FIBERGLASS TUB/SHOWER / A one-piece fiberglass tub/shower unit is taller than previous models and needs less finish wall area. It features optional top. Like other company fiberglass units, *Cabanabath II* is fire retardant. / Universal-Rundle Corp.

573 PLASTIC WATER CLOSET / The *Thermo-Tank* water closet tank matches the china bowl shown above, yet is made of ABS injection-molded plastic. A "Corner Flush Tab" lever is included. The *Thermo-Tank* contains an inner liner that prevents tank condensation. / Universal-Rundle Corp.



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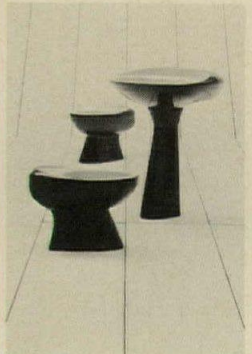
574 CHINA LAVATORY / A self-rimming vitreous china lavatory measures 21 by 19 in., and is designed for residential and commercial installations. Available in seven colors. / Kohler Co.

575 YELLOW FIXTURES / Sunflower yellow is a new color offered in the company's "Steeping Bath," in four lavatory styles and in six kitchen sinks (shown). / Kohler Co.

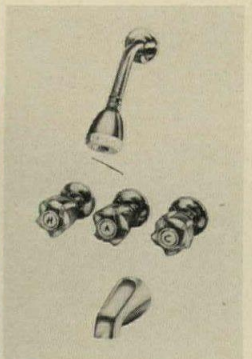
576 SUPER-SIZE BATHTUB / "The Bath," a 5½ by 7 ft fiberglass bathing oval, is now available in seven colors. It is available with dual showers and dual water controls finished in brushed or polished chrome or gold electroplate. / Kohler Co.



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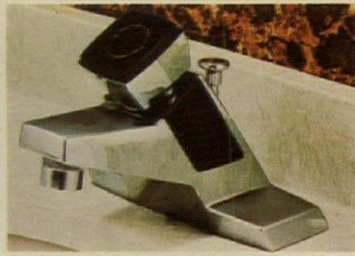
577 HAND SHOWER / A personal hand shower requires no internal plumbing and features easy customer installation. Available in a variety of models, the basic unit includes showerhead, vinyl hose, diverter, and wall holder. / Jaclo, Inc.

578 ITALIAN FIXTURES / Bath fixtures in many sculptured shapes and brilliant colors, together with a handsome line of coordinated tile, fittings and accessories, have been announced by the company. / Hastings Tile A*

579 BATH, KITCHEN FAUCETS / The handles are cast from a clear acrylic on these sets featuring solid, one-piece cast brass construction with a heavy chrome finish. Vanity, kitchen and tub and shower sets are offered. / Union Brass & Metal.



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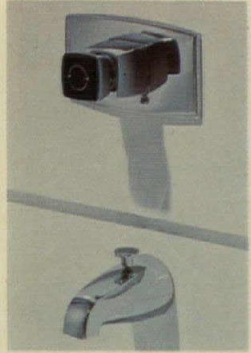
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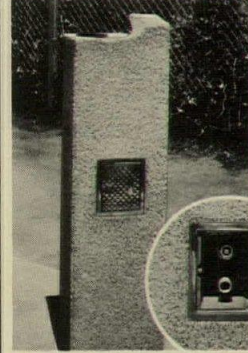
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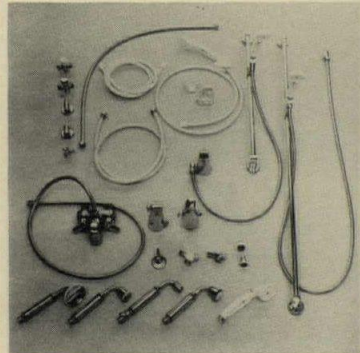
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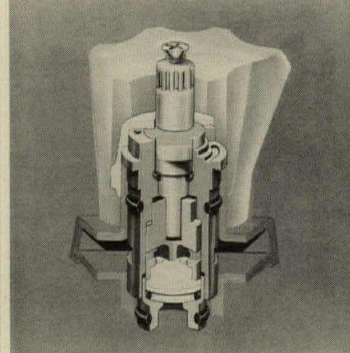
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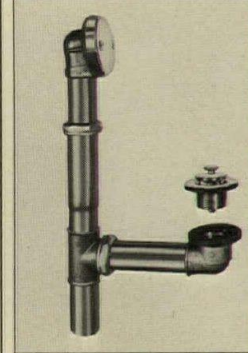
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580 STEEPING BATH / This tub is 20 in. deep, six inches deeper than most other 5-ft bathtubs. Three-foot width and sloping back with integral lower back support and arm rests are featured. The tub is offered in 13 colors. / Kohler Co.

581 TUB/SHOWER CONTROL / A tub single control with ejector tee diverter can be installed back to back. Push-pull operation of the acrylic handle maintains constant temperature or volume. Manufacturer's five-year product guarantee is offered. / Rockwell International.

582 HAND-HELD SHOWERS / The *Ondine* line of convertible showers is offered in a wide selection of components for these installations: residential, commercial or institutional. Featured in the line are hand-held personal showers and portable snap-on hand-sprays. / Interbath, Inc.

583 LAVATORY FAUCET / Pull-on operation of the acrylic handle allows constant temperature and volume control, while the spout angle improves hand clearance. Manufacturer offers a five-year product guarantee. / Rockwell International.

584 BEDPAN WASHER / Simple connections are said to provide a permanent, rigid installation at modest cost. The in-line diverter arm provides forceful flushing, then pivots neatly away. / Sloan Valve Co.

585 OUTDOOR FOUNTAIN / Designed for the general public and persons in wheelchairs, this model has an anodized aluminum finish. Mounted on a 19 1/4 in. extension with two level handle valves for right or left hand operation, it features automatic stream regulation. / Haws Drinking Faucet.

586 WATER COOLER / This wheelchair-level water cooler has a lever extension on the bubbler and delivers 7.5 gallons per hour. One piece wall bracket eliminates wall cut-outs. / Sunroc Corp.

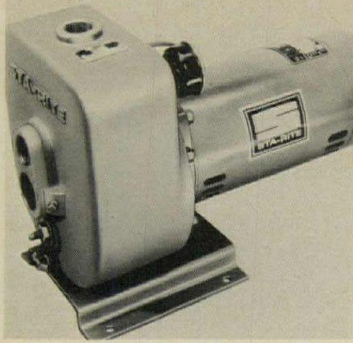
587 WATER COOLER / This wheelchair type cooler is offered with one-operating lever on the right side, or with only a glass-filler faucet. The cooler is flush-mounted to the wall without recessing. Top of the bubbler is 38 in. off the floor. / Eaton Corp., Dispenser. Div.

588 DRIPLESS FAUCET / The new cartridge faucet contains a pair of precision-fitted seats, made of highly polished ceramic material, which are said to eliminate the need for bib washers and conventional packing. One piece solid brass cast body is featured. / Wolverine Brass Works.

589 PORTABLE EYE WASH / Stainless steel portable eye wash, designed for use in remote areas, weighs 13 lbs empty, 43 lbs when filled. It is charged with compressed air by normal tire-filler valve. Wall rack is optional. / Western Drinking Fountains.

590 PEDESTAL FOUNTAIN / Outdoor fountain has hose bib assembly entirely of cast bronze. To discourage vandalism, a special key is required to open door and to operate valve. / Haws Drinking Faucet Co.

591 BATH PLUG / Bath lift-plug drain is constructed without linkages to facilitate installation and to eliminate clogging. Manufacturers claim the all-brass fitting cuts installation time by 25 per cent. Plug opens by twisting and lifting. / Universal-Rundle Corp.



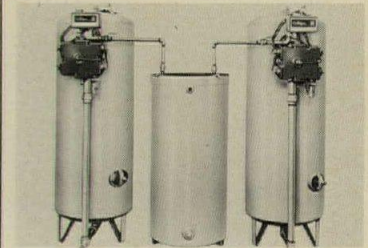
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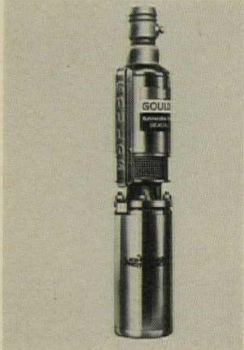
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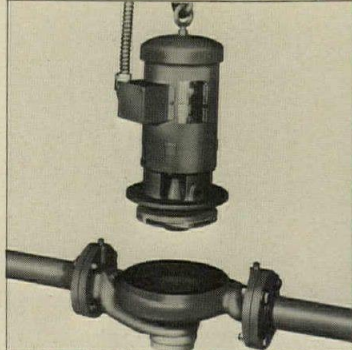
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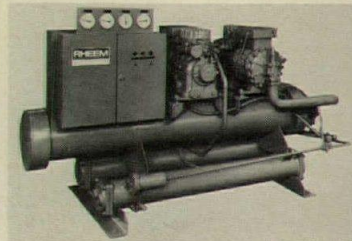
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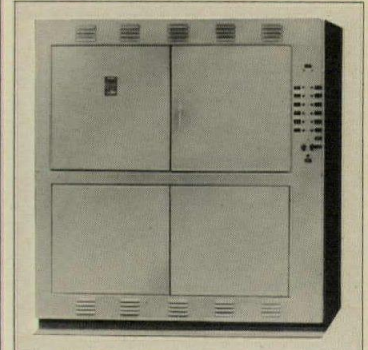
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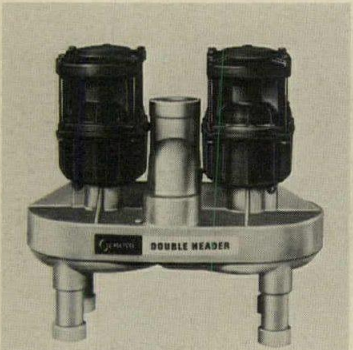
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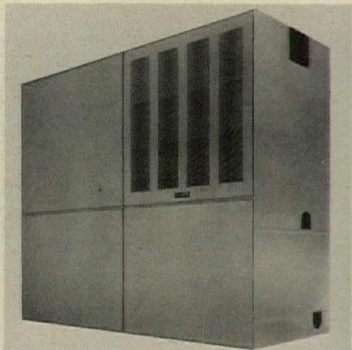
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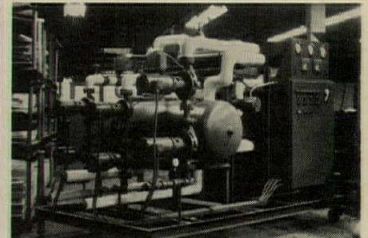
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PUMPS & COMPRESSORS

592 CENTRIFUGAL PUMP / Pumping pressure capabilities are claimed in ½ to 1½ hp models, with heads to 167 ft and capacities to 62 gpm. Close-grained one-piece cast iron pumps are available in ½, ¾, 1 and 1½ hp models. / Sta-Rite Industries.

593 SUBMERSIBLE PUMP / A 10-gpm model has brass castings and stainless steel casings. It is also equipped with a lightning protected motor. Models in other capacities range from 5 to 25 gpm. / Gould Pumps, Inc.

594 EJECTOR PUMP / *Double Header*, a twin sewage-ejector pump, incorporates two pumping units with common discharge. If operating unit fails or is overloaded, second unit cuts in automatically. Constructed of corrosion-proof PVC. / Genova, Inc.

595 PVC SUMP PUMP / Submersible sump pump has pump housing and impeller of molded PVC and motor housing of stainless steel. Automatic switch operates on flotation principle; the pump is also protected by overload protection switch. / Genova, Inc.

596 PUMP / The removal of a few bolts allows brackets and all moving parts of pump to be lifted free of pump housing for inspection of impeller, mechanical seal, bronze shaft sleeve and wear rings, without disturbing piping. / LFE Fluids Control Div.

REFRIGERATION

597 WATER-FIRED CHILLER / A 25-ton chiller for air conditioning or process cooling can be fired with water with temperatures as low as 190 degrees F. Operating on 115V, the chiller can cool a secondary system of flowing water to as low as 40 degrees F. / Arkla Industries, Inc.

598 HIGH EFFICIENCY A/C LINE / The *HS88* series produced in 2½-, 3- and 3½-ton sizes uses the same cabinet for all three sizes. The same enamel finish and extruded aluminum condenser grille are used. / Lennox Industries, Inc. A,L,I*

599 PACKAGED CHILLERS / For air-conditioning applications, accessible hermetic water chillers are offered completely factory-wired, piped and tested. There are 13 models, ranging in capacity from 15 through 185 tons. / Rheem Mfg. Co.

WATER SUPPLY/TREATMENT

600 WATER SOFTENER / Product features a vinyl resin and salt tank guaranteed for the life of the product against rust and corrosion. Unit can operate on home water pressure and does not use solenoid valves, switches, dynamic seals or pistons. / Genova, Inc.

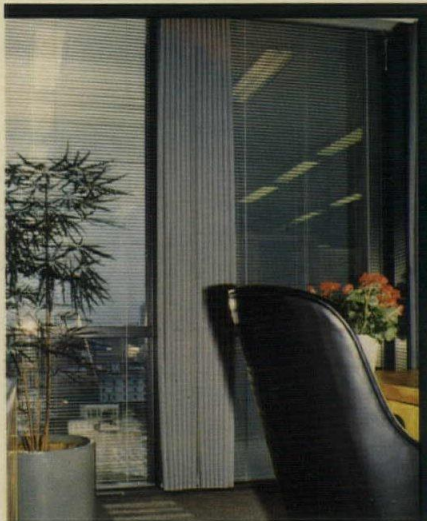
601 WATER CONDITIONER / Smaller in size and cost than conventional industrial water softeners, the standard *Hi Velocity* models will handle water capacities up to 500 gpm at low pressure. Alternating duplex feature with sensors ensures continuous water supplies. / Culligan USA

602 ELECTRIC BOILER / New electric hot-water boiler has heating capacity ranging from 30 to 2520 kilowatts. Heating elements are protected by individually removable Incoloy sheathing, and NEC Class J fusing guards against overcurrent. UL-listed and ASME-rated. / Brasch Mfg. Co.

603 BOOSTER SYSTEM / Domestic water booster system is prepackaged, with pumps, valves, controls and interconnecting piping and wiring mounted on steel frame. The only necessary field connections, says the manufacturer, are suction and system piping and power. / Taco, Inc.



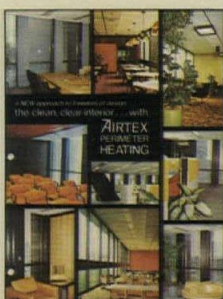
**A NEW FASHIONED
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**The clean, clear interior . . . for
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The AIRTEX Radiant-Perimeter System, a narrow band of radiant ceiling around the perimeter of a building, provides more comfortable heating without taking up *any* usable space. It is normally less expensive initially than perimeter fin tube installations. The piping and control is similar to what would be used with perimeter fin tube, except that all pipes are in the ceiling cavity and accessible, rather than hidden in the wall or floor, where necessary penetration is difficult and expensive. Floor areas are clear right up to the outside wall for unrestricted placement of furniture or equipment. Regular housekeeping is minimal and less expensive. Draperies are not interfered with by mechanical enclosures. The resultant installation provides a clean, clear, totally usable interior with a most desirable appearance.

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Over 18,000 MULTI-VENT MVAT diffusers used

When you have 18,000 of anything, you want them to work well. MULTI-VENT's MVAT air diffusers deliver. In sequence, here are some of the factors which were considered. **1. Original design**—the MVAT diffuser combines excellent aesthetics, easily adjusted delivery flow and pattern, plus solid construction which eliminates costly job-site construction. **2. Fast installation**—sheet metal ductwork may be installed without concern as to the final precise placement of the diffusers. **3. System balancing**—with MULTI-VENT MVAT air diffusers, balancing is done from room-side, lowering contractual installation costs. **4. No ceiling smudges**—all air (except in the most sophisticated clean room installations) contains particles, grease, etc., which must settle out somewhere. With the MULTI-VENT MVAT air diffuser series, the smudges that ensue do not impinge onto the adjacent ceiling surfaces. No ceiling to clean. **5. Easy to maintain and interchangeable diffusers**—every MVAT diffuser of the same series is interchangeable. This means that in any sequential cleaning operation, there is no need to keep track of which diffuser goes where. Start with a clean one to replace the first diffuser and go right down the line.

An extra touch of engineering

While 18,383 MULTI-VENT MVAT series air diffusers were used throughout the building, MULTI-VENT engineering also came through with special air diffuser boots to incorporate air delivery with some 1,100 downlights and approximately 500 acoustical plaques which combine sound treatment with air delivery. In addition, all of the air distribution and diffusion components throughout the building were engineered and designed by MULTI-VENT, a division of Dynamics Corporation of America.

Client:

General Services Administration,
Washington, D.C.

Architectural & Engineering Services:

C. F. Murphy Associates, Chicago, Illinois

General Contractor:

Blake Construction Co., Washington, D.C.

Mechanical Contractor:

Maurice P. Foley & Co., Rockville, Maryland

Mechanical Sub-Contractor:

Stromberg Sheetmetal, Washington, D.C.



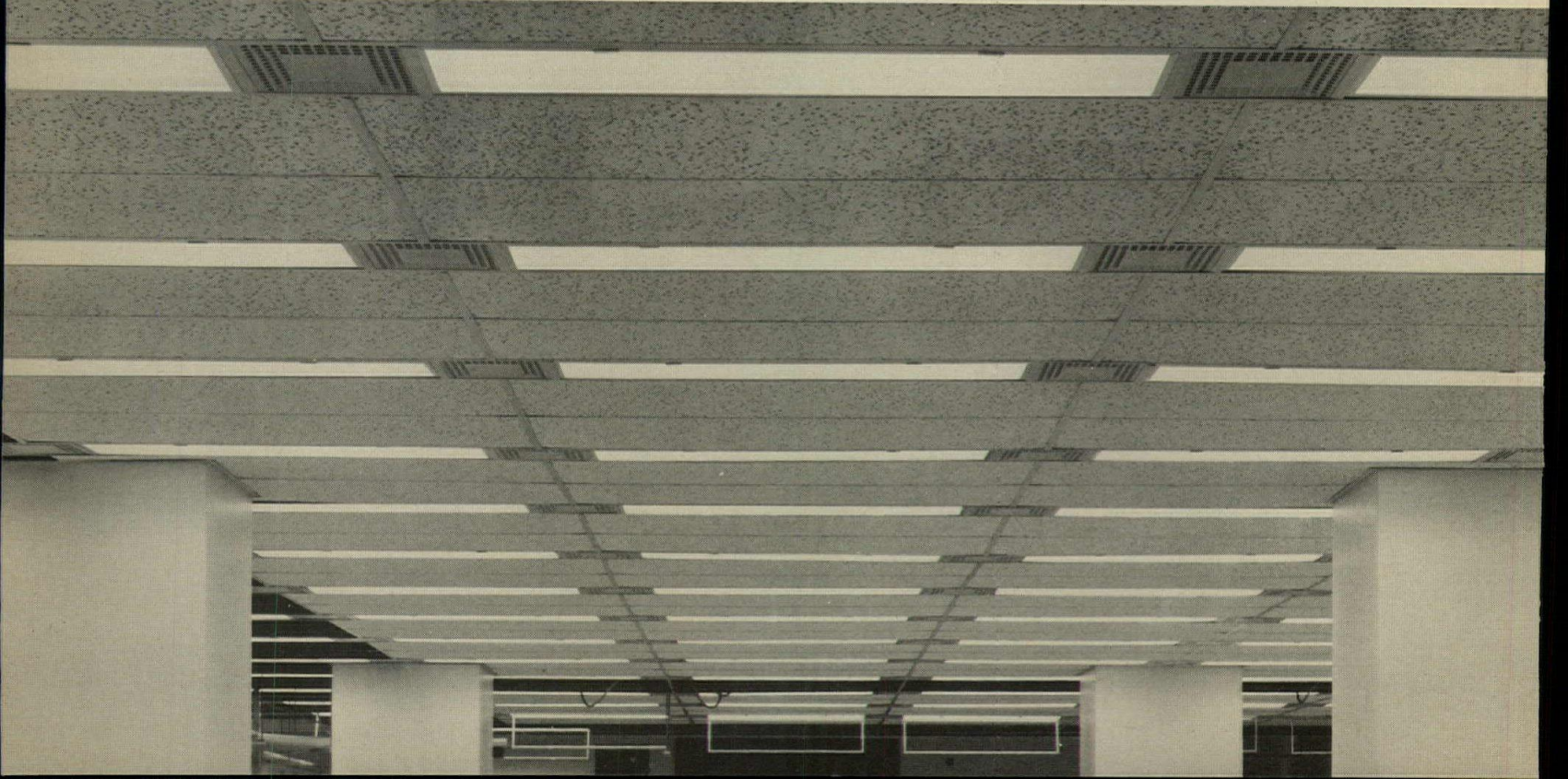
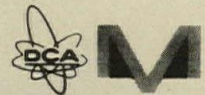
The new headquarters for the Federal Bureau of Investigation in Washington, D.C. is a triumph of function and construction. It meets the aesthetic requirements of the Pennsylvania Avenue Commission while also meeting the FBI's dual requirements of security for sensitive data and equipment areas while maintaining an atmosphere of public openness and access. All spaces in the 2½-million square foot building, from the entry area, offices, administration, files and retrieval system, crime records, laboratories, training center, computer center and cafeteria are environmentally controlled.

Assistance available

To learn more about MULTI-VENT air diffusion capability and the products and services available to help you, call or write.

MULTI-VENT PRODUCTS DIVISION
Dynamics Corporation of America
188 Industrial Drive
Elmhurst, Illinois 60126
Phone: 312/833-8803

For more data, circle A55 on inquiry card



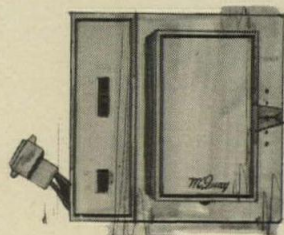
Here's how McQuay Hi-Line fan-coil units can cut 17% off installed costs.

It's really very simple: we practically install your McQuay Seasonmaker® Hi-Line fan-coil units for you.

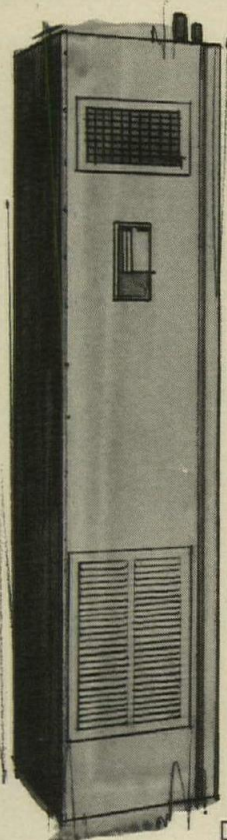
Factory pre-fabricated.

We ship these units already installed with all risers for chilled water, hot water and drains, and with all internal control systems. Which saves you money on both field-supplied labor and materials. (In one documented case, the saving was 17% — and that was a conservative estimate!)

Even greater savings are possible when you consider that one Hi-Line fan-coil unit can do the job that used to require 2, 3 or even more conventional units.



Plug-in thermostat is standard to add to your savings. The Hi-Line fan-coil unit includes a plug-in

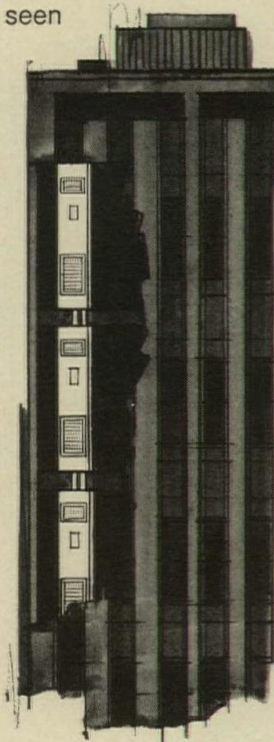


thermostat as standard equipment. It just plugs in after the unit is concealed in place, with no complicated (or expensive) wiring or troublesome delays.

Easy on the ears. We think a good fan-coil air conditioner should be seen and not heard. So we made sure that what's on the inside of the unit runs quietly.

For more facts on the economies and features of the Hi-Line Seasonmaker® Fan-Coil Units, just ask your McQuay Representative for Catalog #770.

Or write: McQuay Division, McQuay-Perfex Inc., Box 1551, 13600 Industrial Park Blvd., Minneapolis, Minn. 55440.



Look to the leader . . .



McQuay

For more data, circle A56 on inquiry card

continued from page 140

- 805 AIR CONDITIONERS** / The technical brochure includes descriptions and specifications, capacities and electrical data for heating and cooling, cooling capacity correction factors, dimensions, options and warranty information on water cooled self-contained air conditioners. / American Air Filter Co.
- 806 FIRE EXTINGUISHANT** / A six-page illustrated brochure describing a smoke and fire confinement system shows the installation, operation and use of the *Insta-Wall* system which employs extinguishants such as *Halon 1301* and *CO₂*. The system consists of 16-gauge steel cabinet units in choice of pressure-operated trip release or electromagnetic release mechanisms. Cabinets are available in 3-, 4-, 6- and 8-ft lengths. Descriptive specifications table on cabinets, four available flame-resistant curtain materials and assembly accessories are also included. / Singer Safety Products, Inc.
- 807 AIR CONDITIONERS** / A data sheet is available on *Zoneline* "High-efficiency" packaged terminal air conditioners available in cooling capacities from 9200 to 12,000 Btuh for 230/280- and 265-volt operation, with electric heat ratings from 3.0- to 5.0-KW. The 265-volt models are new for 1974. / General Electric Co.
- 808 HEAT EXCHANGE SYSTEMS** / A brochure containing illustrations and basic specifications on a line of total heat exchange systems is said to contain product characteristics and application information. / Edwards Engineering Corp.
- 809 PLASTIC PIPING** / A reference book for plastic piping systems, "The Encyclopedia of Plastic Piping Systems—1974," is a catalog of plastic products said to enable engineers, architects, contractors, and users to design, estimate, and purchase either partial or complete plastic air- or fluid-handling systems quickly and conveniently. / Plastic Piping Systems.
- 810 PACKAGED COOLING** / The brochure describes the concept of packaged cooling and illustrates typical custom-built units for a variety of cooling applications. Custom-engineered for food, chemical, petrochemical, air conditioning and general industrial cooling, the systems are factory-assembled. / Vilter Mfg. Corp.
- 811 DUCT FABRICATION** / A fabrication concept which permits the fabricator to convert flat *Fiberglas* duct board into a 10-sided configuration suitable for use as a round metal duct replacement is described in this literature. According to the company, ducts fabricated with the *Deca-Duct* method are air tight and have built-in thermal and acoustical insulation. Properly installed, it prevents loss of energy due to leakage, eliminates noise due to expansion and contraction, and absorbs fan and system noises. / Owens-Corning Fiberglas Corp.
- 812 FUEL-COST CHART** / A chart for comparing costs of various heating fuels contrasts costs of fuel oil, propane, natural gas, steam, electricity (resistance heating as well as lighting) and coal. Charts include a table showing Btu values for various fuels, plus sample problems. / Honeywell's Commercial Div.
- 813 SPEAKER MOUNTING** / A 12-page brochure contains selection information, dimensional data and installation instructions on all company components needed to mount speakers. The brochure covers four types of baffles: square architectural units, decorator wood designs, round steel and economy models. Information on plaster rings, back rings, back boxes and a variety of accessories is included. / Touch-Plate Electro Systems, Inc.
- 814 ENVIRONMENTAL CEILING** / The brochure is designed to give architects, engineers and contractors a comprehensive view of a complete environmental ceiling installation, with photos covering the basic components and their assembly. Additional information includes details of the system's design from the insertion of sprinkler systems to the air supply and relocation of partitioning. / Guth Lighting.
- 815 LIGHTING HANDBOOK** / The revised "Westinghouse Lighting Handbook," which replaces the 1969 edition, includes a new chapter on growing plants indoors under artificial light. The 264-page book covers light sources and their applications, with illustrations of common indoor and outdoor lighting problems. Basic information on vision, light, light sources, illumination levels, design and wiring is also included. The price is \$7.50. / Westinghouse Electric Corp.
- 816 LIGHTING PRODUCTS** / A 44-page catalog offers contemporary lighting fixtures for the residential and commercial markets. Featured are chrome, acrylic, and combination chrome and acrylic or polished brass and acrylic fixtures. / Auralume.
- 817 TRANSFORMERS** / A four-page color brochure features a line of underground distribution transformers, and descriptive text is said to outline pertinent information applicable to each product. / Wagner Electric Corp.
- 818 EMERGENCY LIGHTING** / A four-page brochure provides information on rechargeable battery-powered emergency lighting equipment in sizes from a 6-volt series up to 12-volt system for larger buildings. Also described are *Decor-Lite* heads which may be used in a variety of positions. / Tork Time Controls, Inc.
- 819 GROUND FAULT PANEL** / A data sheet on temporary service panels with ground fault protection for construction sites covers various safety and reliability features provided by the panel's circuit breakers for power tools and lighting. A wiring diagram is included along with the panel's engineering and application information. The panel, designated the *TSP-2R*, carries a main ampere rating of 40 amperes and contains two 20-ampere 120-volt AC duplex receptacles, each protected by a 20-ampere circuit breaker. / I-T-E Imperial Corp.
- 820 STANDBY POWER** / A brochure highlighting the use of rechargeable nickel-cadmium batteries for standby power applications contains charts and graphs to illustrate certain performance characteristics, ratings and dimensions of batteries. / General Electric Co.
- 821 PENETRATION SYSTEMS** / *Multi-Cable Transit* is used for making fire and water-tight penetrations with cable, conduit or pipe through walls, floors and ceilings. The four-page manual shows step-by-step procedures for vertical (floors and ceilings) penetrations and has general instructions for making horizontal (walls) penetrations and installing the transit frames. / Nelson Electric Div., Sola Basic Industries.
- 822 LIGHT FIXTURES** / The catalog shows the products on a proportioned scale so the specifier can more readily coordinate his lighting accents both inside and outside. Art illustrations are used in the catalog to show the actual lighting fixtures in relationship to entryways. Product line ranges from handcrafted fixtures designed for residential use or commercial establishments to mercury vapor and other high-intensity discharge luminaires for residential and light commercial use. / Hadco Products, Inc.
- 823 LAY-IN WIREWAY** / The new bulletin provides specifications and dimensional details on lay-in wireway, manufactured in 2½, 4, 6, 8 and 12-in. square sizes and in lengths of 1, 2, 3, 4, and 5 ft. / Square D Co.
- 824 ELECTRIC HEAT CONTROLS** / The bulletin is said to discuss standard pre-engineered, UL-listed remote control panels for use with electric duct heaters. Systems include two-position, step control, step control/SCR Vernier and fully modulating SCR types including all accessories to meet the 1971 National Electrical Code, according to the company. / Brasch Mfg. Co., Inc.
- 825 RELIGHTING** / A 24-page brochure which discusses how energy can be reduced in industrial, commercial and recreational lighting installations while retaining safe existing lighting levels includes an energy conservation table which compares light output and kilowatt ratings of incandescent and quartz sources with energy conservation sources such as *Metalarc* and *Lumalux*. Energy-saving high-intensity discharge lighting equipment for interior use, and outdoor equipment is also illustrated. / GTE Sylvania Outdoor Lighting.
- 826 LEAD-ACID BATTERIES** / A manual describing stationary lead-acid battery systems for industrial and commercial operations deals with the sequence in which a typical battery installation would be planned. An index to important factors is printed on the back cover. / Exide Power Systems Div., ESB Inc.
- 827 HIGH MAST LIGHTING** / The brochure is said to contain comprehensive information including numerous application photographs and descriptions, photometrics, pole performance data, lowering system design, dimensional information, luminaire electrical characteristics, and complete specification and ordering data for the company's lighting. Luminaires feature a variety of light distribution patterns and accept 400-watt high-pressure sodium through 1000-watt mercury, metal halide and high-pressure sodium sources. / Holophane.

ELECTRICAL

COMMUNICATIONS
ELECTRICAL HEAT/COOLING
CONTROLS
LIGHTING
POWER GENERATION
PROTECTIVE SYSTEMS
RACEWAYS
SERVICE & DISTRIBUTION
WIRING DEVICES

Two years ago in the first issue of *PRODUCT REPORTS*, we noted on this page the trend in lighting toward the implementation of good lighting practices, and the development of great efficiencies in lighting. That the trend continues is evident here in the largest section of this division.

Many of the lamp manufacturers surveyed by *ARCHITECTURAL RECORD* this year report development efforts aimed at increasing the lumens per watt, or reducing the energy requirements without loss of lumen output. According to the recently revised "Westinghouse Lighting Handbook," (Literature, page 156) "a theoretical source of white light of maximum efficacy, emitting only visible energy without any infrared or ultraviolet, would produce about 200 lumens per watt." No present lamp closely approaches the theoretical efficacy, according to the handbook.

However, some manufacturers represented in this division claim lamps that can cut energy consumption by as much as 25 per cent. Certainly, the move is on in this industry for ever greater efficiencies, perhaps spurred by specifier desires, certain government initiatives, and code requirements.

A new lighting study prepared for the General Services Administration by Ross & Baruzzini, St. Louis consulting engineers, concludes that future office design can save at least 35 per cent of the energy presently expended, and still provide an adequate visual environment. The study recommends research and development in electrical wiring methods for interconnection and switching of recessed fluorescent troffers where the space is used for return air. Another recommendation calls for development of simplified methodology for point-by-point footcandle levels for office lighting design using the non-uniform lighting concept.

From the survey, we find that in general, electrical product manufacturing and development continues active in spite of materials shortages and the economy. Nearly 100 per cent of those manufacturers surveyed reported introduction of a new product in the last 12 months, and 100 per cent reported intentions to introduce new products in the next 12 months.

Where there may be subtle shifts in the electrical products sector are in those areas seeking to offset declining demand for residential products. Some of these manufacturers reported they will be expanding commercial lines, moving away from residential ones.



When fires occur in hospitals, nursing homes, extended care and day care centers, the vital life-safety factor is time. Pyr-A-Larm early warning fire detection systems can sound the alarm at a stage early enough to allow safe, orderly evacuation.

Pyr-A-Larm is the most versatile early-warning system ever designed. In fact it is capable of detecting a fire BEFORE there is any visible smoke, flame or noticeable heat. The system sounds the alarm, can activate the automatic extinguishing systems, close smoke doors and dampers, and alert the fire department — all at the same time.

Multi-zone systems, perfect for large facilities, pinpoint the location of a fire in seconds. Single and two zone systems are ideal for day care centers and remote buildings.

For your Fire Detection Application Guide for health care facilities write or call (collect) Bill Columbus, Pyrotronics, 8 Ridgedale Avenue, Cedar Knolls, New Jersey 07927 (201) 267-1300. It's free.

For more data, circle A57 on inquiry card

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LIFE SAFETY SYSTEMS



Pyr-A-Larm. The early warning fire detection system that can save lives.





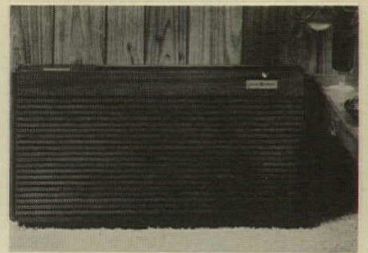
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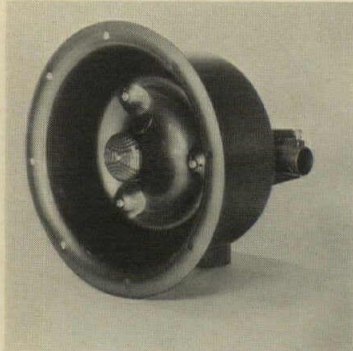
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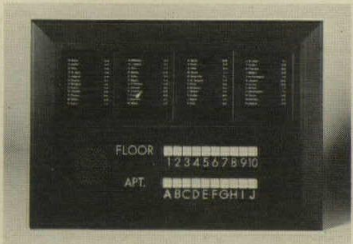
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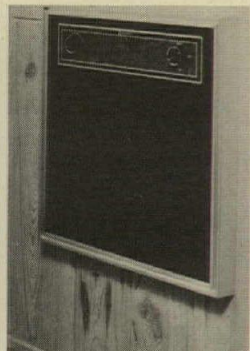
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COMMUNICATIONS

605 HIGH-RISE SECURITY / Dwelling-unit and lobby security in one system meets the fire and burglary protection standards of the Underwriters Laboratories, and also includes a built-in intercom and door-release capability. / Westinghouse Security Systems, Inc.

606 SAFETY SYSTEM SPEAKERS / High efficiency, 15-watt RMS, re-entrant type models comply with National Fire Protection Association standards. Both "Voice-Control" speakers produce 114 dB output on axis at 10 ft distance at rated power. / Atlas Sound.

607 TELEX AND TWX / Teleprinter terminals for Telex and TWX will be leased or sold directly to customers of Western Union's business information networks. The TLT's electronic memory eliminates paper tape, tape perforator and tape reader. / Trans-Lux Corp.

608 SIGNALS AND INTERCOM / The *Selectone Command Control Center* combines a capacity for both voice communication and transmission of as many as four signals from a single unit. The central unit serves remote receiving units, a loud speaker, or both. / Federal Sign & Signal Corp.

609 APARTMENT INTERCOM / Two rows of pushbuttons, one numbered according to floors, the other lettered according to apartments, allow callers to communicate with tenants. / American Device Mfg. Co. A*

610 HI-FI SPEAKERS / Imported from Sweden, speakers measure 1 ft deep, 6 1/4 in. diameter, and stand 7 1/4 in. high. Enclosure is high impact plastic available in white, black and red. Power requirements 115-35 watts. / Intercontinental Enterprises Co.

611 HOSPITAL STAFF REGISTER / Use of the staff register system is said to significantly cut the time and effort needed to ascertain the presence of staff personnel, and for disseminating messages without paging. A processor accommodates up to 5000 messages for up to 999 persons. / Teleplex Co.

612 FIRE-FIGHTER PHONE / Two-way telephone system for use between fire-fighters and the fire command center in high-rises will provide positive communications from floor stations in corridors, elevator lobbies, elevator cabs, etc. / Federal Sign & Signal Corp.

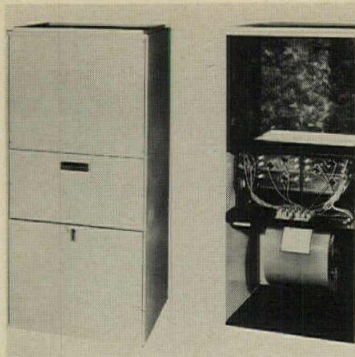
613 NURSE CALL SYSTEM / After screening a call, the *Communicator* can summon the appropriate staff member to the patient's side. One *Communicator* can handle 300 to 400 patients, according to the company. / Executone Inc.

ELECTRICAL HEAT/COOLING

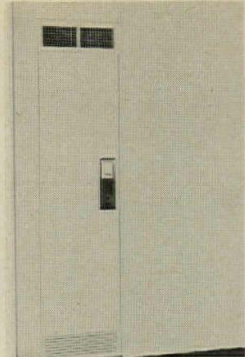
614 BUILT-IN HVAC UNITS / A series of 32-in. wide built-in air conditioners includes: a 10,000-Btu/hr cooling-only model, and three cooling and electric heat models, all for 230/208-volt operation. / Air Conditioning Contract Products Dept., General Electric Co. L*

615 FAN FORCED HEATERS / For residential and light commercial applications, the series utilizes a center flow design that draws air over the elements, eliminating hot spots. Capacities range from 2500-4500 watts and 208 and 240 volt. / Markel Electric Products.

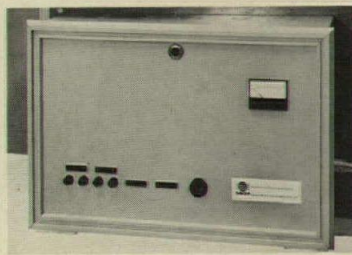
616 AIR CONDITIONER / This 5500-Btu/hr model is one of six "X-L High Efficiency" air conditioners being offered by the company this year. It has an Energy Efficiency Rating of 8.8. The woodgrain-appearance unit has concealed controls. / Hotpoint.



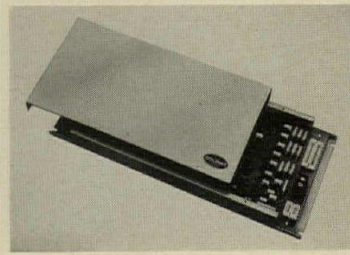
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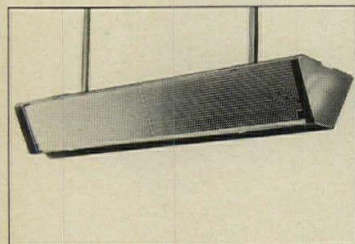
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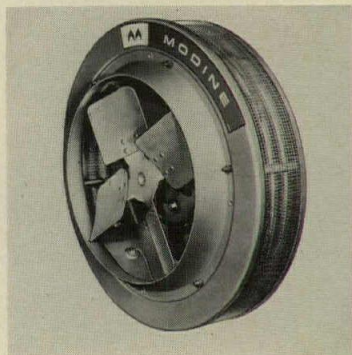
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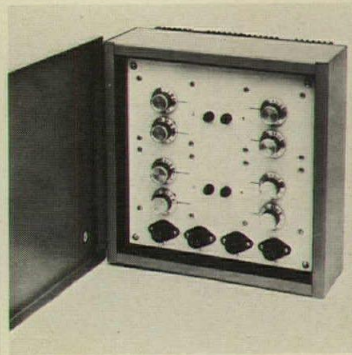
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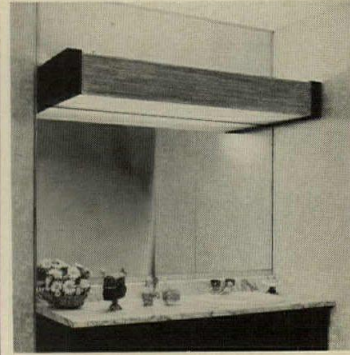
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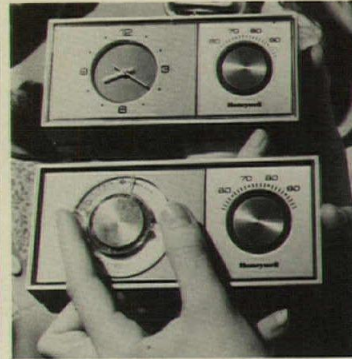
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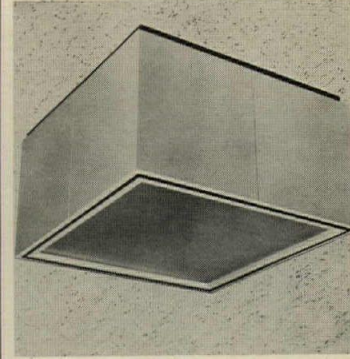
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617 ELECTRIC FURNACE / Residential furnaces incorporate integrated fusing against overcurrent. UL approval allows installation with "zero" clearance on all sides. Available in capacities of 68,260 BTU/hr, 85,325 BTU/hr, and 102,390 BTU/hr. / Fasco Industries, Inc.

618 INFRARED CHANDELIER / Overhead glasspanel heater, designed for use where obstruction prevents use of wall heaters, distributes infrared heat over wide area. / Zell-Aire Corp. A, I, D*

619 PERIMETER SYSTEM / Suitable for both old and new construction by using accessible ceiling cavity, radiant panels are available to match or contrast with existing ceiling panels. / Airtex Corp.

620 APARTMENT UNIT / A self-contained heating-cooling unit is said to eliminate the need for a furnace room. The all-electric Hi-Riser measures 14 in. wide by 37 in. deep by 90 in. high. It is offered in cooling capacities up to 23,000 Btu/hr. / Sears Roebuck and Co.

621 ELECTRIC UNIT HEATER / Vertical-delivery electric units are available with heating capacity ranging from 17,065 to 170,650 Btu/hr and from five to 50 kw. Models for horizontal applications range from 102,390 to 170,650 Btu/hr and 30-50 Kw. / Modine Mfg. Co.

622 RADIANT HEAT CEILING / Specifically designed for use with veneer plaster, *Kal-Kore Panelectric* radiant heat ceiling panels and *Kal-Kote* veneer plaster system includes panels from 4 by 6 ft to 4 by 12 ft. Line or low voltage thermostats may be used. / Gold Bond Building Products, National Gypsum Co.

CONTROLS

623 POWER MONITOR / Designed to control energy consumption in schools, monitor governs maximum power use according to predetermined priorities, automatically shedding load in noncritical areas. Standard model can be furnished with four or eight sheddable loads. / MKM Corp.

624 LIGHTING CONTROL / The device, called a filament control, reduces input voltage on incandescent lighting circuits from the 120 volts supplied by the utility to a lower voltage. The control can be used with any type of incandescent lamp. / Hybrintics, Inc.

625 FUEL-SAVING CONTROL / Integrating a hand-wound timer with a conventional thermostat, the device will automatically adjust thermostat-controlled temperatures. Normal temperatures are restored at the end of the setback period. / Honeywell.

626 HVAC CONTROL / Digi-Dap control system for rooftop and central air supply systems, consisting of sensors, actuators and a miniaturized digital data acquisition panel was designed to energize mechanical equipment only when needed. / Barber-Colman Co.

LIGHTING

627 MIRROR LIGHTING / *Adjusto Soffit-Lite* units are 18 in. deep, come in lengths of 42 to 84 in. with 3 in. over-all adjustment per unit, and use fluorescent or incandescent light. Optional choice of finishes, grille and end cap treatment are available. / Wilson Research Corp.

628 HID LUMINAIRE / The 2-by-2-ft surface or pendant mounted fixture accommodates mercury vapor lamps of 250 or 400 watts or 400-watt metal halide lamps. The fixture is UL listed for damp locations. / Art Metal Lighting, ITT Lighting Fixture Div.



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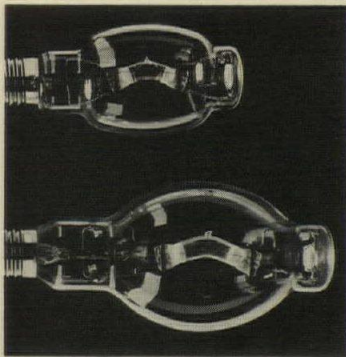
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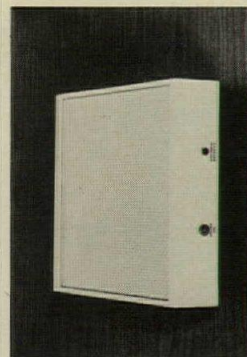
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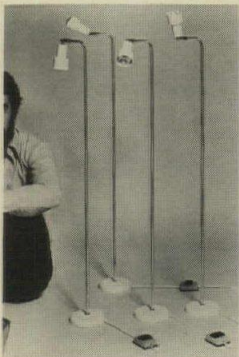
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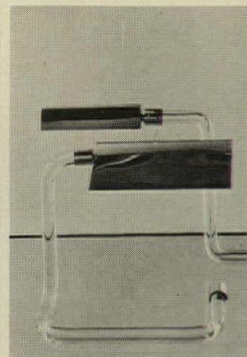
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629 ULTRA FLOOD / Constructed of cast aluminum alloy, the flood has a hinged upper housing for access to electrical components. The complete unit is gasketed to seal out contaminants and moisture. / ITT Landmark Lighting.

630 HID LAMPS / These high intensity discharge lamps are said to produce more light than standard *Metalarc* units with no increase in electrical energy. The "Super *Metalarc*" lamps include a 175-watt version (top), and a 400-watt unit (bottom). / GTEsylvania.

631 HIGH-INTENSITY LAMP / Small lamp was designed to the dimensions of 25-watt reflector bulb. The lamp, mounted on a universal swivel, is operated by a foot switch. / Koch & Lowy, Inc.

632 SEALED FIXTURE / Designed for environments of high humidity, enclosed, gasketed fixtures have clear acrylic diffusers, nylon latches, and chassis molded of impact-resistant plastic. / American Louver Co.

633 SPORTS LIGHTING / *Monterey Pro-Light*, intended basically for night tennis, eliminates glare and stroboscopic effect, according to its manufacturer. Equipped with impact-resistant acrylic lens, it is available with mercury vapor and metal halide lamps. / C-E Elscro Lighting Products.

634 OUTDOOR LUMINAIRE / Aluminum *Tenni-Sun*, a fluorescent luminaire with impact-resistant prismatic lens, can be mounted directly on fence post. Swivel mount allows accurate adjustment. / C-E Elscro Lighting Products.

635 LUMINOUS CEILING / *Skylite* is a three-dimensional luminous ceiling available in square, rectangular, triangular, octagonal and circular configurations. Extruded aluminum members support opal-white diffusers. The system is lighted from above by fluorescent strips. / Integrated Ceilings, Inc.

636 FLUORESCENT MODULES / Modular fluorescent fixtures come in four sizes—1 by 4 ft, 2 by 4 ft, 2 by 2 ft, and 4 by 4 ft; over-all depth is 4 1/8 in. The fixture, which has a white enamel reflector, is available in a variety of lamp combinations. / Keene Lighting, Keene Corp.

637 RECESSED TROFFERS / For skylight effect, fluorescent fixtures are recessed 1 1/2 in.; aluminum frame is black on the vertical, white on the horizontal to increase apparent depth. Standard diffuser is matte white acrylic. / Sechrist Lighting Division,

638 SECURITY LIGHT / *Nite-Hawk* luminaire was specially designed to accommodate 100- and 150-watt high-pressure sodium lamps, but is also available for mercury lamps. HPS units have light bronze finish, mercury units are natural aluminum. / McGraw-Edison Co.

639 EMERGENCY LIGHT / Surface-mounted industrial emergency *Decor-Lite*, housed in flame-retardant, corrosion-proof casing, is powered by sealed lead acid batteries and carries a 10-year warranty. / Chloride Systems.

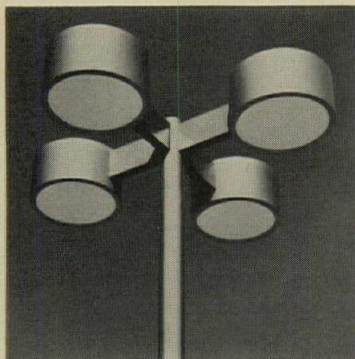
640 DECORATIVE LAMPS / A new collection of desk and floor lamps, designed for homes and offices, uses Knoll's patented clear acrylic tubing, which contains concealed wiring. / Knoll International.



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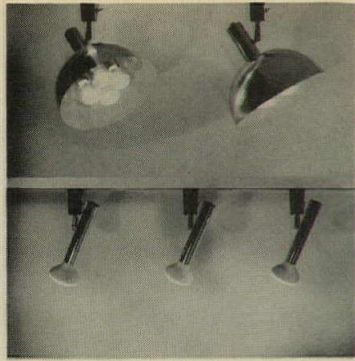


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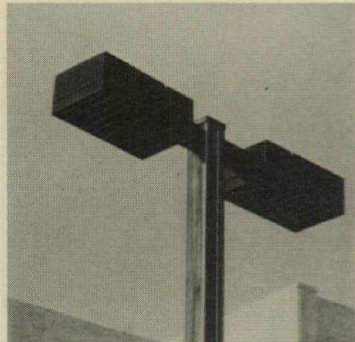
641 OUTDOOR LIGHTING / Available in aluminum or cast bronze, watertight luminaire can be sunk in earth or in any paving material. Fixture accepts incandescent lamps to 500 watts, mercury lamps to 175 watts, or 12-volt pencil beam lamps. / Kim Lighting, Inc.

642 WOOD STANDARDS / The *Minerva*, a laminated wood lighting standard, is offered in 13 wood-stain colors and in heights ranging from 20 to 36 ft. Wood is treated to prevent decay and insect attack. / Koppers Co. Inc.

643 AREA LIGHTING / This series of drum-shaped luminaires provides wattages of 50 to 1000 with incandescent or high-intensity discharge lamps. Of extruded aluminum, they are adjustable to provide standard I.E.S. distribution patterns and cut-off points. / Sterner Lighting Systems, Inc.



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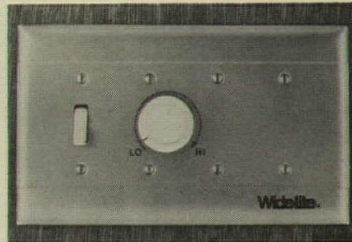
644 TRACK LIGHT / Shown top is "Saturn," a four-lamp (50-watt each) chrome-finished lighting system. Twelve-inch diameter domes have an over-all height of 12½ in. Another model is shown below. / TSAO Designs.

645 OUTDOOR LIGHTING / Geometrical shapes and anodized finishes of cast aluminum luminaires combine with wood posts. Modular components of the systems are 67 different models of luminaires and two basic standards of laminated wood. / Mc-Philben Lighting.

646 EMERGENCY LIGHT / Units now can be tested by shining a flashlight into a photocell. They can be attached to most wall-mounted emergency lighting units connected to 120-volt AC power lines. / Exide Power Systems, ESB Inc.



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647 LOW WATTAGE LAMP / Directly interchangeable in indoor fluorescent lighting system presently using 4 ft, 40-watt lamps, these new lamps can reduce electrical operating costs for lighting by 15 per cent. / General Electric Co.

648 WALL-BOX DIMMER / Designed for areas requiring up to four 1000-watt or ten 400- or 250-watt mercury vapor fixtures, depending upon system voltage, these units are furnished with a four-gang back box and satin-finish stainless steel trim plate. / Wide-Lite Corp.

649 ENERGY-SAVING LAMPS / The products are designed to reduce power needs by 8 to 25 per cent, compared to conventional lamps, with some decrease in output. Four fluorescent, 12 incandescent and two high intensity discharge lamps are included. / Westinghouse Electric Corp.



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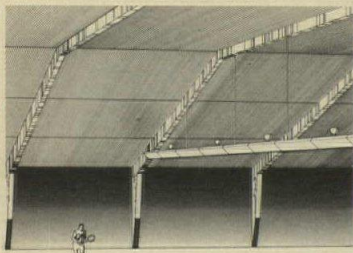


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650 TRACK LIGHTS / Spherical *TracLite* 7 in. in diameter and finished in polished chrome is available with or without choice of matte white or black bezel. Unit with bezel utilizes a 75W, R-30 lamp; one without bezel: 150W, PAR-38 lamp. / Prescolite.

651 ENERGY SAVER CEILING / A 5 by 5 ft coffered ceiling which is said to save both electrical energy and installation manpower energy, incorporates one luminaire per module for task lighting levels at two watts per square foot. / Holophane Div., Johns-Manville A, I*

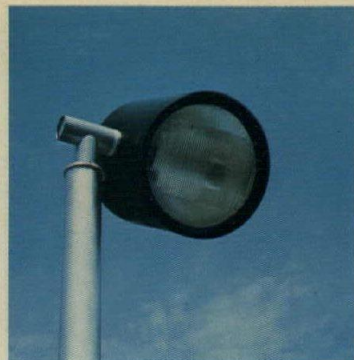
652 INDUSTRIAL HID LIGHT / *Lobay* accepts 400-watt mercury, metal halide, and high pressure sodium lamps, and is suitable for high temperature operation. / Holophane Div., Johns-Manville.



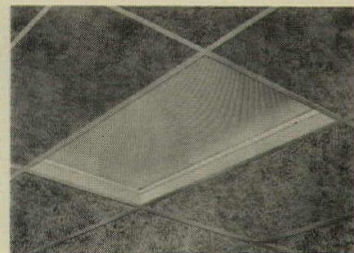
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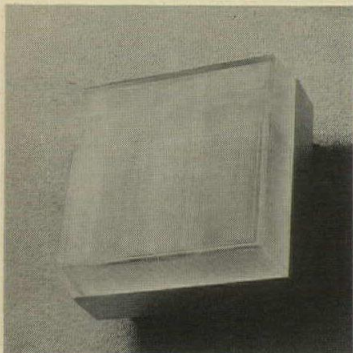
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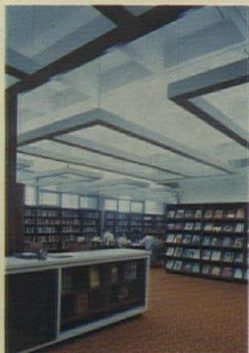
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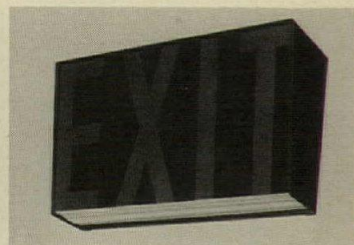
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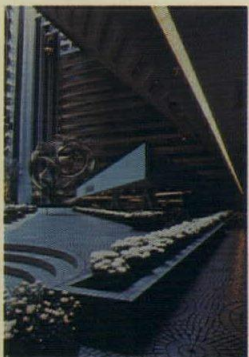
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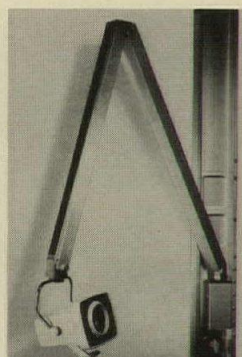
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653 TENNIS LIGHTING / Direct fluorescent and indirect metal halide luminaires are integrated to provide an optimum seeing environment for tennis. The 1000-watt metal halide indirect units feature a wide-spread distribution to control apparent strobe effect. / Holophane Div., Johns-Manville.

654 OUTDOOR LUMINAIRES / Module 600 for 150-watt high pressure sodium lamps is an area-lighting luminaire for wall, pole, or street furniture applications. A pole-top unit (not shown) is said to offer performance equal to overhead systems. / Holophane Div., Johns-Manville.

655 LIGHT BAR CEILING / A suspended direct, or indirect, fluorescent ceiling system offers spotlight options. / Peerless Electric Co.

656 HI-INTENSITY FLOOD / Spun aluminum reflector coupled with a die cast aluminum ballast housing and all non-corrosive hardware are combined in this flood for all high intensity discharge light sources. / ITT Landmark Lighting.

657 LIGHT BAR MODULES / Rectangular extruded aluminum configurations provide up or down fluorescent light. / Peerless Electric Co.

658 RECESSED LIGHT STRING / Extruded aluminum incandescent strip lighting system incorporates 1/4 in. flange trim for recessed application within gypsum board, plaster, tile, concrete or wood ceilings. / Peerless Electric Co.

659 HID FLOOD LIGHTING / An all-weather cylindrically-shaped, integrally ballasted floodlight can be specified for 1000-watt mercury and metal halide sources, in addition to 400-watt mercury and metal halide and high-pressure sodium lamps. / Holophane Div., Johns-Manville.

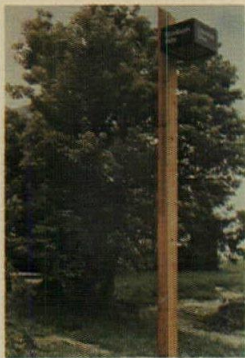
660 THE I-LAMP / The *I-Lamp* designed by Vagn Dyring and made in Denmark is made of flameproof, washable stretch fabric on a metal frame and comes in seven colors and three sizes, according to the company. / Arango International.

661 HIGH LIGHT / Lamps of 100 to 1000 watts can be used at heights of 7 ft 6 in. to 40 ft. Options include various colors and a variety of materials, cross sections and profiles in the poles. / Sterner Lighting Systems Inc. A*

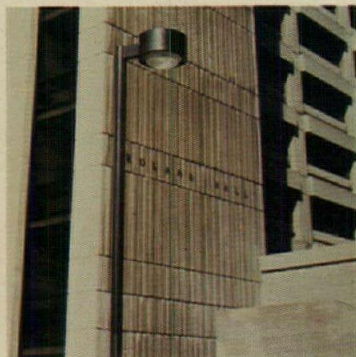
662 TROFFER / Fluorescent troffers which feature a 2-in. deep extruded aluminum recessed trim are available in 1 by 4 ft, 2 by 2 ft and 2 by 4 ft sizes. Units feature hinged and latched door frames, and acrylic prismatic lenses. / Guth Lighting.

663 EXIT SIGN / A universal exit sign is constructed of heavy gauge steel and is finished matte-black. The one-piece *Lexan* faceplate is self-locking and available in either a white or stencil face black faceplate with red or green lettering. / Guth Lighting.

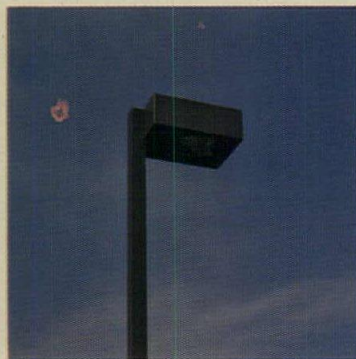
664 READING-EXAM LIGHT / For use in patient rooms, the unit features a dual-voltage transformer which permits selection of low intensity light for reading and high intensity for examination. It includes a spring-balanced, articulated arm. UL-listed. / American Sterilizer Co.



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665 LUMINAIRE & STREET SIGN / The product can be used in conjunction with other street furnishings; a 250-watt mercury vapor lamp is housed in a baffle control system to provide illumination on the roadway and for the street name that appears on three sides. / Crouse-Hinds Co.

666 SITE LIGHTING / Construction features extruded aluminum housing and mounting arm, aluminum reflector, integral ballast for 175/250-watt mercury vapor lamps and clear glass lens. Drop prismatic refractor shown is optional. / Crouse-Hinds Co.

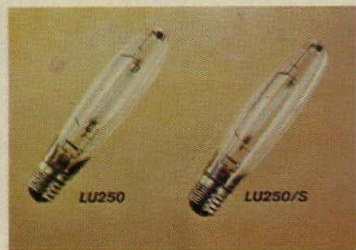
667 ROADWAY LIGHTING / Construction features an extruded aluminum housing, aluminum reflector, integral ballast on inner aluminum hinged door, and clear tempered glass lens. Direct mount system has no slip-fitter or exposed hardware. Several finishes are offered. / Crouse-Hinds Co.



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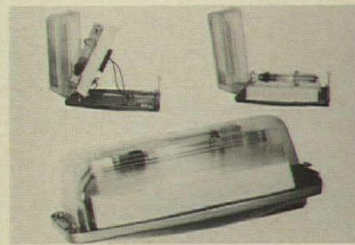
668 HIGHWAY LIGHTING / Unit mounts on a standard tenon-top pole, eliminating the conventional overhanging arm, and is designed for placement up to 40 ft from the road. Prismatic glass refractor and contoured metal reflector take maximum advantage of HID light. / Holophane

669 SELF-BALLASTED LAMP / This 160-watt mercury lamp has a built-in solid-state electronic circuit that eliminates bi-metal switch. The lamp is recommended for industrial incandescent lamp sockets. / General Electric Co.

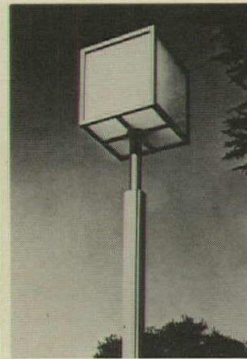
670 SODIUM LAMP / This 250-watt *Lucalox* lamp is said to offer an average initial light output of 30,000 lumens, compared with 25,500 lumens for present 250-watt lamps. Installation in outdoor applications can result in a 13 per cent reduction in operating costs. / General Electric Co.



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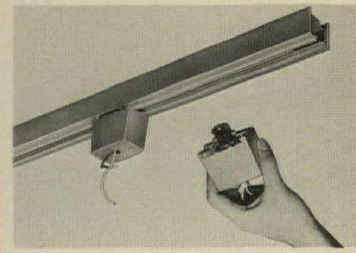


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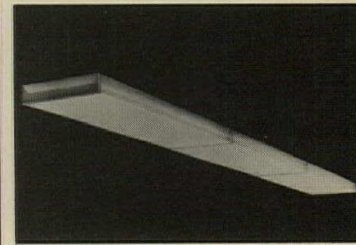
671 ADJUSTABLE HOUSING / Telescoping action permits four different depths in one housing, all with positive locking action, according to the company. There are 20 trims available. / Nutone A*

672 DURABLE LUMINAIRE / The 35-watt low pressure sodium vandal-proof unit is said to offer a lamp with 4600 lumens at end of life, and has a fixture efficiency of 85 per cent light output. / Quality Outdoor Lighting

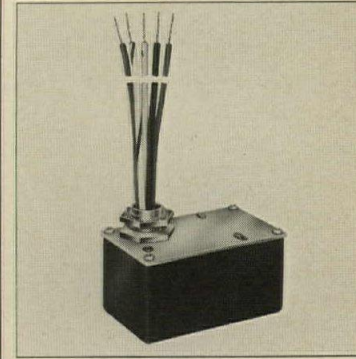
673 ALUMINUM LANTERNS / The units are heavily constructed for low-mounting situations to prevent vandalism. Luminous panels are translucent milk-white acrylic, and all units are finished in a baked enamel color. / Gardco Mfg. Co.



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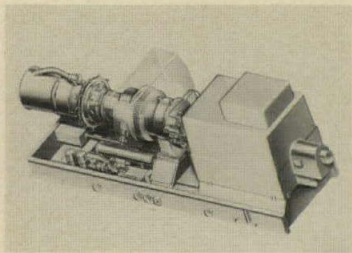


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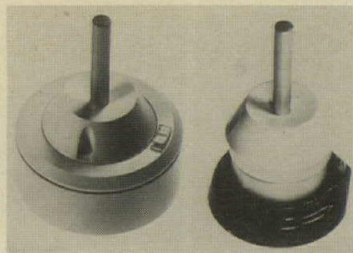
674 COMMERCIAL TRACK / This UL-listed lighting track is designed primarily for ceiling and wall installation. It has a satin aluminum finish and is available in one and two circuit models, each rated for 20 amperes at 120 volts AC. / I-T-E Imperial Corp.

675 WRAPAROUND / This injection molded wraparound features a one-piece lens with 3-D prism definition. Illuminated sloping metal sides eliminate ceiling shadows and permit a flush-look profile. Hinging or latching is from either side. / Lithonia Lighting

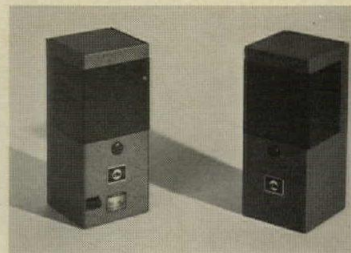
676 STANDBY CONTROL / An electronic device provides standby incandescent lighting whenever the arc lamp goes out due to momentary interruption of power. Standby lighting remains on until the arc lamp restrikes and reaches 60 to 70 per cent of rated output. UL-listed. / Leviton Mfg. Co.



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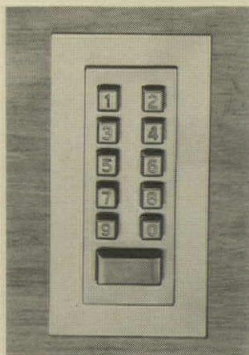
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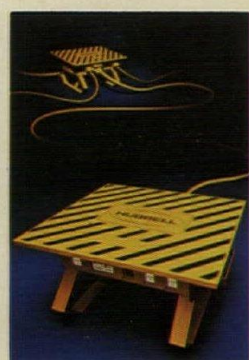
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POWER GENERATION

677 GAS TURBINE GENERATOR / Length and weight have been trimmed from *Centaur* gas turbine generator sets. For continuous service, utility peaking, standby service and mobile power applications, the set will be rated from 2500 to 2800 kw. / Solar Div., International Harvester Co. A, I*

678 HOME POWER SYSTEM / The self-contained unit consists of 5,000-watt engine-driven electric generator set and a load transfer switch. The generator sets can produce standard 120, 240 or 120/240 volt electricity. Designed to be installed outside the home. / Onan Corp. A, I, L*

PROTECTIVE SYSTEMS

679 SMOKE DETECTION / Fire alarm, fire management, security and equipment monitor alarms tie together in this alarm receiver. The modular control panel provides power, line supervision, annunciation and remote control. / Honeywell Commercial Div.

680 FIRE DETECTOR / *Thermal Fire Detectors* are rated at either 135 degrees F or 200 degrees F, and can be used with the manufacturer's detection system or with other fire alarm circuits. The product, which can protect up to 2500 sq ft, is UL listed. / Pyrotechnics. A*

681 DIGITAL LOCK SWITCH / To prevent unauthorized access to power switches, lock switch must be operated by four-digit or seven-digit combination. Standard model is inactivated by pressing clearing bar; automatic model inactivates itself. / Presomatic Lock Co., Inc.

682 PHOTO ID ACCESS / An electronic access control system combines the automatic, crypto-coded card with an internal, color-photo ID bank, to provide high-security access control. Visual comparison of the photo and the individual allows or denies access. / Rusco Industries, Inc.

683 INTRUSION DETECTION / The system has an operating range of 500 ft with a beam direction range capability of 180 degrees. It is said to be immune to activation by stray light. / Detection System, Inc.

684 PERSONNEL ID / A closed-circuit personnel-access control system focuses the person's face and ID card (inserted in slot) simultaneously on one television camera and displays a split image on a remote monitor. Unit measures 5 in. deep by 20 by 24 in. / Visual Methods Inc.

685 INDICATING PANEL / Self-contained audio-visual annunciators designed to meet in-house door surveillance system requirements are designed to comply with the requirements of the National Electrical Code for Class II installation under article 725. They are all solid state. / Detex Corp.

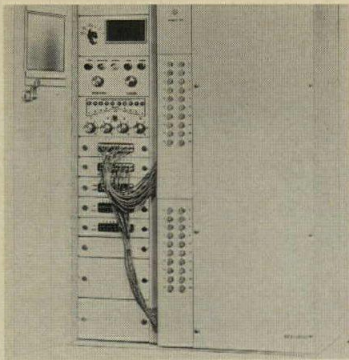
RACEWAYS

686 POWER POLE / Telephone call stations, computer rooms, and other locations featuring clusters of communications, electronic and electrical services can use the *30TP-4 Telephone Power Pole*. It features two cable-carrying channels plus a third channel for electrical service. / The Wiremold Co.

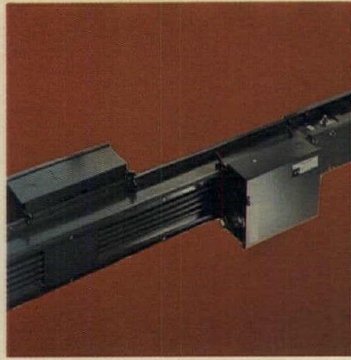
687 THROUGH-FLOOR SERVICE / The *FR-2 Poke-Thru* provides a fire-safe method of furnishing both power and telephone service. Underwriters Laboratories has classified it for use in three-hour floor-ceiling designs. / Mac-Fab Products Inc. A*

SERVICE & DISTRIBUTION

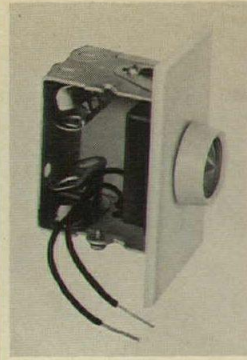
688 TEMPORARY POWER / For temporary power needs, *Spider* system provides wall-mounted weatherproof outlets, portable power distribution boxes, and 50-ft prewired cables. Stringer lights are available in 50- and 100-ft lengths. UL listed. / Harvey Hubbell, Inc.



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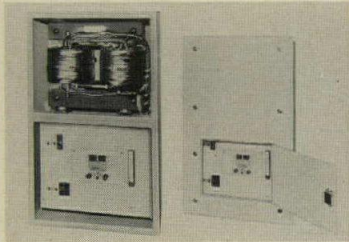
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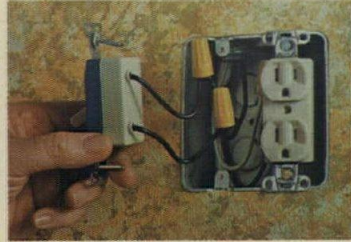
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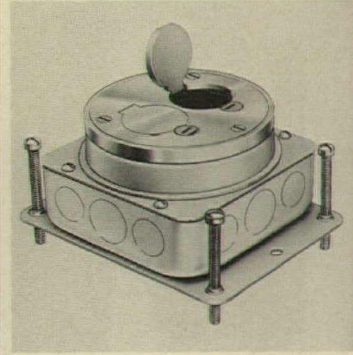
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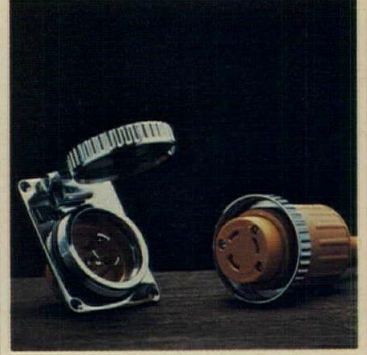
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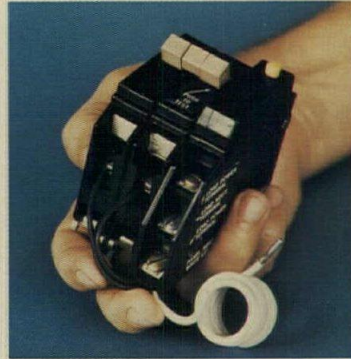
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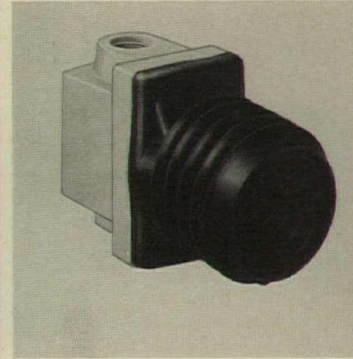
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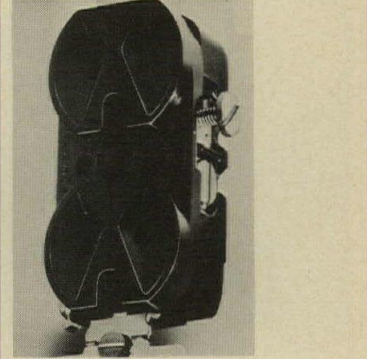
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689 ELECTRIC MONITORING / The device modifies the demand pattern of energy, increasing the load factor and spreading the demand over a longer period of time. It defers predetermined loads during maximum demands periods. / Sangamo Electric Co.

690 HOSPITAL ISOLATION / Specifically designed panels for operating rooms, portable X-ray equipment and similar applications incorporate four elements—isolating transformer, line isolation monitor, equipotential ground bus, and circuit breaker panel. / Westinghouse Electric Corp.

691 OFF-SHORE POWER / Type PCP breakers are available to meet common thyristor power supply sizes from 1600 amp DC continuous to 3200 amp DC continuous. / Westinghouse Electric Corp.

692 BUSWAY / Straight sections of newly offered *Safetybus* are made in lengths of 1½, 3, 5, 6 and 10 ft. The busway is available in ratings from 225 to 5000 amperes, and in configurations for 3-phase, 3-conductor and 3-phase, 4-conductor. / Cutler-Hammer.

WIRING DEVICES

693 PIGTAILED SWITCHES / Factory pre-wired flexible stranded copper leads install on copper or aluminum conductors. UL-listed toggle or key-operated switches in 7 colors include single pole, double pole, 3-way and 4-way rated 15 or 20 amp, 120/277-volt AC. / Sierra Electric.

694 CIRCUIT BREAKER / Double-pole, 3-wire, 240-volt *Safetyguard* circuit interrupter is available in 15 and 20 ampere ratings, and has a 10,000 ampere interrupting capacity. The unit complies with NEC requirements and is UL listed. / Cutler-Hammer.

695 COMPACT DIMMER / The application of thick-film microcircuitry reduces the depth of the new *Trimatron* dimmer to 25/32 in. The 600-watt dimmers can be ganged in any combination using standard wall plates. UL listed. / Leviton Manufacturing Co., Inc.

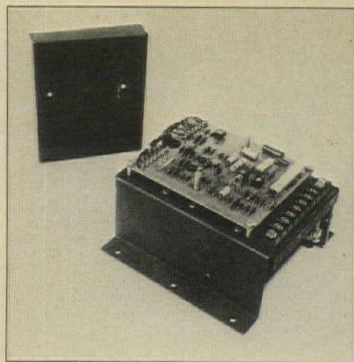
696 FLOOR BOX / Full adjustable stamped steel floor boxes accept a flush duplex receptacle. Available in depths of 1½ in. and 2½ in., the boxes are welded to a flat steel leveling plate. / Midland-Ross Corp.

697 OUTLET PROTECTORS / The weatherproof bellows is molded from neoprene and can be used in place of metal or plastic lift cover plates in protecting outdoor outlets. They fit standard FS and FD boxes. / Harvey Hubbell, Inc.

698 FLAT WOVEN CABLE / This telephone key set cable for under-carpet applications is available in lengths to any order. Different connector/plug combinations and variations in leads may be specified. / Woven Electronics.

699 MARINE EQUIPMENT / Designed for use on marinas and docks and off-shore drilling stations, the wiring devices line includes corrosion-resistant power inlets, attachment plugs, connector bodies, neoprene boots, etc. / Bryant Electric, Div., Westinghouse Electric Corp.

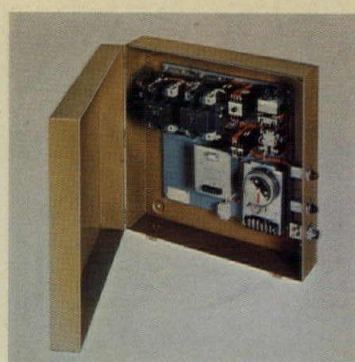
700 RECEPTACLES / For residential use, the receptacle is automatically grounded by a copper alloy spring wire that self-grounds to any grounded metal box. The receptacle is a NEMA two-pole three-wire device. / Bryant Electric, Div., Westinghouse Electric Corp.



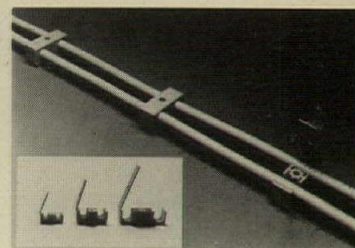
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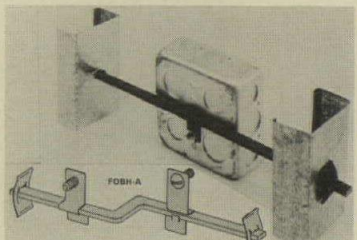
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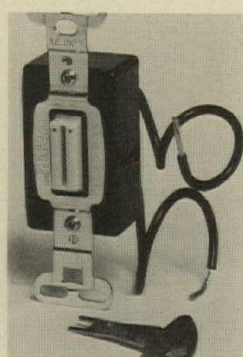
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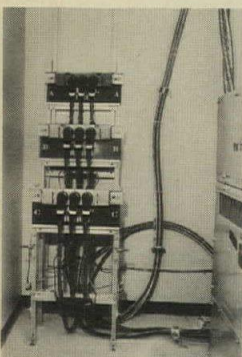
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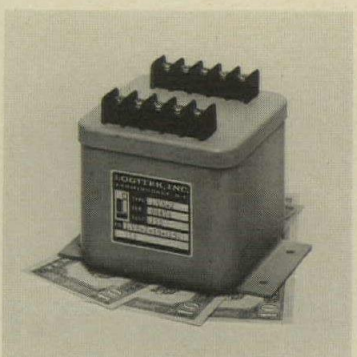
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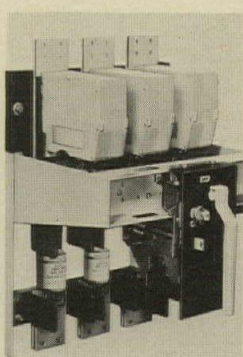
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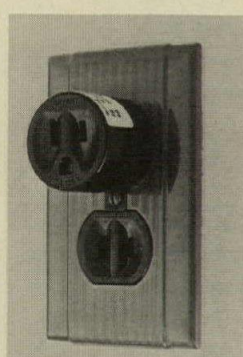
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701 VOLTAGE REGULATORS / Un-affected by temperature changes, the units offer sensing for all standard NEMA voltages and feature adjustable stabilizing circuit for numerous applications. All models operate on 50 or 60 cycle frequency, and offer built-in EMI suppression. / Demco Products

702 POWER COLUMN / Listed by UL, these factory assembled units provide power, low voltage light control, thermostat, speaker circuit, and telephone lines for up to four stations. Quick disconnect from the ceiling and electrical grid are featured on units in several heights. / Hauserman, Inc.

703 JUNCTION SUPPORT / The completely assembled unit ready for attaching to floor, wall and/or ceiling occupies one third of the operating area required for wall-mounted construction according to the company. Designed for minimum-space use. / Aluma-Form, Inc.

704 POWER BAR / Designed for horizontal power distribution, unit is offered for 32- and 46-in. wide open office screens, and 48- and 60-in. wide partitions. It is UL-listed, with five or six 15-ampere outlets. Finish is earth brown with black outlets and cord set. / Hauserman, Inc.

705 METAL STUD HANGER / Fitting all metal studs, this bar hanger assembly includes one 26-in. long steel bar and mounting clips for installation of electrical boxes. Additional boxes may also be mounted on the bar hanger, along with conduit. / Fastway Fasteners, Inc.

706 VOLTAGE MONITOR / The solid-state monitor is a single-phase unit for 115-volt operation. It automatically shuts down equipment when voltage drops to a dangerous level. If level returns to normal, unit automatically reconnects power. Critical components are UL-listed. / Logitek, Inc.

707 TRANSFER PANEL / Designed for use with the company's standby generator sets, the automatic transfer panel is offered in three contactor models rated 30, 70 and 100 amperes, and 13 circuit breaker models rated 30 to 2000 amperes. All are UL-listed and CSA approved. / Kohler Co. A,I*

708 KEY LOCK SWITCH / This is a heavy-duty 15 and 20 amp, 120/277-volt (AC) key-operated switch in a totally enclosed body. Unit is said to come in five colors; single pole, double pole, three-way or four-way switches can be self-grounding. / Sierra Electric.

709 SERVICE INTERRUPTER / With a 1200-5000 amp, 600-volt, 200,000 AIC rating, this device is for main service protection or larger sub-feeder protection. The standard device is manually operated, fixed mounted and front connected. It is UL-listed. / Federal Pacific Electric Co.

710 CABLE SUPPORT / A plastic (polypropylene) electric wiring and cable support in bright yellow with securing hinge is said to accept diameters from 1/64 in. to 1 in. The material is non-marring, dimensionally stable, and inert to oil and most chemicals. / Stauff Corp.

711 FLOOR ASSEMBLY / A UL-listed unit is fire-rated for poke-through wiring of receptacles and telephones in concrete floors. Complying with NEC Section 300-21, the unit is listed for use with 2 in. to 8 in. concrete floors. / Raceway Components, Inc.

712 GROUND ADAPTER / The 15-amp, 125-volt adapter converts a two-pole two-wire receptacle to a two-pole three-wire receptacle. A rigid green metal "ear" replaces the usual wire pigtail attached to an adapter. / Bryant Electric Div., Westinghouse Electric Corp.

