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Vol. 17 No. 5 July 2017

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From the Publisher's Desk

Dear Readers,

By the time you receive this edition of *Concrete Decor*, I'll have visited family in Denmark before heading to Ideal Work's 20th anniversary celebration in Italy. After that, it's off to Paris to meet with World of Concrete (EU) management to discuss a Decorative Concrete LIVE! event for their April 2018 show.

Prior to the March 2010 launch of the Concrete Decor Show, I thought building a stronger sense of industry on U.S. soil would ultimately enable the industry to grow internationally. It seemed reasonable to think that the success we cultivated here could serve as a template we could use to grow elsewhere.

Some may think that foreign-based companies don't work like we do. However, I believe if you want to learn a trade — no matter where you are — you still need to learn fundamental skills before you can become proficient. What makes decorative concrete unique to other building trades is that it draws interest from people with diverse backgrounds who have an unquenchable desire to learn how this industry's products work. That we are blessed with a rich pool of experts who are enthusiastic and eager to share their knowledge is a driving force for our ongoing success and overseas developments.

Like so many of you who regularly train employees or customers, *Concrete Decor* is doing its part by developing relationships with foreign-based publishers who understand this industry's long-term viability. They're interested in using *Concrete Decor* magazine's print and online resources to advance this industry's success.

During the past 18 years of publishing *Concrete Decor*, a lot has changed — some good, some not so good! What concerns me most is the potential for fragmentation. At one time, concrete countertop fabricators believed they were their own entity. While some may still share that opinion, a group of fabricators/artists doesn't create the sense of industry that can move that decorative concrete category into mainstream. And while concrete polishing wrestles with this kind of identity today, its association with ASCC and the Decorative Concrete Council is simply indicative of the industry's natural progression.

Based on this industry's evolving needs, *Concrete Decor* has elected to start holding the Concrete Decor Show every other year. Following the Nov. 6-10 event in Florida this fall, the next show will take place in 2019 in Texas. In the even years, we'll host a buying event that will strengthen and support vendor/distributor relations for decorative concrete products, nationally and internationally.

Meanwhile, enjoy this gorgeous edition. Remember, your workmanship is not just another well-deserved paycheck, it's a potential livelihood for future generations.

Sincerely,



Bent Mikkelsen
Publisher



On the cover: This mesmerizing metallic floor is the handiwork of Jon Kopp, an accomplished concrete artisan in Arizona who largely installs these one-of-a-kind coverings in high-end residential garages.

Photo by Quality Epoxy

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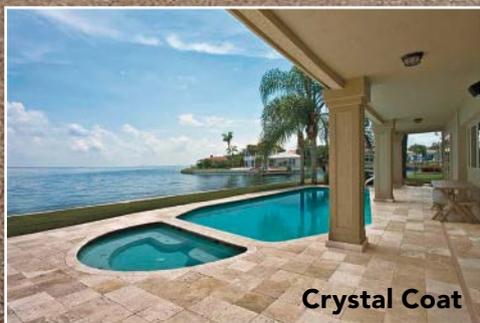
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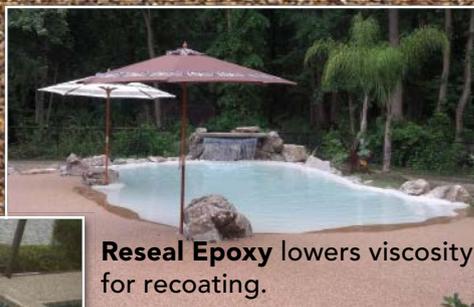
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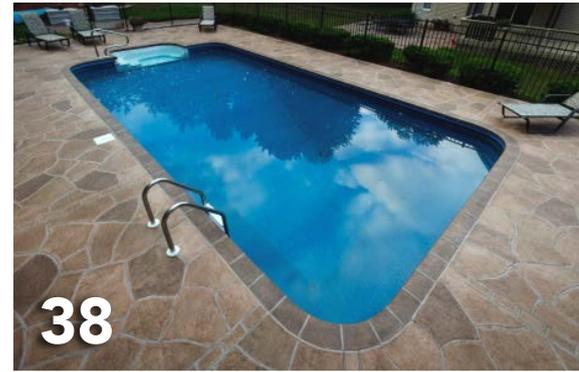
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business & industry

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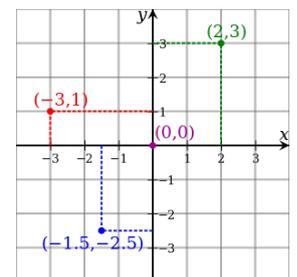


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concrete DECOR® EXPERTS



Jon Kopp, who has been coating floors for more than 16 years, owns and operates Quality Epoxy LLC in Gilbert, Arizona. The company exclusively uses Arizona Polymer Flooring epoxies and urethane and Cohills Building Specialties Inc.'s metallic powders. You can follow Kopp on social media under Facebook.com/qualityepoxy or visit his website at www.qualityepoxy.com. See Jon's article on page 34.



Rick Lobdell, a classically trained artist with a master's in fine arts in painting from the Savannah College of Art and Design, has also studied math and drafting. In this series, the owner of Concrete Mystique Engraving in Tennessee will explain how he lays out his well-known designs. He can be reached at rick@concretemystique.com. See his column, "Design Theory," on page 47.



Stephan Reed is the digital marketing specialist for ForeFront Web, a web design firm in Columbus, Ohio. His role includes search engine optimization, content marketing, digital marketing consulting and researching what makes search algorithms tick. He can be reached at stephan@forefrontweb.com. See Stephan's article on page 18.



David Swindle II, sales manager at Surtec Inc. in Tracy, California, has more than 20 years of experience in the cleaning and maintenance industry. For the past three years, he has worked with Surtec, focusing on its polished concrete system. He can be reached at DSwindle@surtecsystem.com. See David's article on page 44.

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ASCC-DCC now accepting entries for 2018 Decorative Concrete Awards

The deadline to submit entries for the 10th annual Decorative Concrete Awards, presented by the Decorative Concrete Council, a specialty council of the American Society of Concrete Contractors, is Sept. 30. The competition, held in partnership with Concrete Construction magazine, is open to DCC members and nonmembers.

Entries are invited in the following categories: overlays, cast-in-place stamped and special finishes, stained, polished concrete, polished overlays, countertops, vertical application, concrete artistry, multiple applications, architectural concrete, decorative environmental and project video. Except for countertops, two awards may be given in each category, for projects 5,000 square feet and less, and projects more than 5,000 square feet. Submittals are judged on craftsmanship, aesthetics, functionality and creativity.

The awards will be presented at the World of Concrete 2018.

[\(866\) 788-2722](tel:(866)788-2722)
www.ascconline.org

ASCC to hold conference in Phoenix

The American Society of Concrete Contractors will hold its 16th annual conference Sept. 14-17 at the Arizona Grand Resort in Phoenix. Concrete contractors, manufacturers, designers and other industry professionals will gather for three days of educational events and networking.

Industry experts including Brad Humphrey, Pinnacle Development Group; Ian Blair, The Blair Group; Amy Lynch, Generational Edge; Chris Sullivan, ChemSystems; and Kim Basham, KB Engineering, will offer seminars on critical industry topics.

Seminar tracks include tech, business management, business field level, decorative and polished concrete and safety. Seminar topics include “Use Science Not Luck (to Minimize Floor Cracking),” “Polished Concrete Maintenance,” “Navigating Your Construction Contract,” “Winning the War on Attitude” and “Death on the Job.”

Attendees can take advantage of the ACI Flatwork Finisher Certification class and exam, which is offered Sept. 14.

[\(866\) 788-2722](tel:(866)788-2722)
www.ascconline.org

PCA honors leaders in safety

The Portland Cement Association recently honored the winners of the 2017 Safety Innovation Awards, which recognize creative safety-enhancing projects in the cement industry, at a recent PCA board meeting and fly-in event.

The winners were determined by a panel of judges that evaluated innovative submissions from across the country in the following categories: distribution, pyroprocessing, general facility and milling/grinding.

The following are the 2017 Safety Innovation Award winners: Milling/Grinding Category: Ash Grove Cement, Montana City, Montana; Pyroprocessing: Cemex USA, Balcones, Texas; Distribution: CalPortland Cement Terminal, Portland, Oregon, and LafargeHolcim U.S., Corporate Program, Chicago, Illinois. There was no winner in the general facility category.

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Cement consumption growth on the rise

The Portland Cement Association is expecting U.S. cement consumption to

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reach 3.5 percent annual growth during the remainder of 2017 and 2018, based on analysis of data and policies likely to impact the industry in the years ahead.

Speaking before the IEEE-IAS/PCA Cement Conference in Calgary, Alberta, Canada, PCA Senior Vice President and Chief Economist Ed Sullivan said that while details on specific federal U.S. policies are not yet fully available, the association is forecasting growth in the years ahead using conservative baseline estimates for factors such as infrastructure spending and tax reform.

Tax reform will have a key impact on cement consumption, as it drives consumer spending and confidence that play heavily with the housing sector, according to PCA.

“The underlying fundamentals supporting economic growth are positive, though we’ll maintain a watch on how the U.S. government addresses possible inflation and immigration policy,” Sullivan said. “This confidence in stable, sustained growth in cement consumption is likely to be unchallenged through 2018.”

☎ (847) 966-6200

🌐 www.cement.org

The Stephens Group acquires GranQuartz

GranQuartz, a leading supplier of tools and equipment to stone fabricators and concrete and monument professionals across the U.S., has been acquired by The Stephens Group, a private, family-owned investment firm based in Little Rock, Arkansas.

The deal, finalized May 5, will allow GranQuartz to maintain its reputation as a trusted partner to the industries it serves while expanding its offerings and services.

GranQuartz has experienced extreme growth in recent years through an expanded product line, acquisitions and a relentless focus on exceeding the expectations of its customers. Along with new tooling, GranQuartz has introduced large equipment to the market, including affordable and high-end bridge saws and equipment for increased efficiency, as well as the Zoller CNC pre-setter.

GranQuartz also recently acquired Granite City Tool and is focused on meeting the needs of all its fabrication and monument customers.

☎ (800) 458-6222

🌐 www.granquartz.com

Ghostshield partners with Redi-Mix Colors

Ghostshield, a pioneer in concrete protection through advances in molecular nanotechnology, has partnered with Redi-Mix Colors & Sealers.

Redi-Mix Colors & Sealers recognized an opportunity to bring quality products and service to a flourishing market. It has top-quality, high density-concrete coloring pigments, stamping release agents and nonreactive stains, and will now offer Ghostshield concrete sealers.

Ghostshield is a leading global manufacturer of a wide range of innovative specialty construction materials including impregnating concrete sealers and structural waterproofers.

With this cobranded product launch, contractors will have the convenience of purchasing Ghostshield sealers from the Redi-Mix website.

☎ (855) 573-8383

🌐 www.ghostshield.com



The new Elcometer 500 can quickly, accurately and repeatably measure dry film thickness on concrete and other cementitious substrates.

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www.elcometer.com/e500

sales@elcometer.com

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Blastrac NA expands to new location

Blastrac NA, headquartered in Oklahoma City, recently expanded its operations with an additional location at 7140 Ivy St., Unit E, Commerce City, Colorado. Blastrac operates several sales-rental-repair locations throughout North America and Canada.

The Blastrac Commerce City location will provide sales-rental-repair and surface prep products.

[\(800\) 256-3440](tel:8002563440)

www.blastrac.com

EVENT CALENDAR

Decorative Concrete Fair

Solomon Colors/Brickform HQ
Aug. 17-19, Springfield, Ill.

www.brickformtraining.com/decorative-concrete-fair

ASCC Annual Conference

Arizona Grand Resort
Sept. 14-17, Phoenix, Ariz.

www.ascconline.org

The Concrete Convention and Exposition

Disneyland Hotel
Oct. 15-19, Anaheim, Calif.

www.concrete.org

PCA Annual Summit

Hotel Del Coronado
Oct. 29-31, San Diego, Calif.

www.cement.org

Concrete Decor Show concrete 2017
DECOR SHOW
INNISBROOK

Innisbrook Golf & Spa Resort
Nov. 6-10, Palm Harbor, Fla.

www.concretedecorshow.com

ICRI Fall Convention

Hyatt Regency New Orleans
Nov. 15-17, New Orleans, La.

www.icri.org

World of Concrete

Las Vegas Convention Center
Jan. 23-26, Las Vegas, Nev.

www.worldofconcrete.com

Online tech start-up enters surface prep market

Kwipped is ramping up its sales and marketing efforts to focus on driving business in the flooring and surface preparation market.

Its proprietary platform technology and two-sided marketplace structure facilitates equipment rental and equipment leasing between businesses, organizations and professionals that need nonpurchase options to access specialty equipment and a global network of approved, prequalified suppliers.

According to Charlie Dickinson, Kwipped's business development director, its go-to-market strategy for the surface prep industry will be fueled by an aggressive equipment supplier recruitment blitz

accompanied by a paid search ad campaigns and PR outreach to build awareness and attract rental customers.

"We think the timing for market entry is enhanced by the recent OSHA silica dust rule, which is driving rentals and leases for certain types of equipment, especially dust extractors," Dickinson said.

Kwipped has already approved and added several active flooring and surface prep suppliers to its network including Runyon Surface Prep Rental & Supply, APE Cos. and Xtreme Concrete Polishing. 

[\(800\) 273-8404](tel:8002738404)

www.kwipped.com

TRANSITIONS

Scott Becker, president and CEO of Chromaflo Technologies Corp., will serve a three-year term on the board of directors of the American Coatings Association, a nonprofit association that advances the paint and coatings industry. Becker has been the president of Chromaflo Technologies, one of the largest independent global suppliers of advanced colorants and chemical dispersions for the paint, coatings and thermoset plastics industries, since 2012. Previously, he was CEO and president of Plasticolors Inc., and Elementis Specialties' Colorants and Additives.



Dylan Snyder joins the technical service team at Dur-A-Flex Inc., a leading manufacturer of commercial, industrial and institutional, seamless, resinous floor and wall systems, as the western region's technical service manager. He has spent his entire career thus far within the coatings industry.

Lauren Albrecht has joined Laticrete's strategic account group as a strategic account specialist for retail. Laticrete is a manufacturer of globally proven construction solutions for the building industry.

Mary Erholtz, vice president of marketing for Superior Industries, has been named chair of the next CONEXPO-CON/AGG by the Association of Equipment Manufacturers. The show is set for March 10-14, 2020, at the Las Vegas Convention Center in Nevada.



Clint Schramm has been named director of marketing for Laticrete Supercap, a leading manufacturer of premium self-leveling underlayment products delivered through its patented pump truck technology. Schramm has more than 30 years of experience in the commercial flooring industry.



Casey Webster has been hired as human resources manager for the Americas Chromaflo. Previously, he was the director of human resources for Haysite Reinforced Plastics. Webster holds a bachelor's degree in safety and environmental management from Slippery Rock University.



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See-through cabinets don't compromise security

Tool Kage, a new line of job site storage cabinets from Knaack, is clad in 16-gauge diamond-punched steel that provide clear visibility of the contents without compromising security.

Based on Knaack's well-known and trusted Jobmaster, the new see-through security cabinets can stay locked while allowing viewable access to valuable tools, accessories and more.

The Tool Kage line includes three products, the 139-MT, 129-MT and 100-MT, each outfitted with the patented Knaack Watchman IV security lock, an electrical power pass, electrical pass-through in each shelf and diamond-punched 16-gauge steel panels.

Each cabinet is built with a fully arc-welded steel body and powder coated for superior durability and resistance to corrosion and electrical currents. The new cabinets also offer optional 6-inch wheel casters and door shelves.

☎ (800) 456-7865

🌐 www.knaack.com



Tool delivers a better way to seam

As a solution to how much time it takes to seam together large areas of board, Surface Shields developed the Builder Board Seamer. It's an upright tape applicator that is used to quickly seam sheets of surface protection together.



This Builder Board tool can be used on any of Surface Shields' products that require seaming. It can be used with any tape up to 4 inches wide with a standard core.

☎ (800) 754-9685

🌐 www.surface Shields.com

Rock splitter debuts at expo

Brokk, a leading manufacturer of remote-controlled demolition machines, introduced the C20 Rock Splitter during CONEXPO-CON/AGG 2017 in Las Vegas. The attachment, manufactured by Brokk's German sister company, Darda, offers contractors a safe and quiet alternative to explosives and hydraulic breakers. It increases productivity in industries including construction, demolition, mining, quarrying and tunneling.

The C20 Rock Splitter comes in four models: two vertical options ranging from 64-72 inches long, as well as two horizontal options, from 70-83 inches long. Contractors can use the splitter with Brokk machines ranging in size from the new Brokk 280 and up.

When combined with a Brokk machine, it allows laborers to work from a safe distance — typically 10 to 20 feet away — using a belt-mounted remote-control box.

The rock splitter is one of more than 70 attachments that operators can quickly interchange on a Brokk machine for greater versatility on a job site.

☎ (800) 621-7856

🌐 www.brokk.com

Rotary hammer delivers small diameters

The new Hilti SDS+ Rotary hammer TE 3-C delivers consistent and reliable performance for drilling small diameter ranges, as well as light-duty chiseling applications. Featuring an industry standard SDS+ chuck and user-friendly select switch, this versatile hammer drill can tackle multiple tasks, including drilling and hammer drilling in concrete and masonry, corrective and light channel chiseling in concrete and masonry, as well as rotary-only drilling.

This powerful hammer delivers 3,000 rpm of performance, and its hammer-mode produces 5,160 bpm with a 1.8 foot-pound force of impact energy. It has an optimum drilling range of up to 5/8 inch and a maximum diameter drilling range up to 1 1/8 inch. And, it weighs 6.6 pounds, which helps minimize operator fatigue when working overhead.

The new rotary hammer is covered by the Hilti Tool Warranty 20/2/1 — 20 years of repair or replacement of defective parts; two-year, no-cost repairs including wear and tear; and a guaranteed one-day turnaround on repairs.

☎ (800) 879-8000

🌐 www.hilti.com

Solvent-based repellent added to line

A new solvent-based alternative to Prosoco's popular Concrete Protector offers more powerful and robust initial water-beading and repellency on all kinds of finished concrete floors. Formulated based on contractors' feedback, the new Concrete Protector SB offers improved performance in repelling water, oil and stains over competitive products. It also can be burnished.

Surfaces treated with it retain their natural appearance, texture and breathability, and are easier to maintain. The product is ideal for areas of high traffic or wheeled traffic where surface film-forming sealers may prematurely wear off.

The low-odor, VOC-compliant product is easily applied with pump-up sprayers and can also be applied to surfaces previously treated with Consolideck guards like LSGuard and PolishGuard.

The product previously known as Concrete Protector remains available as Concrete Protector WB for customers who want a water-based formulation.

☎ (800) 255-4255

🌐 www.prosoco.com

These bits last a good bit longer

Bosch Daredevil multipurpose bits get the job done in a variety of materials, including masonry, brick, block, tile, metal, wood and concrete. Thanks to a carbide multigrind head (tip is ground on four surfaces) that delivers up to 85 percent faster drilling in metal versus competitive multimaterial bits, these bits are ready for any drilling task in almost any material.

The bits' multigrind heads feature sharp edges that are tough enough for metal and masonry applications. Their robust tungsten carbide heads ensure no skating, clean holes and long life in impact applications. The Daredevil bits have up to nine times the life versus competitive bits in multimaterial applications.

They have an impact-rated hex shank that can withstand tough drilling when used in a hammer drill or an impact driver.

☎ (877) 267-2499

🌐 www.boschtools.com

System introduced for seismic anchoring

Deliver even more performance in seismic anchoring with the Hilti adhesive anchoring system HIT-HY 200. The system now has ICC-ES approval for grout-filled concrete masonry units, as well as 20 percent higher published loads on average in cracked concrete.

It's suitable for securing anchor rods and rebar in cracked and uncracked concrete; anchoring structural and secondary steel structures; retrofitting, seismic strengthening and bracing of reinforced concrete buildings; as well as making structural splices, straight connections with post-installed rebars and the substitution of misplaced or missing rebars.

Using Hilti SafeSet Technology installation methods with the new system eliminates the need for manual hole cleaning, increasing productivity by up to 60 percent when compared to traditional hole-cleaning methods. Hilti's TE-CD and TE-YD hollow drill bits used in conjunction with its VC40/VC20 vacuum system removes dust when drilling, while the revolutionary cone-shaped helix Hilti HIT-Z anchor rod eliminates cleaning altogether. The SafeSet Technology solutions also improve the working environment by reducing airborne silica dust while helping to ensure proper installation every time.

The adhesive is available in two versions with the same load performance: the HIT-HY 200-R for regular working times and the HIT-HY 200-A for accelerated working times.

☎ (800) 879-8000

🌐 www.hilti.com

Moisture barrier melds with surface material

Arisfor, a leading provider of coatings and sealers for a wide range of masonry and concrete surfaces, has introduced its next-generation Multi-Surface Waterproofer (MSW). Using leading-edge nanotechnology, MSW forms a moisture barrier that integrates with the surface material, providing superior protection against the damaging effects of water intrusion, acids and deicing salts.



It's the result of an association with Integricote, the first nanotechnology spin-off company from the University of Houston, currently based at Energy Research Park in Houston.

MSW is designed to prevent corrosion, spalling and cracks caused by moisture, deicing salts and chemicals for new or untreated concrete construction, masonry and precast applications. The product is equally suited to both residential and commercial use, including home and commercial building facades, parking lots and decks, driveways and curbs, loading docks and ramps, and concrete sidewalks and stairs.

It delivers a number of significant enhancements that will appeal to property owners and contractors alike. Some include one-and-done applications, simple prep, fast curing, easy maintenance, long lasting, highly resistant finish and environmentally friendly.

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🌐 www.arisfor.com

Tile system simplifies stamped concrete production

After teaching stamping classes in Las Vegas for 14 years, Gerry Sadleir noticed that most of his students weren't successful at 1/4-inch stamping unless they had a lot of concrete experience. "It was and is a difficult system to learn," says Sadleir, who along with his brother, Rod Sadleir, and Concrete Solutions introduced his 1/4-inch stamping system in 1997 at the World of Concrete. "It requires too much skill and a lot of trial and error."

To appeal to those concrete contractors who want to offer stamping as one of their services but can't quite get the hang of it, Sadleir developed the StoneCrete Tile system that allows users to pour their own tiles and achieve an almost perfect stamped concrete finish every time. Now being sold by Concrete Solutions by Rhino Linings, the reusable molds can be used to make up to two tiles a day.

StoneCrete Tiles — currently available in Random Stone and Ashlar Slate patterns — are recommended for patios, porches,

walkways, decks, driveways, pool decks and similar applications. Border molds and step molds are also available.

The tiles, which fit together like puzzle pieces, are durable, flexible and crack resistant in extreme weather, including heat and freeze thaw conditions. They are designed to conform to uneven surfaces and to cover over cracks and joints.

"We introduced the system at this year's WOC and had a tremendous positive response," says Ernie Archuleta, technical sales manager for Concrete Solutions by Rhino Linings. "Stamped concrete is very labor intensive and you have to have skilled labor to install concrete on site. By making tiles in your shop beforehand, contractors at all experience levels will appreciate this system."

The StoneCrete Tile system, which is available in an array of packages, is now for sale by Rhino Linings.

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Hilti adds two 36-volt cordless tools

Hilti has expanded its 36-volt cordless tool line with the cordless rotary hammer TE 6-A36-AVR and the cordless angle grinder AG 600-A36. These new, highly productive cordless tools reportedly perform as well as their respective corded versions.



The new hammer includes a chiseling feature for light-duty corrective chipping and can be converted to virtually dust-free operation by adding the optional TE 6-A dust removal system. It delivers 1.5 foot-pounds of single impact energy and a 1,040-rpm gear speed for exceptional drilling and hammering in concrete or masonry.



The cordless grinder delivers similar grinding performance of a 7-inch corded grinder with reduced weight and improved maneuverability. Powered by the Hilti B36/5.2 CPC Li-Ion battery pack, the grinder has class-leading power, a slim design and is lightweight. Its built-in Active Torque Control helps protect the user from kickback without impacting performance.

It features a brushless motor that extends the life of the tool by up to three times as long as the average grinder. It will also deliver more work per charge than other cordless angle grinders currently available because it uses batteries with Hilti CPC technology, enabling a higher charge and deeper discharge per cycle.

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Curing compound meets DOT specs

New from ChemMasters Inc., Silensure DOT is a single-step white-pigmented wax emulsion-curing compound with integral penetrating silane sealer. It's formulated to meet stringent state Department of Transportation specifications for curing new highway pavement, with long-term silane protection from damage caused by freeze/thaw cycles and deicing chemicals.



The compound cures concrete to ASTM C309 standards. Its white pigmentation provides a minimum 65 percent light reflectance to keep concrete cool as it cures, while integral silane meets most state DOT requirements for reduction of water and chloride ion penetration per NCHRP Report Series II & Series IV.

Silensure DOT replaces the time-consuming and costly process of separate curing, removal and sealing steps traditionally associated with placement and sealing of new highway pavement. It reduces lane closures and exposures of workers and the traveling public to hazardous traffic conditions and detours. Fewer steps, less labor and lower traffic control expenses result in project cost savings.

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Admix makes creating with GFRC easier

Trinic, a worldwide provider of concrete solutions, released its latest in admix technology, TEC 10.

Built off the same backbone as a GFRC admixture, TEC 10 allows you to dose a single component admix that provides a curing polymer specifically designed for GFRC without all the issues associated with a liquid polymer. Designed to maximize shrinkage reduction, it almost eliminates curling, shrinkage cracks and crazing due to variances inherent to portland cement and dry sands.

TEC 10 can be used for spray applications for both face and backer coats. Its exceptional strength averages 25-50 percent above conventional additives. 🛠️

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ARTISAN IN CONCRETE

Dion Battles

Vertical Concrete Creations, Nampa, Idaho

by Jacqueline Valle

BEING in the construction industry his whole life, Dion Battles made the unsurprising leap to decorative concrete, specifically the vertical carving and theming part of the industry, after the nationwide recession hit the residential building industry hard in 2007.

“We had all our eggs in one basket and when the home sales and construction industry (along with a lot of other industries) took a dive, we scratched by trying to survive,” he says.

Although this was the lowest point in his life — he pretty much lost everything he had worked so hard for — it was also one of the greatest.

“I realized a lot about myself and what I wanted out of life. At that point I decided that I was going to start making myself happy every day while I was at work,” says Battles.

That’s when he decided to start his own company that would allow him to get back to his artistic side. In January 2010, Vertical Concrete Creations was born in Nampa, Idaho.

“I knew inside that if I started having fun in what I designed and created in my business, then happiness and success would come,” says Battles.

Listening to his inner child

Battles says he draws most of his inspiration from his “inner child” and it’s not unusual for him to bring up this side of himself in initial client meetings, as well as ongoing design and construction meetings. “We stop listening to our inner child and allowing it to thrive and be present,” he says. “VCC is based on allowing our inner child to thrive and have fun in daily life.”

VCC specializes in designing and creating cool spaces that are just plain fun within larger residential and commercial projects. “Because everybody deserves a little Vegas or Disney in their lives!” He says this tag line works well for his company’s advertising approach because he feels everyone he

meets loves the idea of a fantasy world where they can get lost and be taken back to childhood.

Another tag line he’s fond of is “No more looking down at concrete.” This is the phrase he uses for branding on the company’s jackets, coats and hoodies.

Always learning

If you look at some of the carving work that Battles has done, you should notice each project is drastically different. “We don’t always use the same colors, styles and techniques when creating our projects. That way we always grow, learn or develop new techniques,” says Battles.

He notes a lot of carving artists find their style and stick to it, but he doesn’t feel he can do that with the projects he designs and builds.

While Battles has paid for training and soaked up as much information as he could, he’s also attended industry trade shows and expos to help keep him up to date. And when he needs advice, he’s not

afraid to cold call people such as manufacturers, suppliers and artists to ask for it.

He attributes his success to surrounding himself with some of the best artists, company owners and trade leaders in the industry. A few noteworthy artists are Thom Hunt, Nathan Giffin and Mike Vernelson, along with his business partner, Jeff Kirt.

“I consider all these guys my mentors. They have each taught me some valuable lessons in their own rights and each one has their place in this industry,” says Battles.

Perfecting the mix

Battles’ favorite mix to use is KirtBag Carving Mix partly because he co-owns the company of the same name with Kirt and partially because he feels the mix is hands down the best on the market.





Photos courtesy of Vertical Concrete Creations

“As I went through the process of meeting, training and working with what I consider some of the best in the industry, I learned about the process and materials used and some of the (so-called) best mixes were not what they said they were,” says Battles.

After using these mixes, he and Kirt realized there wasn’t a carving mix on the market that they wanted to use in their own daily carving businesses. So they set out to fine-tune KirtBag Carving Mix to be a consistently reliable high-performance, cost-effective mix. Now when it comes to carving, he adds, it’s the only mix he uses.

As for color, says Battles, “We color all our hand-carved concrete or vertical

carving with professional quality exterior flat latex paint.” For precast, “We create our forms by hand and use a high-strength concrete mix to cast the forms.”

For countertops, he adds, he either uses GFRC (glass fiber reinforced concrete) or wet casts them.

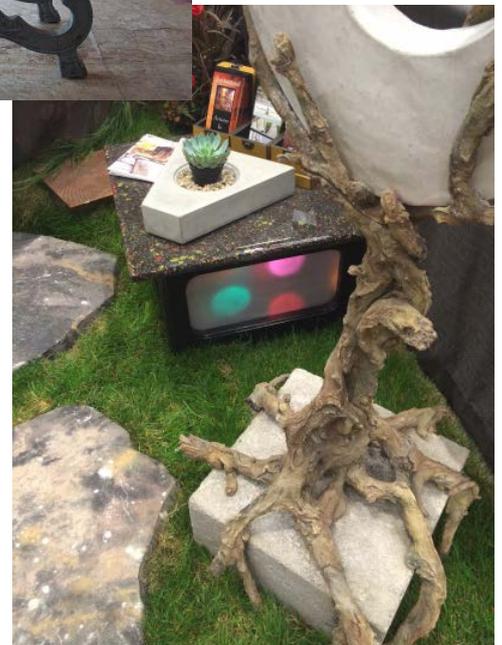
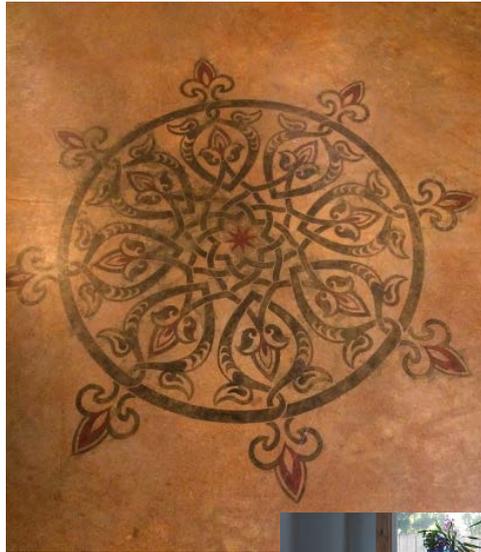
Projects worth noting

Some of Battles’ notable projects include the Halloween-themed display that netted him first place in the 2016 Concrete Decor Show in San Diego and the Idaho backcountry-themed exhibit he designed and built inside the Corwin Ford dealership in Nampa, Idaho.

The latter, he says, exquisitely replicated Mother Nature’s handiwork. “The people that live there said that we recreated what they experience every time they step foot into that area of the state.”

On a more personal level, Battles notes a special project that involved creating a gravestone/family monument for a lady named Judy Dolby. “When she called me, her husband had passed away almost a year ago and they still had not purchased a gravestone,” says Battles.

Dolby, whose vision was very specific and detailed, had three parameters for the project she proposed: the monument had to be designed around the old cast-iron cross



the family had gotten overseas many years ago, it had to have space for multiple family members and it had to look 100 years old.

"I worked closely with her and one of her daughters and we kept adding little features that were very important to the family like the plaque on the back of the monument that reads 'Sempre Famiglia,' which translates to 'Always Family,'" says Battles.

The concrete plaque was cast from a wooden plaque her husband had carved years ago. Battles used a combination of acid stains and water-based latex paints to make the concrete piece look weathered and old.

"I think the hardest part of this project was making sure I delivered a piece that was better than the expectations of my clients," says Battles.

Helping others is important

One of the biggest challenges Battles faces is growing his abilities by trying new things, new techniques and not always creating the same look. He thinks being a manufacturer as well as a home remodeler gives him an edge.

"Being co-owner of KirtBag Carving Mix, I see the industry not only as an artist but as a manufacturer and that definitely

changes how you navigate and grow in the industry," says Battles.

Battles' advice to newcomers is to reach out to others, ask questions and be fearless in their carving. He also urges them to contact him as he loves talking to newcomers, and spends a lot of time on the phone helping them understand every aspect of what they are getting into.

"I want them to succeed and enjoy this business because I believe they are the future of this industry," says Battles.

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A Shift in the System

Why search engine algorithms change and how you can capitalize on these modifications

by *Stephan Reed*

In the early days of social media marketing, you could post virtually any piece of content and, realistically, expect to see engagement from about 15 to 20 percent of your followers, fans or friends — depending on the day and just how many were online at that time. Search engine algorithms were just as simple — spam some keywords, throw in a few pictures, gain some backlinks and your site would be ranking in no time.

However, as time went on, users began to demand more out of their resources because they wanted better answers to their questions. Algorithms continued to give the users exactly what they wanted, which is why we see so many algorithm shifts and shake-ups today, to make the experience more satisfying for actual humans.

How can we take advantage of these changes? In theory, it's simple: create the best user experience. In practice, it's a bit more labor intensive and requires a lot of creativity, testing and reporting.

How Google paved the way for UX-based algorithm changes

First, we have to reshape our philosophy on search engines, as a whole, if we want to accurately predict shifts in the search engine algorithm and capitalize on them. Google isn't some evil genius, hellbent on forcing the little guys to do battle over crumbs while they give feast and favoritism to the conglomerates. It's also not some pushover that can be nefariously manipulated to do your bidding.

Google search is the virtual manifestation of user experienced-based answers to questions. The algorithm acts as a ranking mechanism that rewards resources that provide a great experience for all users while penalizing those that either deliberately try to game the system through spammy techniques or drastically go against the general user consensus. In a sense, it is more human than human.

What has the search engine giant done in the past that has showcased its strength and

willingness to put the user first?

All the way back in November 2003, Google introduced the update named “Florida” that took direct aim at late '90s spam tactics, like meta keyword stuffing.

2011 saw the introduction of “Panda” — a major algorithm update that penalized websites with low quality content and minimal word count.

“Penguin” was introduced in 2012 and brought websites partaking in backlink farms and other links spam tactics to their knees.

April 22, 2015, was the day “Mobilegeddon” was implemented, successfully promoting sites with great mobile experiences and punishing those that didn't consider their mobile users.

The Intrusive Interstitial Penalty hit the scene Jan. 10, 2017, and damaged the rankings of sites that used invasive pop-up ads that took up more than 50 percent of the screen and couldn't be easily bypassed.

SEO: Less system manipulation, more user empathy

SEO is a robust, ever-changing science. While search engine experts may know most, if not all, of the ranking factors, the weight of each is still up for debate and the subject of constant testing. But at the end of the day, think about what you're doing with your website.

Are you making the user experience better for anyone or are you simply making edits because you think you can manipulate the system by appeasing the almighty Google machine? If you're not adding value to the user, search engines will take notice and your rankings will take a hit. If you're going above and beyond for all users, expect a reward.

Facebook marketing: Pay-to-play (but it's a really great game)

Social media algorithms have changed shape in a similar fashion, but with a much less altruistic, more capitalistic tone. They have soured on the idea of an “open web” in favor of a more custom-tailored experience for each individual user.



Many modifications have been made to enhance user experience, but it would be unsound to dismiss advertising opportunities as a reason for the metamorphosis. Advertising has become a major component of Facebook, YouTube, Instagram and Twitter — pretty much every social platform except Snapchat. And as users continue to share, tweet and post, they are seeing increasingly more advertisements — but that's not necessarily a bad thing.

With the introduction of target audiences and retargeted marketing, ads have become more relevant to user interest. Ever wonder how that bracelet company created an ad for the exact model you were looking at and place it in your feed? Tracking pixels can be implemented into most websites to continue the marketing efforts. Not only are these personalized ads relevant to users, but they also increase the rate of conversion for marketing and e-commerce sites, as they have already reached their target demographic.

Since 2014, organic reach-per-post has drastically decreased for Facebook businesses. Some companies watched as their average post reach would go from 16 percent of their total fan base down to 2 to 3 percent.

The social media Goliath stated that the reason for the decline was twofold — there was too much content being published already and Facebook was trying to feed more tailored content to its users. This is a great move for the consumer experience, but not so hot for the innovators and entrepreneurs.

How can businesses with small budgets compete?

What does this mean for the small business startup that doesn't have a large

marketing budget or for the mom-and-pop shop that isn't so tech savvy? Is the ever-decreasing organic reach going to snuff them out?

Not exactly. These demographics must market more actively — post more often and at strategic times. They must test drive all the new Facebook features — live streaming video, messenger for businesses, call to action buttons — to get the most out of the platform without paying. Organizations must also be more selective with the content they publish.

Engagement is an algorithm factor and if you're posting just to post, you're wasting resources. Creating actionable posts that garner link clicks, image clicks, likes, comments and shares not only increase your overall organic reach, but also impact how often you show up in the feed of someone who has interacted with your post. They engaged with it, they liked it, why not show them related content from the same source?

What types of posts get low organic views? Colossal walls of text, posts with no images, automated posts and posts that were created through third-party platforms see substantially lower organic reach.

The Facebook algorithm does not reward laziness. Rather it punishes apathetic publishing behavior and gives credence to the page that takes the extra time to create engaging content. Additionally, the opportunity to go viral will always remain free. Publish an exceptional concept and watch it spread like wildfire — for free.

It is important to stress that experimenting with boosted posts and other paid-for advertising can be a fruitful endeavor. As unpaid hits and clicks decline, more targeted clicks are made. Instead of spinning your wheels at full speed for free, you can take extra time to carve out a targeted advertising campaign, create a custom audience and market to only that desired demographic.

Think of it as putting up a peanut butter billboard on the road to the jelly and bread emporium — you have that much control. 🍪

Stephan Reed is the digital marketing specialist for ForeFront Web, a web design firm in Columbus, Ohio. His role includes search engine optimization, content marketing, digital marketing consulting and researching what makes search algorithms tick. He can be reached at stephan@forefrontweb.com.



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Flooring Restoration Highlights Sanctuary's Conversion

The First Presbyterian Church of St. Louis, University City, Missouri

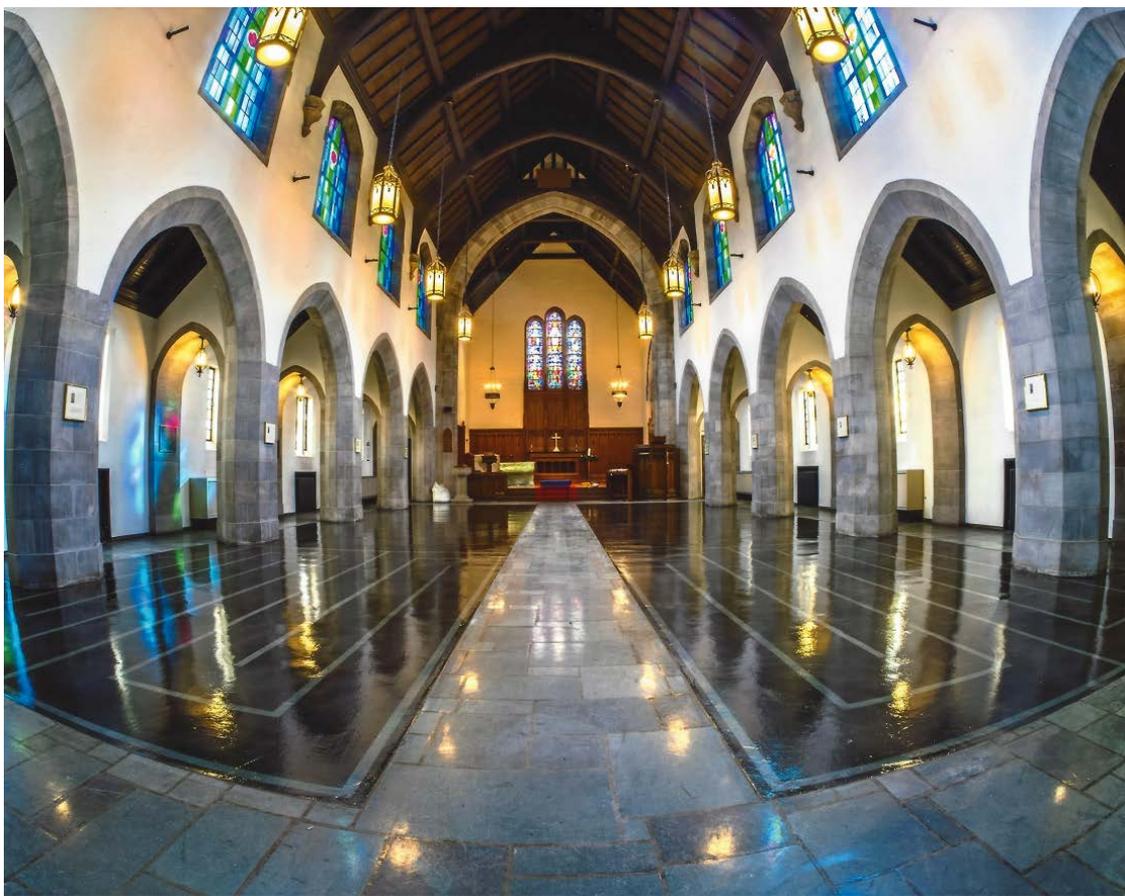
by Erik Pisor

BUILT in Missouri in 1927, the First Presbyterian Church of St. Louis' sanctuary was recently renovated to modernize its look and feel, while preserving its historic Gothic style. Improvements to the sanctuary's floor, specifically two rectangular sections under the pews, were vital to this upgrade.

The heavy-gauge battleship linoleum in these locations was badly damaged and would not complement the newly installed stained-glass windows and modified, movable pews. Possibly the church's original flooring, it was also a stark contrast to the stone-clad aisles that run up and down the middle and sides of the sanctuary.

"We pulled that up (the brown linoleum flooring) and underneath was concrete," says Sue Salvati, chair of First Presbyterian's flooring committee.

In search of an affordable flooring treatment, the church connected with locally based Decorative Concrete Resurfacing which was tasked with staining and coating the 1,665 square feet of concrete and creating a new prayer feature.



The First Presbyterian Church of St. Louis, photos by Phil Aneviski

Project at a Glance

Client: The First Presbyterian Church of St. Louis; University City, Mo.

Decorative concrete contractor: Decorative Concrete Resurfacing; Ballwin, Mo.

www.decorativeconcreteresurfacing.com

Scope of project: Removing the battleship linoleum floors of a 90-year-old church to expose, grind and stain the building's original concrete flooring and create a prayer walk.

Products used: SunCanvas architectural microtopping, SunStain SunDye Grey and Fern Green, SunOne 100 primer, SunStain SunH2O base container with rich earth and black color packs.

Most challenging aspects: Altering the initial stain prior to touch ups and adjusting the prayer walk's measurements midway through taping.

A path of restoration

According to Kevin O'Hern, president of DCR, his team first prepped the concrete floor using a hammer drill outfitted with a spade bit to loosen the rolled linoleum. They followed up with Dewalt hand grinders equipped with various Drillco diamond blades. The surface was then washed and wet vacuumed.

A Sundek premix squeegee coat was applied to smooth out the existing concrete, filling any holes and prepping the surface for a SunCanvas architectural microtopping, which was applied with a Magic Trowel and designed to accept the desired stain.

Two workers then applied SunStain SunH2O to the surface, each using pump-up sprayers filled with either rich earth or black colored stain. SunStain is prepared by mixing a base stain container with separately packaged color packs.

By following each other and spraying the water-based stain in a circular fashion the workers achieved a mottled look where the two colors blended together. Work was led by Eduardo Gomez, DCR's head installer who boasts 20 years of experience.

The creation of a prayer walk was crucial to the church's modernization. To create the walkway, DCR taped off lines so that



the SunStain SunDye Grey and Fern Green could be misted on top of the areas not taped to create the lines. The measurements of these lines had to be exact, although the committee changed the dimensions midway through the taping, which made this task a bit more challenging, O'Hern says.

Similar visually to a bank or amusement park line, the path serves as a meditation and prayer tool for the churchgoers.

At this point, the contractor had put down what he thought was the desired stain and prayer walk lines. However, the day after applying the stain, the church's flooring committee requested a color adjustment, as most members did not oversee the previous day's work.

"Typically, we like to have everyone that makes the final decision on color there to approve the work," O'Hern says, and that didn't happen.

"Initially we were not happy. It had a lot of black in it," Salvati says, explaining the six-person committee wanted a gray-mottled look.

DCR achieved this by adding more rich earth stain to the surface. This color adjustment delayed the project two to three days primarily because the prayer walk had to be taped again and the additional stain needed more time to dry.

Dye applied, the contractor then removed the tape used to outline the prayer walk and coated the entire surface with SunOne 100 primer and water-based polyurethane/polyaspartic as the topcoat. These coatings were chosen because the project was indoors and needed to be low odor and nonflammable.

Overall, the project wrapped up in eight days, with the church having to relocate just one Sunday service to a different building.

While initially frustrating, O'Hern concedes, the extra days involved on the project paid off, as both the congregation and outside sources were impressed with the results.

"In the afternoon, the sanctuary is an array of colors and the floor just really shines," Salvati says, marveling over the polished concrete results. She adds she's also impressed with the floor's ease of maintenance.

O'Hern, too, is pleased with the outcome

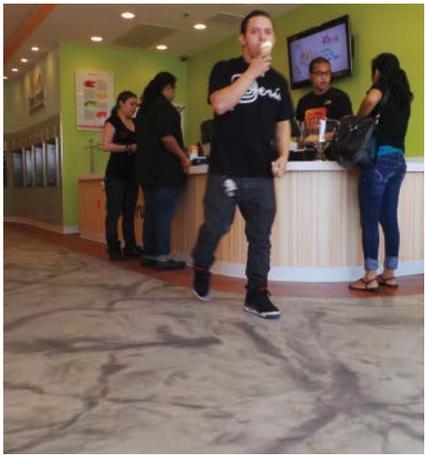
of his hard work. "The project really showcases the character of the floor," he says.

Others have noticed the church's shiny makeover. The new flooring and its inlaid meditation path garnered national recognition at Sundek's National Convention earlier this year, taking home "Project of the Year" honors. 🏆



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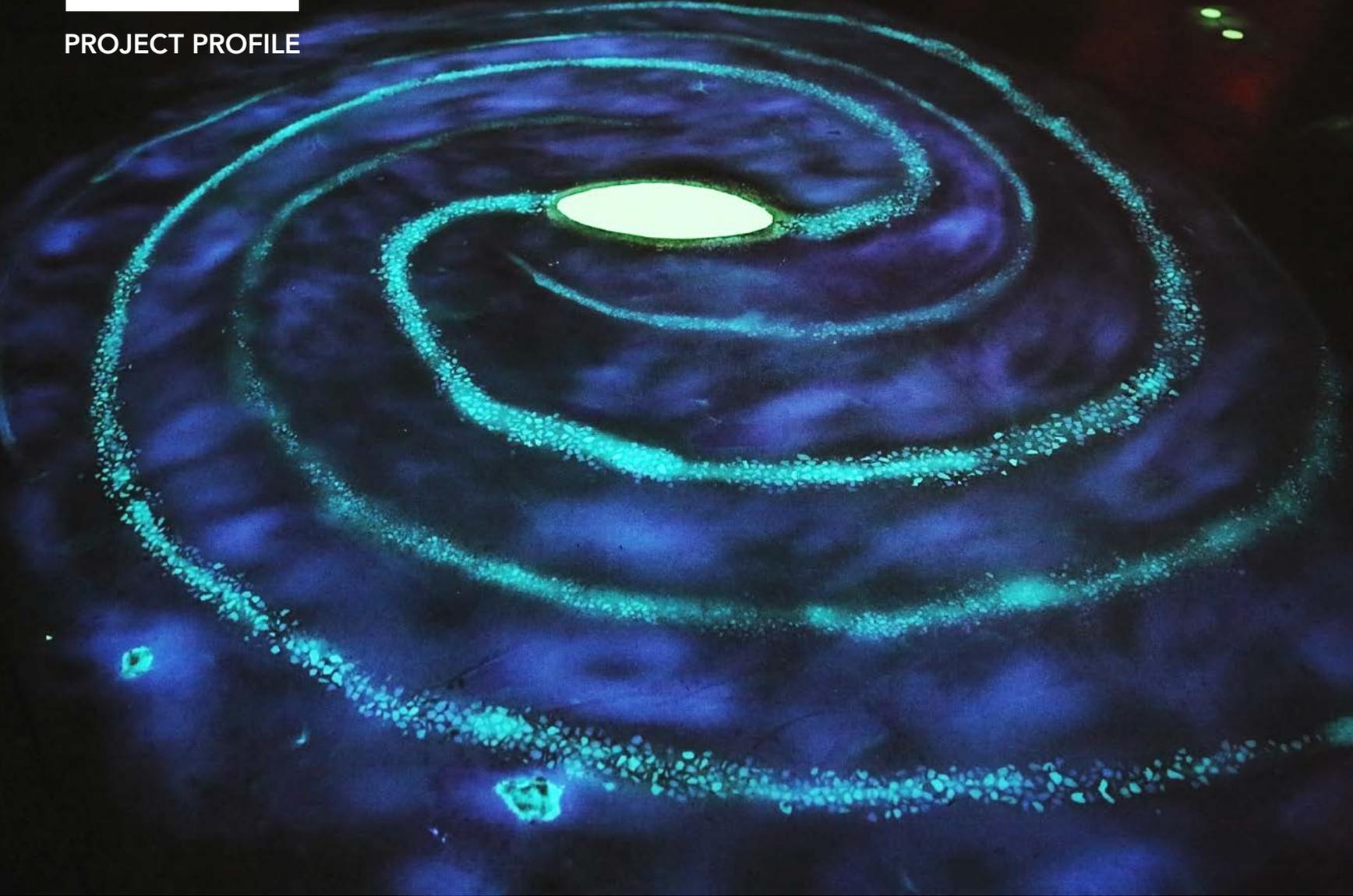
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Glow-in-the-dark Patio: Way Cool for School

Dalton Elementary and Middle School amphitheater, Dalton, Ohio

by Stacey Enesey Klemenc

JASON Geiser, owner of Deco-Crete Supply in Orrville, Ohio, thought a broad, sloping hill at his three children's new school needed something to transform it from a virtually unusable space to an inviting outdoor classroom. After talking things over with the superintendent, he and school officials came up with a project that revolved around Geiser building an amphitheater.

Donating time, labor and materials, Geiser and his crew tackled the project at Dalton Elementary and Middle School over the course of a year or so. Finally complete, the amphitheater comprises a five-tiered seating area made from concrete blocks that are faced with Kirtbag Carving Mix stained with Proline Easy Accent stains.

"We put down artificial turf between





the tiers to make upkeep easier,” Geiser says. “It would have been a bear to mow between the rows.”

Out of this world

Above the seating walls is an upper area with picnic tables on a cappuccino and chocolate colored patio with an oyster white and smoky brown border. Stairs, textured with a rock-face form liner from Brickform, lead off the patio and down the hill to the literal star of the project — a jet-black patio adorned with glow-in-the-dark images of the Milky Way galaxy surrounded by a host of constellations, everything from the Big and Little Dipper to Orion the Hunter.

Geiser says the concrete used there is integrally colored with a Deco-Crete dark gray liquid colorant and a black shake-on color hardener. “I knew we were going to grind and I wanted the surface to be as black as possible,” he says. “And the only way to get it super black is to use a color hardener.”

On top of the hardener, he broadcast crushed mirror — about 25 pounds per

every 100 square feet — and ground that down to expose the mirror. This addition gives the patio a special daytime effect. “When the sun shines on the patio, it’s lit up with little sparkles that look like millions of stars twinkling in the sky,” he says.

But it’s at night when the patio really shines. The galaxy and the constellations — which were created with templates supplied by one of the school’s teachers — spring to life when the sun goes down.

On the template, the constellations’ brighter stars were marked with bigger circles to make them more prominent. Rather than using large glow stones for these points, they made 1/16-inch deep indents in the surface with different sized circles made from MDF (medium-density fiberboard). They then filled these indents with a slurry mix made from a two-part UV-stable epoxy and a glow-in-the-dark powder made by Glow Stones USA.

With glow-in-the-dark products, Geiser explains, the smaller luminescent particles glow much brighter than the larger stones. To make the stars look like they are glowing, he added very fine glow-in-the-dark powder to a polyaspartic and sprayed it out of an HVLP (high-volume, low-pressure) gun. “This created a fine mist around the stars which really looks cool at night,” he says, and illuminated them even more.

When they were all done spraying, they applied a clear coat of the same polyaspartic on everything.

An uphill battle

The biggest challenge Geiser and his crew faced was the project’s location. “It was on a hill and it was challenging to get the concrete there,” Geiser says, adding that they needed a slinger truck and everything

had to be pumped.

There was also a lot of back-breaking wheelbarrow work involved — especially with the stone and landscape rock in the upper level.

And, since school was in session much of the time, they had to wait until the kids were gone because the work was too noisy and disruptive.



Finishing touch

Besides the space-themed patio, the outdoor classroom has another interesting touch involving animal tracks. On a concrete expanse between the black patio and the school, an array of animals looks like they’ve run across the surface.

“You see bird prints. Then a fox’s. Then a combination of a fox chasing a bird,” Geiser says. “Doing that part was really fun.”

Geiser says that he incorporated tracks from a beaver, deer, racoon, opossum and squirrel as well. He found most of the tracks online and made rubber molds from them for the project. 🐾

Project at a Glance

Client: Dalton Elementary and Middle School

Contractor: Jason Geiser, Deco-Crete Supply, Orrville, Ohio, www.deco-cretesupply.com

Scope of work: A volunteered community service for a public school in Ohio involving building an amphitheater complete with seating walls and stairs, glow-in-the-dark patio with constellations, outdoor lunch area and a patio with imprinted animal tracks

Challenge: Building on a not easily accessible hillside along a section of a new school

Products used: Kirtbag Carving Mix, Proline Easy Accent stains, American Specialty Glass crushed mirror, glow-in-the-dark powder by Glow Stones USA, and Deco-Crete integral colorant, color hardener, release and Poly Armour 70 sealer



Cordless tools have the reputation of being industry lightweights, but improved battery technology is taking them out of the home shop and into heavy-duty work situations.

Photo courtesy of DeWalt Power Tools

Cut the Cord

Cordless tools gain ground in the workplace

by K. Schipper

If you've been ogling the new cordless tools but think they're just for the do-it-yourself crowd, or wonder if they'd stand up to a full day's work on a hot — or frigid — job site, it's time to take another look.

Improvements to battery technology and tool design mean that cordless tools are holding their charges longer and are being outfitted with more powerful motors that go well beyond what's needed to hang a few pictures or assemble a bookcase.

While those who make and sell tools say there will probably always be some tools that require a cord, they add that it's no accident the cordless market is growing by leaps and bounds.

Robust growth

The bottom line for cordless tools is that it's a thriving market to be in right now, says Erik Mazurski, general manager, supply train, for the Scottsdale, Arizona-based Border Construction Specialties.

"Every one of the manufacturers is coming out with all these technological advances," he says. "They seem to be leap-frogging each other with their innovations. They're designed to be ergonomic and fatigue-reducing. There's just a lot of R&D (research and development) going into how these tools are made."

That's not to say the manufacturers are marching in lock-step on how they

approach the market, either. Mazurski says one may have a battery that works with 20-, 60- and 120-volt platforms, while another is incorporating Bluetooth technology to help craftsmen keep track of their equipment on the job site and reduce theft.

Dave Pulliam, category director for power tools and equipment for Atlanta-based HD Supply, says he sees four main fronts in which the technology is expanding: battery innovation, brushless technology, product expansion and Bluetooth tool tracking.

Additionally, he sees cordless tools expanding in a host of areas.

"We continue to see robust growth in

Photo courtesy of Milwaukee Tool Corp.



Battery life depends on how frequently and consistently a tool is used on the job site. Grinders, which typically are used continuously for hours, have proven to be a challenge.

the cutting, drilling, impact and, now, lighting categories,” says Pulliam. “Many of these products are finding their way into the general contractor, residential, MEP (mechanical, electrical and plumbing) and concrete trades.”

Along with construction sites, Mazurski says he’s also seeing technological advances that are moving outdoor power equipment away from gasoline-powered engines into the battery realm.

Just how great the demand for cordless tools is, though, is open to discussion. While Pulliam says feedback he’s gotten from his suppliers shows that more cordless products have shipped than corded ones since 2013, Mazurski isn’t quite as positive.

“Right now, I’d say our sales break 65 percent for corded tools and 35 percent for cordless,” he says. “But, I also see it moving rapidly in the other direction. By the end of the year it could easily be 50-50.”

Battery revolution

Probably nothing is helping fuel the move to cordless tools quite as much as improvements in battery technology, much as it has in a range of other technologies from electronics to personal transportation devices.

Leading the charge is the switch from nickel-cadmium (NiCd) to lithium-ion batteries. Or, as Kevin Gee, a product manager with the Brookfield, Wisconsin-based Milwaukee Tool Corp., explains, “The

lithium will drive larger tools longer.”

Theron Sherrod, product manager for cordless tools, batteries and chargers for the power tool group of Robert Bosch Tool Corp. based in Mt. Prospect, Illinois, puts it even more strongly.

“There were three things we looked for specifically in developing the Core18V battery,” Sherrod says. “We knew if it was designed and engineered properly we’d be able to transfer the most power into the tool,



Photo courtesy of Wacker Neuson

A battery-powered rammer allows for compaction without a power cord or emissions.




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The lithium-ion battery has revolutionized the cordless-tool market by providing more power over a longer period.

Photo courtesy of Milwaukee Tool Corp.

so we looked at the cells that make up the battery, the heat management of the battery and then the construction of the battery.”

For would-be buyers, the numbers that are helpful in evaluating a battery are the voltage, the amp hours (the amount of time the battery can run) and then the watt hours, which represents the amount of potential energy in the battery.

“They’re all related,” says Gee. “You want to take your amp hours and multiply it times the voltage and that’s going to give you your watt hours. Of course, the bigger the battery pack, the more watt hours and the higher amp hours.”

While that’s going to provide better performance, especially in high-demand applications, there’s also a trade-off: a higher-voltage battery will weigh more, making a tool less ergonomic and leading to user fatigue.



Photo courtesy of Robert Bosch Tool Corp.

One of the newer innovations with cordless power tools is their ability to work with vacuum attachments for a cleaner job site.

Sherrod says one of the things Bosch was careful to do with its Core18V battery was to engineer it to increase the size by only millimeters while increasing the power output by 80 percent. And, Gee notes, Milwaukee has opted to keep its users on 12- and 18-volt platforms to keep battery weight down.

There’s an added advantage to keeping battery voltage consistent, as well. “If you change voltages every few years, that can be

a huge investment for companies to change out their tools and batteries,” Gee says.

As cordless tools continue to improve, one of the biggest problems companies face is convincing buyers that they’re going to get performance as good as — if not better than — what they can expect from many corded tools.

For instance, Ricky Cacchiotti, senior concrete product manager for Towson, Maryland-based Dewalt Power Tools, says his company now offers a cordless rotary hammer kit that will deliver a day’s worth of work on a single charge.

And, says Mike Iezzi, product manager, corded products for Bosch, Bosch’s new cordless rotary hammer provides better performance than the corded version.

“However, the end users still perceive cordless tools as being weaker,” Iezzi says. “Now that we have the corded performance in cordless tools, there needs to be a better awareness among users of their cordless performance, as well as battery development. We need to do a better job of getting that info to the users.”

Cordless advantages

So, is it time for you to make the switch to cordless tools? The number of considerations that need to go into finding the better answer is large. Certainly, a big one can be cost.

“The No. 1 disadvantage to going cordless is probably the initial upfront

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A cordless tool can go just about any place on the job site and the user doesn't have to fight with cords or find electrical power.

cost of the investment,” says Milwaukee’s Gee. “So, it depends on how price-point conscious you are.”

Of course, some of that can be mitigated by purchasing tools from the same manufacturer that use the same battery platform, which can reduce the investment in multiple batteries and chargers, says HD Supply’s Pulliam.

Still another huge consideration is the scope of how you’re going to be using that tool or, as Gee puts it, “the number and frequency of applications.”

For example, Gee says a drill or impact driver may be used in various applications all around the job site, while a grinder may be used continuously for a longer sustained period. How the tool is used also plays a role, Bosch’s Sherrod says.

“You really want a drill driver or an impactor to be cordless because you’re taking your tool to the job,” he says. “You’re walking around with it and you don’t want to be attached to a cord behind you. However, if you’re cutting wood, you probably have your circular saw on a table and you have a specific place to do that work, so if it’s corded it isn’t a bad thing.”

For many users, efficiency is the key, says Dewalt’s Cacchiotti.

“Company owners and users see the benefit from a job site that is not limited by the distance of the tool and the application to the power source,” he says. “Projects can

be completed faster when there’s no need to search for power sources.”

Finally, there simply aren’t always cordless tools available for every task

involved in concrete finishing — at least not yet. Gee notes it was only about three years ago that Milwaukee launched a cordless grinder that could handle a diamond cup wheel or a cutting disk.

However, the trend is definitely toward cutting the cord on more equipment as time goes by. For instance, all these manufacturers are committed to keeping users in compliance with federal Occupational Safety and Health Administration (OSHA) dust regulations with new cordless vacuum attachments.

And, Border’s Mazurski says, he can envision a day when battery assists may be available for tasks that today still rely on manpower, such as moving a yard of concrete.

“I don’t know if we’ll ever get away from having corded and cordless tools,” Mazurski says. “I do think there are tools we haven’t even thought of yet that will have battery power — such as a wheelbarrow. It’s all very exciting.”

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WATER PROBLEM?

Remediating moisture in concrete doesn't have to be complicated

Moisture in concrete slabs can be due to topography, skipped testing, improper application or other factors. Seen here is severe blooming efflorescence, one of the unsightly results of excess moisture.

Photo courtesy of Perkins Custom Coatings



Photo courtesy of Wagner Meters

A popular invasive testing device, Wagner Meters' RapidRH will deliver fast and accurate moisture readings that easily comply with ASTM F2170.

by David Searls

MOISTURE problems in concrete slabs old and new can play havoc with decorative concrete projects and other flooring strata in several ways, including bubbling, blistering and blushing of color. It's commonly an interior problem because breathable products that reduce the threat are more commonly used in exterior applications.

"Anecdotally, based on conversations heard the last two or three years at World of Concrete, it seems like there have been more discussions about moisture problems in decorative concrete," says Jason Spangler, flooring division manager at Wagner Meters in Rogue River, Oregon. "I think this is

because of the increased use of epoxies and overlays that aren't as breathable, and greater use of nonbreathable surface coatings and treatments for aesthetic purposes."

Nonporous products are also mandated by the Food and Drug Administration and U.S. Department of Agriculture for use in health care, food processing, breweries and other commercial sites where sterilization is demanded.

The good news is that once you've identified the problem and figured out its cause, contractors have a range of effective moisture remediation solutions at their disposal.

Recognizing the problem

Contractor Paul Frankel, president of Perkins Custom Coatings in Southern California, sees concrete moisture issues from a pre- and post-2005 perspective. That's because in 2005 California adopted building code regulations specifying the use of vapor barriers beneath concrete slabs.

"There are exceptions to the rule, but to over-generalize and simplify, homes built before 2005 are much more likely to have higher moisture levels in the slabs and those built after 2005 are much more likely to have lower moisture levels," he says.

If a structure has a wetter slab, a look at the general conditions around it will often point out the cause, says Frankel. "I like to see direct connections between the roof, gutter and downspout to a landscape drainage system so the water coming off the roof goes directly into the storm drain and away from the foundation."

A lot of the homes in California either are over-irrigated or don't have proper gutters and downspouts.

Without the latter, "All the rainwater will fall straight down next to the foundation," he says. "Some of it will ultimately end



Photo courtesy of Perkins Custom Coatings

Signs of a concrete slab subject to excess moisture can include bubbling, blistering and spalling.

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Drytek from Laticrete is Frankel's moisture control barrier of choice because it can be put down in various strengths to control almost any degree of moisture.



Photos courtesy of Laticrete

One coat of Drytek's two-part epoxy coating can effectively control the moisture vapor emission rate from new or existing concrete slabs.

up under the house. It depends on the topography of the lot and landscaping around the house, but even in a dry year, tens of thousands of gallons of water can end up rolling off even a small home here. Just a fraction of that is way too much water to go under the house.

"Without a vapor barrier in place to protect the home from runoff from the roof or from irrigation, this water will easily pass through the slab on its way back to the atmosphere, creating excessive hydrostatic pressure within the slab. That's when the job becomes more complicated, expensive and riskier for coating contractors," says Frankel.

In new slabs, moisture is often caused by contractor error in mixing the concrete or in not waiting the full 28 days or more for the slab to cure.

Wagner Meters' Spangler identifies not waiting out evaporation of the water of convenience — the fluid in the cement mix for the ease of placement and finishing — as a prime culprit.

"You have to think of concrete as a hard sponge," says Mario Nicasio, director of market development and technical support at Elite Crete in Valparaiso, Indiana. "Moisture that rises from the substrate will be absorbed into and rise through the concrete slab,

filling the pores and capillaries."

Hydration will usually occur — eventually. But when?

"It's crucial that moisture testing be performed," says Nicasio.

Testing, testing, testing

Every expert pointed out the importance of testing for moisture in the slab before applying coatings. Nicasio says that the industry is pushing toward ASTM F2170 testing, in which holes are drilled in the new slab and in-situ probes are placed at the rate of three per the first 1,000 square feet of surface and at least one per 1,000 feet after that.

Wagner Meters' RH 4.0 EX meters include sensors that are sunk, with 3/4-inch drill holes, to a depth of 40 percent of the slab depth, and left in for 72 hours for relative humidity and temperature readings. Wagner product packages also include metal disks that drop into the top recessed portion of the sensor, just below the surface of the concrete.

"The disks enable documentation that moisture testing was actually performed if the slab fails and customers are looking for answers," says Spangler. "Grid paper is included in the system so you can map out the placement of the holes as you make them and then use a magnet to find the disks for proof that you did the work."

The Wagner system also allows shortcutting of sorts.

"Although the ASTM standard waiting period for the sensors is 72 hours, and you're going to follow that standard, you can get a good ballpark preliminary reading after one hour," Spangler says. "It will



Photo courtesy of Arizona Polymer Flooring

Applying an epoxy coating such as VaporSolve Ultra System from Arizona Polymer Flooring is a simple remediation to seal in moisture — whether you know if it's present or just suspect it.



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usually show you within about 5 percentage points of the moisture reading you're going to end up with when testing is done. This one-hour reading allows you to start having discussions about what your early indications are."

This can be valuable data for next-step preliminary planning, but Spangler emphasizes, "You're definitely not making any installation decisions based on that."

According to Nicasio, "Most nonbreathable resinous floor coating products are going to allow a maximum threshold of up to 75 or 80 percent relative humidity without needing any special procedures to be performed."

Avid Wagner Meters customer Bill Lepito is something of an expert in concrete moisture testing. Through his company, Certified Floor-Covering Consultants, Lepito specializes in conducting forensic floor failure analysis for large flooring sites. So how familiar is he with testing technology?

"I typically do about 600 tests a year. I'm doing 25 tomorrow," he says. Almost all those tests are conducted with Wagner Meters' Rapid RH meters.

"I've been using Wagner for eight or nine years," Lepito says. "It's fast, simple and effective."

He highlights the fact that it takes him a minute to a minute and a half to drill the hole and vacuum it out and just a minute or so to place the sensor — a process that generally takes less than five minutes per hole.

The process is even less complex for Frankel, who frowns on drilling holes which, he says, customers will hate (even if they're only temporary). "Moisture testing doesn't have to be highly accurate. It's either a problem or it isn't." You just need to know if there's a problem.

So Frankel uses Tramex noninvasive meters (approved under ASTM F-2659-10).

"With this testing method, I can measure moisture levels on 20 or 30 places on the slab in less than five minutes and show the customer the results immediately," he says.



Photo courtesy of Tramex

Tramex CME4 can be used to conduct a nondestructive moisture content test as per ASTM F2659.

"If the site conditions and the test results line up, I remediate."

That's good news to Andrew Rynhart, CEO of Tramex Meters in Ireland. He points out that the most ideal approach is to do both invasive and noninvasive testing, but that the Tramex system will tip off contractors to problems early.

"The advantage of our system is that it's quick and it can measure the top inch of the slab," Rynhart says. "If you have moisture that's lower than that, you want to seal it off. But you don't want to seal the slab if the moisture is coming from the top."

Solving the problem

With new slabs, moisture most often means that the slab isn't rid of all its water of convenience yet. Waiting another day can be a simple, valid solution much of the time — when you have the luxury of time.

"Many moisture problems in new slabs can be mitigated by mechanically profiling the surface," says Nicasio. "This opens the concrete pores and allows the release of all of this excess moisture if enough time is allowed."

Another relatively simple solution is the application of an epoxy coating that will act to seal in the moisture. One such moisture remediation product is VaporSolve Ultra System from Arizona Polymer Flooring. Company CEO Daniel Owen says that there are three basic uses for this product.

"It can be used anytime there's moisture, whether with fresh concrete, when moisture is known or even when the state of the surface is unknown and you're using it as a preventive measure."

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Owen recommends first shot-blasting the surface before applying VaporSolve.

Drytek from Laticrete is Frankel's moisture control barrier of choice. "You can put it down in various strengths to control any degree of moisture as long as it's not over the redline (the moisture threshold, per each coating manufacturer's specs)."

In addition to its protective quality, Drytek is a step-saver, Frankel says, as it comes tinted and untinted. When using the tinted version with broadcast flakes, he doesn't have to apply another primer coat if he puts it down thick enough, saving him time and materials without losing moisture protection.

He recommends an application of about 70 to 130 feet per gallon, depending upon moisture levels and site conditions.

The bottom line is that moisture in concrete doesn't have to be a major problem, but it must be addressed. Simply test upfront, identify the signs of current or possible moisture problems and use the right response mechanisms and remediation products to take on problems that have already occurred. 🛠️

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METALLIC FLOORS

MESMERIZE THE MASSES



The homeowners requested a garage floor that resembled a Caribbean seascape. Kopp delivered with a blend of Caribbean Blue, Teal and Pearl.

by Jon Kopp

As metallic coatings grow in popularity, the competition is heating up. Bear in mind that the key to a mesmerizing metallic floor is the artist behind it.

Unlike a solid or chip system, metallics produce floors that are one of a kind. Installers each have their own ways of applying metallics, so I stress to potential customers that it's not a system they can easily shop around for pricing. If they like a contractor's work, they should go with that person because another installer won't be able to replicate that artwork. Metallic floors can be applied in many ways. There is no right or wrong way, and each artist/installer will have his or her own style.

As I have said in the past and will say

again, every metallic floor is unique. While I can copy the colors used in one of my projects, even I can't precisely reproduce the metallics' movement for the outcome.

No clones here

Metallic epoxy floor coatings continue to be popular choices where a high-tech, exotic-looking floor is desired. Essentially, they comprise mica pigments added to clear epoxy as opposed to pigmented epoxy. The pigments are designed to be dispersed in a variety of binders to produce a unique three-dimensional appearance with the color or colors showing through. Because the product is a clear epoxy, the result can end up being very translucent.

There is a certain amount of natural variation in the finished product's appearance from job to job, which makes no two jobs identical. It's this fact that each floor is noticeably different that makes the product so desirable.

Be advised that with metallic epoxy

flooring, imperfections make the floor! Each floor will vary in look inch by inch. Although the floors shown on my website and Facebook page are floors I've done, I cannot duplicate them. If clients see one they like, the best I can do is give them the same coloring and overall look. If clients want a perfect floor with consistency throughout, this is not the system for them.

You can use just a single color or multiple colors to create a glossy floor with depth and a variety of visual effects. I recommend using no more than three colors or the look gets too busy. Some applications can create a beautiful three-dimensional appearance that gives the illusion of acid stain, craters, ripples and swirling rivers of metallic-looking plasma. If you're going for more of an acid stain look, skip the solvents.

Solvents add movement

To help achieve a three-dimensional look and create movement, I always squeegee the entire floor and use solvents to disperse



Part of an office complex for a high-end car parts business, this floor was crafted with a blend of Cappuccino, Copper and Steel. Keep in mind that using these same colors may not yield like results as metallic floors are influenced by other factors such as gravitational pull, artisan techniques and solvent choice.



This residential interior hallway was mainly colored with Copper but has other colors worked in, too.

the pigment. The effects can range from soft and subtle changes in color, to a more distinctive hammered/cratered look.

The solvents I prefer are xylene, denatured alcohol or MEK (methyl ethyl ketone). I always use the same solvent on a



Copper and Teal were used to form this home's garage floor.

project depending on the look I'm trying to achieve and never mix them during an application. Different solvents will create different looks so you need to experiment to determine what produces what.

Besides solvent selection, timing is critical. If I want to get a crater look I wait until the floor is tacky to apply the solvent. If I touch the floor with my finger and it leaves an indentation, then it's ready to go. If the floor is too wet when the solvent is put down, the material will flood back and you will lose much of the "hammered" effect.

You can use a variety of solvents to achieve a cloud-like look. You don't want to put a solvent on the floor when the epoxy is too tacky. A lot of what the finish looks like is determined by the high and low spots of the floor as gravity pulls the product as it dries and cures.



Mainly a mix of Myan Gold and Copper, this garage floor also includes a little Cappuccino and Black.

The drying process

After a metallic coating is down, the metallic epoxy product remains in flux. The applied metallic epoxy product will move in the direction of any slope in the concrete substrate while drying. So that "swirling river" effect you sometimes see has more to do with gravity than preconceived artistic movement.

All concrete substrates have some slope and inconsistencies that will affect the movement of the product while it's drying. Therefore, there may be some variance in the appearance of the application from the time the installer completes the application and leaves the job site, and when the product finally dries. This variance is out of any installer's control.

In other words: Your effects will continuously change until the floor completely dries.

Blemishes may show

All concrete surfaces have blemishes and cracks. You should patch all the ones you see before applying a metallic system, but you will probably miss some. Because of the high-gloss, transparent epoxy used in metallic floors, unnoticed blemishes and cracks in the underlying concrete surface might become apparent after applying the metallic epoxy product.

You should let clients know a metallic epoxy floor is not guaranteed to conceal pre-existing blemishes in the concrete surface. These blemishes would normally not be visible with a chip floor. While metallic floors look amazing, a chip system is forgiving.

Metallic floors are one of the most durable systems on the market because they're done with 100 percent solids. But because of their high-gloss finish, they are also a lot more susceptible to scratches. There's a difference between impact durability and scratch resistance.



Although his clients pick the colors, Kopp says it's important for him to always be given a creative license to use them at his discretion, as was the case in this Quick Silver, Steel and Emerald Green garage floor.

Upkeep is important

With their high-gloss finish, metallic floors are very susceptible to scratches. It's not a matter of if it will be scratched, it's just a matter of when.

For exterior residential jobs, such as garages which comprise the bulk of my metallic business, I always use polyurethane. It offers the best scratch and UV protection for metallic coatings.

For retail and residential interior jobs, I recommend applying four layers of wax for protection. This way scratches will be imbedded in the wax and not the floor. Whenever the floor is stripped and rewaxed, it will look brand new again. 🛠️

Jon Kopp, who founded and has been operating Quality Epoxy LLC in Gilbert, Arizona, since 2000, exclusively uses Arizona Polymer Flooring epoxies and urethane and Cohills Building Specialties Inc.'s metallic powders. If you're interested in learning more from him directly, he now offers contractors one-on-one training and start-up programs. You can follow Kopp on social media under Facebook.com/qualityepoxy or visit his website at www.qualityepoxy.com.



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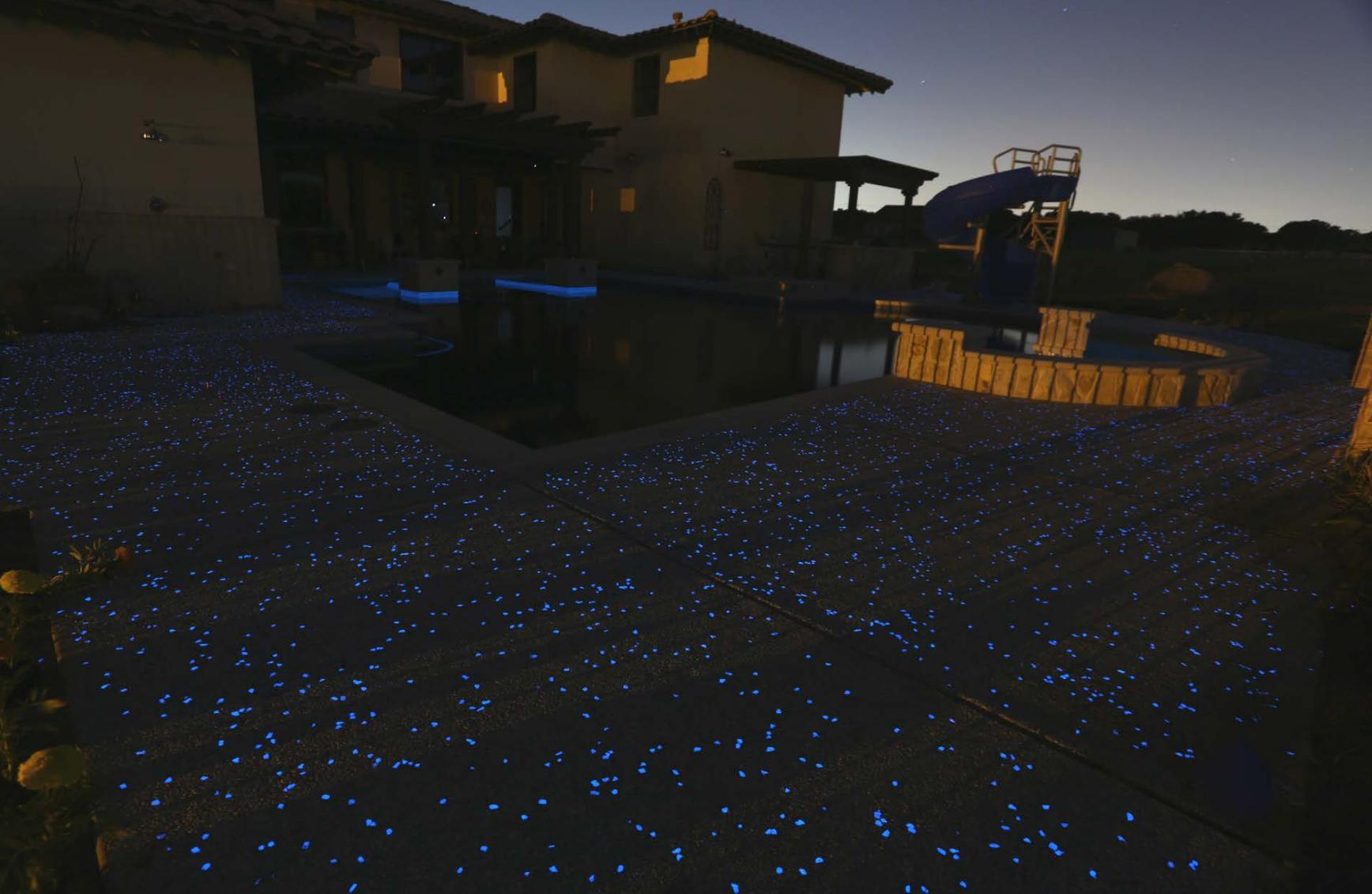
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This glowing pool deck in Texas was created by broadcasting Sky Blue Glow Stones from Ambient Glow Technology onto its surface while it was curing and then applying a retarder. The surface was then finished with a light pressure wash. Below is what it looks like by day.

Bigger Bang, Better Backyards

Consumer tastes extend beyond the basics

by Vanessa Salvia

CONCRETE patios and pool decks have long set a standard for basic backyards. But today's consumers want much more than the basics and the industry is complying. Due to more efficient tools and techniques, complex designs can be installed quicker, easier and at a fraction of the cost. And thanks to an improving economy, the consumer has more money to spend.

Rick Lobdell, *Concrete Decor* columnist and owner of Concrete Mystique in Nashville, Tennessee, still has clients asking for gray-on-gray stained concrete. But "I usually talk them down off the gray ledge," he jokes. He's beginning to see a trend beyond "boring tile patterns," he continues. "People are willing to spend a little more for something really cool."

Glow, glimmer and glam

Andy Jones, owner of Core 9 Design in Oklahoma City, got into staining and overlays in 2003 and later began offering outdoor amenities such as concrete countertops, precast fire pits, and color-



Photos courtesy of Ambient Glow Technology

Photo courtesy of Core 9 Design



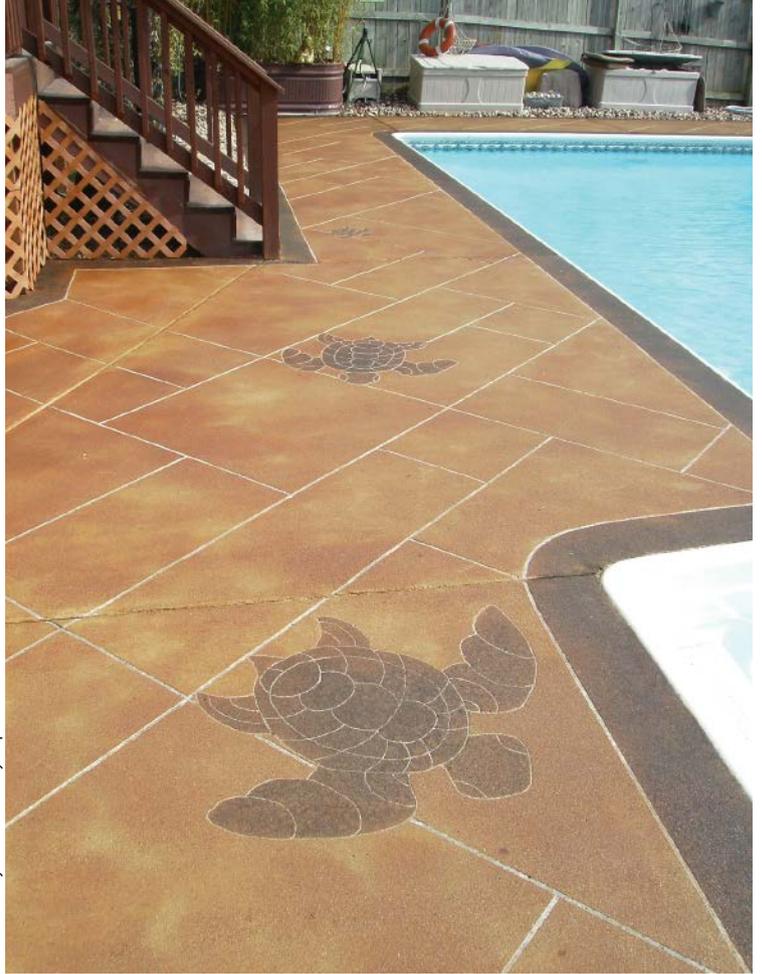
After stamping this pool deck in Broken Arrow, Oklahoma, and staining it with a series of grays and walnuts, Andy Jones applied a proprietary dry pigment mix that gives the surface color-changing qualities. To tie it all together, he then added glow resin around the pool inside control joints and decorative cuts.

shifting and glow-in-the-dark patios. “We’re incorporating things like glow resin in pool decks and using glowing aggregate, so when it’s dark outside parts of the pool deck are glowing,” he says.

He thinks many of his customers ask for more sophisticated work partly because of the faster turnaround. “Some of the stuff we do in a couple days used to take a week,” because the material took longer to dry or cure, he says.

Besides the time reduction, people are more in tune with

Photo courtesy of Concrete Mystique



For a fun accent, Rick Lobdell added these hand drawn and cut sea turtles to this engraved and acid-stained ashlar slate pool deck.



Chiseled Stone (pictured)



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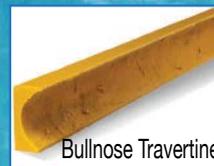
Bullnose Slate



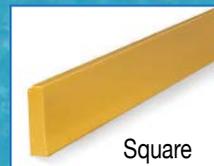
Bullnose



Bermuda



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Square

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Photos courtesy of JDeRailey Designs

Jeremy Bayliss's Busted to Beautiful system using Elite Crete products turns cracks into stone by cutting, carving and resurfacing the cracked surface. This process is becoming very popular for his company and many other installers around the country have been trying to learn the process. For this project in Slocomb, Alabama, Bayliss turned existing cracks into a wood and stone design.

possibilities, thanks to sites such as Pinterest. "People aren't just asking for what their neighbors have anymore," Jones says. "They see things (on the internet) that strike their interest and they ask for it."

When customers ask for yawn-worthy gray or walnut, Jones tells them they can add special effects with metallic pigments in the sealers. "When the light hits it right the whole pool deck could look like shimmering blue or green or copper," he says.

"People usually start with what everybody's doing and by the end they're mixing colors for a one-off project that we couldn't duplicate even if we wanted to," he says. Lately, "We've been doing that a lot."

Wise cracking

Jeremy Bayliss, an Army veteran and artist who owns DelRailey Designs in Dothan, Alabama, incorporates cracks into stone designs on concrete patios or

driveways. Many of his customers don't have large budgets and fixing their cracked concrete is more appealing than replacing it. "We figured out a way to make it look nice and save people some money," he says.

Bayliss cuts into the cracks to even up the edges and also cuts additional grout lines. "Once everything is cut in we use a decorative saw blade to carve everything so there's three dimensions to the grout lines and they look like they're below the surface of the stone." He fills the grout lines with colored concrete in tones that match the home and then resurfaces the whole thing with Elite Crete products.

In Alabama, he notes, people want designs that look like tile, wood or stone. "I try to steer people away from brick and paver looks because it got overdone," says Bayliss. "We came up with cutting the cracks in the concrete and we've been doing more of that since people are seeing it and wanting it," he says, adding that one job they did went viral. "It got popular really quick."

Destination backyard

Lenny Maffei, who for the past 34 years has been with PoolCorp, one of the world's largest wholesale distributors of swimming pool and related backyard products, says people want bigger and better.



This pool and spa features a combination of a brick and tile design alongside a plain textured area for visual relief. Crack repair on this job was done using concrete staples. The job was hand-troweled and hand-stained.

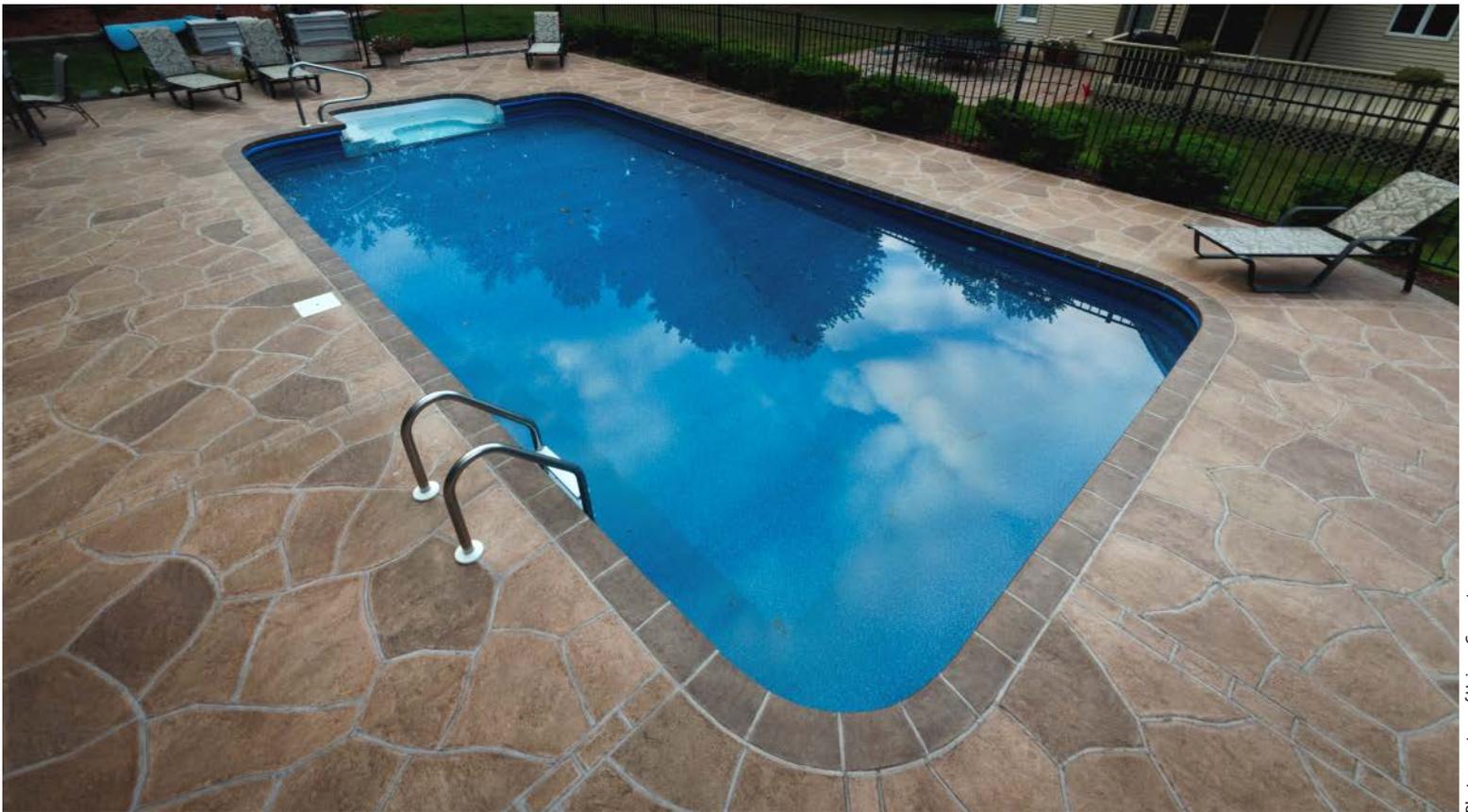


Photo courtesy of Unique Concrete

Although contractor Todd Fisher has seen a switch to more contemporary color schemes involving grays and whites, he says a lot of his customers still request browns and tans when it comes to fieldstone. For this pool deck in Sparta, New Jersey, Unique Concrete integrally colored and stamped the deck before hand-staining it. It was also antiqued with Kingdom Products' Mystique Antique Color Wash, then grouted and sealed with Kingdom Guard.

"The backyard is getting to be more of a destination than just a typical backyard," Maffei says. "People are spending more money on their houses and want the whole outdoor experience. They want a resort in their backyard."

He says using glass and tile in swimming pools is a growing trend, and lagoon-type and vanishing-edge pools and spas remain popular. Technology allows homeowners to control heating and lighting with a smartphone app. Maffei is also seeing increased interest in energy efficiency, including solar heating. "The typical pool is not so typical anymore," he says.

In Southern California, where Maffei lives, the sanded finish, where chemical retardants etch away a thin layer on the surface to expose the sand matrix, is popular. Stamp patterns that mimic wood are also increasing in popularity.

Growing fancies

Bart Sacco, owner of Kingdom Products in Throop, Pennsylvania, says outdoor areas continue to draw huge interest. "People want an outdoor oasis," he says. "You see a lot of pizza ovens and outdoor fire pits. Generally you would just see that outdoor living trend in the warmer climates but it's made its way here."

Sacco, who manufactures decorative concrete products, notes traditional fire pits remain popular, but people are more interested in the newer propane ones. Adventurous customers want features that combine water and fire in a gas-burning fire pit. In short, "The things people ask for are getting fancier," Sacco says.

Case in point: Emil Gera of Gera Concrete, near Sacco's area of northeastern Pennsylvania, recently completed a 7,000-square-foot pool and patio space. "Everybody wants fancier and bigger," Gera

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Photo courtesy of Multicoat

This BNA Construction project in Charleston, West Virginia, showcases how Multicoat's Stamp Overlay system can visually separate the pool deck from a seating area or an outdoor kitchen. This is a perfect example of how to use and incorporate existing control joints to create a seamless finished product while making the installation process easier with multiple stopping points.



Photo courtesy of Gera Concrete

Emil Gera's clients on this job wanted their 7,000-square-foot patio turned into a vacation zone. This job had a custom-cut floor design and three defined sitting areas with a hardscape system and poured caps on the walls to make them look like pieces of stone.

says. "Used to be if you had a 600-square-foot patio that was decent size. Now that's on the bottom end."

This job had a custom-cut floor design and three defined sitting areas with a hardscape system installed and carved by Nathan Giffin of Vertical Artisans. "We poured all the caps on the walls to make them look like pieces of stone," Gera says.

In his neck of the woods, Gera says, outdoor kitchens are considered too much like "work." Pennsylvanians want something different, he continues. "They're wanting a place to sit and relax. They want to come out on the patio and be on their own little vacation."

Stamped overlays surge

Scott Harrison, sales manager of Multicoat Corp. in Rancho Santa Margarita, California, is seeing a lot more stamped overlays. "Everyone is asking us, 'How can you take my patio and distinguish between the areas?'" he says. "You can separate the different areas using designs, and I see that as a trend."

Harrison says what used to be possible only on a resort level is now affordable for residential projects. "Stamp overlay is

something that has taken off all across the country because there are more options, more colors, more designs and people are better at it now," he says.

"Stamped overlays showcase what you can do at an affordable price. Used to be, it cost \$30 per square foot," and jobs were few and far between. "Now it's \$12 a square," with a laundry list of colors and options. "There's nothing else that will provide that many options at that cost that will last," Harrison says.

Natural is in

Todd Fisher of Unique Concrete in West Milford, New Jersey, has seen a switch to more contemporary color schemes. "People are asking for concrete that looks like concrete," he says. "They like the more minimalistic, cleaner lines and contemporary colors such as grays and whites."

However, he concedes, many of his customers ask for ashlar slate and fieldstone, often in browns and tans. "People are interested in that look of a bluestone patio or a fieldstone," he says. "If they're going with an ashlar pattern they're showing us inspirational pictures of actual bluestone and asking if we can replicate that. People want stamped concrete to look realistic."

People in his area, near New York City, are less interested in outdoor kitchens and more interested in outdoor living rooms. "They're looking for cozy living areas and entertaining spaces, outdoor fireplaces where everybody gathers around," he says.

Pools are getting more inventive, too. Insurance companies charge homeowners more for diving boards, so customers are replacing those with dive rocks. Whereas they don't 'spring' like boards, they provide a jumping-off platform and visual interest.

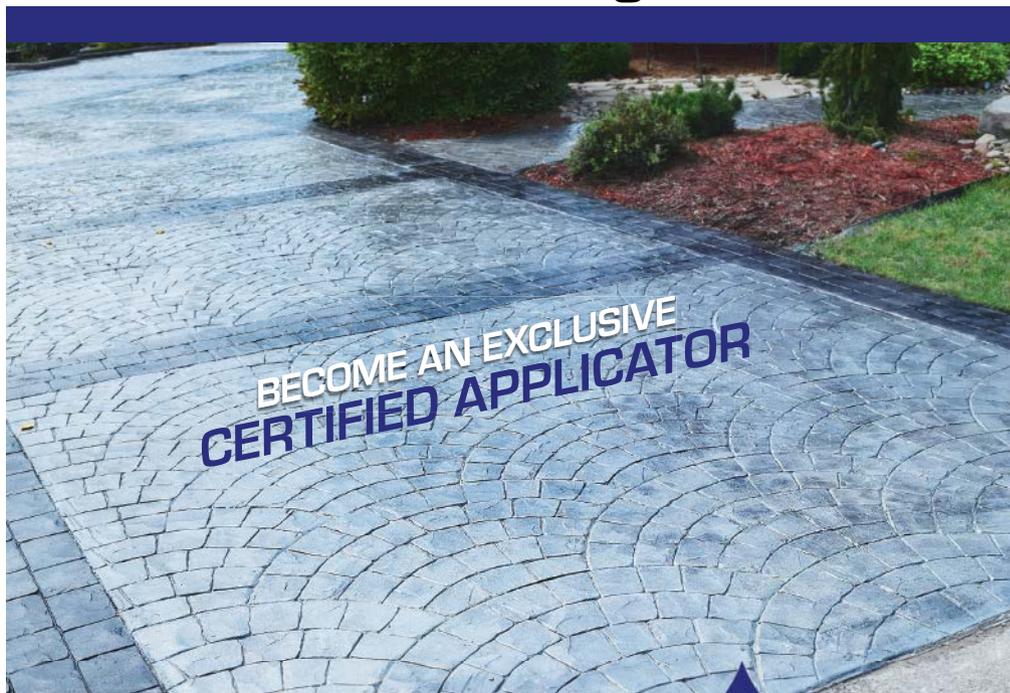
"That's another thing," Fisher says. "People are getting away from that 'city pool' look so they're making the pools and spas look more natural so they fit into their yard. People are looking to create a more natural area outside their home."

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Photos courtesy of Surtec Inc.

Making the switch to polished floors has paid off for Stockton Metropolitan Airport in California. Seen here is the lobby after it was polished. The photo on the next page is what it looked like before.

Schools and Public Facilities Weigh the Benefits of POLISHED CONCRETE

by David Swindle II

EVERY year, schools and municipalities spend millions of dollars replacing old worn-out carpet and vinyl composite tiles. The cost of replacing these traditional flooring materials is quite expensive and in most cases not at all green. Over the past several years more and more facilities are looking at polished concrete as a viable option. Why? Lower costs, simplified maintenance, greater longevity and true sustainability are key factors.

Although the benefits are very convincing, many are still reluctant to make the change from traditional flooring options.

Some of the major concerns are noise, cost of polishing concrete, condition of the concrete (such as cracks) and the amount of time it takes to convert. That fear of the unknown has caused many to go with what they know and stay with carpet or vinyl flooring.

Guards are good

Tony Almeida, manager of custodial services at Elk Grove Unified School District in Sacramento, California, says the challenge of converting to polished concrete has been strictly cultural. Some administrators struggle with the perception

of polished concrete.

Esthetics are a definite factor. There's a concern the finished product will appear too institutional or modern. It has taken years of testing to find a system that works well for the district. Interestingly, Almeida says 90 percent of the time when they go back to an area that's been polished, staff say they love their floors and wouldn't change for anything.

One of the major concerns in polishing classrooms are the scratches caused by moving furniture, particularly student desks, tables and stools. Even a rock-

hard concrete floor will scratch. Almeida recommends putting floor glides on the legs of desks, chairs and tables to help reduce scarring the surface.

Just like with any flooring, entrance mats can also help to preserve the appearance and lower the overall maintenance costs. Most importantly using a quality guard product that protects the concrete from staining and is easily maintained and repairable is vital. "If you find a guard that reduces your labor and need for stripping, then life is good!" he says.

Restoring is easier

When weighing the cost of maintenance against traditional flooring, facilities should consider what's involved in restoring the floor, what environment the floor will be exposed to, the health benefits and the costs to maintain the current flooring.

For example, if a school is in a more rural area it might deal with more sand and dust. Carpet traps the sand causing the fibers to break down faster. In addition, the trapped dirt and dust when disturbed adds allergens into the air.

In most cases, a school only has a few

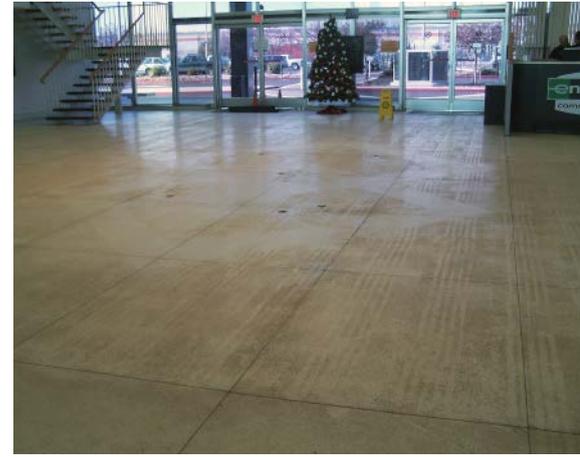
weeks in the summer to extract the carpet with equipment that doesn't get it all out. Even though the sand will scratch the polished concrete, the cost to restore it is significantly cheaper in the long run and it will never need to be replaced like carpet.

Acoustics and sustainability

The second perceived issue at Elk Grove was the acoustics. Just as with esthetics, the issue of noise is really a matter of perception. For many years, vinyl composite tiles were the standard in classrooms. The noise level in those classrooms isn't much different than a classroom with polished concrete.

Elk Grove has found that splitting the room with a combination of flooring options has helped to alleviate those concerns. "You have to understand that every environment is different and every floor is different," Almeida says. "Polished concrete is just one of many standards now available for our schools."

However, one of the biggest benefits he sees to using polished concrete is sustainability. "That plays a huge part in our decision. We are not sending another floor into the landfill 10 years down the road."



Maintenance goes a long way

An example of how making the switch to polished floors has paid off is that of Stockton Metropolitan Airport in California. In fall 2013, Harry Mavrogenes, airport director, had been contemplating a cosmetic overhaul that would completely replace the terminal buildings' carpet. Bill Fields, owner and founder of Surtec Inc., met with him and identified that under the old, worn-out carpet squares was a cementitious terrazzo floor.

This propelled the prospect of restoring

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the underlying terrazzo floor, rather than replacing the carpet. Stripping and polishing tests were conducted and the decision was made to restore the original terrazzo floor, saving tens of thousands of tax dollars.

Surtec assisted the airport and local contractor, DCS Facility Services, with products, training and technical support throughout the restoration process. Now four years later, with only basic maintenance, the floor still looks great. This past year, DCS Facility Services came back and refreshed the floor. “We expect that our floors will continue to look like a million dollars for years to come!” Mavrogenes says.

“By moving to a polished concrete floor, you can lower your cost of maintenance,” says Greg Brown, owner and president of Finished Floors in Sacramento, a company that specializes in working with schools and health care facilities.

Over the years, the company has restored various flooring systems such as ceramic tile, resilient flooring and recently polished concrete. “Resilient covered floors require a lot of preventative and corrective maintenance to maintain the quality,” Brown says. “Opting for a polished concrete floor means much easier maintenance.” Not to mention, he adds, “Concrete has a personality.”

A little at a time

What about the cost and time it takes to remove old flooring and polish the concrete? Instead of doing it all at once, Elk Grove Unified School District began a program of steadily converting rooms as needed.

To save money, it used its own staff



School personnel in the Elk Grove Unified School District of California are finding they can easily maintain polished floors and reap a huge savings. Pictured here are a before and after of an area in Laguna Creek High School.

and sought out training. They attended workshops hosted by their vendors and developed a program that helped greatly reduce maintenance costs. Almeida says that when given the choice between polishing the existing concrete or waiting for funds to replace the carpet, it’s a no brainer — polish the concrete!

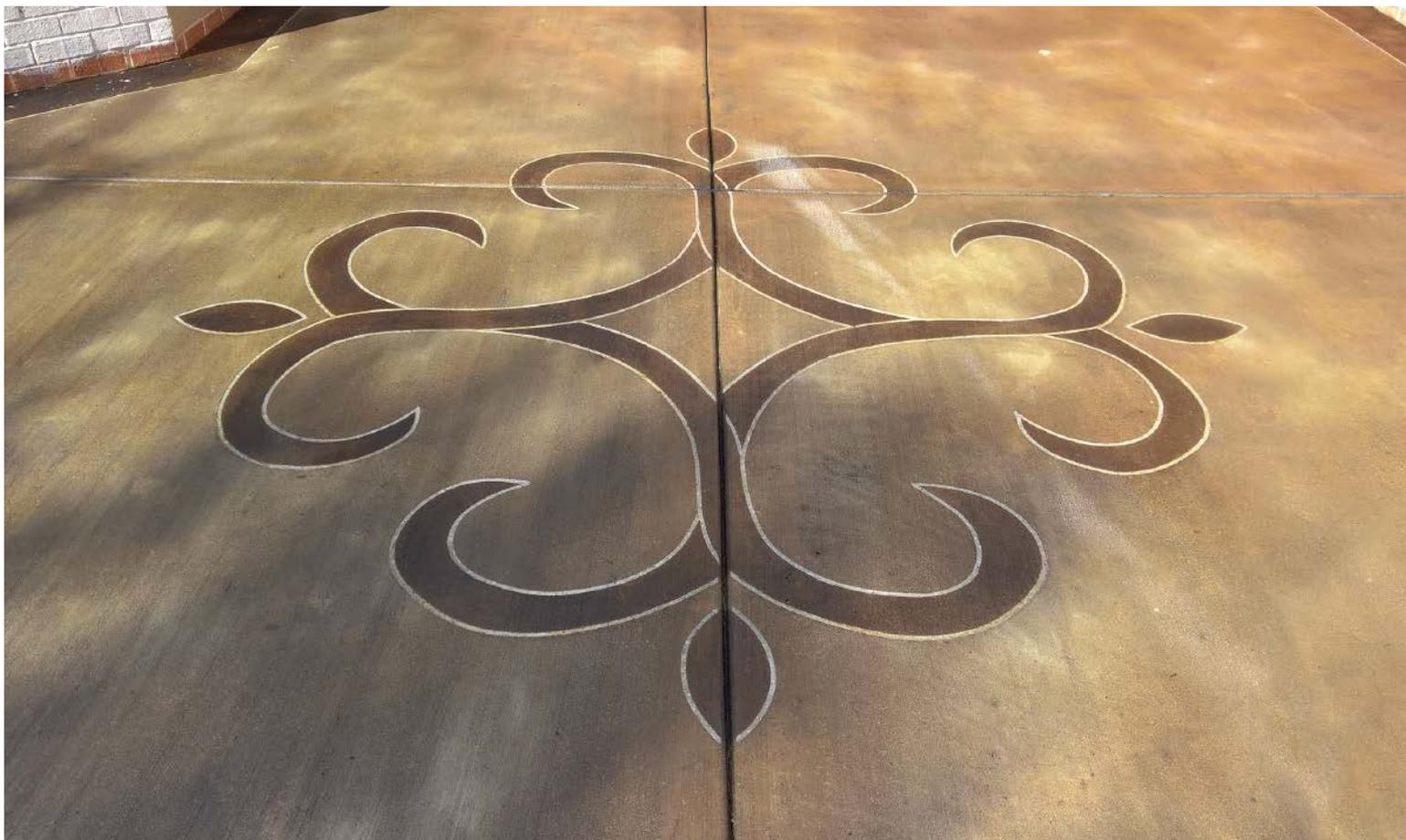
Although carpet still makes up a large part of the flooring that’s being put down in schools, universities and public facilities, polished concrete is making strides as an alternative. In high-traffic areas, lobbies, entrances and classrooms, it’s proving to be a great flooring option.

With the help of vendors that can train staff, many in the public sector are finding it’s not nearly as difficult a transition as once thought. In many cases, the initial

grinding and polishing can be outsourced and still cost less than installing carpet. The facility can easily maintain the floor with a huge savings.

In a nutshell, with proper training on how to maintain polished concrete — and with the latest in densifiers and guards — polished concrete is attractive, easier to maintain and less costly than most other flooring options. 📱

David Swindle II, sales manager at Surtec Inc. in Tracy, California, has more than 20 years of experience in the cleaning and maintenance industry. For the past three years, he has worked with Surtec, focusing on its polished concrete system. He can be reached at DSwindle@surtecsystem.com.



Photos courtesy of Rick Lobdell

Medallions Part 3: Courting the Cartesian Coordinates

by Rick Lobdell

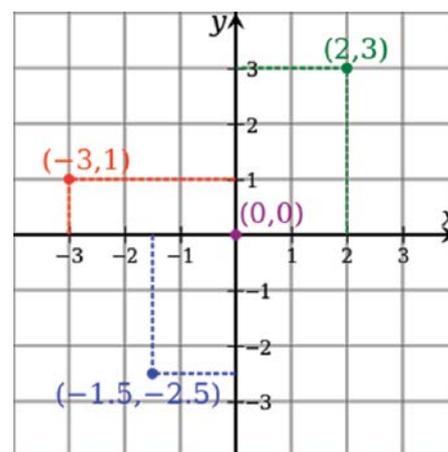
FOR me, one of the most influential theories of math is called the Cartesian coordinates. The adjective Cartesian refers to the French mathematician and philosopher René Descartes who published this idea in 1637. Cartesian coordinates are the foundation of analytic geometry, and provide enlightening geometric interpretations for many other branches of mathematics, such as linear algebra, complex analysis, differential geometry, multivariate calculus and group theory.

A familiar example is the concept of the graph of a function. Cartesian coordinates are also essential tools for most applied disciplines that deal with geometry, including astronomy, physics and engineering. They are the most common coordinate system used in computer graphics, computer-aided geometric design and other geometry-related data processing.

The Cartesian coordinate system in two dimensions (also called a rectangular coordinate system) is defined by an ordered pair of perpendicular lines (axes), a single unit of length for both axes and an orientation for each axis. (Early systems allowed “oblique” axes, that is, axes that didn’t meet at right angles.)

The lines are commonly referred to as the x- and y-axes where the x-axis is horizontal and the y-axis is vertical. The point where the axes meet is taken as the origin for both, thus turning each axis into a number line.

For a given point P, a line is drawn through P perpendicular to the x-axis to meet it at X and a second line is drawn through P perpendicular to the y-axis to meet it at Y. The coordinates of P are then X and Y interpreted as numbers x and y on the corresponding number lines. The coordinates are written as an ordered pair (x, y).



With that said, until this point all my articles have been about the basics of basic math. I have taken layout one step at a time, building up to this moment. This is where my secrets start to appear. It’s not just about layout anymore — it’s more about plotting points.

Practice makes perfect

Although it might take a while for this idea to sink in, I can promise you I do this on a regular basis and there's no limit to what you can draw once you understand this theory. In truth, I don't completely adhere to all this theory's rules. I have simplified it and created a great way to layout large medallions in perfect symmetry.

Let's dig into how we can use this theory. I hinted at some of this with my last article on fleurs-de-lis. Like the last two articles, start by making a big "X" in the middle of the floor. Now the space is separated into four quadrants. You'll begin by drawing your design correctly in one quadrant twice and then mapping the other three. In the end, you will have drawn the partial fleur-de-lis that comprises the design eight times, twice in each quadrant.



For this article, I used a recent design I did where I took the theory of a fleur-de-lis and added a twist to it. I started by deciding how large I wanted my medallion. In this case, it ended up being 8 feet long through the diagonal. I measured 4 feet out from the center of my X. Then I picked my first line to start drawing and drew the beginning of a fleur-de-lis. I can't teach you how to draw a perfect curve. It takes lots of practice, erasing and redrawing until you get it right.

The plot thickens

Once you create one side of the image, you can plot important points from it. The more points you plot, the easier it is to draw the other quadrants. Typically, I plot out points based on the outside edges of the image.

Just like a computer, the actual Cartesian coordinates require points. But I don't need as many points plotted as a computer. I just need enough to be able to duplicate the original image. For this design, I plotted eight points (but I suggest you plot more like 10-15 to make it easier). Those same eight points are plotted on each quadrant twice.

Imagine the points in inches. The first one is for how far away the point is from the horizontal line and the second measurement is for the vertical point. For this design, all the plot points using x, y axes as coordinates are:

0,48 – 3,38 – 10,41 – 18,34.5 – 12,31 – 9,33 – 1.5,24 – 12,12

To the point

Did I lose you? Let me explain those numbers. In the second photo down on the right, you see a bunch of little marks. Each mark is a plot point of the original image. The first one — 0,48 — means that I started on the vertical line 48 inches from center. The second one is 3,38. I measured 3 inches from the horizontal center and then 38 inches up the vertical line. With 10,41, I measured 10 inches to the horizontal line and then 41 inches up the vertical. And so on.

So you don't get confused, plot the same measurement in each quadrant as you proceed. For example, for the second mark, plot

3,38 seven times before moving on to the 10,41 mark. This will not only make the plotting procedure simpler, it will speed up the process.



In my imagery, you only see six distinct marks instead of the eight I mentioned. One of the marks that's hard to see is on the vertical line at the tip of the design. The other is close to the center of the design where the opposite sides of the quadrant meet.



Finishing touches

To finish this design, I had to draw the curve that combines each fleur-de-lis section. After I finished drawing the design's main areas, I went back in to add a border in the center of it. I did this by measuring the width I wanted and plotted a bunch of little points

that I followed so I could accurately draw a curved line. This isn't something you have to do but I like everything to have a consistent width. Just to add more flair, I finished off some of the curves to create a twist to my design, pun intended.



In the video for this article, I didn't go in a perfect order around the quadrants like I should have. I did this on purpose to show you it doesn't matter. If the points are identical, the design will come together when you are done. 🛠️

To view a video on the process described in this article, go to

<http://bit.ly/2r3Kh5i>

Rick Lobdell, a classically trained artist with a master's in fine arts in painting from the Savannah College of Art and Design, has also studied math and drafting. In this series, the owner of Concrete Mystique Engraving in Tennessee will explain how he lays out his well-known designs. He can be reached at rick@concretemystique.com.

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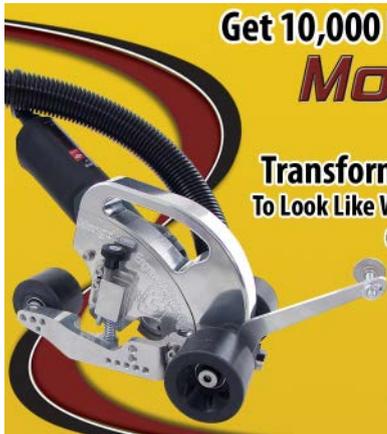
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All Part of the Plan

by Stacey Enesey Klemenc

WHEN it comes to delivering difficult designs — like this circular plaza that highlights the entrance to the Waldorf Astoria Beverly Hills — you’ve got to have a plan. And we’re not talking just a quick sketch but a detailed drawing that clarifies precisely what joints and finishes are to be placed where.

“Shop drawings are essential to clarify the joint layout and provide information to the field so that a difficult design conforms to the architect’s intent,” says Kyle Boyer, project manager with Trademark Concrete Systems based in Oxnard, California. They also increase field production and eliminate layout issues.

From February until June 2017, Trademark installed 10,000 square feet of its proprietary blend of EcoCast 01 white color hardener paving, 3,000 square feet of EcoCast 03 pedestrian paving and 600 linear feet of EcoCast green integral color with 1/2-inch diameter seeded green granite banding. The company also put in 550 linear feet of cast-in-place planter walls and 150 linear feet of EcoCast 3 integral color fountain walls.

All the decorative concrete had to be placed over a waterproofed structural deck with a topping slab thickness of between 8 and 10 inches. Circular 26-inch wide



bands with three different finishes — white, green and Granite Cobble — comprised the layout. “The thickness and radius banding layout over a structural deck made forming the biggest challenge,” Boyer says.

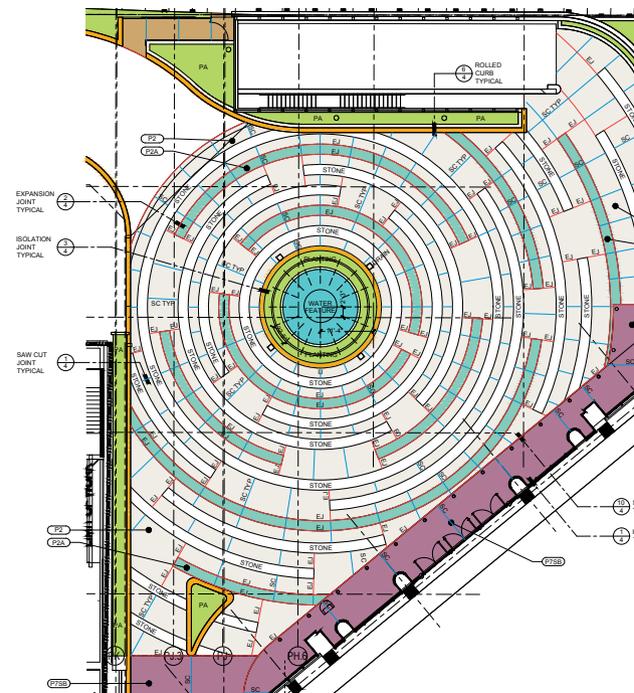
But thanks to Trademark’s shop

drawings, he says, the crew knew what joint types — in particular, isolation, expansion or saw cuts — went where and easily coordinated with the stone subcontractor that installed the granite.

To significantly save money on this project, Trademark used white color hardener in lieu of concrete batched with white cement. 🚧



Photos courtesy of Trademark Concrete Systems



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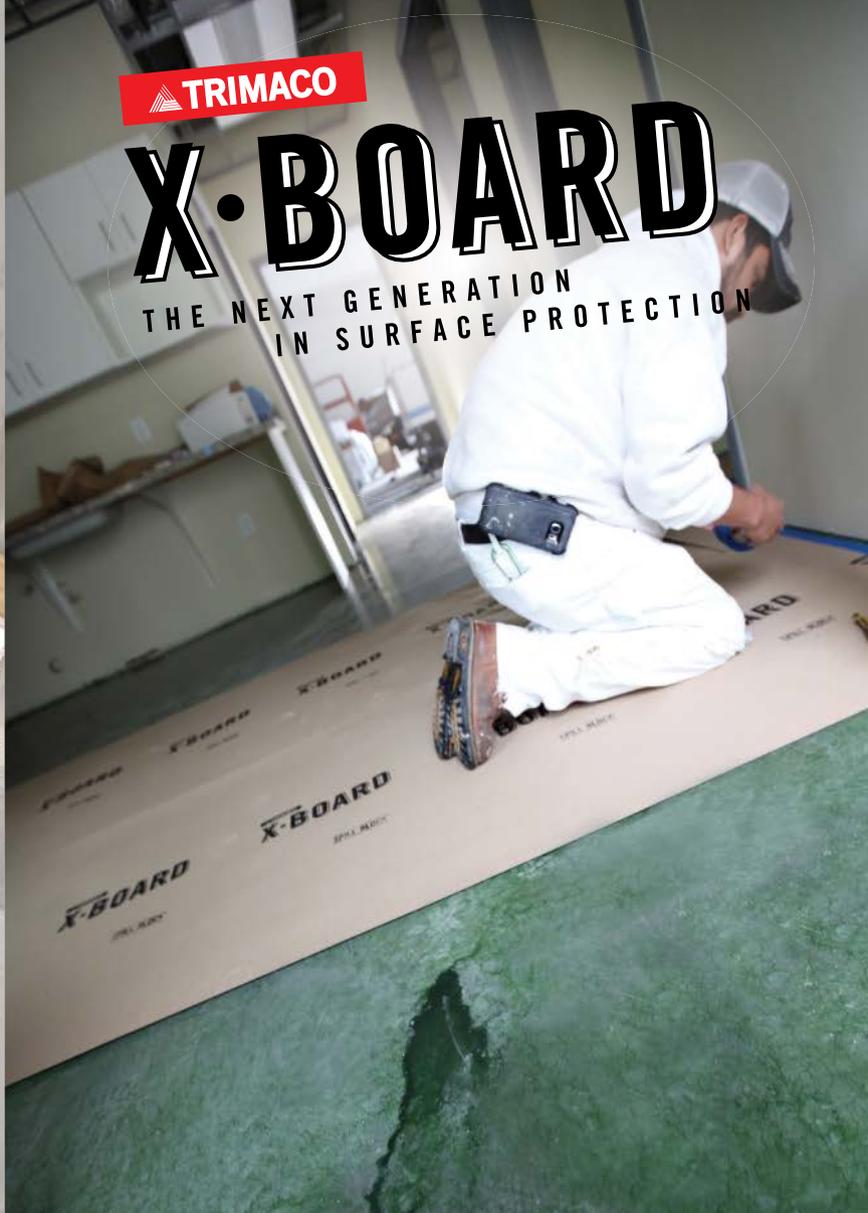
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