

Over the last two decades, all categories of commercial interiors have included ceramic tile, natural stone and similar products such as quartz, metal and glass surfacing within their design plans. Go into any upscale shopping mall or high-end retail store and you'll see amazing, state-of-the-art visuals created with these products. And as of late, manufacturers and marketers of these materials, along with high-tech producers of tile and stone installation systems, now offer amazing solutions that allow for locations other than "wet areas" (such as commercial kitchens or public restrooms) to showcase today's beautiful hard-surface materials.

And why not? Just about every building owner and construction director worldwide will agree that no interior surfacing material lasts longer, is as durable, keeps its original condition, or is easier to clean and maintain than today's commercial-grade tile and stone products. Today's porcelain tile, the most popular tile for commercial interiors, is as hard or harder than natural granite, and only has a porosity level of .05 percent—similar to that of granite and other very dense stones. Glass and metal have also made major design comebacks; they look good and perform at optimal levels over the long term. With a vast offering of sizes, shapes, textures and colors, designing with tile and stone offers more choices than a Saturday night buffet at the Bellagio.

But interior designers can take these materials to a higher, more sophisticated design level by creating imagery in tile and stone that lasts virtually forever. Anything two-dimensional that can be drawn or photographed can be reproduced via a computerized process called waterjet cutting and fabrication.

What is waterjet cutting and fabrication? It refers to the harnessing of jet streams of water coming out of a tiny nozzle at up to 87,000 psi, a pressure level which is about ten times as strong as

# FULL BLAST Ahead

Waterjet-cut tile and stone designs offer the A&D community limitless creative options for high-quality productions on both horizontal and vertical surfaces.

what was available just a decade ago. This nozzle (featuring a tiny orifice generally made of garnet or diamond, which accurately "focuses" the water) is attached to a futuristic robotic arm and driven by state-of-the-art computer software. The pressure coming from the jet stream is so strong that it can cut right through hard surface materials such as granite, which may be up to 6 inches thick.

If a designer wants to include a waterjet-cut tile or stone section in one of his or her commercial interiors, the process is actually quite simple. Once designs are decided upon, an image is sent to the waterjet firm. This image is then scanned and digitized via a special software program which will ultimately produce a schematic of the various pieces of hard-surface material that are to be used in the design. This software, in some cases, can actually recommend which material and colors are to be used.

Once the schematic is generated (such as the Houston Police Department example, shown right), the next step is preparation for cutting. The stone or tile is put on a "sacrificial table" and the robotic arm guides the nozzle across the material, cutting it with only the tiny jet stream. This cutting is so precise that grout lines will ultimately be almost invisible.

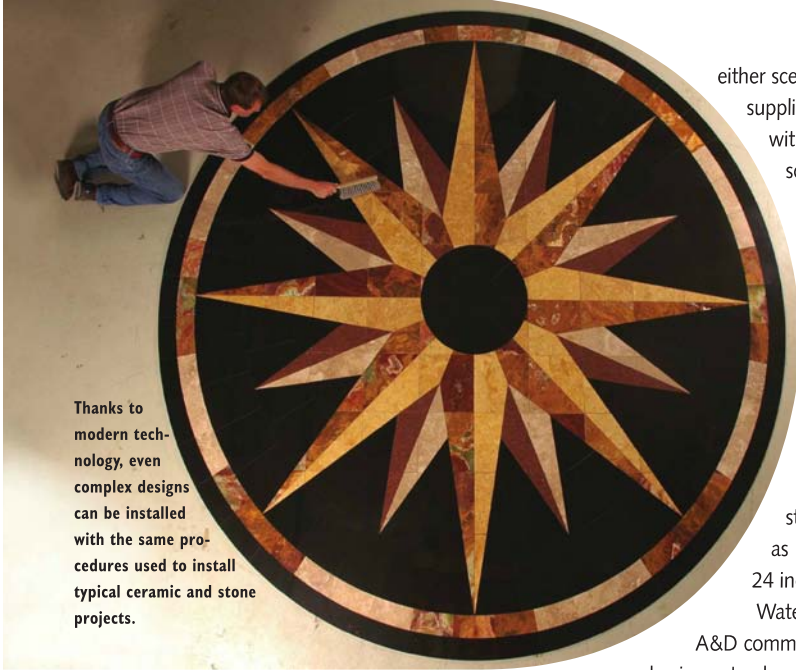
When creating a visual design for a commercial interior, it is not uncommon for dissimilar materials to be combined together. Designers may now use different shapes, sizes and colors of marble, granite, travertine, ceramic tile, metal and glass all together in one amazing design statement. And because the process is computerized and saved to disk, anything that is waterjet cut and fabricated can be duplicated and used again and again. Think of the potential when creating logos or wayfinding signage for retail, hospitality or healthcare applications.

Whenever there is a new location for one of those companies and floor logos or wayfinding signage is needed, the computerized waterjet will be able to cut materials needed to exact specifications with a minimum of hassle.

Virtually all tile and stone waterjet-cut productions are installed with the same procedures used to install typical ceramic and natural stone projects. Many times, waterjet designs consist of individual rectangular field tiles which are cut and modified with other colors and/or materials, resulting in a same-sized tile consisting of two or more pieces which generally are epoxied together. In this case, the installer simply puts down tiles piece-by-piece, as he typically



Special "install by numbers" schematics show the position of waterjet-cut tiles in a Houston Police Department design.



Thanks to modern technology, even complex designs can be installed with the same procedures used to install typical ceramic and stone projects.


would do, but follows the original schematic to ensure all parts fall in pre-determined place. In other cases—specifically when an intricate, multi-piece “jigsaw puzzle” of a floor mural is installed—the process may be more on a piece-by-piece basis. In

either scenario, the waterjet firm supplies the flooring contractor with an “install by numbers” schematic; each of the provided waterjet-cut pieces will be numbered on the backside. Today’s professional installer should have no problem with their installation, especially when the waterjet-cut designs have been pre-assembled into standard-sized tiles such as 18 by 18 inches or 24 by 24 inches.

Waterjet designs offer the A&D community limitless creative horizons to showcase high-quality productions for both horizontal and vertical applications. Projects may be for custom floors, focal medallions, any type of signage, tile or stone business entryways, murals, etc. Throughout America, examples of unique waterjet design may

be found in more and more commercial interiors.

Waters Edge’s sister company, Rheinschmidt Tile & Marble, is a third-generation flooring installation contractor with a specialty niche within the shopping center industry. Over the years, we’ve installed mall floors in almost all 50 states and Puerto Rico. We started using waterjet-designed pieces within our installations roughly two decades ago. As the demand grew, we found it made sense to recommend that the flooring areas which were to be waterjet cut and fabricated consist of the same tile material as the surrounding “field” areas incorporated. This made the transition from straight tiled flooring to an incredibly ornate waterjet design much more of a soft, flowing process.

It is our belief that a professional tile contractor should be just as knowledgeable of the waterjet process as a professional waterjet fabricator should be of today’s trends in tile installation for commercial interiors. 

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