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Peria, Syria) second or third
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Toolbox,



Circa 1972

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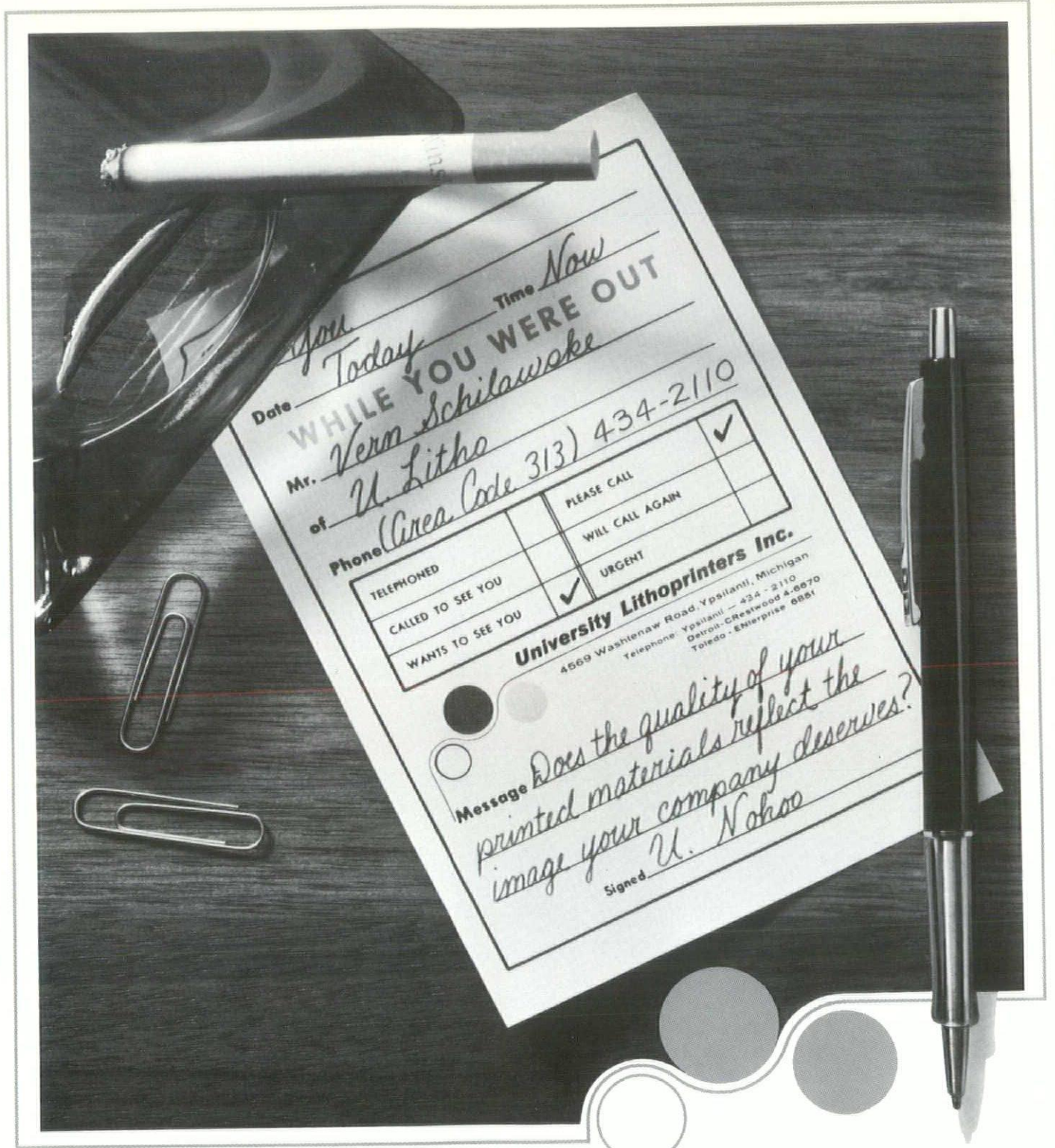


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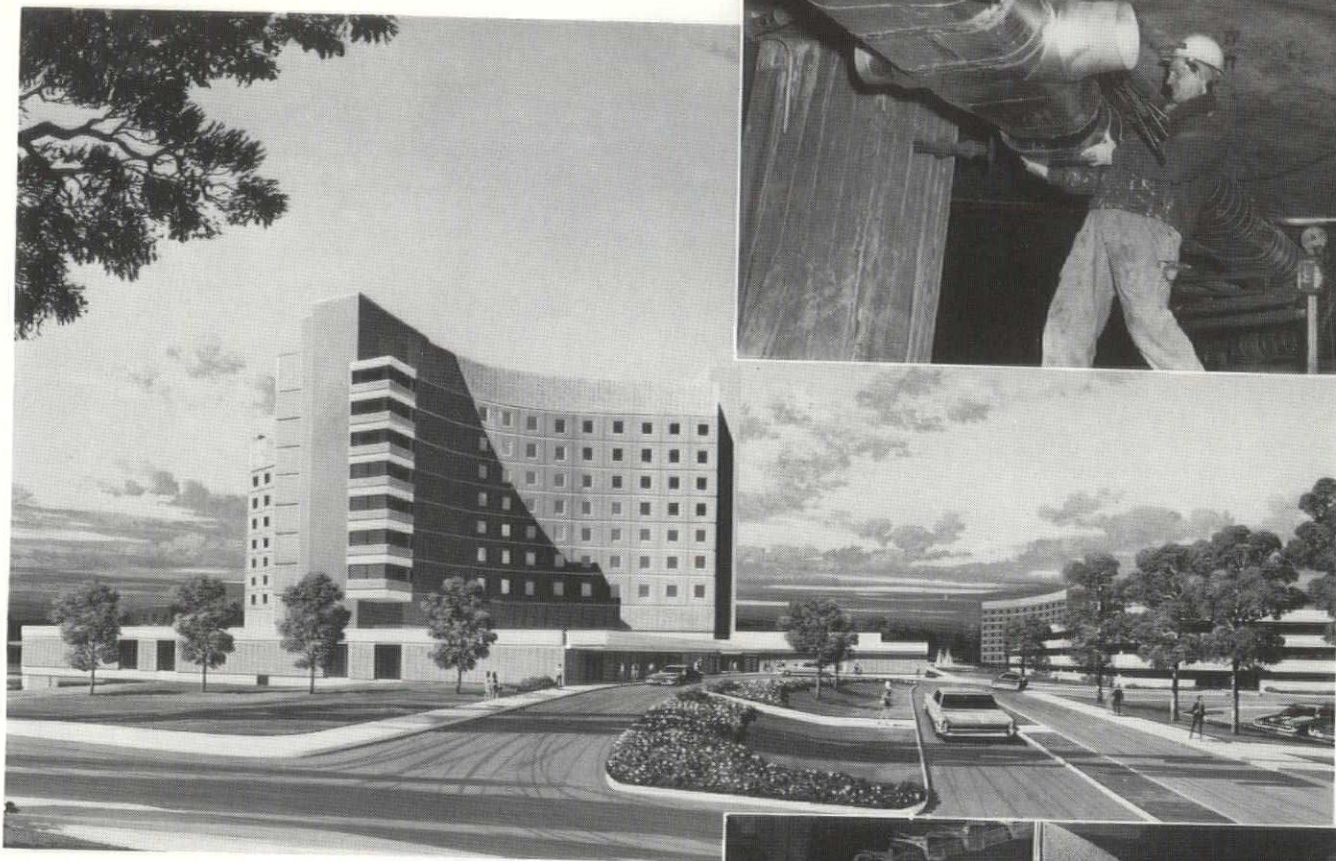
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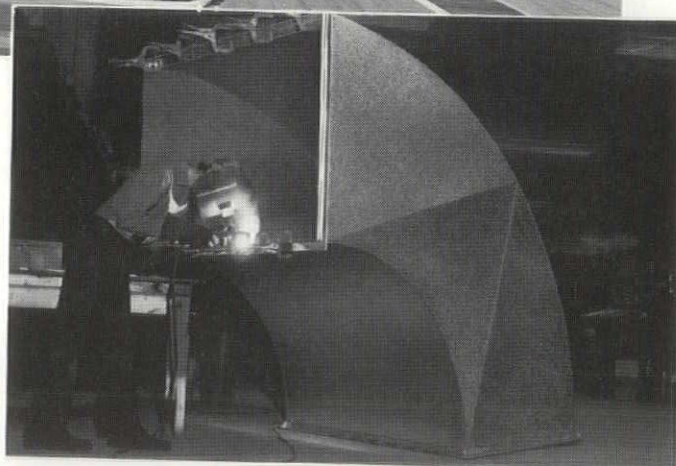
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THE MONTHLY BULLETIN
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Monthly Bulletin, Michigan Society of Architects, the official publication of the Society; all Michigan Chapters of the American Institute of Architects; Women's Architectural League of Detroit (WALD); Producers Council, Inc., Michigan Chapter; Builders & Traders Exchange of Detroit, Grand Rapids and Lansing is published monthly by the Michigan Architectural Foundation; Editorial and Advertising Offices—28 West Adams, Detroit, Mi 48226, Phone 965-4100.

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Three days of information, of discussion, and of fun, are rapidly shaping up for the 1972 Michigan Society of Architects annual convention. A blue-ribbon lineup of speakers and panelists has already agreed to take part, and early reservations are suggested.

This year, the Detroit Hilton Hotel will be Convention Headquarters, located right in the heart of downtown Detroit. All meetings, several of the social events, and an interesting products and materials show, will all be held right in the

hotel. But you will be within walking distance of many restaurants and theatres.

The architects have been especially honored by the acceptance of Governor William G. Milliken to speak to the convention on Wednesday, March 15, the opening day of the Convention. In a change of format, the ordinary dinner followed by speeches has been abandoned, and the Governor will speak informally to the delegates, their wives and families, and invited guests, then a Champagne Reception will follow, at which Governor and delegates can meet in a less formal setting.

Not all discussion panels have been finalized, but we already have had acceptances from a number of outstanding personages, including famed Skidmore-Owings-Merrill designer Walter Netsch, FAIA, who is partner in charge of design of the Chicago S-O-M office. From Toronto Architect Robert W. Anderson, of the John Andrews Architects office and the Architects for Metro Centre, Group One, who will tell how that city is redeveloping some 200 acres between the present downtown and the lakefront. Toronto's plans have lessons for every city, big and small.

From our own state capitol will come the latest word on the plans and ambitions of the Michigan State Housing Development Authority from William Rosenberg, who is Executive Director for the Authority. This agency is playing a larger and larger role in the financing of low and moderate income housing in cities throughout our state, and

MSA members will want to know what role they can play in this critical activity.

And from Washington, D. C., our own AIA Vice President Robert Nash, AIA, will be the principal speaker at the Annual Awards Banquet on Thursday evening, March 16. Here is the chance for MSA members to get an insider's view of the policies and plans of the national organization. Bob Nash is in his second year as a national officer, and as the owner of an urban practice, can bring many insights to our overall convention topic: "Michigan Cities: Challenge and Opportunity." Special feature at the MSA Annual Business Meeting will be the presentation by Archibald Rodgers, FAIA, Vice President, American Institute of Architects, on the Policy Statement of the National Task Force. One of the nation's outstanding authorities on cities, Robert E. McCabe, President of Detroit Renaissance, has also agreed to take part in a seminar. He was formerly general manager of the New York State Urban Development Corporation, the nation's largest redevelopment program, and joined Renaissance last summer.

Still to be added to the program are state legislators and one or more mayors of outstate cities, so that the program can identify all of the problems and interests that every Michigan city has in common, and suggest the role that architects can play in their solution, both as professionals and as citizens.

But like all conventions, all is not work and serious discussions. Wed-

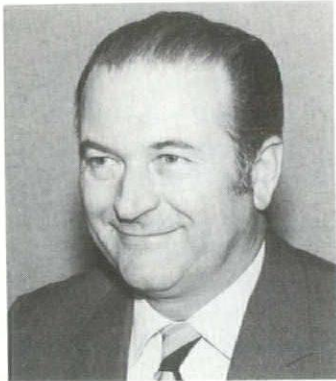
nesday evening will see the Governor's remarks and the Champagne Reception that follows. Thursday will be the Awards Dinner, and Friday will see the entire convention invited to an evening of music and nostalgia at Detroit's Orchestra Hall, just a short distance up Woodward Avenue from the Hilton. This hall has been the object of a determined effort to save it from the wrecker's ball, restore it to its 1918 grandeur, and use it for the many musical events that its superb acoustics will highlight. Exactly what the musical program will be has not yet been settled, but whatever it is, you will have the chance to hear it in an almost perfect acoustic setting.

As usual, a number of outstanding manufacturers of building products and materials will set up exhibit booths for your information, and a number of luncheons and cocktail receptions will be held in the exhibit area. Prize drawings will be held every day.

Plans are being made for a number of interesting affairs for the wives in attendance, and for those interested in shopping, the Hilton is just a few feet from Detroit's finest speciality shops and the giant J. L. Hudson Co. main store. There is a wide choice of eating places and entertainment, and for those who drive, you are just a few blocks from the city's Freeway system, which will take you to any part of the metropolitan area in just minutes.

As always, first choice of accommodations will go to those who register early.

SH&G Names V.P. & New Associates



Merrill M. Bush, P.E. was appointed Vice-President of Smith, Hinchman, & Grylls Associates. His responsibilities will include the development of markets for professional services.

Five staff members of SH&G were named as associates of the firm. Announcement was made by Robert F. Hastings, Chairman of the Board. The Five: Kenneth J. Guion, Director of Computer Facilities; Charles T. Harris, Designer; D. R. Roggenbach, Architectural Discipline Head; John Solo Rio, AIA, Project Manager; and Joseph B. Uicker, Mechanical Discipline.

Thirteenth Acoustical Training School

The 13th Acoustical Training School conducted by Michael J. Kodaras and Robert Lindahl, Acoustical consultants, will be held at the Dearborn Inn, Dearborn, Michigan, on March 20, 21, 22, 1972. The three-day session will be devoted to acoustics, lighting and air distribution of interior systems as well as general principles of Architectural Acoustics; Sound Transmission Loss; Acoustical Correction of Rooms; Industrial Noise; and Noise Control of the Air Conditioning, Heating and Ventilating Equipment.

The course is designed for acoustical contractors, sales engineers, research technicians, engineers, ar-

chitects, etc., who wish to learn the fundamentals of noise control building acoustics, lighting and air diffusion for practical use in the field.

The number of registrants is limited so each person may receive personal attention from the instructors. The last few sessions have been oversubscribed.

Information on these courses can be obtained from Robert Lindahl, P. E., 2261 Winthrop Rd., Trenton, MI. 48183; or Michael J. Kodaras, 75-02 51st Ave., Elmhurst, New York 11373.

Daverman Appointments

Appointment of two new Associates, on the staff of Daverman Associates Inc., has been announced. The Company now has 21 architectural and engineering Associates and 8 Directors.

James D. Hess and David J. Tulos are both 34 and both registered architects Hess, a graduate of Bradley University and a Daverman staff member since 1968, works primarily in the fields of shopping center and vocational education design. Tulos, who joined Daverman in 1962, is a graduate of the University of Michigan whose current work involves school design, master planning and project management.

New Associates for Eberle M. Smith

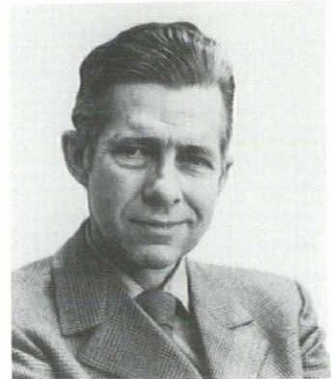
Thomas Hanawalt, E. David Reitzel and Robert Stevens have been elected associates of the firm of Eberle M. Smith Associates, Inc.

Producers Council Holds Meeting on Stadiums

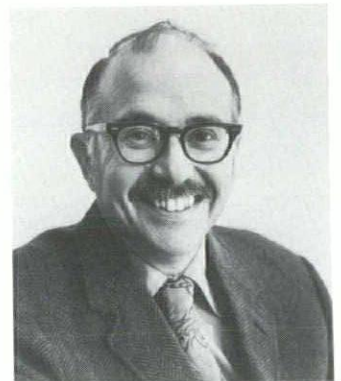
The Michigan Chapter of Producers' Council and the Consulting Engineers' Council co-sponsored a meeting in the Engineering Society of Detroit's Founders Room on February 24, 1972. The subject of the meeting was Sports Stadiums.

New Name For Bloomfield Architects

Begrow and Brown Architects, Inc. of Bloomfield Hills will henceforth be known as Jack Brown and Associates Architects, Inc.



The firm's principals remain Jack W. Brown, President in charge of design, Samuel M. Deyo, Vice



President in charge of Production and Research, Charles E. Johnson in charge of Structural Engineering and Peter L. Hadix, assistant in Design.

The name change has not resulted from any new internal reorganization, but rather in recognition of the fact that its former partner and co-founder has been carrying on a successful independent practice for several years in Charlevoix, Michigan under the name of H. Jack Begrow Architect, Inc.

In addition to its current practice of designing commercial, educational, institutional, religious and educational structures, the architects are actively engaged in the designing of planned residential communities,

municipal design, space planning and interiors and various types of consulting.

The firm will retain its association with Thebaud, Begrown and Brown Architects on St. Croix in the U.S. Virgin Islands which it founded in 1964.

Hilberry Opens Office

The firm John D. Hilberry, Architects, 130 Chicago Blvd. in Detroit, has been opened to provide complete architectural services as well as master planning. The firm recently completed the installation of the Tannahill Bequest and the French Impressionist Galleries at the Detroit Institute of Arts.

Hilberry leaves the position of Vice-President of Gunnar Birkerts and Assoc., Inc., where he has been since 1965. Previously he had been a senior designer with SHG and a designer with Minoru Yamasaki and Assoc. and with Birkerts and Straub. Hilberry graduated from the U of M School of Architecture and Design in 1957 and was a Booth Fellow in 1958.

Among the projects for which Hilberry has had major responsibility in other firms are the college campus master plans for Tougaloo College in Jackson, Mississippi and for the Vocational Technical Institute at the Southern Illinois University, the 1300 Lafayette East Apartment Bldg. in Detroit's Lafayette Park, the Medical and Dental Schools at the University of Louisville, the University Reformed Church in Ann Arbor and the master plan for the expansion of the Detroit Institute of Arts, of which the North Wing was recently completed.

GLF&E Election

At the Annual Meeting of the Great Lakes Fabricators and Erectors Association held January 1972, the following officers and directors were elected for the fiscal year beginning May 1, 1972: President—John H. Busch, Haven-Busch Co., Grandville, Michigan; 1st Vice President—Michael A. Gaskin, Taylor & Gaskin, Inc.; 2nd Vice President—Fred P. Haas, Mississippi Valley Structural Steel Co.,

Flint; Secretary—James R. Moore, Whitehead & Kales Co.; Treasurer—John F. Burke, Aluminum & Architectural Metals Co.; and Directors: A. E. Wetter, Byrne Doors, Inc., Immediate Past President: N. O. Saulter, Acorn Iron Works, Inc.; M. E. Woodbeck, Overhead Conveyor Co.; E. H. Webster, Whitehead & Kales Co.; James T. Bernardi, Chapper Iron Works, Inc.; Kip Anderson, Midwest Steel Erection, Inc.; John W. Broad, Broad Crane & Engineering Co.; I. J. Rosenbaum, Amarco Corp.; Walter A. Kaufmann, W.J.C. Kaufmann Co.

The major interest of GLF&E is the expansion of markets for steel

building products through technical and educational services, maintains offices at 519 New Center Bldg., with J. Gardner Martin, Executive Director. The association represents fabricators and erectors of structural steel and metal building products and associate detailing firms.

We wish to thank Ronald L. Miller, AIA of Harley Ellington Associates, Inc. for answering our plea for a copy of the September 1959 issue of the Bulletin. His prompt response has enabled us to complete our bound volumes for that year.

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Appointments at Levy

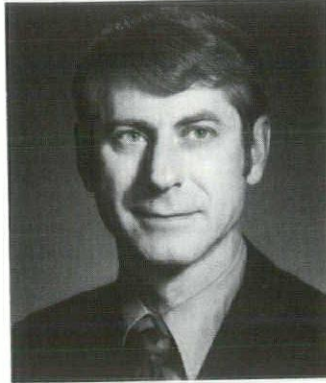
Hal Poulin, Director of Sales for the Edw. C. Levy Co., announced the appointments of Russell A. Reed, Prod. Promotion Manager and Leonard Bell as a Sales Representative.



Russell Reed has been with the Levy Co. for 3 years as a sales representative and as a member of the Corporate Development Division. His business background also includes 8 years with the Marblehead Lime Co., a division of General Dynamics Corp. His new responsibilities will involve the promotion of all materials of the Edw. C. Levy Co. and its Subsidiaries—Kellstone,

Inc., Lyon Sand and Gravel Co., and the Detroit Lime Co.

Prior to joining the Edw. Levy Co., Bell was with the Medusa Portland Cement Co. as a sales engineer, and before that served as a concrete consultant with SHG. Previously with Eero Saarinen Assoc., he worked on such notable projects as the TWA Terminal Bldg. at Kennedy Airport, the St. Louis Arch, and the IBM Pavilion at the New York Worlds Fair.



Bell is a Registered Professional Engineer (Michigan) and a member of numerous professional groups including the American Concrete Institute the Construction Specifica-

tion Institute, the Michigan Society of Professional Engineers, and the Concrete Improvement Board of Detroit. He is a graduate of Michigan State, with a BSCE degree.

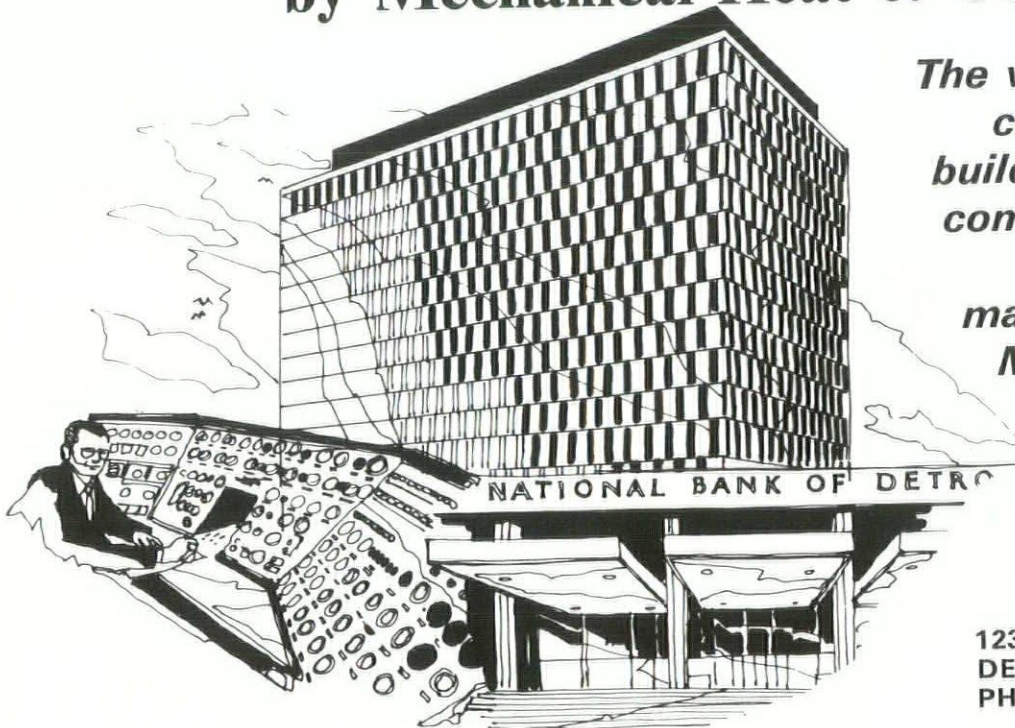
Letters

The following two letters were recently brought to the attention of the MSA Board. For three reasons it was felt that all members of the Society should see them. First, in order to be reminded where their competition is coming from. Second, to show that it is possible for an architect to say a lot in a few words. Third, to provide a small touch of humor to these pages.

Dear Mr. Anderson:

In planning expansion of your hospital facilities, how do you know your project will be within your proposed budget? How do you know your program will be executed within a specified completion time? Who coordinates the architectural design, engineering and construction phases? Who assumes the responsibility for the overall management of your project, including programming and cost control? *cont'd on page 39*

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CERAMIC tile



Mosaic: Personification of the River Tigris Roman (from Seleucia Pieria, Syria) second or third century A.D.

The Detroit Institute of Arts

This special technique in marble mosaics is still available today. Information can be obtained from Mosaici : Peter Cantu ; Via C. Colombo, 40; Corsico, Milano, Italy.

The Great Lakes Ceramic Tile Council is a non-profit industry association supported by the voluntary contributions of ceramic tile contractors working in southeastern Michigan and employing the trained artisans of Local #32, tile setters', and Local #40, tile helpers' unions.

The Great Lakes Ceramic Tile Council was organized in 1963 for the purpose of promoting professional installation of ceramic materials. As a service to design professionals and council members, 25100 Evergreen Road, Southfield, Michigan 48075 (353-5547), the Council Office, was established to answer questions about proper specifications and technical details. Materials regarding installation mentioned in this special section are available upon request. The Council also sponsors product display installation and discussion programs, professional journal advertising, publication programs and direct mail.

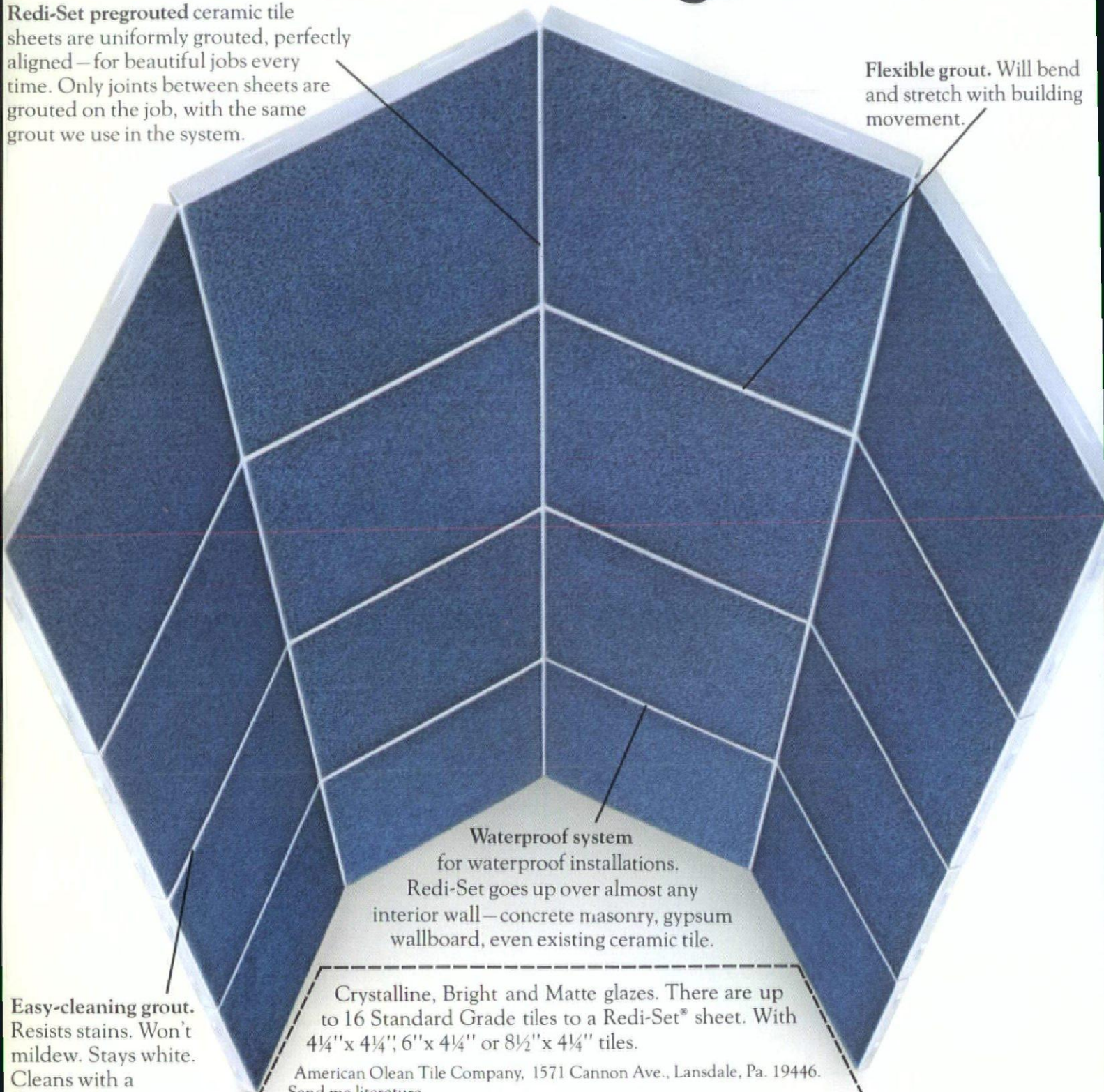
The Council is directed by four Trustees, two residential and two commercially-oriented ceramic tile contractors, who are appointed to this position by the Board of Directors of the Detroit Ceramic Tile Contractors' Association.

This section produced in cooperation with the Council initiates a series of special articles on Construction Components which will appear from time to time in the Bulletin.

New! The American Olean ceramic tile system.

Redi-Set pregrouted ceramic tile sheets are uniformly grouted, perfectly aligned — for beautiful jobs every time. Only joints between sheets are grouted on the job, with the same grout we use in the system.

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The Ceramic Tile Contractor and the Architect:

a profitable relationship.

The business of the ceramic tile contractor is to install tile just the way you want it. He's a professional. His workmen are skilled with the tools of the trade, carrying forward a tradition of craftsmanship dating from ancient times.

The expert tile contractor is an important member of today's construction team. Working with the architect (and the general contractor, designer, engineer and building owner), he can recommend the correct tile type and install it with the most effective mortar system, using the most efficient installation method.

Ceramic tile is available today in all shapes, sizes, surfaces, textures and colors. And, it is as useful as it is beautiful. When installed by a professional, ceramic tile remains in place, retaining beauty and giving protection that lasts for years.

HOW THE CONTRACTOR CAN HELP CUT THE COST OF CONSTRUCTION

Through research and experience this fact is well-documented: properly-installed ceramic tile costs less to install and maintain in its useful life span than any other substitute material.

But, that sometimes is difficult to sell to a developer concerned with initial cost, not projections. There are ways to save money at the very beginning of any construction project.

The first to consider is **proper specification**. In today's economy, everything costs money; overspecification wastes money. With a wide variety of installation methods to specify, it is wasteful to select a traditional, full-bed mortar ceramic installation when a thin-set latex or organic mastic will perform just as well and the installation can be made much more quickly. However, it will be a disservice to the building owner if, for the purpose of "saving money", tile is specified to be installed by an organic adhesive in a wet area, such as a tub recess, gang shower, steam room, or the like.

Often for the purpose of preventing "staining" which sometimes occurs in the joint, an epoxy grout is specified. The development of chemically-formulated Epoxies and Furan Grouts and Mortars is a marvelous, progressive step for the ceramic industry; they are need-

ed in heavy-duty applications—dairies, meat packing and bottling plants, on ship decks. Use a simple silicone grout joint sealer for other areas. It will eliminate unnecessary extra cost and provide the expected performance.

Proper specification of ceramic tile will also help extend the construction investment. Reference to **performance ratings** published by the tile industry will prevent overspecification of materials.

The current Installation Handbook notes that "in very small rooms (less than 12') and also along the sides of narrow corridors (less than 12') **expansion joints** are not needed (however, local building codes and some other factors must be taken into consideration). How many times has the tile contractor been perplexed to find ambiguities such as "expansion joints shall be installed in all work" or "tile shall be installed by conventional mortar and Thin-Set methods (the very same job!) as specified in the current Tile Council of America handbook"?

You know what happens? The reputable firm bids the job according to specs. The opportunist reads the inference that the tilework section is not too well understood by the specification writer, bids low, takes the chance that the architect won't police the job properly, and because of either ignorance or expediency, will accept the installations. That's how failures get started.

It is no secret that opportunists exist in the tile industry, just as in any other. The Standards Committee of the Detroit Ceramic Tile Contractors' Association and the tile industry unions are making a joint effort to insure a professional level in all installations.

Proper supervision on the construction site by the job captain is as necessary for tile work as for all other trades. If it's embarrassing to have to ask a question of the contractor on the job, or if his answer still leaves questions open, refer to the service and materials available for construction industry professionals at the Great Lakes Ceramic Tile Council office.

IS THE LOW BID ALWAYS THE BEST BUY?

Check qualifications of the ceramic tile contractors who bid your jobs. What are their records? Where are their jobs? What is his credit rating? How long has he been in business? Does he belong to the professional associations in his industry? Just as some architectural firms gain a reputation for proficiency in a certain type of work—schools, churches, industrial plants or commercial structures, you'll discover that ceramic tile contractors have recognized performances in their own specialties - acid-proof floors, schools, commercial structures, housing projects, mural installations.

Tilesetting is an ancient art, with its own tricks of the trade. The responsible contractor is the one who is staffed with craftsmen who know these tricks well. The tile installation can contribute importantly to the efficiency, worth and beauty of the building. Because ceramic tile is a finishing material, your design work will be on view as a permanent advertisement of creative proficiency. Tile floors and walls are sometimes all that survive in the ruins of Egyptian, Greek and Roman cultures. Get to know your tile contractor; he can help you. After all, the materials he installs in your building, might be on view for a long, long time.

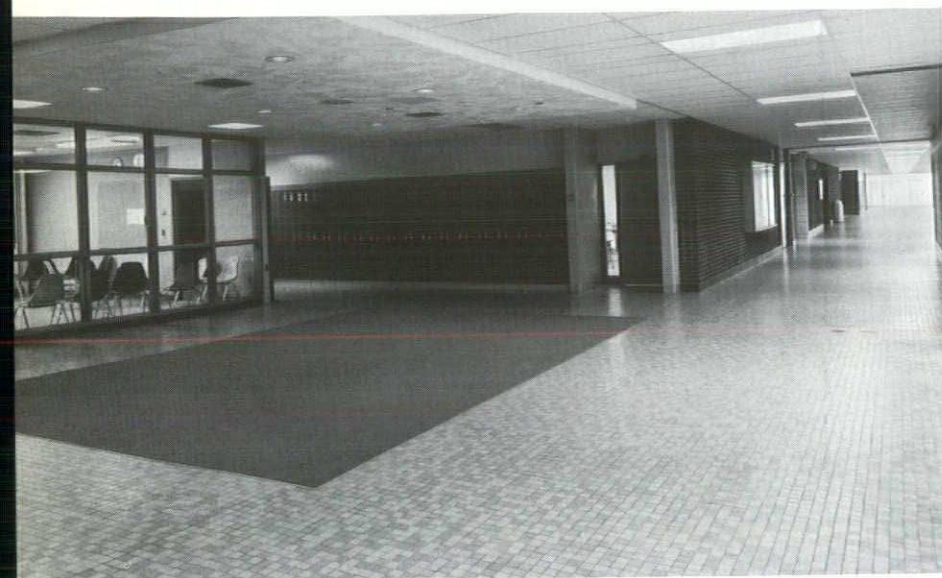
Imagine . . .

The ALL-TILE BUILDING!

not really, but the more imaginative designers are specifying installation of more and more ceramic materials.

Tile has what building owners want: the ability to withstand hard usage and still look good with a minimum of maintenance.

In this era of "planned obsolescence" and "plastic imitations," ceramic tile is still a trademark of quality and honesty.



Ceramic Tile Floors

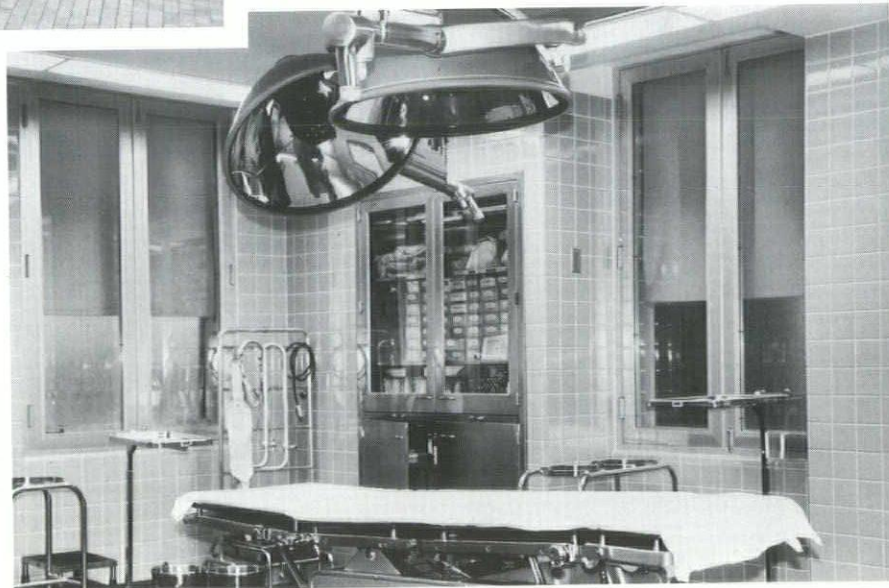
(Fraser High School)

The Fraser School Board wanted a flooring material that was attractive, wouldn't wear out, and because of rising maintenance costs, wouldn't need the expensive cleaning required by other materials. Experience since the school opened in January 1970, has proved their selection of ceramic mosaics to be a correct decision.

Ceramic Tile Walls

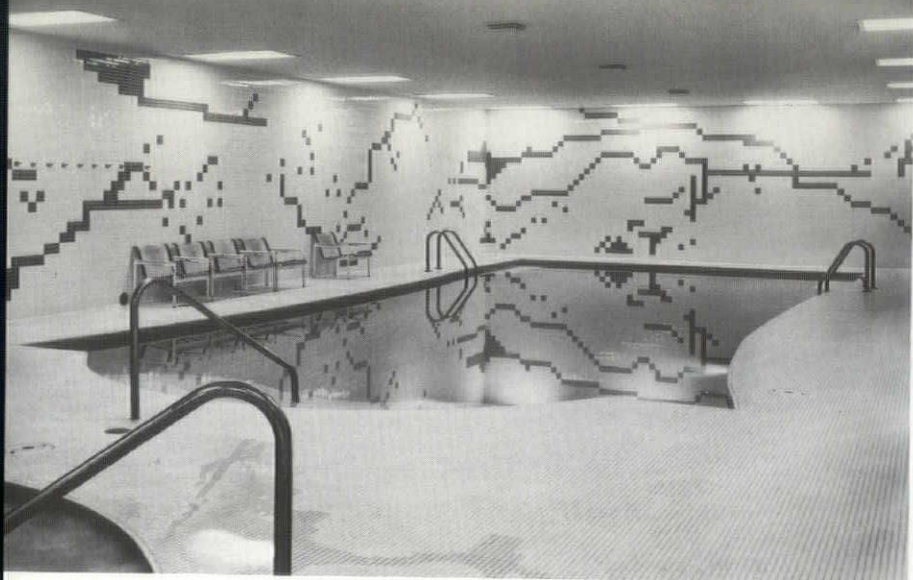
(Hutzel Hospital Operating Room)

The health care field is almost unique in its requirement of a finishing material that can be kept absolutely sterile. Here, ceramics hold a commanding advantage. Even the most commonly-used portland-cement type grout joint is extremely alkaline, with a minimum pH of at least 10, lethal for most bacteria. Ask for a copy of the "Evaluation Report; ceramic tile in hospitals, clinics, nursing homes."



when an architect plans for the future . . .

he selects building materials very carefully. A ceramic tile contractor will be pleased to explain how quality products and professional installation methods produce a lasting effect.



Ceramic Tile Swimming Pools

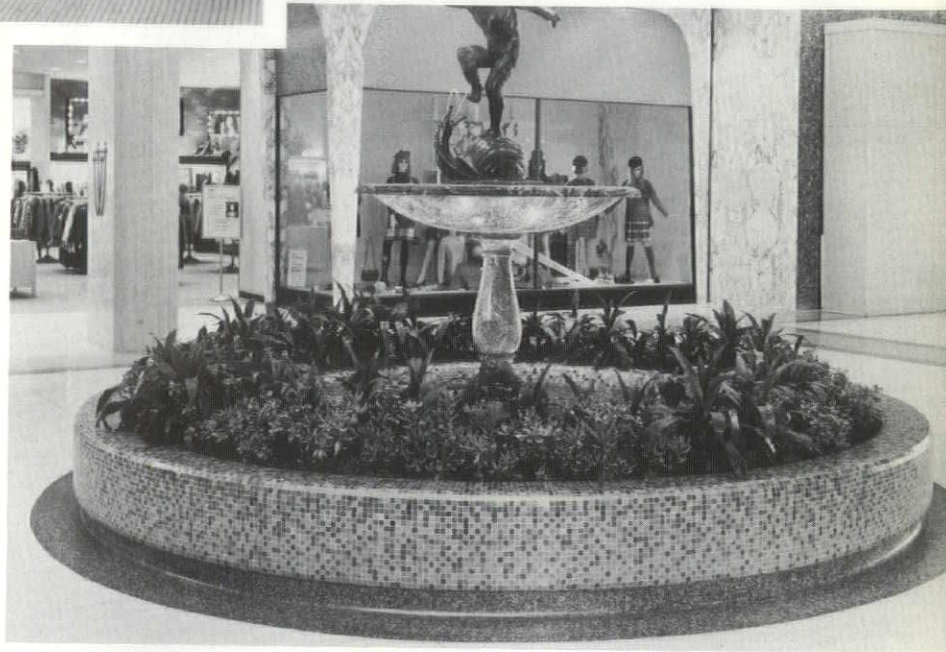
(Silhouette/American Health Spa)

Where surfacing materials must resist chemicals and constant water flow in order to maintain sanitary conditions, properly installed ceramic tile can save maintenance dollars. The rapid erosion of substitute materials exposed to such conditions requires frequent replacement, and subsequent costly "down time."

Ceramic Tile and Design

(Glass Mosaic Fountain and Planter;
Pontiac Mall)

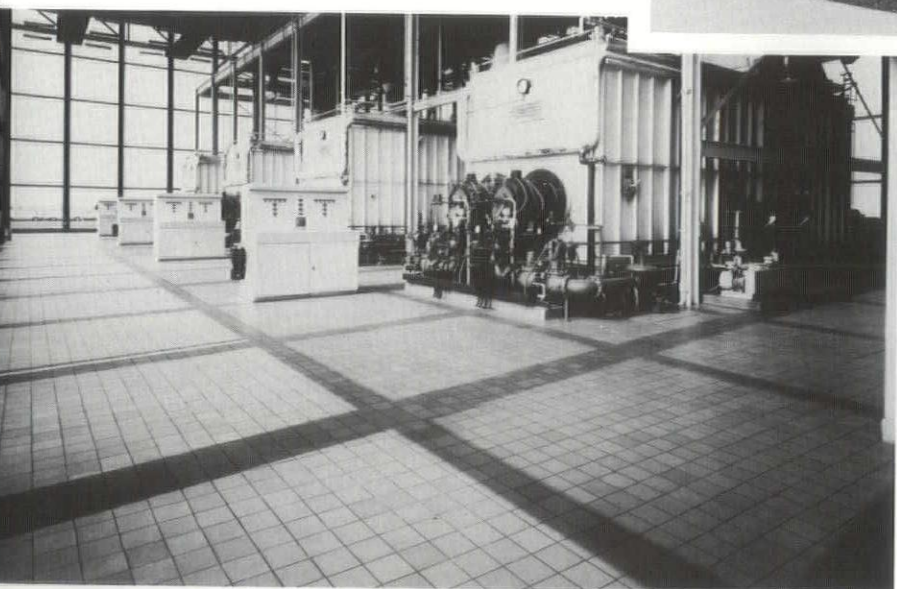
Ceramics have inherent, infinite design qualities. Ceramics can be installed as an extension of the designer's desire to customize, to enhance, to enrich environment, space, structural function and as an esthetic realization. Many manufacturers maintain custom design services; this information is available from your contractor.



Industrial Surfaces

(airport power station)

Extruded quarry tiles and pavers meet the most rigid specifications for heavy duty applications. This material is virtually unaffected by freezing temperatures, heat and moisture, acids, oils, detergents and traffic. An independent study made of installation, maintenance and replacement costs shows that total investment in ceramics is less than for popular, competitive flooring surfaces.

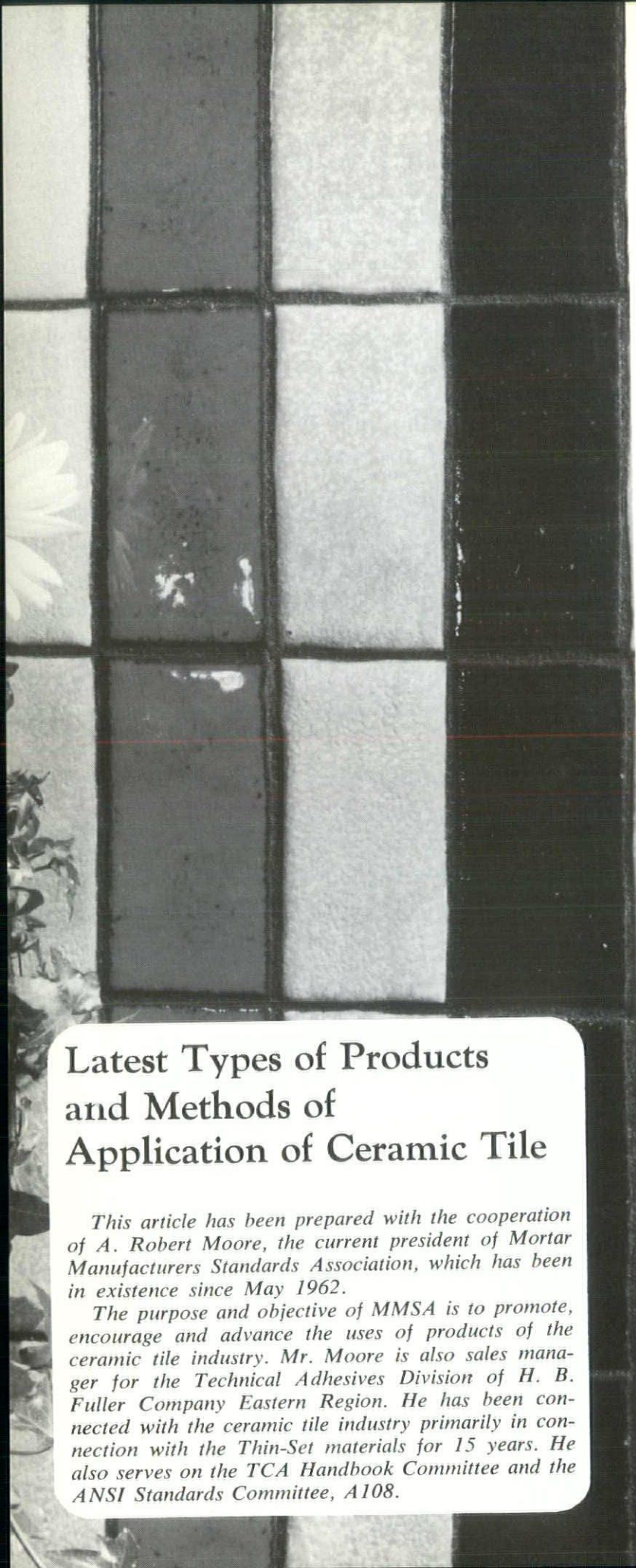


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GREAT LAKES CERAMIC TILE COUNCIL, Inc.

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Latest Types of Products and Methods of Application of Ceramic Tile

This article has been prepared with the cooperation of A. Robert Moore, the current president of Mortar Manufacturers Standards Association, which has been in existence since May 1962.

The purpose and objective of MMSA is to promote, encourage and advance the uses of products of the ceramic tile industry. Mr. Moore is also sales manager for the Technical Adhesives Division of H. B. Fuller Company Eastern Region. He has been connected with the ceramic tile industry primarily in connection with the Thin-Set materials for 15 years. He also serves on the TCA Handbook Committee and the ANSI Standards Committee, A108.

ARE YOUR SPECIFICATIONS UP-TO-DATE?

Ceramic tile has long been recognized and accepted as one of the best building materials available throughout the world today. It is not difficult to locate installations that were made several hundred years ago that are still serviceable. For all practical purposes, up until about 15 years ago, most ceramic work was installed by the conventional Portland Cement mortar system. This type of workmanship is still accepted in many areas and will last for the life of the building.

During the past 10 or 15 years, many changes have occurred in the construction industry. The types, sizes, shapes, colors of ceramic tile that are available today vastly outnumber the limited supplies available prior to the 60's. Construction methods and materials used today also reflect many changes and new developments. As a result, specifications that were adequate and applicable 15 years ago, no longer apply to today's job conditions and materials.

AVAILABLE PUBLICATIONS

The ceramic tile industry in cooperation with the Tile Council of America, now publishes an annual "Handbook for Ceramic Tile Installation." The 1972 issue is now available and work on next years publication has already been initiated. We recommend that every architect and specifier review the new Handbook as soon as they are available each year. By so doing, the specifications covering the installation of ceramic tile can be updated through the use of accepted and proven materials and methods of installation.

In addition to the Handbook, other publications are available through the Great Lakes Ceramic Tile Council office. A guide for Ceramic Tile and Building Codes spells out the various Standards pertaining to the Ceramic Tile Industry. In the Handbook section describing the materials for setting ceramic tile, all of the latest types are described including the current ANSI (American National Standards Institute) specifications that are applicable.

"THIN-SET" INSTALLATION METHODS

The new 'Thin-Set' materials include Dry-Set Mortar, the Latex-Portland Cement Mortars, Epoxy Mortars, Epoxy Adhesives, Furan Mortars, Organic Mastics and different types of grouting materials. Each material is designed to perform best under certain job conditions and exposure.

Dry-Set Mortars work exceptionally well over backup surfaces that are compatible with Portland Cement, such as concrete block, poured concrete, Portland Cement and sand, and plaster or float coat. Experience to date indicates that wherever Dry-Set Mortar is used, a pre-sanded mix will perform best.

Latex Mortars can be used in installations that are subject to potential damage from frost or in high heat areas where thin-set is acceptable. Although no ANSI spec exists today for the Latex Mortars, the Tile Council of America currently has one under discussion which may be approved within the next year.

Epoxy Mortars and Adhesives along with **Furan Mortars** are designed for installations where both high bond strength is required as well as resistance to chemical attack. Both types of materials perform quite well for the jobs for which they have been designed.

Organic Mastics are recommended for interior use only and have performed exceptionally well on walls. They are readily compatible with most of the common building materials used in construction today. ANSI A136.1-1967 certified mastic used properly will give you a low cost, long lasting, permanent installation. Organic Mastics are **not recommended** for exterior installations or heavy moisture areas such as swimming pools, steam rooms, refrigerators, tub recesses and shower stalls.

GROUTING MATERIALS

Most of the current manufacturers of grouting materials have been striving for years to improve the products available on the market. The ideal or perfect grout would be a material that remains permanently white, is easy to maintain and clean, a product that will not stain, crack, or powder out, one that will sustain flexing or movement without losing bond to the edge of the tiles and still be easy and economical to apply. **Portland Cement type grouts** have been used for many years and they are still in use today.

Relatively new materials such as the **Latex and Mastic Grouts** are steps in the right direction as far as performance is concerned. It is a must, for example, to use a true Latex Grout for all exterior installations to keep potential damage from frost at a minimum or nil. The use of **Silicone Sealers** with the basic Portland Cement Grouts has been relatively effective, but they are not necessarily recommended for use with the Liquid Rubber Latex type products. Floor Grouts designed for use over wood subflooring should definitely have a latex additive. As an aid to all concerned, a performance level chart for grouting materials will be incorporated in the 1973 issue of the TCA Handbook.

Special attention should be paid to expansion joints as described in the Handbook. Many jobs that either did not incorporate any expansion joints or else used poorly-designed expansion joints, have resulted in low performance, and in some cases, failures. Modern, fast construction demands that the designer provide for movement, especially in floors. Ceramic tiles are rigid by nature and if the backup surfaces flex up and down or expand and contract to any degree, expansion joints are needed to compensate for the resulting movement.

In summary, many millions of square feet of ceramic tile have been installed successfully through the use of the new Thin-Set materials.

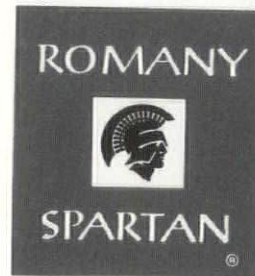
CERAMIC TILE NOW COSTS LESS

Ceramic tile is being installed today for less money than it was 20 years ago. To insure excellent performance of the tile you select for installation, we urge the design profession to update and enforce specifications. Job conditions must be such that a mechanic can use the materials properly, especially the Epoxies and Furens. ANSI specified materials can be expected to perform as desired, while substandard materials may or may not do the job. In essence, when you go to a job site to inspect the materials and installation methods, "What you see is what you will get". Usually about 10 or 15% more effort and money spent for better materials and time will give you the trouble free installations that your customers are asking for.

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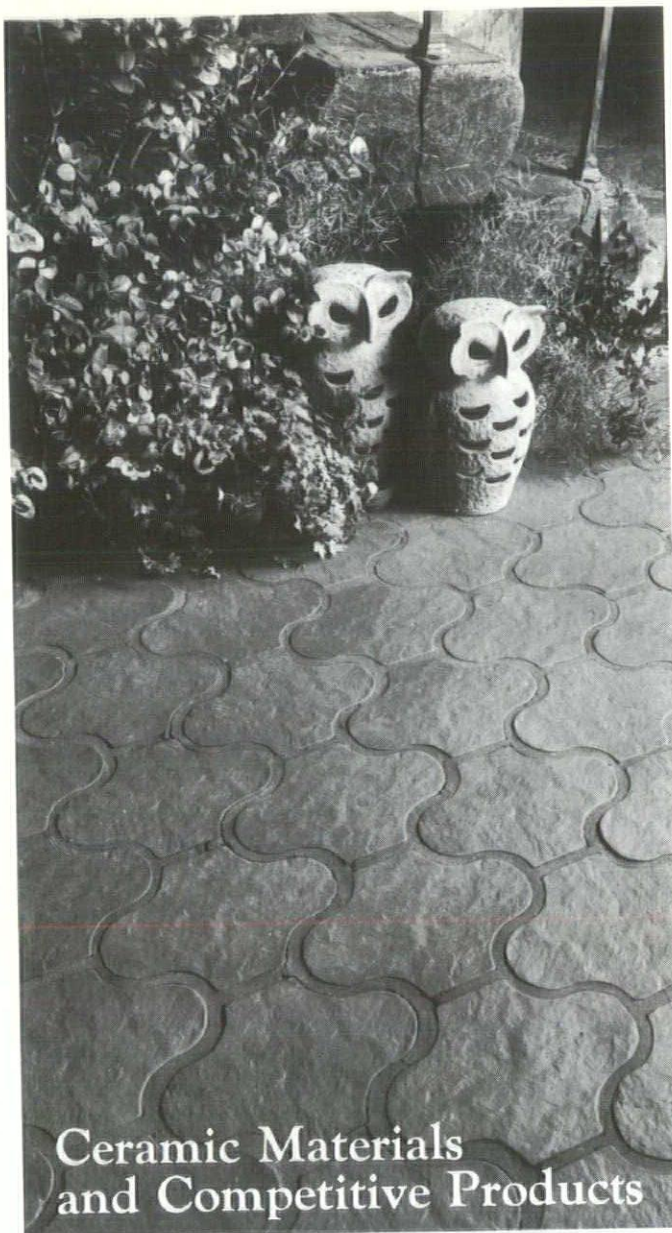
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Ceramic Materials and Competitive Products

Current speculation is that centuries ago the moment after the inspired inventor who discovered that mud baked in the sun made a building material of some stability, his rival across the river proclaimed that a better job could be done with wood, or with bullrushes, or with some other substitute material. That's the way it's been for thousands of years ever since. Isn't it interesting that many of these substitutes have faded and been forgotten while the ceramic industry proceeds with the vigor of exploration and youth.

In order to retain its vitality, the ceramic tile industry must move with the marketplace. We support the development and testing of new materials. When more efficient methods of installation have been developed, tile contractors have adopted them, giving building owners the continuing advantages of professional installation and control of costs.

Recently, certain products said to be "easy to maintain", "easy to install", or "with a tile-like surface" of plastic material composition have been introduced to the construction industry. Even in this age of accelerated research and advancing technology, based on the growing documentation of failures of these products,

there is reason to believe that some new substitute materials have been introduced too fast with too little understanding of product performance.

Building codes generally require that floors and walls in toilet rooms, shower compartments, and similar locations, shall be finished with a smooth, hard, non-absorbent surface to produce sanitary conditions. Sanitation is also important in other places, such as food preparation areas; eating areas, lunch rooms, cafeterias, restaurants, hospital delivery and operating rooms; preparation rooms in funeral parlors and in morgues.

The following are some of the properties of glazed wall, ceramic mosaic, paver, quarry or similar ceramic tile of Standard Grade quality which make these materials acceptable under code requirements. There is an important addition to these utilitarian qualities: ceramic tile does much to improve the decorative and design function of both interior and exterior surfaces.

SANITATION: Ceramic tile, when properly installed, presents a compact, non-absorbent, extremely durable surface, having high abrasion and wear resistance and excellent stability. It can be readily cleaned, with live steam if necessary, without harming its sanitary qualities or appearances.

SAFETY: Ceramic tile makes floors and steps safer for walking under wet or dry conditions. For severe situations, slip-resistant ceramic tile can be required. Where static sparks are specific hazards, as in hospital operating and delivery rooms, laboratories and certain industrial and commercial uses, electrically conductive ceramic tile are especially suited and frequently used. Controlled conductivity or limited resistance of such tiles that conform to the National Fire Protection Association Standards reduce the hazards of fire and explosion attending the use of flammable mixtures of anesthetics with due regard for the hazard of shock from electric power and lighting circuits, from defective grounding of equipment and surfaces and from development of an excessive electrostatic charge.

NOISE REDUCTION: Ceramic tile installations reduce sound transmission through walls and floors. Ceramic tile is especially effective in reducing sound transmission when tile is applied to backup structures with low Sound Transmission Coefficient.

FIRE RESISTANCE: Ceramic tile improves fire resistance of ceilings, walls and floors.

The quality of materials and the manner of installation are major factors contributing to the safety of any building. This applies to all components and all products, including ceramic tile, and tile—like any other material—should meet specified standards of manufacture and installation, and should be carefully controlled by building codes, whether installed for sanitary, safety, or other utilitarian purposes, or as a decorative or finish material.

SANITARY CONDITIONS: A fundamental condition for sanitation and health safety is that surfaces which are subject to intermittent or prolonged wetting shall be unaffected by these conditions. Many substitute materials alleged to be unaffected themselves depend upon or are surface treatments which deteriorate through the effects of time or ordinary use and main-

CALYPSO

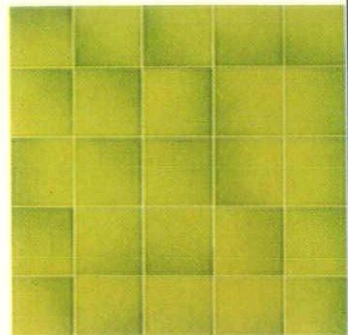
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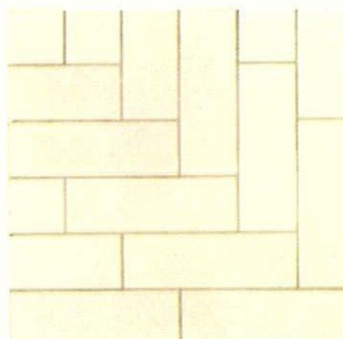
new design freedom for
vivid, dramatic surfaces

CALYPSO

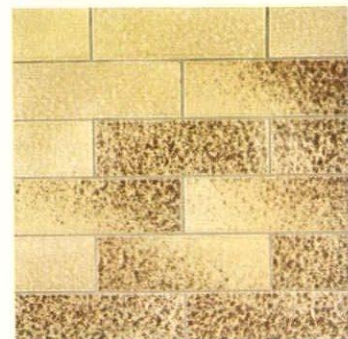
a collection of contemporary
colors deeply shaded to give
a look of handcrafted elegance



994 Lime



961 Frost



964 Nougat

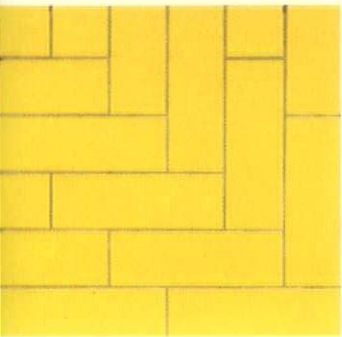
CALYPSO is the newest member of the Mosaic family of distinctive tiles. The CALYPSO line sets a new standard of brilliance in contemporary floor and wall surfacing. CALYPSO offers a blending of shaded glazes which set off the deep tones of each tile. CALYPSO has the look of custom-crafted tile to provide designers with the flexibility to create bold and dramatic effects.

The CALYPSO collection offers a wide scope of color and variety of sizes which makes it eminently suitable for any residential, commercial or institutional application.

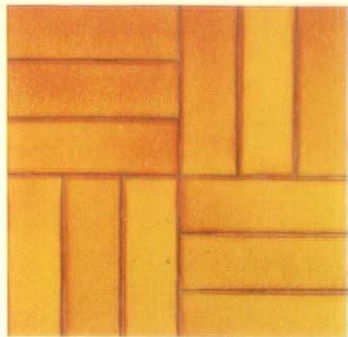
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it's the color collection for the seventies.

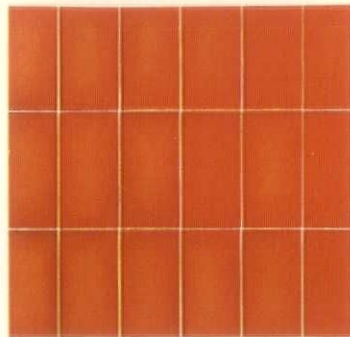




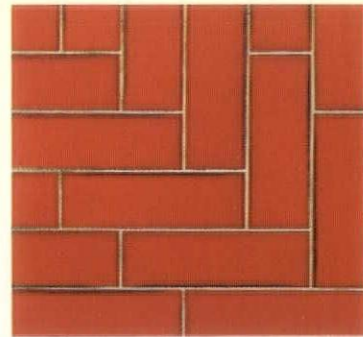
995 Citron



997 Kumquat



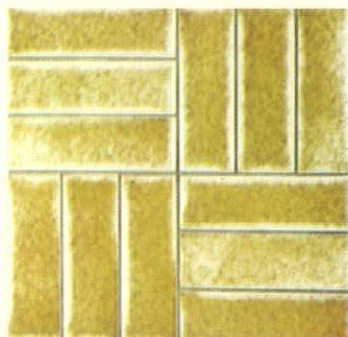
996 Flame



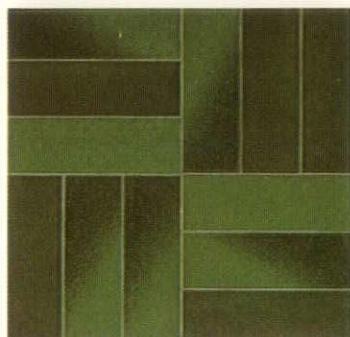
999 Flashed Cherry



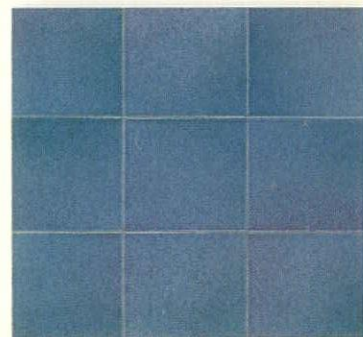
968 Gold



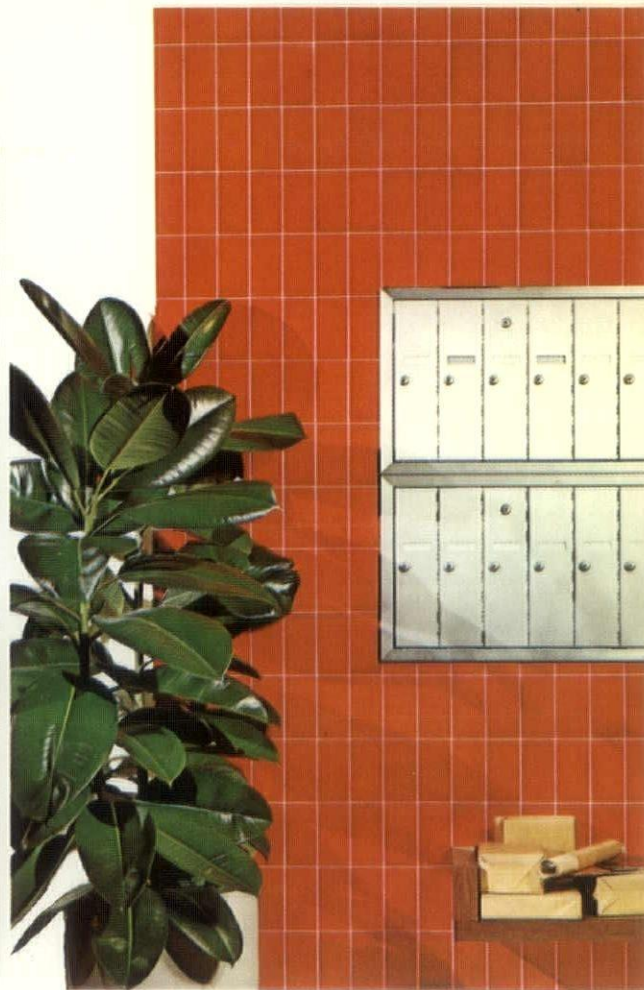
993 Moss Green



967 Forest Green



966 Ocean Blue




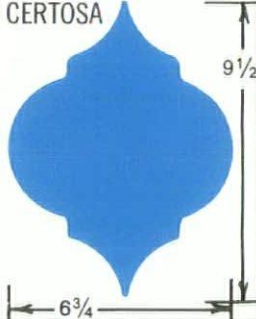
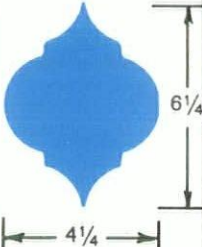



CALYPSO

A subtle blending of shades to enhance any installation. Suitable for all interior surfaces. Calypso is also suitable for exterior surfaces in frost-free areas.

Space lugs are provided for easy installation.

SHAPES AND SIZES

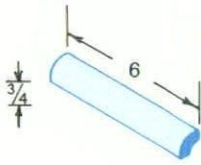
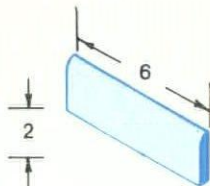
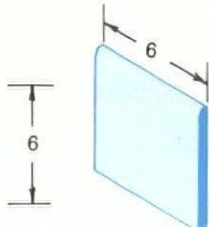
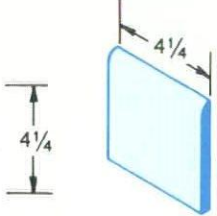
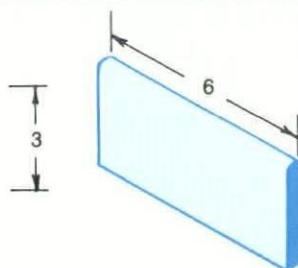
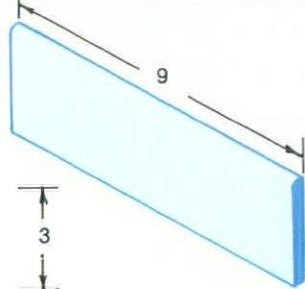
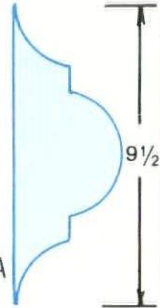
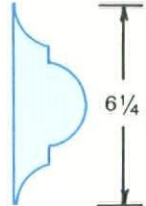
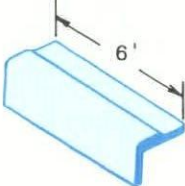
 4 1/4 x 4 1/4	 6 x 6	 6 x 3
LARGE CERTOSA  6 3/4 x 9 1/2	SMALL CERTOSA  4 1/4 x 6 1/4	 9 x 3

All sizes are nominal and do not include the joints. Spacer lugs are purposely large on the 9 x 3 tiles to give a wider grout joint. Consequently, joints on 9 x 3 tiles will not align with normal wall tile joints of 6 x 3 and 6 x 6 tiles.

Desirable and inherent shade variations are intentionally fired into all CALYPSO tiles. No two tiles should appear the same. The result is a unique combination of various color tones.

Use of complimentary colored grouts is highly desirable to blend with and enhance the natural beauty of and varied tones of CALYPSO.

CALYPSO is a non-vitreous wall tile body suitable for interior walls and light to moderate duty interior floors.

 A106	 S4269	 S4669
 S4449	 S4369	 S4399
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tenance methods. Although substitutes for genuine ceramic tile are legion, efforts of the Great Lakes Ceramic Tile Council to understand the nature of products competitive to ceramic tile have been directed in two areas: glass fiber reinforced polyester, or "plastic," plumbing fixtures, and carpeting.

"PLASTIC" PLUMBING FIXTURES

Glass fiber reinforced polyester plumbing fixtures were introduced to solve the problem of "dirty" or open joints caused by thermal expansion. The unitized tub with three walls is supplied with several nails for installation to the rough framing. But, the moment a nail is driven, the plastic painted gel coated surface is fractured and so is the bond which holds the reinforcing glass fiber material.

Anytime the gel coat surface of this type unit is fractured, or separates from its bond to the waste and overflow, the underlayment is vulnerable to capillary action. Absorption of waste water creates a serious public health problem.

Since about four times as much grease is used in the bathroom than can be found in the kitchen, attention must be paid to the staining effects of oil and common household chemicals on the plastic painted surface of glass fiber reinforced fixtures. Smearred lipsticks, nail polishes, acids from fruits, solvents for clogged drains, all have an effect on non-metallic surfaces.

Cleaning must be done with great care. Abrasive cleansers remove the shine from the gel coat surface. A mild detergent is recommended. What is a detergent? It's a name on a bottle and can be anything from soap to harsh chemicals.

Ceramic tile, with a fired body and a glass glaze, can be cleaned with anything up to and including muriatic acid without damaging appearance or structure.

THE PROBLEM OF FLAMMABILITY

There is growing evidence about inconveniences and danger associated with glass fiber reinforced plastic plumbing fixtures. In addition to quality problems, the units are accused of accelerating the spread of several fires. Here are some examples:

1. Fire which started in a stack of plastic bathtubs injured three people and caused \$600,000 damage in a Hayward, California apartment complex.

2. At the 1971 Annual Meeting of the National Fire Protection Association, the president of that organization made a speech outlining the most critical problems facing his membership. Plastics was the second on his list. The fact that only arson was considered more critical explains how seriously fire safety officials are concerned.

3. Boys playing in an unfinished apartment building in Toledo ignited cardboard and then tossed the burning substance into a plastic bathtub in an attempt to extinguish the flames. The plastic tub flared up with intense heat, ignited timbers and siding and destroyed the 2½-story building.

4. Sparks from a torch ignited a plastic bathtub and caused \$25,000 damage to an apartment building under construction in Parma, Ohio. According to Fire Chief Leonard H. Ott, "There is little question that some plastic bathtubs are a definite hazard."

"These tubs were not stacked side by side, but lo-

cated on four separate floors. Other building material on the job was not consumed. Flames from one tub ignited the tubs on the floors above. Smoke produced by these burning fixtures filled four floors with smoke so dense that electric lights could not be seen through the smoke. Remember, only seven tubs were burned."

Documentation of these reports and other material may be obtained from the Great Lakes Ceramic Tile Council office.

OTHER ABSORBENT SURFACING MATERIALS

According to a spokesman for the City of Chicago Plumbing Testing Laboratory, "from the public health picture, we might say that carpeting in a bathroom stinks, literally and physically. The greatest destruction of the public health has been with the carpeting of bathrooms. Throw rugs and covers are easily removed and washed, but not the fastened-in carpeting."

Also documented is the fact that an owner of a building covering 50,000 square feet will spend \$110,000 more in total flooring costs in the next ten years with carpeting than he would with ceramic tile. An independent consulting firm says that even with a 5,000 square foot building, you will lose \$11,000 in the same period. Although the carpet industry has been advertising that their new products are the most practical cover you can use on commercial floors, let's check with some people who know:

1. "we got on the carpeting bandwagon for awhile, but had too many problems with spotting, staining and ripping. We went back to good old ceramic tile." . . . Construction Manager for a national food franchise chain with 1300 restaurants.
2. "Purity Save-Mor is the first to admit a mistake. Carpeting in a supermarket is just not practical yet." . . . Purity Save-Mor Supermarkets, Massachusetts.
3. "I had to spend \$165 for carpet cleaning every three months in each of our eight stores. The carpeting never looked good" . . . Manager, Kenny's Markets, Minnesota.
4. "In very heavy traffic areas, carpeting can be expected to have a life span of five years." . . . The Carpet and Rug Institute.

Again documentation of these reports and other material may be obtained from the Great Lakes Ceramic Tile Council office.

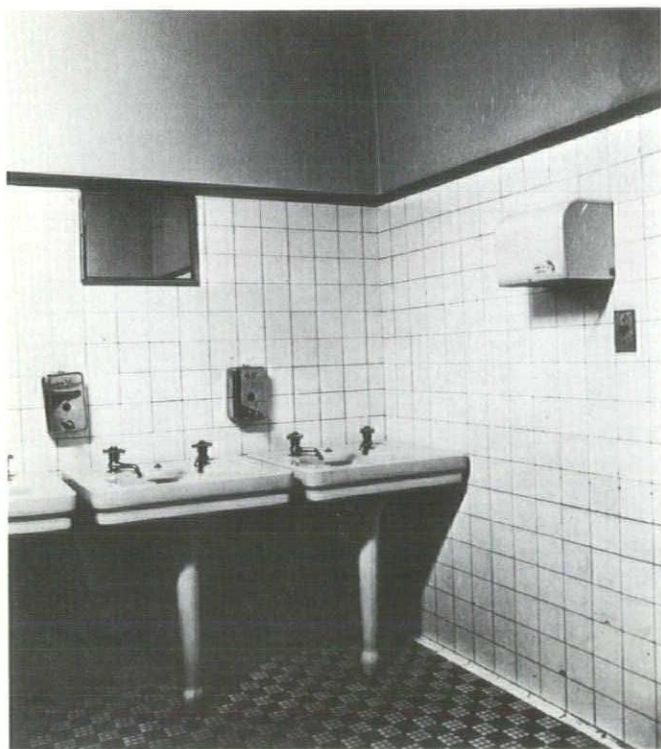
LOOK AT TOTAL COSTS

The most practical way to look at new building or modernization cost is to look at TOTAL COST. If you don't realize that interior maintenance is one of the largest single items in any institutional or commercial building budget, you're only looking at part of the picture. Ceramic tile costs from one to twenty cents a square foot less, per year, to maintain than competing materials.

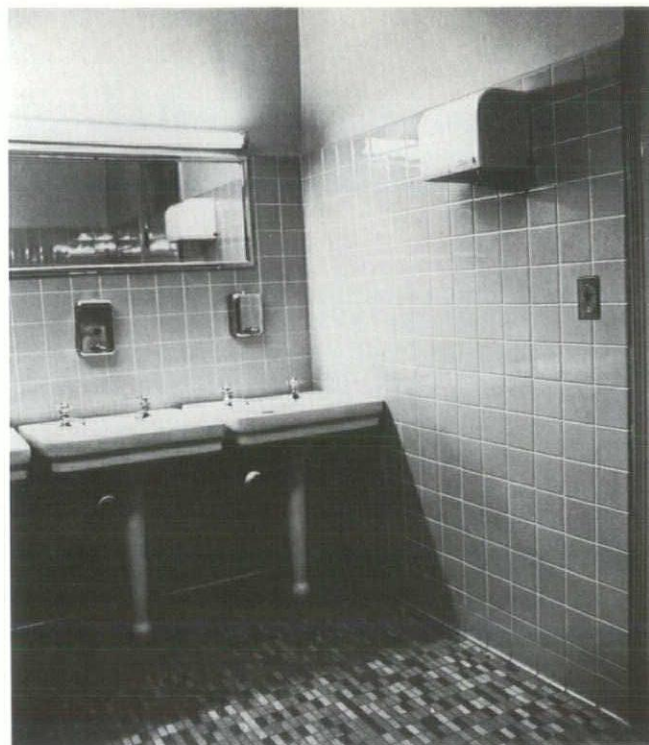
THE STANDARD COMPARISON

Ceramic tile because of its excellent qualities and widespread use is therefore well qualified to be the standard for comparison of other materials. Ceramic tile guards your dollars. It doesn't make sense to specify materials that will wear out in five or ten years. If you have a twenty year mortgage, you end up paying for replacements while still buying the original job.

Tiling Over Tile: speedy renovation of Detroit's Hilton Hotel



BEFORE the development of the tiling-over-tile technique, remodeling the old ceramic tile installation in this hotel washroom would have involved considerable inconvenience, and lots of time, labor and money.



AFTER considering the alternatives, tiles of modern color and design were set directly over the older wall and floor tiles. Similar applications are in evidence in more than 400 guest rooms throughout the hotel.

An extensive renovation project completed at the Detroit-Hilton Hotel (formerly the Statler-Hilton) in the heart of downtown Detroit stands as one of the largest commercial applications of tile-over-tile ever undertaken.

It points the way for faster, cost-saving applications in scores of renovation jobs throughout the nation. Urban renewal and inner-city remodeling are particularly adaptable to the tile-over-tile application.

The project also revealed the practicality of the relatively new technique on a large scale, and proved that the owner benefits in labor and time savings.

Property owners and managers also benefit by maintaining the goodwill of the patrons without curtailing operations. Despite the extensive face-lifting, the hotel remained in full operation. The comfort and convenience of guests had to be considered, and disruption of normal operations held to a minimum.

During the re-tiling phase of the project, some knotty problems were posed for the architects and tile contractors. Scheduled to receive new tile in the \$3.5 million renovation were 414 bath-shower units of the 905-room veteran hotel. The formidable task of ripping out old 3" x 6" wall tiles and the floor mosaics presented undesirable side effects.

A decision was made to place new ceramic tile directly over the existing tile in the hotel's bathrooms, using a high-quality, tight-bonding mastic. It marked a departure from standard remodeling approaches. The

anticipated advantages of re-tiling rather than conventional wholesale wall and floor removal and rebuilding with cement and lath were highly desirable.

In the conventional "mud-type" replacement, the fixtures, floor and walls of each unit would be removed. This would involve noise from compressors, jack hammers, dust and dirt. In addition, there would be the problem of hauling down the debris and trucking it away through a high-traffic area.

Even with this accomplished, there would be the task of bringing in new cement, metal lath and forms—plus mixing the cement on the job. Existing tub units in the baths also stood the chance of being damaged during both the dismantling and reconstruction phases.

In the tile-over-tile approach, plumbers and carpenters removed only the existing toilet, wash basin and medicine cabinet, leaving the bathroom ready for re-tiling. The result was a plumbed, water-proof wall with an even surface. Mastic was applied to the old tile and the new tile positioned in place. A beautiful, new surface was the result with all the advantages of speed, savings and convenience for all parties concerned.

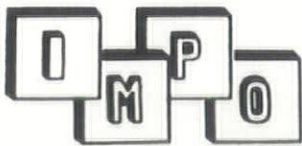
One crew was able to complete two units per day. In all, some 48,000 square feet of walls and 20,000 square feet of floors were covered with bright glaze and crystalline tile in decorator blues and whites.

The cost and time savings resulting from the Detroit project should give rise to potentials for new applications throughout the country.



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Aw, c'mon Harry, tell us about it.

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Temperature? Slippage? Too short open-time?

Don't worry. We've got your solution somewhere in our line of TEC adhesives. The most complete choice of mastics, mortars and grouts available to you today.

Take, for instance, our new, improved TEC 100. It's the best ceramic tile-setting mastic in your business. Non-flammable, non-staining, non-freezing and odorless.

And it trowels 25-30% easier than ever!

Available in either long or short open-time, TEC 100 grabs the tile quickly and holds it. No slippage.

And, best of all, its bond won't become brittle and crack. Resiliency lasts a lifetime.

So, c'mon. Take a few minutes, write out your problem and send it to us.

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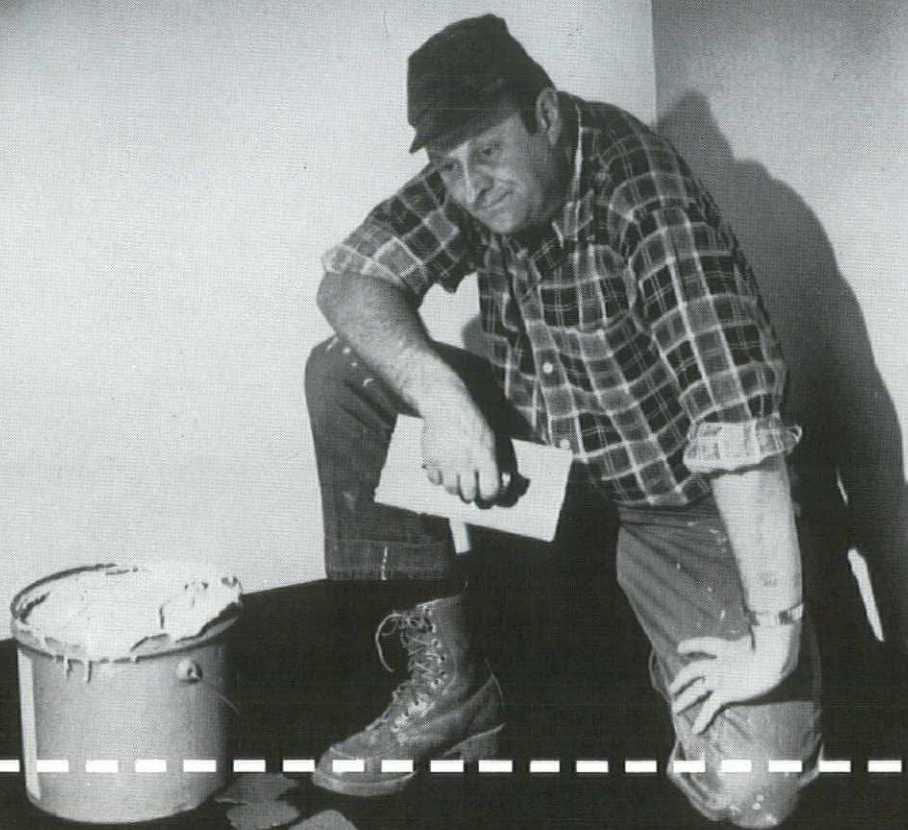
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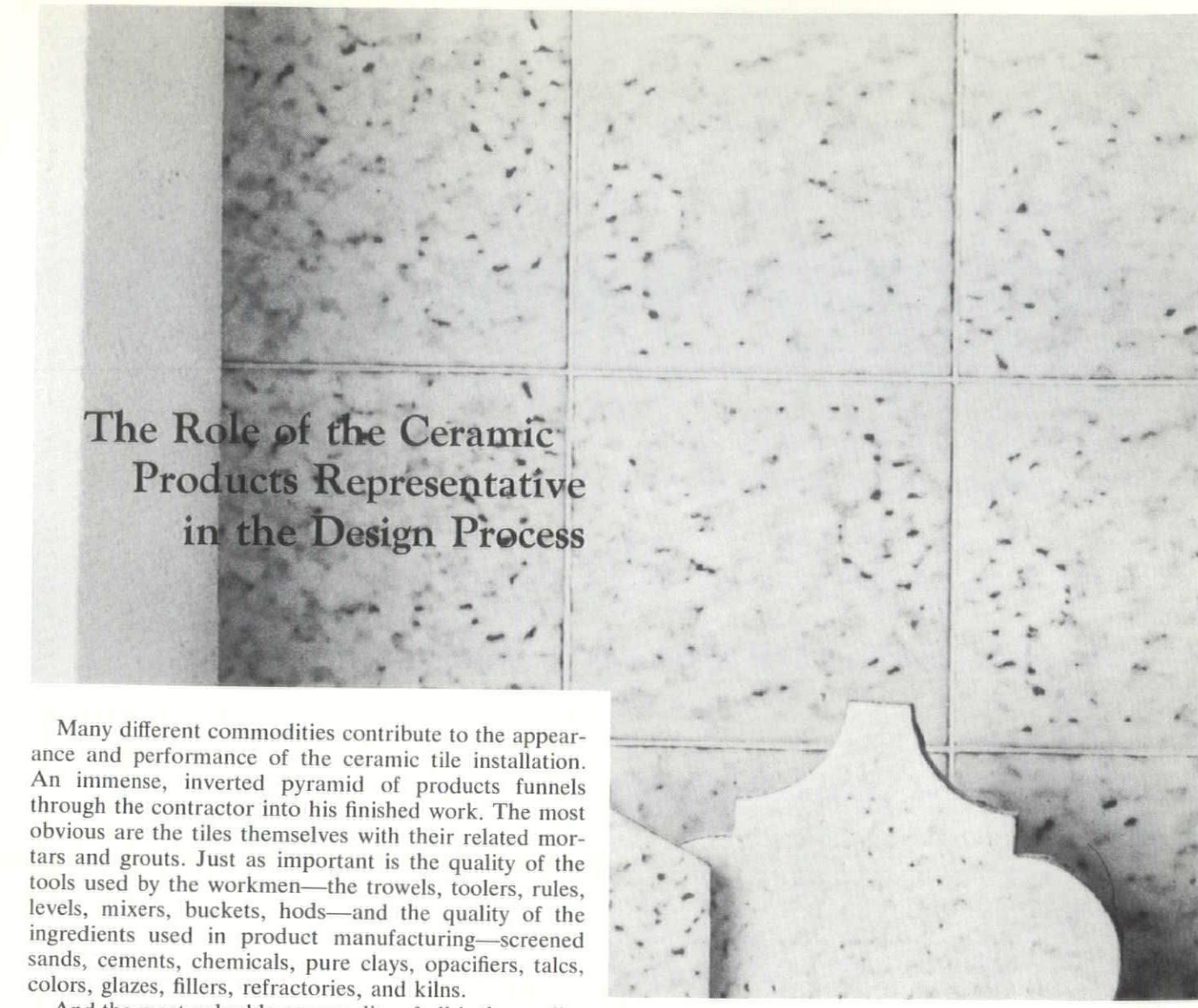
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The Role of the Ceramic Products Representative in the Design Process

Many different commodities contribute to the appearance and performance of the ceramic tile installation. An immense, inverted pyramid of products funnels through the contractor into his finished work. The most obvious are the tiles themselves with their related mortars and grouts. Just as important is the quality of the tools used by the workmen—the trowels, toolers, rules, levels, mixers, buckets, hods—and the quality of the ingredients used in product manufacturing—screened sands, cements, chemicals, pure clays, opacifiers, talcs, colors, glazes, fillers, refractories, and kilns.

And the most valuable commodity of all is the quality of knowledge and experience of the manufacturers and distributors who help the ceramic tile contractor explain product and installation values to the designer.

How is all this assistance given? The wide variety of ceramic materials available today seems to make choice more difficult rather than easier. It's been estimated that domestic manufacturers alone make more than 1,000 colors, shades and color combinations, 500 designs and over 100 different sizes and shapes! At least that many more are offered through the importers of foreign tiles.

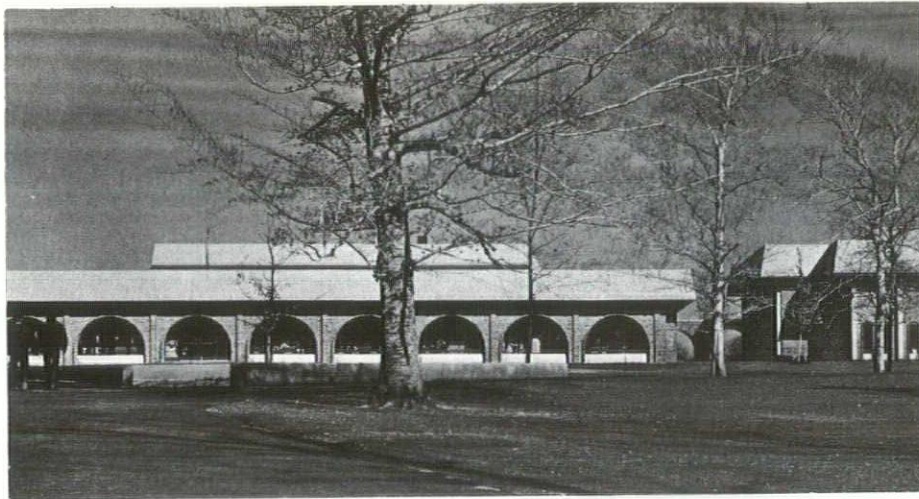
But the real values are not those which are readily seen. Those values include the development of new manufacturing processes which have actually reduced the cost of material; and, the discovery of Dry-Set Mortar, the first thin-set cement bonding material specifically designed for use with tile. The Tile Council of America estimates that Dry-Set has saved more than \$200 million in installation costs since its development 16 years ago.

Today's successful designer has no time for "peddlers" in his office. For that reason, most manufacturers offer specialized services to him through their distributors. They include:

1. complete product knowledge and display of their products.
2. design consultation service; useful on large projects such as institutional swimming pools.
3. color coordination service; sampling is often necessary to evaluate color harmonies and texture blending.
4. knowledge of competing products and the other products to which ceramics must attach, meet or blend.
5. adequate inventory of popular sizes so that no project is delayed due to lack of local supply.
6. availability—making certain the specifier knows how to reach the right people for answers when he has to.

On big projects it is wise to consult beforehand with the representative and the contractor about specifications and price groupings of the various material under consideration. Through the contractor, the distributor furnishes reliable information about delivery of special order materials.

It's a complex process and each project has its own set of guidelines, but the contractor and his supplier work hand-in-hand to provide the quality of craftsmanship expected of a professionally-installed installation.



PICTURED: Macomb County Community College, Center Campus;

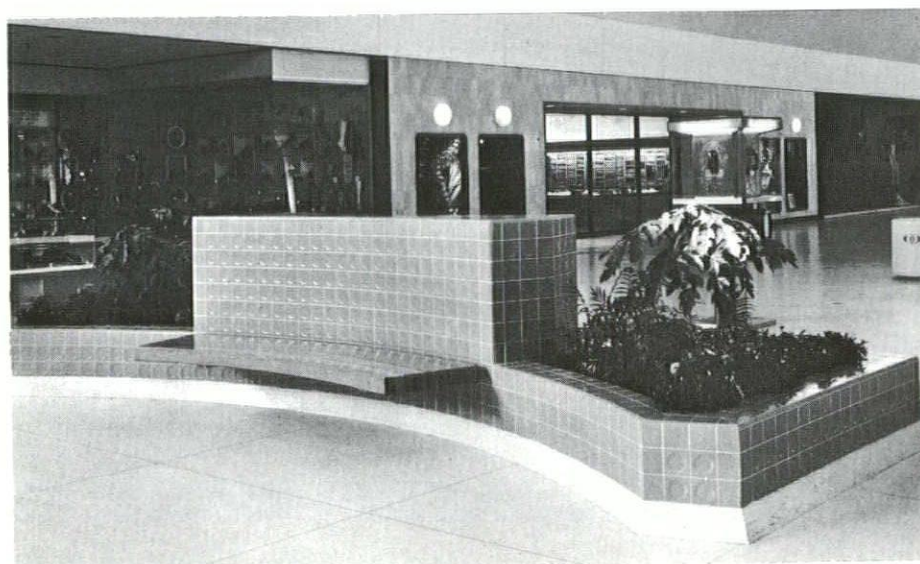
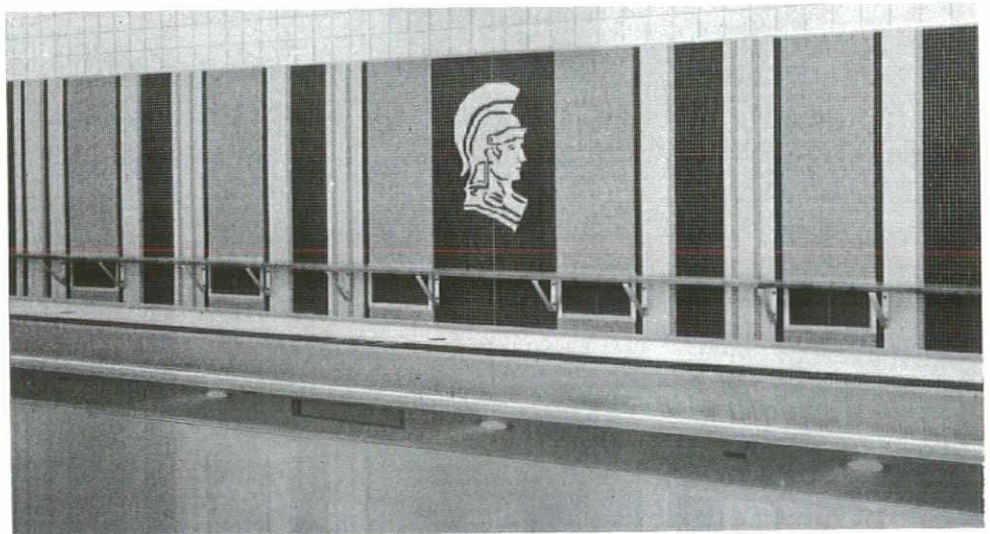
Wakely-Kushner Associates, Inc. Architects

Ceramic Tile Installed: on all corridor floors and in all toilet rooms.

PICTURED: Senior High School Clawson, Michigan O'Dell, Hewlett and Luckenbach, Inc., Architects, Engineers and Planners

Ceramic Tile Installed:

Natatorium mural, walls, deck and pool; walls and floor of kitchen area, shower, drying and toilet rooms; corridor walls; entrance and laundry room floors.



PICTURED: Oakland Mall; Charles N. Agree, Inc. Architects

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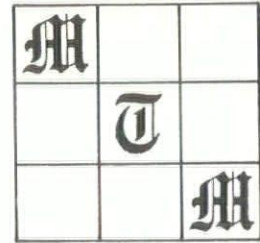
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Glossary of Terms Used in Tilework

ACCESSORIES (TILE ACCESSORIES): Ceramic or non-ceramic articles, affixed to or inserted in tile work, as exemplified by towel bars, paper, soap and tumbler holders, and the like.

ACID-WASH: Acid or other material to clean unglazed tile, remove thin deposit of cement from tile.

BALANCED CUTS: Cuts of tile at the perimeter of an area that will not take full tiles.

BOND COAT: A thin coat of pure portland cement which is used to bond tile to mortar.

CAPPING: A round nosed tile used for trim on walls.

CEMENT BODY TILES: Tiles with the body made from a mixture of sand and portland cement. The surface may be finished with portland cement, spheroids of marble or other materials.

CERAMIC TILE: A ceramic surfacing unit, usually relatively thin in relation to facial area, made from a clay or mixture of clay and other ceramic material, called the body of the tile, having either a "glazed" or "unglazed" face, and fired above red heat in the course of manufacture to a temperature sufficiently high to produce specific physical properties and characteristics.

CERAMIC MOSAIC TILE: Tile formed by either the dustpressed or plastic method, having a facial area of less than four square inches and which is usually mounted on sheets approximately 2' by 1' to facilitate setting. Ceramic mosaics may be of either porcelain or natural clay composition, and may be either plain or with an abrasive mixture throughout. Shape may be square, diamond or hexagonal.

CHIPPED: Caused by rough handling and confined to the corners and edges of the tile.

CONTAMINATED: Stained tile as a result of carton and tile being saturated by moisture, oils, solvents or other materials.

COVE TILE: An inside round part of tile used to make quarter-round corners of floor.

CRACKED: Tiles that have actually been cracked in one or more pieces usually during the beating in process of installation. These will show up as hairline cracks.

CRYSTALLINE GLAZE: A heavy color topping on a non-vitreous body which shrinks when fired, producing a "crackled" finish; often over-coated with a smooth, clear glaze for ease of maintenance.

FAIENCIE TILE: Glazed tile or unglazed tile generally made by the plastic process, showing characteristic variations in the face, edges and glaze that give a handcrafted, non-mechanical, decorative effect.

FLAKED: Irregularities left on the edge of the tile mainly due to the use of machine cutting tools.

FLOAT COAT: Level or plumb mortar bed for receiving pure coat of cement before placement of tile.

FROST PROOF: Tile with body impervious to moisture for use in extra-cold areas, exterior or interior.

GLASS MOSAIC TILES. Tiles made of glass, usually in sizes $\frac{3}{8}$ " x $\frac{3}{8}$ ", $\frac{3}{4}$ " x $\frac{3}{4}$ " but not over 2" square and $\frac{1}{4}$ " thick, mounted on sheets of paper. Usually sheets are 12" square.

GLAZED INTERIOR TILE: A glazed tile with a body that is suitable for interior use and which is usually nonvitreous, and is not required or expected to withstand excessive impact or be subject to freezing and thawing conditions. Most commonly installed on wall surfaces. Produced in units as small as 3" x 3", but more commonly in units $4\frac{1}{4}$ " x $4\frac{1}{4}$ ", 6" x $4\frac{1}{4}$ ", 6" x 6" and $8\frac{1}{2}$ " x $4\frac{1}{4}$ "; sizes up to 12" x 12" and 8" x 24" are available.

GRADES OF TILE: The best grade obtainable is the "Standard" grade. The grade called "Seconds" is the result of slight imperfections in manufacturing that in no way affect wearing or sanitary qualities.

GROUTING: Cement or plastic mixture, white, black or colored, which is applied to tile to fill in the small spaces between tile.

HAND MADE: Tile made by

hand from clay materials having a variation in face and edges that occur from the handicraft method.

IMPERVIOUS: Tile that has moisture absorption approximately 0.5% or less by weight.

JAGGED EDGES: Irregularities left on the edges of the tile due to the use mainly of hand cutting tools.

MARBLE TILES: Marble cut into tile sizes 12" square or less, usually $\frac{1}{2}$ " to $\frac{3}{4}$ " thick. Several types of finishes are made: polished, honed and split-faced.

MATTE GLAZE: A glazed surface on the tile that does not clearly reflect an image or is entirely without sheen.

MORTAR: A combination of sand, cement and lime in proper proportions for the setting bed for tile.

MOUNTING: All ceramic mosaic tile is regularly furnished to the contractor in the form of tile mounted on sheets about 2' by 1', but can also be obtained as individual pieces.

NATURAL CLAY TILE: A type of ceramic mosaic or paver made by either the dust-pressed method or the plastic method, from clays that produce a dense and strong body having a distinctive, slightly textured appearance, with high resistance to wear.

NON-SLIP. Descriptive of an unglazed tile having an antislip coefficient sufficiently high to decrease the hazard of slipping by persons wearing rubber heels, leather heels, or barefoot, under the normal conditions of use of the floor. Floors may be wet and soapy, wet and dirty, wet and clean, or dry and dirty, dry and clean. Either grooving or abrasive aggregates may be specified.

Abrasive tile is commonly made with a homogeneous admixture of not less than 6% by weight of aluminum oxide (Al_2O_3) or silicome carbide (SiC_2) to form a surface of slightly projecting and hard grains, yet smooth enough to be easily cleaned. Abrasive tile has a speckled appearance resulting from the

interspersed abrasive granules.

NON-VITREOUS: Tiles having moisture absorption of more than approximately 7 percent.

PACKINGHOUSE TILES: Made by the extrusion process, similar to QUARRY TILE; 1¼" or more in thickness; withstands heavy loading, abrasion and impact; made from reddish earths; low water-absorbency.

PAVER: A type of unglazed tile similar to ceramic mosaic in composition and physical characteristics, having a face area of 4 square inches or more. Particularly suitable for heavy duty floor service. Made by dust-pressed or plastic method; porcelain or natural clay; abrasive or non-abrasive. Pavers are produced in sizes up to 12" by 12" and are made thicker than smaller mosaic units as the size increases because increased stability is required during firing.

PLASTIC PROCESS: A method of manufacturing tile from clay that has been rendered plastic by mixing with sufficient water and then firing.

PORCELAIN TILE: A type of ceramic mosaic or paver that is generally made by the dust-pressed

method; of a composition resulting in a tile that is dense, fine-grained, smooth, with sharply formed face; resistant to stains, easily cleaned, with high resistance to wear.

QUARRY TILE: Unglazed tile, usually 6 or more square inches in surface area and ½" to 1¼" in thickness, made by the extrusion process from natural clay or shales. Usually having an absorption ranging from 0.5% to 5%. Can be vitreous or semi-vitreous. Some colors are resistant to moisture, dirt, abrasion, freezing and thawing.

SCRATCHED: Tiles that have surface scratches (usually glazed wall tile) caused from sand, tools or rough handling.

SCRATCH COAT: Mortar applied before float coat.

SEMI-VITREOUS: Tiles having a moisture absorption from about 3% to 7% by weight.

SMALTI: Small hand-cut color chips used by mosaic and mural artists; a kind of non-porous-surfaced glass with very little structural or functional strength not to be confused with GLASS MOSAICS.

SPACERS: Small well-placed elongated bisque material usually

¼" to ½" long. Vary in depth on side of tile from 1/32" to 1/8" in height along four edges of tile to provide space for grout and an even space between each tile.

SPALLING: Tile that has been applied to a wall surface that shows fine hair-line cracks, but tile has not separated as, in the case of a structural crack. Spalling can be caused from too strong setting bed as well as from structural movement.

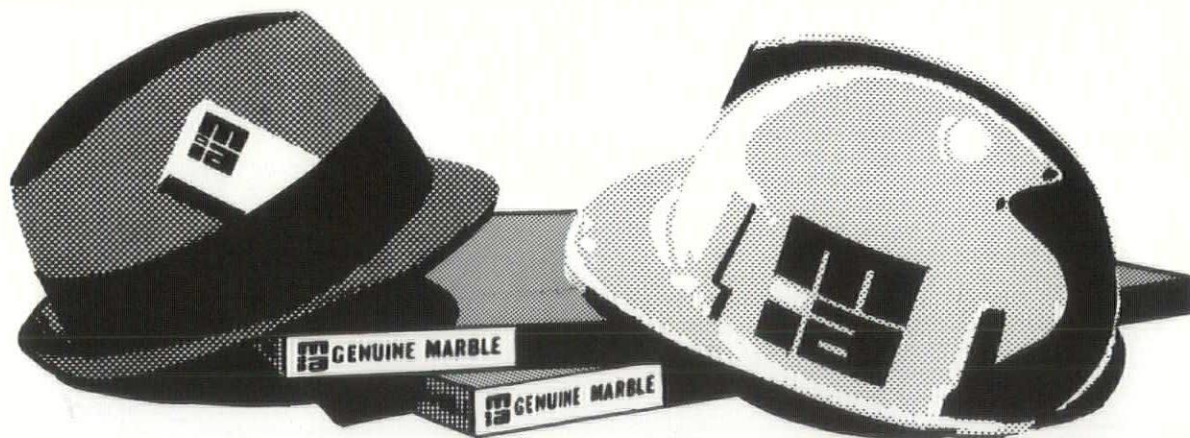
STAIR-TREAD: Large size quarry tile for steps usually 6" x 6". Usually has a round edge on one side.

STRIPS: Glazed pieces that are narrow in width compared to length. Used as decorative accents principally with glazed interior tile.

STONED: Use of a carborundum stone to eliminate the jagged and flaked edges, due to cutting.

STRUCTURAL CRACKS: Tile that has cracked due to the movement of the structure.

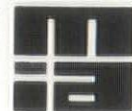
TILE: A thin slab or shaped piece of baked clay sometimes glazed or ornamented, used for covering roofs, lining walls, paving floors, draining land, and often in ornamental work. The word "tile"



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originates, in part, from an old Latin word meaning "to cover."

TILEWORK: Refers to all the labor and materials provided by the contractor to result in a "Tiled" surface. The words "Tile" or "Tiles" refer only to the fired clay pieces either before or after installation.

UNGLAZED: A hard, dense tile of homogeneous composition, deriving color and texture from the materials of which it is made. Colors

are limited by composition, firing, and degree of vitrification. Made by dust-pressed or plastic process. For floors, either impervious or vitreous unglazed tiles should be used. This class of tile comprises Unglazed Ceramic Mosaic, Unglazed Paver, Unglazed Quarry, and Unglazed Special Purpose Tile.

VITREOUS: Tiles having a moisture absorption of approximately 0.5% to 3% by weight. Comes from

the Latin word "vitrimum" meaning glass. The composition of the tile body or the glaze will determine the impermeability which results from vitrification.

WEATHERPROOF: Any kind of tile that will pass the Standard Weather Test.

WRINKLED SHEETS: Pertaining to ceramic mosaics mounted on paper. Due primarily to rough handling in shipment.

The Great Lakes Ceramic Tile Council wishes to acknowledge the assistance of the Tile Contractors' Association of America, The Tile Council of America, the Ceramic Tile Institute, the Southern Tile, Terrazzo and Marble Contractors' Association, the Western States Ceramic Tile Contractors' Association, the Detroit Ceramic Tile Contractors' Association, the Chicago Tile Institute, the Delaware Valley Ceramic Tile Institute, and the many manufacturers and distributors of ceramic materials who have provided materials and information used in this special section.

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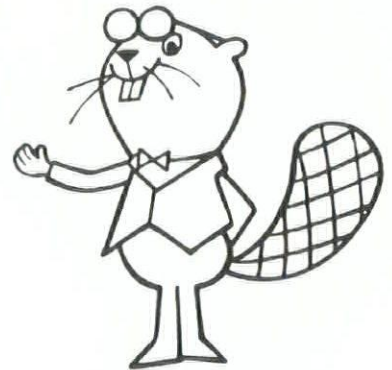
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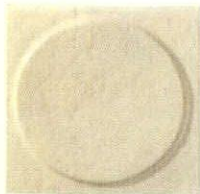
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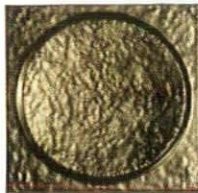
A8/LT24B White



A8/LT21B Fawn



A8/Bronze Green



A8/Bronze



A1/LT24B White



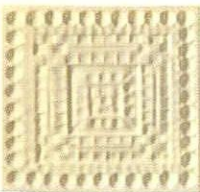
A1/LT21B Fawn



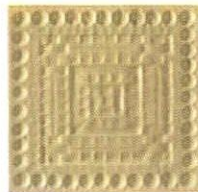
A1/Bronze Green



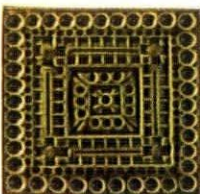
A1/Bronze



T7/LT24B White



T7/LT21B Fawn



T7/Bronze Green



T7/Bronze

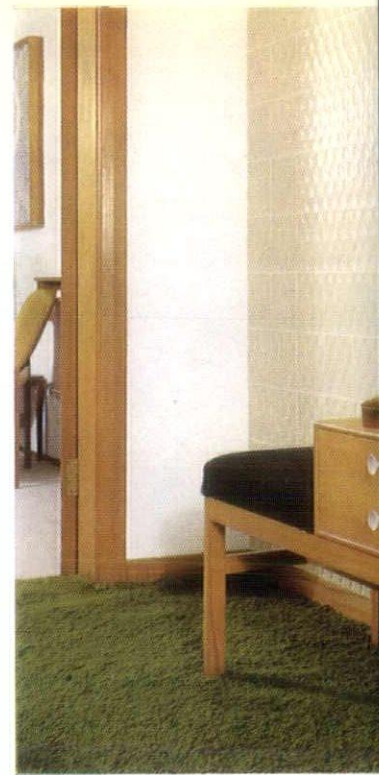
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Special Note.

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The design A1 is $\frac{1}{2}$ " in thickness.

All the other tiles are $\frac{3}{8}$ " in thickness.



(Colours shown are as close to actual tiles as printing process will allow.)

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cont'd from page 8

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To give you more insight into the Cunningham-Limp Rx for Hospital Expansion we are enclosing a brochure that further explains our Comprehensive Services and highlights some functionally designed, thoroughly coordinated facilities recently completed in the health care field. Our multi-disciplined staff is available without obligation and we welcome an opportunity to consult with you.

May we hear from you?

Yours very truly,
M. E. Cunningham

Dear Mr. Cunningham:

I asked Mr. Sherman Anderson, Superintendent, Norwood Hospital, if I could reply to the letter he received from you. A photocopy is enclosed for your reference, although I'm quite certain that it being a form-letter the verbiage is as familiar to you as the innuendo it contains is to me.

Allow me to respond to your questions: (Asterisks signal footnotes)

Q. How does my client know his project will be within his proposed budget?

A. His architect tells him.*

Q. How do you know your program will be executed within a specified completion time?

A. His architect assures him.**

Q. Who coordinates the architectural design, engineering and construction phases?

A. His architect.***

Q. Who assumes the responsibility for overall management of the project, including programming and cost control?

A. His architect.***

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Swarts Retires

Ward Swarts, AIA, member of the Detroit Chapter retired as of October 1. Swarts was the Director of Architecture and Engineering, with Colonial Williamsburg having served for almost 12 years. Ward joined the AC&M staff in February of 1960, as architectural projects manager.

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CALENDAR

February 26	George White, Lecturer Continuing Education Program Rackham Auditorium Ann Arbor, Michigan 9:00 A.M. Registration
March 15-17	MSA Annual Convention Detroit Hilton Hotel Detroit, Michigan
May 7-11	AIA National Convention Houston, Texas
August 3-5	Mid-Summer Conference, MSA Mackinac Island, Michigan

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