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Publisher's Letter



Dear Readers.

When I graduated from college in 1989 and decided to forego a job opportunity with a book publisher on the East Coast, it was partly because a good friend in the trades had introduced me to some craftsmen whose work was nothing short of the best in the business.

These talented individuals did not just catch my attention because they did great work. It was the

methods they used that made me want to learn how to do that myself.

If it wasn't for a 30-foot fall from a scissor lift some six years later, there's a good chance I would still be out there wielding the tools everyday. Often I miss those days, because it was not only about the pride of workmanship I enjoyed, it was the relationships with those fellow artisans that I always felt honored to have.

Among the many reasons that each issue of Concrete Decor includes a contractor focus called Artisan in Concrete is that these pages pay tribute to the generations before us whose attitudes toward work and workmanship are the reason we strive to excel on every project. Artisan in Concrete is also our way of giving you guys a pat on the back for the quality standards you uphold. Without your ongoing efforts to be the best in the business, this industry would not succeed.

That said, we would like you to join us for a celebration dinner on the evening of March 18, 2010, when Concrete Decor will honor the 55 Artisans in Concrete we have published in these pages from 2001 through 2009. The evening will include some great entertainment, including a few industry bloopers and special inductions into our industry's new Hall of Fame.

This celebration will take place at the Phoenix Downtown Sheraton Hotel, located at 340 N. Third Street, Phoenix, Ariz., as part of the First Annual Concrete Decor Show & Decorative Concrete Spring Training event on March 16-19. Party tables and individual ticket sales are now available online at www.concretedecorshow.com.

We look forward to seeing you there.

Sincerely,

Bent Mikkelsen, Publisher

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Assistant Editor: Emily Dixon Creative Director: Bill Simpson Web Design: Brian Hollett Writers: Doug Carlton

Howard Jancy, CSI Amy Johnson Stacey Enesey Klemenc

Chris Mayo Mike Miller Kelly O'Brien Erik Pisor David Searls Chris Sullivan David Thompson

Business Manager: Sheri Mikkelsen Circulation: Meg Kilduff

> Editorial: (877) 935-8906 news@protradepub.com

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> info@protradepub.com Fax: (541) 341-6443

Eastern U.S. Sales: Donna Flood

donna@protradepub.com (770) 967-3373

Middle U.S. Sales: Bent Mikkelsen

bent@protradepub.com

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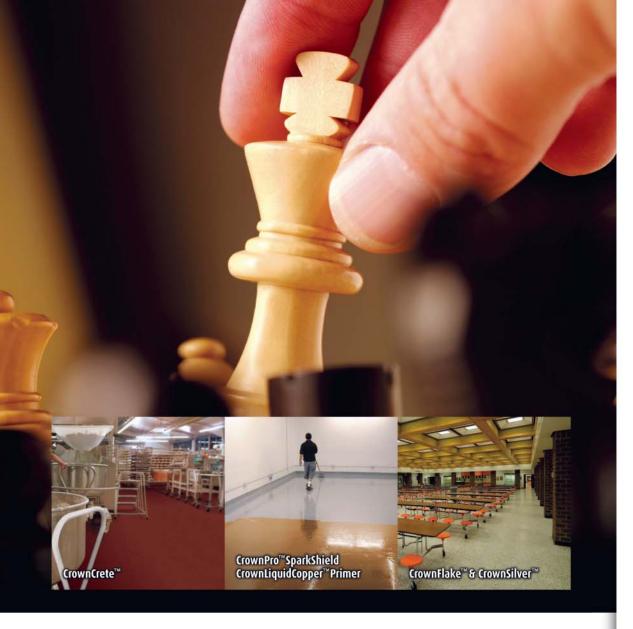
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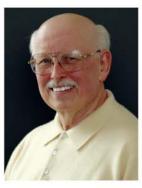
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Photo by Mark West

Pouring concrete into fabric instead of the usual rigid formwork represents, for some, the shape of things to come. by Stacey Enesey Klemenc

On the Cover: Japanese architect Kenzo Unno has developed more than one basic method of forming cast-in-place walls using fabric, and his "Quilt-Point Method" creates the texture shown here. This photo is of one of his walls, viewed looking up towards the ceiling, in a house in Tokyo. For more, see page 58.



tenciled concrete utilizes rolls of heavy paper, called *Stencils*, which are pre-cut into patterns of stone, brick, or tile. Stencils are designed with an overlapping, repeating pattern, much like wallpaper, and are laid out in strips covering the freshly poured concrete.

The coloring agents are typically *Color Hardeners*, a mixture of sand, pigments and Portland cement. This coloring agent is cast over the slab in powder form, then floated into the wet cement, creating a much harder surface than normal concrete.

Texture is applied, typically with a *Texture Roller*, along with a *Release Agent* for contrasting color. Once the concrete has dried the paper stencil is pulled out, revealing a grouted stone appearance.



Advantages of Stencil

Stenciled concrete creates a more uniform and level surface, with greater control over drainage and slope, without sacrificing the natural beauty of stone, tile or brick. This flatter surface is a better choice for high-traffic areas.

The uniform surface is less prone to drainage issues or delamination from freeze/thaw cycles, and is less problematic with snow removal equipment.

Using broadcast coloring techniques, stencils allow the installation of differently colored borders and accent pieces without the need for separate forms. It also eliminates the need to purchase expensive stamp patterns for what might be a one-time use installation.

Stenciled concrete is also one of the speediest methods of installing decorative concrete, allowing the contractor to cover up to 90 sq.ft. per row of stencil.

Versatility of Stencil

Stenciled concrete is often combined with acid stain to achieve even greater color depth and detail. Once the surface has been cleaned, but before it's sealed, take a small brush and apply one or more colors of stain to individual tiles. It's an easy way to make your concrete look more sophisticated.

Stenciling also works great for many types of coatings, including flat and

vertical applications. Some overlayment techniques require one to build out their surface anywhere from 1/2" to 1" or more. But stencils only require a 1/8" base coat and a 1/8" color coat. Stenciled overlay uses less than half the material of other methods! This is enough material to accept a light texture, and gives you the same choices of colorants and patterns as the stenciling for cast-in-place.



Stenciled concrete is often combined with acid stain to achieve even greater color depth and detail.

For more information contact
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See how it's done at www.decrete.com/video

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Industry News

MasterFormat expands definition of plaster cement

MasterFormat, a system design professionals use to organize building product information, will have new names for the section numbers that deal with plaster cement.

Section 09 24 00, formerly titled Portland Cement Plaster, is now simply Cement Plaster. Similarly, "portland" is no longer in the titles of Section 09 24 23 Cement Stucco and Section 09 24 33 Cement Parging.

By making the changes, MasterFormat's publishers, the Construction Specifications Institute and Construction Specifications Canada, are keeping pace with recent advances in the industry, such as the growing popularity of plasters made with rapidsetting calcium sulfo-aluminate (CSA) cement.

MasterFormat is used by designers and builders for organizing specifications, cost estimates, and other construction information. The current version of MasterFormat was published in 2004, and is revised on an annual basis to keep it current with industry practices.

www.masterformat.com

Consolideck products granted NSF registration

NSF International has registered Prosoco's Consolideck LS and Consolideck LS/CS finished concrete flooring products in its Nonfood Compounds Registration Program.

The NSF Nonfood Compounds
Registration assures inspection officials
and end users that formulation and
labels meet appropriate food safety
regulations. The registration means that
NSF International has reviewed the
product formulas and found that when
used as directed, they meet standards
for health and safety. These products
underwent a formulation review and
label review to verify that they can be
used in and around food establishments.

The formal registration will help when health issue questions come up about the use of Consolideck LS and LS/CS on floors in kitchens, grocery stores, cafeterias, food-processing areas, and other places where people are concerned about the indoor environment. Health department inspectors look for and recognize NSF-registered products when inspecting these facilities.

NSF's program is a continuation of the USDA product approval and listing program, which is based on FDA's requirements for appropriate use, ingredient and labeling review.

www.prosoco.com

NOVA, Propex sign Elemix marketing agreement

NOVA Chemicals Corp. has signed a sales and representation agreement with Propex Concrete Systems, a business unit of Propex Operating Co. LLC, regarding Elemix concrete additive.

Under the agreement, Propex Concrete Systems will be responsible for increasing sales of Elemix concrete additive in the United States ready-mix and precast markets, while providing customer service and marketing support to accelerate commercial use of Elemix in project specifications. Propex provides Elemix with an additional channel to market through a targeted, national sales force, while Elemix gives Propex another innovative product offering to enhance the performance of concrete.

www.novachem.com

www.fibermesh.com

Kretus, Quest partner with **National Flooring Equipment**

Kretus Group and Quest Building Products have partnered with National Flooring Equipment to distribute products to the Southern California market.

National Flooring Equipment has been a leader in the surface preparation industry for more than 40 years, specializing in ride-on floor scrapers, walk-behind floor scrapers and planetary grinders.

Kretus and Quest Building Products operate from offices in Anaheim and San Diego, and will serve as distribution centers offering equipment sales, rentals, and repair and warranty service for National Flooring Equipment products.

www.questbuilding.com

www.kretusgroup.com

Lafarge receives awards

Lafarge North America's West U.S. Aggregates division recently received numerous awards from the Colorado Stone, Sand & Gravel Association in recognition of the company's commitment to safety and the environment.

Lafarge collected the top three safety awards at the annual CSSGA awards ceremony, along with an additional 12 recognition certificates for each of their mines that had gone 12 months without any injuries resulting in restricted or lost time. Additionally, the CSSGA awarded Lafarge's Specification Aggregates Quarry, located in Golden, Colo., with the prestigious 2009 Jack Starner Memorial Reclamation Award,

which honors outstanding reclamation of aggregate/construction material operations.

www.lafarge-na.com

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Allen Engineering Corp. promotes two

Allen Engineering Corp. recently appointed Jeff Johnson as sales manager and Scott Ward as marketing

Johnson has been with Allen for more than 12 years, starting out in the manufacturing area. He had most recently served as assistant sales manager for the company. Johnson will be responsible for managing inside sales, outside sales, and national accounts for Allen.

Ward has been with Allen for more than 20 years, starting out in





the manufacturing area. Ward has most recently served as marketing coordinator for the company. He will be responsible for all areas of marketing at Allen, including advertising, promotions, catalogs, Web sites and special events. He also serves as the regional sales manager for the Midwest and for the paving equipment specialists at Allen. 🗭

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Carlton's Corner



An outdoor kitchen project by Elements, a decorative concrete company in Sheridan, Wyo.

Success in a Small Town

ne of the many things I love about our industry is meeting folks that share my passion for decorative concrete. Most of us picture

the decorative stars coming from places like California, Texas, Arizona and Florida, but this is not always the case. I have felt for a long time that our industry has talent in small



by Doug Carlton

markets that the exposure train doesn't pass close to — artists that design or install top-notch jobs day in and day out and never consider themselves to be anything special. You see, without competition, it can be difficult to know how good you really are. I recently heard of such a couple in northeastern Wyoming and took a look to see what the fuss was all about. I was blown away, to say the least.

Wayne and Pamela Gable of Sheridan, Wyo., operate a company called, simply, Elements. Elements

specializes in decorative concrete, both indoors and outdoors. As I spent time with these folks looking over portfolio pictures and travel samples of concrete counters, I couldn't help but wonder what the heck these folks were doing way out here. I'm all about where the buffalo roam, but most companies that specialize in high-end work have traditionally been found a little closer to the city. Well, rethink the status quo, because the next few paragraphs will describe how small-town America can do decorative concrete like the big markets.

The logical question to ask is how did Pam and Wayne get involved in decorative concrete in the first place? It seems Pam was thumbing through a Fu-Tung Cheng book on concrete counters, and the pair thought it would be fun to try something like that in their own kitchen. They found themselves taking the first of four trips out to Cheng's workshop in Berkeley, Calif., to learn the technical and artistic side of concrete counters. Next came GFRC, acid staining and Modellos, and they were off and running, combining decorative

concrete with an existing landscape business. Pam says that concrete and landscaping go well together and one side can easily "spin off" to the other. Outdoor kitchens can lead to indoor concrete counters and acid-stain flooring.

I asked Wayne about establishing themselves and decorative concrete in a small market. It seems they tried newspaper advertising, home shows, etc., but word of mouth worked best. Many local folks didn't understand what decorative concrete was until the Gables presented examples of how beautiful concrete could be. The process went from showing examples and answering questions to bidding work. Pam said local builders and architects have been the hardest market to penetrate, while homeowners (the end users) started requesting their services. Eventually the Gables trained under notable artisans such as Bob Harris and Melanie Royals, and they learned techniques by Buddy Rhodes as they expanded their decorative expertise.

My next two questions for the Gables concerned travel and obtaining materials. It seems Mullinax Construction Supply, a Sheridan supply house run by Aaron Mullinax, shared the same interest in decorative concrete and started to stock many of the products needed. The Mullinax family supplies their area with ready-mix concrete, so branching out into the decorative supply side made sense. Maintaining inventories of all colors and materials can be a challenge for them. Also, freight can be expensive in rural markets. And Sheridan, Wyo., can get cold, so some water-based projects have to be protected during shipping.

In answer to my other question about travel, the Gables have worked up to 425 miles from their home base in Sheridan. They say the secret to long-distance projects is a lot of planning before traveling. I was starting to feel a little sorry for these folks having to travel so far until I heard that the final destinations were sometimes places like Jackson Hole, Wyo. Pam says they have found a way to travel and let the projects pay for it — nice.

The Gables are currently working on fresh ideas such as curved walls and adjusting acid stains to have the look of watercolors. I asked if they had advice for our readers in markets like theirs. Pam and Wayne recommend starting small but being creative. Educate, but adapt to your local market. Be hands-on and challenge yourself to be the best possible. Sounds like a recipe for success regardless of your market to me.

What we can learn from businesses like Wayne and Pam's is that the decorative industry is no longer limited to large cities or populated states. Customers, regardless of demographics, can see artistic quality and will appreciate the value in what we do. If you are in a small market, don't overlook the opportunities that lie firmly at the feet of our decorative industry. Test the waters with a few small jobs and take many pictures along the way. Think of it like you're a big fish in a small pond and let me know how it goes.

Thanks, Wayne and Pam. 🛹

Doug Carlton operates Carlton Concrete Inc. in Visalia, Calif. He can be reached at carltondoug@comcast.net.



Trowel and Error

The Lighter Side of Troubleshooting

f you are like me, the end of 2009 could not come soon enough. To put it mildly, it was a tough year for the decorative concrete industry. When

you really think about it, this is an industry built on value-added products and services. Color, stamp and stain are not necessary when placing concrete — gray works just fine. Not a good



by Chris Sullivan

place to be when money is tight and "finding the absolute lowest-cost product or method to get it done" is the builder's motto. Even with all the doom and gloom (I hear 2010 could be as bad or worse than 2009) you must have levity, the ability to look at the bright side or find some humor in your day. Don't be afraid to smile or even chuckle. After all, laughter is the best medicine.

I get on average 50 troubleshooting questions per week (outside of my regular job) split between e-mail, phone and face to face. I absolutely love being a go-to guy in the industry, and I really enjoy helping those in need solve problems. The tougher the question or situation, the more excited and involved I get — it's just the way I am wired.

With 2,500-plus questions per year coming across my desk, every so often there are those that stop me in my

tracks, not because they are difficult or have me stumped, but because they are so ridiculous they make my eyes cross. I think e-mail is partly to blame — it's so easy to use, the author hits the send button before realizing what they sent is borderline absurd. In defense of the industry, a majority of the "goofy questions," as I like to call them, come from homeowners and nonindustry people who are not up on the basics of decorative concrete. So, with all due respect to those goofy question posers (who will remain anonymous), let me share the lighter moments of troubleshooting decorative concrete in 2009

It never ceases to amaze me how common sense can so easily go out the window. How does the saying go? "You can't see the forest through the trees"? This past summer I received an e-mail question from a guy with a concrete house on one of the small islands of Hawaii. This was not an ICF (insulated concrete forms) house, but rather an 8-inches-of-solid-reinforced-concrete house — floors, walls, and roof. His question was pretty straightforward —

"The roof and ceiling of my (8-inchthick) colored concrete house has a big crack in it. The crack runs the length of the ceiling and is so wide that I see daylight, and water runs into the house when it rains. Should I fix the crack?"

I know Hawaii has pretty nice weather, and there are no biting insects,

but in an effort to avoid a river running through your living room, I say YES, fix the crack.

I know everyone is busy, but the next question really pushes the envelope of procrastination. One fine afternoon this past year the phone rings. The contractor on the other end sounds normal enough. There is no sense of urgency, and after some small talk he gets to the meat of the question —

"I have a job where the homeowner wants colored and stamped concrete. I bought some of your throw color (color hardener) and I rented stamps."

As a side note, when I heard color hardener referred to as "throw color." I knew this was going to get interesting. He continued —

"I need some advice on how to use this throw color and these stamps."

Having done this long enough, I speak the code. "Advice" in this context means "I have no clue what I am doing, I have spent way too much money already, I am too proud to admit it, disaster is looming, and by the way, please save me." The conversation continued —

"By the way, the concrete truck just pulled away, and mud is on the ground."

The first thought that crossed my mind was the look of surprise the homeowners were going to have when they realized their stamped patio was the test pour for a bunch of first-time stampers. For the next 10 minutes, I did the best I could trying to teach a contractor thousands of miles away how to color and stamp concrete via the phone. My last comment to the contractor before hanging up —

"Do the best you can, and plan on ripping it out tomorrow."

Information has become the currency of the 21st century. Just look at how fast and easy obtaining information has become. Most of us can access the world from a hand-held phone or PDA. In contrast, it seems like providing basic information when you're the one asking the question can be like pulling teeth. Case in point was an e-mail, like many I receive, asking for advice on how to fix a color issue. The e-mail read something like this —

"How do I fix a color issue on

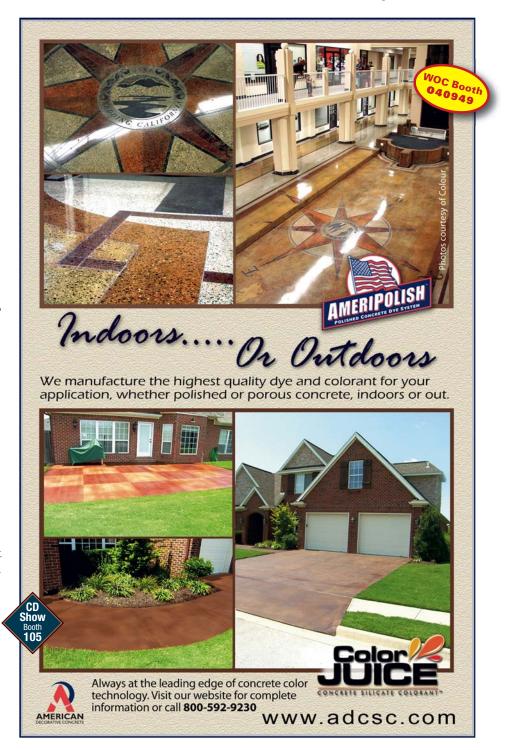
my floor?"

These types of e-mails remind me of answering questions from my 6-year-old. It's a game of "answer a question with the absolute least possible amount of information provided." In all seriousness, how can anyone help you if you don't even know what the problem is? Try this next time you go to the doctor and see how far you get -

"Doc, it hurts."

These e-mails usually end up in back-and-forth exchanges, lasting for days, with me painfully extracting little bits of information. In the end, I usually ask for pictures of the problem, and fill in the details myself. When asking troubleshooting questions, the devil is in the details.

Along the lines of information or lack thereof, the other culprit is the "holdback." This is the person who



goes into excruciating detail, either on the phone or e-mail, only to leave out some obvious and critical detail. A case in point was a conversation I had with a contractor last spring. The issue revolved around a sealer failing. I knew the contractor was based in Florida, so I ruled out cold temperatures — my mistake. They went on and on about how they had been doing this type of work for 20 years (translation: they may have been doing it wrong for 20 years), and they followed the application guidelines to the letter, and it's the product, etc. After 25 minutes of back and forth on the phone, I was borderline stumped. It was then that the contractor mentioned in passing that the job was at his buddy's house in Ohio where the temperature at time of application was 38 F, and it rained and snowed for five days after application. Those are 25 minutes of my life I can never get back. Brain damage is pretty easy to come by in this line of work.

Last, but far from least, are people (often homeowners) that want to condense our trade into a paint-bynumbers kit you should be able to find on the shelf at the local big box store. The e-mail that best exemplifies this comes from a homeowner who spent time researching stained concrete on the Web as well as in publications like Concrete Decor. They loved the look of stained concrete. They were drawn to a picture of a floor that incorporates multiple colors seamlessly blended into one another, with an intricate Southwestern pattern saw-cut into the surface. They solicited multiple bids from local artisans who, combined, probably have 60 years of experience doing this type of work. They freaked out when they see what it actually costs to have this type of work done, and turned to me to solve their dilemma —

"I want my concrete to look like the picture attached. Tell me the steps involved so I can do it this next weekend."

I have a boilerplate standard reply that is about five pages long. It contains detailed instructions that are enough to scare the daylights out of even the most hardened do-it-yourselfer. I usually end

that long e-mail with a reminder that even if they do everything exactly by the book, there is a 99.5 percent chance the floor will not look anything like the picture. In most cases a contractor ends up with the job.

I am an eternal optimist at heart, and always give people the benefit of the doubt. I am looking forward to 2010 and the new opportunity it brings. I can also be sure that there will be a new round of questions that will make me shake my head and sit back and chuckle.

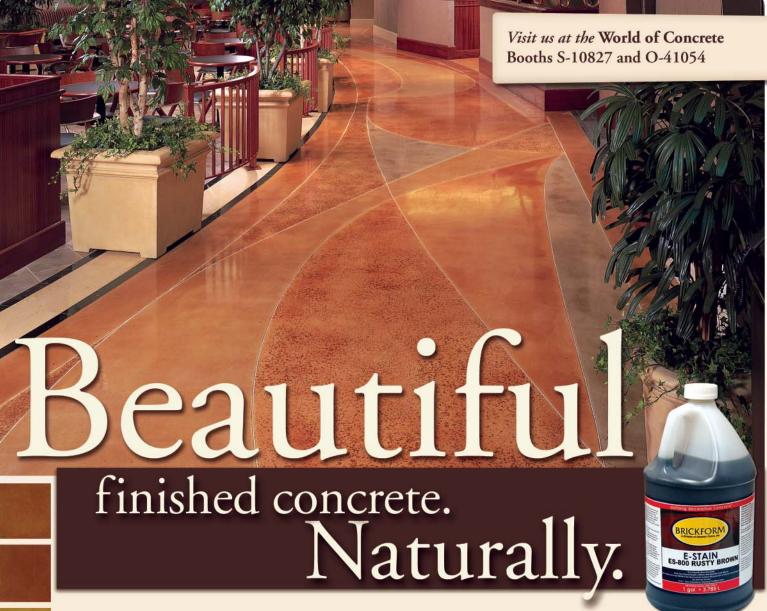
Chris Sullivan is vice president of sales and marketing with ChemSystems Inc. He has presented seminars and product demonstrations throughout North America, including at the World of Concrete convention. Contact him with technical questions at trowelanderror@protradepub.com.

Chris Sullivan will teach a seminar, "Taking the Mystery out of Sealers," at the Concrete Decor Show & Decorative Concrete Spring Training in Phoenix on Thursday, March 18, at 3:00 p.m. For more information, go to www.ConcreteDecorShow.com.

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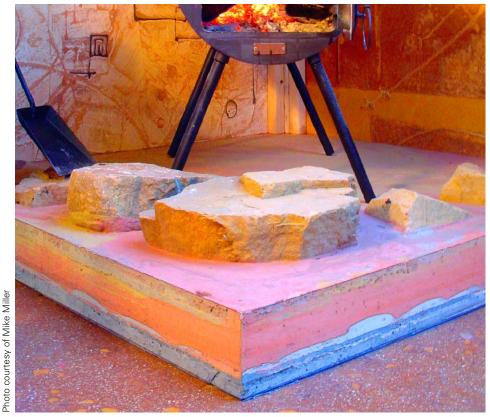
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A layered, integrally colored concrete and sandstone hearth in Mike Miller's Concretist studio.

Entering the Strata-Sphere

Clearly, designing and placing concrete is a process. However, for me, it's best when not overly processed. I'm not particularly fond of Wonder Bread or Cheez

Whiz. I much prefer homemade bread or artisan bread like a pugliese, or a really ripe and nasty brie, exuding ammonia and looking not just interesting, but also perhaps a bit dangerous. I like my concrete the same way



by Mike Miller

I like my breads and cheeses, with every bit of the material exuding something interesting and reflecting the character of the ambient conditions and personalities that shaped it. And I'm not the only one who feels like this.

Ace Architects principal David Weingarten took a two-year sabbatical to build his and his partner Lucia Howard's northern California home. Immersed in all aspects of the building process, he was present and involved as every cubic centimeter of concrete was placed. When I asked him to elaborate on the process, he got excited and seemed to want to talk. He began with the pump. "What was really surprising was holding the hose, and even more surprising, to be at the nozzle end. Its wild! You're grateful to have gotten to the end of the day. I imagine it's what a really wild animal is like."

He's come to believe that one of the great things about concrete is that "it is an artifact. You are left with an artifact of an experience — everything from the building form, to the hot day, to the really sweaty people swearing in Spanish." As with a fossil, you see the butt and grain of the form boards and the tie holes, like ancient dinosaurs, ferns or trilobites, and it fossilizes the experience that made it — the experience and memory of building the thing. The house has become an external



Lift lines act as both color separaters (blue gray and natural gray) and saturated areas of color emphasis (intense and rising blue) in this Mammoth Lakes, Calif., home. The structure was designed and produced by decorative concrete master Fu-Tung Cheng.



Yin-yang study by Emily McClintick and her husband and partner, Ramon Manzano, both of ER Designs, based near Lake Tahoe. The piece features fine multicolored sedimentary layers of integrally colored Pterra, a cementitious overlay product from Colormaker Floors.

memory. "I can't help but look at the walls and see (the memories)."

Tie holes and the grain of form boards, especially those forms that are well-crafted but not too well-crafted, are often a component of vertical sensory concrete. And just as all of our

lives are at least somewhat complex, complicated and multilayered, so it is with sensory concrete. Other components of interest include bug holes, laitance and lift lines... Ah, I get dewy just thinking about those lift lines!

The laws of physics pretty much guarantee that most vertical concretes will want to resolve in a graphically sedimentary way. And why bust your ass to fight the laws of physics, especially when the results can be so compelling? After

all, when was the last time you can recall someone returning from the Grand Canyon and grousing about how boring or offensive the layers of colorful sandstone were? This just doesn't happen, and why should it be any different with concrete?



Note quartzite stacked between lifts in this Lithocrete installation by T.B. Penick & Sons Inc., of San Diego. Shimmering silvers and oxidized iron colors in the quartzite play well with the natural gray vertical concrete and the gold-and-rust-patina stained horizontals.

Photo courtesy of T.B. Penick & Sons Inc



Bug holes, the horizontal grain of the form boards and intentional lift lines create visual interest in this composition of "black and white" verticals. The installation is the work of concretist Sean Dunston, with Concrete Jungle, of Colorado Springs, Colo.

You can spend lots of money and work like crazy to turn the concrete into something it basically is not... that is, something middle-of-the-road, consistent, pleasant and unchallenging, like a vanilla milkshake from McDonald's. Or, you can not think so much and not work so hard. You can take your concrete as God intended it and be prepared for surprises. Concrete with bug holes. Concrete with serendipitous lift lines. Concrete with lacy laitance, like a fractal filigree. Concrete as a fickle muse ... the kind of concrete you'd talk about at a cocktail party. Concrete that's always interesting! You'll see examples of this by concretist Sean Dunston.

There's also a middle position, one in which you approach the concrete

with deliberation and forethought, but on its own terms — where you direct with whispers and gentle nudges rather than with a sledgehammer. For example, realize in certain cases that a stratified lift line is at least likely, and, possibly, guaranteed. So, why not indulge, perhaps highlight and enjoy. Enjoy a guilty pleasure! I've included two examples of this. One by Fu-Tung Cheng, in which he emphasizes lift lines through shifts of color and with use of applied dry pigment floating in between the lifts. Fu-Tung's work is always natural and honest, with his mind and hand apparent in the outcome.

Another is by San Diego contractor T.B. Penick & Sons Inc. The Klemaske brothers, Frank and Byron II, have shared with me photos of a project

where lift lines were emphasized by the placement of natural stone within the forms, between the lifts. A really great idea! And T.B. Penick has practiced this with many different materials (exotic aggregates, glass, seashells), producing a really broad range of effects. Sean is a protégé of Fu-Tung's and came-up through the Cheng educational system. T.B. Penick offers access to their ideas through their Lithocrete system. Both of these outfits are worthy of study and vour consideration.

Finally, I've included an example of intense strata work by two of my protégés, Emily McClintick and her husband, Ramon Manzano, both of ER Designs, based near Lake Tahoe. This is a sedimentary yin and yang graphic, composed of integrally colored layers

Photos courtesy of Concrete Jungle

of cementitious Pterra, from Colormaker. Both pieces were placed horizontally, with multicolored layers between 1/8 inch and 1/4 inch thick. I don't know whether it was the yin or the yang, but one of the pieces was then tilted up for final presentation.

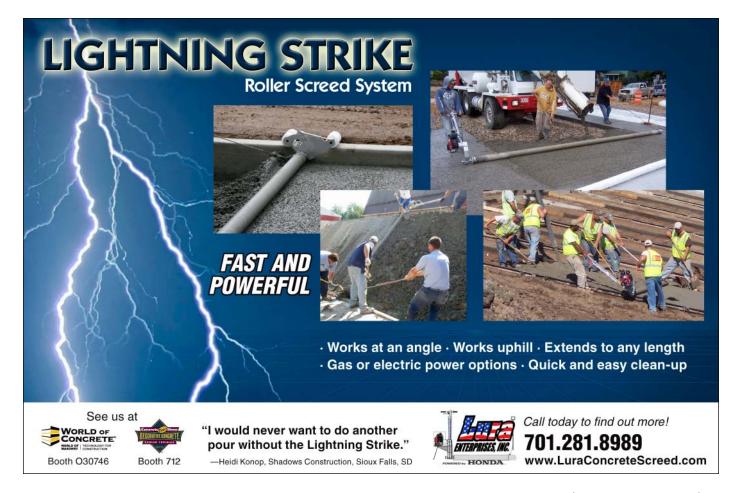
I hope you'll take a look at these installations and consider the laws of physics, the true nature of concrete and the installers' methodologies. I hope you are titillated. I hope you enjoy. Ladies and gentlemen, fasten your seat belts and prepare to enter the strata-sphere!

Mike Miller just returned to the United States after spending two months on a sensory concrete theming project in Singapore. He kissed Jeannine, ate the turkey, considered the economy and returned to market in Asia. He loves the U.S. and his wife but is currently operating as a bit of a world citizen. He can be reached at concretist@aol.com.

Mike Miller will deliver the Kick-Off Address, "Step Into the Clarity of Sensory Concrete," at the Concrete Decor Show & Decorative Concrete Spring Training in Phoenix on Tuesday, March 16, at 4:15 p.m. For more information, go to www.ConcreteDecorShow.com.



Bug holes, defined horizontal laitance and color variegation create visual interest in this cast-in-place vertical, by artisan Sean Dunston, with Concrete Jungle, of Colorado Springs, Colo.



Business Strategies

Building Relationships with Architects

n winter and during the holidays, concrete construction slows dramatically. We have more time to think about next season. Finding jobs is foremost

on our minds as we contemplate strategies for getting more work. How can I give myself an edge over my competitor? How can I differentiate myself from every other concrete contractor? The answer — architects.



by Howard Jancy, CSI

An underutilized opportunity for potentially creating more jobs and visibility for your company exists within the design community. Architects and landscape architects are key members of the project team for commercial and highend residential installations. They design the project and are involved with product research and selection.

Most contractors are only involved with the designer when a project commences if at all, often with little initial input regarding the methods and means of achieving the owner's vision for the decorative concrete. Understanding the design team's needs during every stage of a project and developing the tools or skills to satisfy those needs can greatly improve your chances of influencing and securing

The initial step is simply getting in front of an architect, long before the first shovels of dirt are turned on a project, and

positioning oneself as a reliable resource for decorative concrete information. Many contractors seem intimidated by architects, since the contractor may assume an architect is already quite knowledgeable about decorative concrete. From my experience, just the opposite is often true. Considering the incredible number of products and processes involved with a building's construction, an architect does not have the time or inclination to be an expert on each element of construction. Your many years of hands-on field experience will be welcome and respected if you interact with an architect proactively as a consultant, not just as an installer after the job starts.

Doing a little homework before you contact a design firm is important. All design firms maintain a Web site that contains information about the firm: areas of expertise or types of projects they typically design, professionals on staff — architects, landscape architects, interior designers or engineers — and a portfolio of completed projects. It might be best to meet with a firm that is staffed predominantly by landscape architects rather than interior designers. A firm that is focused on streetscape projects or educational facilities is a priority over a residential firm. An office staffed with two architects should be visited after meeting with the firm staffed by a dozen architects. Don't inadvertently spend an hour talking about polished and stained concrete floors only to discover you are talking to a landscape architect who is only interested

in exterior paving. Armed with good information, you can decide where to spend your time.

If you find speaking with architects to be nerve-racking, minimize the stress by letting your past work — that is, your photo album or online photo gallery — speak for you. Architects and landscape architects relate or respond well to visual representations. A project picture (remember, a picture is worth a thousand words) may more thoroughly convey your thoughts than anything you might say. Once you have directed the conversation towards a specific job, speaking with an architect is much easier, since you are talking about a job with which you have direct experience as opposed to worrying about saying the right thing.

As you look for opportunities to strengthen or broaden your reputation as a reliable and knowledgeable decorative concrete consultant, move beyond the office and job-site trailer visit. The American Institute of Architects (AIA), American Society of Landscape Architects (ASLA) and Construction Specifications Institute (CSI) often have state chapters that, through local product shows, chapter meetings and social events, and chapter publications, allow you to further expand your visibility among their members.

Additionally, architects and landscape architects need continuing education to maintain their state license or their professional credentials for their organization. By becoming a continuing education provider, or by partnering with a supplier or manufacturer that has developed a continuing education program, you greatly enhance your credibility







within the design community. The time spent in an architect's office during a lunch and learn is invaluable. You have the opportunity to meet key personnel: specification writers, project architects, principals, and even the receptionist or gatekeeper, which can be helpful on future calls.

Previously I commented on the importance of a photo album or online photo gallery as an effective means of creating awareness about your products and services. Expanding on the photo concept, finished samples provide an even better visual representation of the prospective decorative concrete installation. Cast samples combine the selected elements of color, pattern and texture into a more understandable whole, which is often difficult to evaluate just by viewing color charts and pattern selection guides. The cast samples also help the architect convey his vision to the client. Even more importantly, finished samples help you create realistic expectations for the installation. You may even find that your finished samples become the reference

standard for a project.

As you evolve into a consultant's role, knowing your product, as well as your competitors, is important. Your ability and willingness to discuss the qualities of your product compared to alternative or even competitive systems will be appreciated by the architect.

Most project specifications contain language that addresses product choices. Consequently, the more informed an architect is about product options, the more likely he will write a specification that is clear, correct and complete. It creates a construction document without ambiguity, which improves the bidding and installation process. It makes the architect look good. It elevates your stature in the eyes of the architect. It is important to note that when discussing your product versus competitive materials, you should do so within the context of features and benefits, not by bad-mouthing the competition. Negative selling should never be used to promote your talents or products. Also, ask lots of questions and listen, pay attention and take notes. Remember, the meeting is not just about your concerns. Probe by asking questions so you understand the challenges the architect is facing on the job and provide relevant solutions.

The more successful contractors have established their credentials with designers by developing the skills I have briefly outlined. They have become an integral part of the design process, and for those efforts, are able to secure more profitable work. When work is slow, it is the ideal time to meet with architects and plant the seed for future jobs.

Howard Jancy, CSI, has 22 years of experience in architectural specification selling. He has written numerous articles published in the Construction Specifier. He is an ACI-certified Concrete Technician and is certified by the Construction Specifications Institute as a Construction Documents Technologist (CDT).







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Belarde Co. Inc. Woodinville, Wash.



tos courtesy of Belande Co. Inc.

by Kelly O'Brien

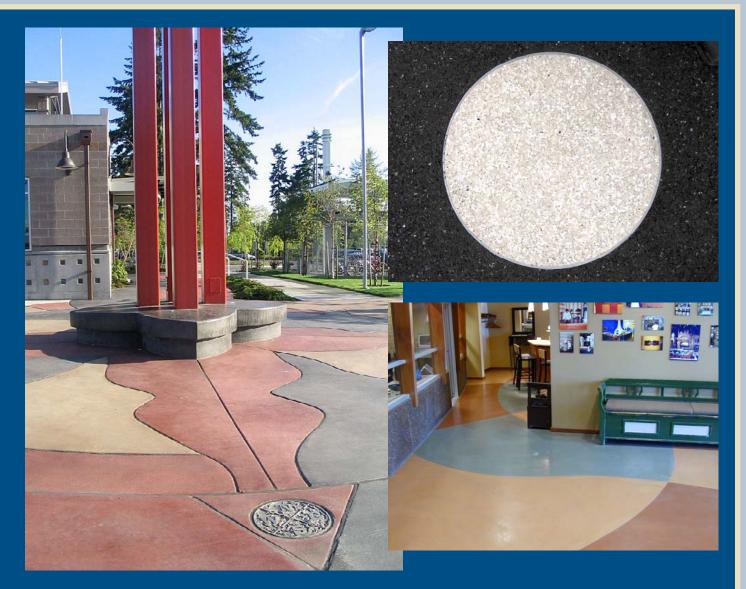
ith an average of 226 cloudy days a year (according to National Geographic), Seattle can be a tricky place to work with concrete. "Sometimes I feel like our new motto should be, 'When it rains, we pour," says John Belarde, owner of Belarde Co. Inc. in Woodinville, Wash., a drizzly Seattle suburb.

Belarde, who has been involved in concrete for virtually all of his 55 years, has devoted the last decade to raising the bar for decorative concrete in the region.

Raised in Anchorage, Alaska, Belarde moved back to his home state of Washington

20 years ago, when the family business relocated. The company his father founded, John-Wayne Construction, specializes in slip-form construction and heavy-duty highway work, and Belarde grew up doing just that. "I had a really rounded education and experience with all kinds of concrete," Belarde says.

However, his passion has always been for decorative work. So 10 years ago, when a Bomanite decorative concrete franchise became available for his part of the state, Belarde struck out on his own, leaving the family business behind.



When Belarde Co. was founded, the company specialized in stamped, stained and imprinted concrete. It was a natural place for John Belarde to start, since he had done some decorative concrete work with his father's company.

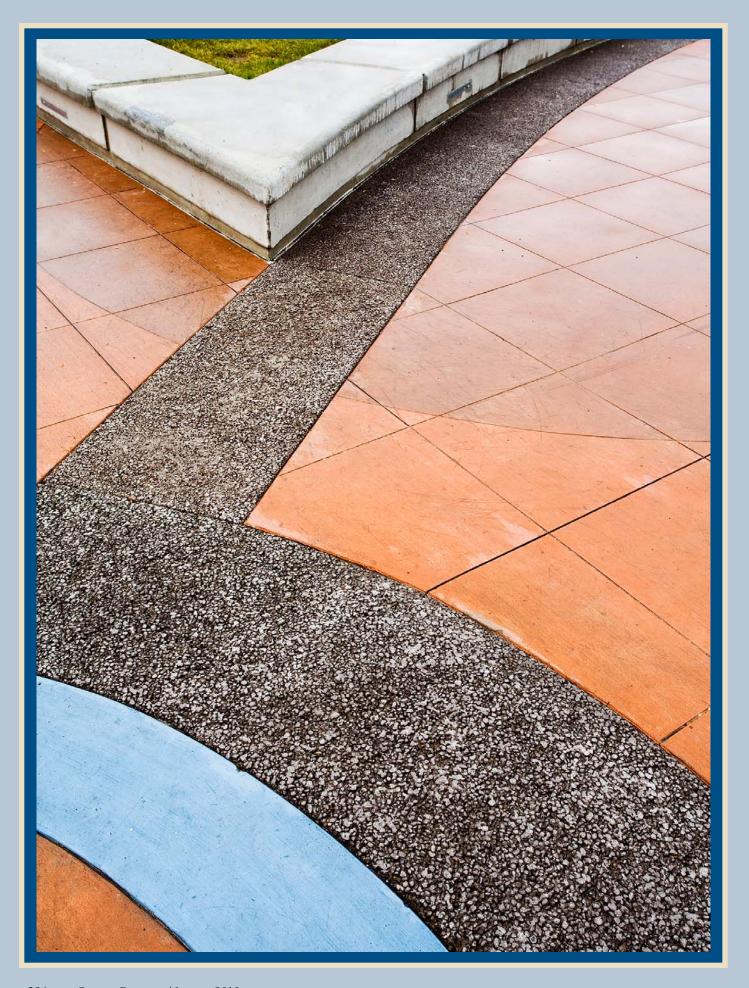
As the years have gone by, trends have come and gone and Belarde has worked very hard to stay on top of them. Being a part of the Bomanite group, he says, has been a big part of that.

When he first got into the business, Belarde says, the Pacific Northwest had not had much exposure to decorative concrete. Being part of such a large network of decorative contractors gave him access to a lot of emerging techniques and technology that were gaining popularity in other, sunnier parts of the country. "It helped me a lot to bring new ideas and technology to our area," he says.

In addition to his Bomanite connections, Belarde is also a Lithocrete licensee, and he has made it a point to get involved with other professional associations — not only to interact with the concrete community, but also to get his name out there. In addition to his memberships in the American Society of Concrete Contractors and the Associated General Contractors of America, Belarde is affiliated with the Washington Aggregates & Concrete Association,

which awarded him the Best Decorative and Best Overall Concrete Project in 2008 for the Kent Town Square Plaza he did in Kent, Wash. Being involved in professional associations like the ASCC, AGC and WACA has been particularly helpful for making connections with the architectural community and with municipal planners, which is key for Belarde.

Early on in his company's history, Belarde made the decision to run a union operation, which has had a major impact on the way they've developed. "It was difficult, at first, with smaller projects," says Belarde, "but in the end it's been very beneficial for bigger





projects that have to be union jobs." Because of that early decision, Belarde Co. has relied on commercial and municipal projects for the majority of its contracts.

Another factor in the development of Belarde's business has been his personal history with other aspects of the concrete trade. Over the past few years Belarde says his company has ended up splitting their time on the job between decorative work and other concrete pouring and construction. While Belarde will initially sign on as the decorative subcontractor, he says that once they're on-site, the general

contractor may award them a lot of the other concrete work as well. "It has been very beneficial to have that expertise," says Belarde, especially considering the state of the economy. This last year, in particular, Belarde says that only about half of their on-site time has actually been spent doing decorative work, compared to two years ago, when that figure was more like 85 percent.

Despite the slimming of their clients' decorative budgets, Belarde's priority is still promoting both the company's decorative expertise — "Decorative concrete will always be forefront and foremost on our agenda,"

he says — and the craft as a whole. "That's where my time is spent," he says, "educating our design community on the different kinds of decorative concrete that's available." This education, Belarde says, is of particular importance in his region. "(Decorative concrete) in the northern climates is slightly behind the curve," he says. "Always has been ... maybe always will be."

Belarde spends a lot of his time promoting new technology and techniques. For example, he says that in the past few years, the stamped and imprinted finishes that once made up the majority of the company's work



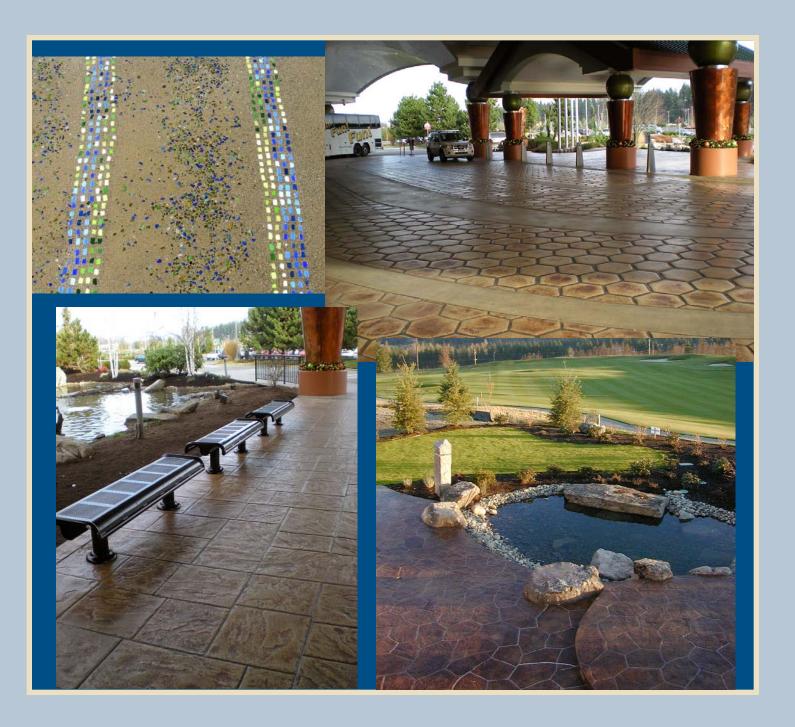
have been giving way to a newer trend. Exposed-aggregate systems (like Lithocrete, Aggretex and Bomanite Exposed, three systems Belarde represents) have been growing in popularity, he says. "Those are the systems that are getting more of a 'Gee whiz!' kind of thing (from architects and designers)," he says. "You can do so many different things. You're not governed by just pattern and texture."

Belarde's also been shaking things up, sandwise. "Our sand in this region has a distinctive dark gray color," he says. "It has a way of diluting any other colors you put in." So Belarde's been importing sand from other parts of the country — in particular from the Sun Belt. The lighter colors of sand, he says, "give us a little more control over our colors."

He's also had a lot of call, recently, for graphics work — he just did a series of Seattle-area bus stops along a stretch of Highway 99 in Snohomish County that feature regionally inspired artwork done on a Bomanite Micro-Top surface with Surface Gel Tek's Flattoo system (another Sun Belt import).

But pitching these techniques to the

local design community is not Belarde's only concern as a self-appointed decorative emissary. The other part of the equation is educating them on the environmental concerns involved in working with concrete in a perpetually cold and wet climate. Fortunately, his personal background has also been a definite advantage on that front. "All of the cold-weather concrete practices that I used in Alaska come in very handy here in western Washington," Belarde says. Those practices include not only checking the weather religiously — with TVs, radios, computers, cell phones,



and even calls directly to the weather station — but also being on standby with all the things a crew will need if that 40 percent chance of rain suddenly turns into 100 percent. (Miles of plastic sheeting and blankets, nonchloride accelerants and buckets of hot water are the cornerstones of his In Case of (Inevitable) Rain and Cold kit.)

While these job-site insights stem from his decades of experience, these days Belarde finds himself less and less in the field and more and more in the office. And that's a hard transition to make, he says: "When you started out

something yourself — mixing stains and putting saw blades on — it's hard to give up because you think nobody can do it as well as you."

But Belarde has come to the realization that running a job as a contractor and running a company as a CEO require two different mindsets. So he's joined a group called Vistage International, a global executive coaching organization that runs regular meetings and retreats for CEOs from a huge variety of fields. Belarde says that just getting together with other business owners to discuss what it takes to grow

and run a company has been extremely valuable, even if it keeps him away from the job site. "It might take away from my passion for working hands-on," he says, "But it prepares me better for our clients, prepares me to be a better business leader."

www.belardeco.com

Project Profile



The focal point of the renovated MedAmerica Billing Services lobby is a mosiac.

MedAmerica Billing Services Inc. Modesto, Calif. **Contractor: Concrete by Hallack**

by Stacey Enesey Klemenc

n two weeks' time, Julio A. Hallack and his crew of four transformed what he calls a "mail lobby" — a ho-hum, run-of-the-mill 1,500-square-foot space — into a warm and inviting receiving area that everyone who sees it can't help but admire.

MedAmerica Billing Services Inc. in Modesto tasked the president and CEO of Concrete by Hallack in Turlock, Calif., with the job. The company, which has more than 600 employees, provides coding, billing, auditing, accounts receivable management and reporting services to more than 60 client firms involved with hospitals, emergency medicine, wound care, physical therapy, skilled nursing facilities and family practices.

"This company is huge," Hallack says, and the renovated area is always teeming with people. "Management thought it was time to replace the gray look you find all over America **Project description:** Renovate a 1,500-square-foot "mail lobby," which involved removing the existing 12-by-12-inch ceramic tile and carpet, replacing it with a 1/2-inch stampable overlay and refurbishing the existing laminate counter, all while the company was still open for business.

Contractor and designer: Julio A. Hallack, president and CEO of Concrete by Hallack, Turlock,

with something more modern-looking. They wanted something that would make people take notice, something that would make them say, 'Wow, where am I? This can't be a billing office."

And it couldn't just look good. It had to wear well, since traffic was not expected to slow. After visiting Hallack's showroom, board members were sold on the upscale look of his decorative concrete samples. They chose to



A picture of the lobby prior to renovation.

go with a Matcrete seamless-skin overlay stamp. Hallack was in charge of selecting the color combination and placing saw cuts, besides actually placing and stamping the overlay.

Establishing a focal point

The focal point of the area's design is a mosaic that Hallack found at a Home Depot in Mexico. The 3-by-3 mosaic consists of pieces of stone bonded to a fabric. "I was down there doing training for a museum named MUSAS being built and I was shopping for some supplies. That's when I saw these mosaics and fell in love with these amazing pieces of artwork," he says. He bought a few in different styles and brought them back to California.

He asked his MedAmerica clients if they would be interested in using one of the mosaics as the center of the new design, which he would color-coordinate to match the rest of the project. They liked the idea but thought the idea of a mosaic sounded pricey — until Hallack reassured them. "I told them I would only charge them \$500 more as my gift to them," Hallack says. "I wanted to use the combination of that mosaic with products we normally use to show people everything is possible when you have a client that allows you to play with your skills and breathe life into a vision."

Matching the colors was very simple, Hallack continues. "Miracote has many excellent choices." His crew used



The front desk was the job's crowning jewel, according to Julio Hallack.



Workers apply Adobe Mirastain II to accent the sides of the front counter.

Miracote's water-based Mirastain II colored Sandpiper Beige as the base, then applied Mirastain colored Adobe. A dark brown grout was used for dramatic contrast and because the client was nervous about dirt getting trapped in the floor's crevices and showing over time. The floor was sealed with three coats of Mirapoxy WB, a breathable, chemically resistant, waterbased epoxy coating.

The mosaic was grouted in where foot traffic from four entranceways converge in the lobby. "It had to be laid right on center because it can be seen from four different directions," Hallack says.



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This 3-by-3 mosaic consists of pieces of stone bonded to a fabric. Hallack purchased the mosaic at a Home Depot in Mexico. It serves as the focal point of the MedAmerica Billing Services lobby and is the only thing on the floor not made of concrete.



Dark brown 2-by-2 diamond-shaped areas spaced down each corridor accent the mosaic. To the untrained eye they look like pieces of tile, but, of course, they aren't. "The only thing not concrete (on the floor) is the mosaic," he says. "That's the excitement I got from this job — fooling people at a very good price."

Trials and tribulations

To achieve the transformation, Hallack says, he had to protect the rest of the building. "We had to be very careful not to invade other areas of work," he says, as the company was open for business as usual during the renovation. "The plastic was up the whole time and we had to vacuum a lot to keep the dust to a minimum."

Cracks were another obstacle he had to overcome. "There were a ton of cracks on the existing floor," Hallack says. To repair them, he and his team placed a special rubberized fabric membrane, and another fabric on top of that, before covering the entire surface with Miracote Mirastamp overlay, a two-component cementitious, thin-stamped overlay with

high compression strength that's wellsuited for continual pedestrian traffic.

The chosen finish involved a very soft stamp on the overlay and no deep saw cuts. Since everything was under wraps for two weeks, the end result was a big surprise, Hallack says. "It was pleasing to management and staff alike."

Counter actions

Although the mosaic-inspired floor design turned out awesome, Hallack says the transformed 29-foot-long laminate counter was the job's crowning jewel.

"The management asked if anything could be done with the existing counter, since the painting contractor felt that paint was not the right product and replacing it was very expensive. I recommended Miracote Micro-Topping with a smooth finish," he says.

First, Hallack says he had to profile the counter's laminate surface before applying a self-adhesive fabric. He next applied Miracote MPC Micro-Topping in a four-step process that involved sanding out imperfections in between coats to build up a smooth cementitious layer. He acid-stained the top of the counter Dark Walnut and applied Adobe Mirastain II with a sponge to accent the sides. The whole thing was sealed with Mirapoxy, an epoxy system typically used on floors.

To pull it all together, the drawers were dressed with 12-by-12-inch clay tiles, and new baseboards were stained dark walnut

"The fact that we introduced a new technology (to the client) on the existing laminate counter was the aspect of the job I was most proud of," Hallack says. "The high-quality sealer will serve the company well." People will be leaning up against the counter and shuffling papers and packages across it all the time, he notes, and he thinks it will hold up.

www.concretebyhallack.com

Julio Hallack will teach a resurfacing workshop on Thursday, March 18, and a staining seminar on Friday, March 19, both in Spanish, at the Concrete Decor Show & Decorative Concrete Spring Training in Phoenix. For more information, go to www.ConcreteDecorShow.com.

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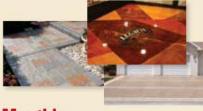
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Project Profile



Quebradillas Skate Park Quebradillas, Puerto Rico Contractor: Placed to Ride Inc.

by Kelly O'Brien

tefan Hauser, owner of Placed to Ride Inc., was one of 10 firms to bid on a skate park project for the city of Quebradillas, Puerto Rico. A local in-line skater had secured federal funding earmarked for sports parks on the island, and the city now had to decide who they were going to entrust with that money. Hauser's bid was not the lowest, he says, but because of his exWe nperience and expertise — he's done nothing but skate parks over the last decade, on three different continents — the city was confident that he could deliver the most bang for their buck. And Hauser did not disappoint.

Hauser is from Seaside, Ore., and has been skateboarding for most of his life. After years spent working for other skate park contractors on municipal projects in Oregon, Hauser started Placed to Ride in 2002 and

found himself immediately in demand around the world. The company's first project was a private park in Austria, followed shortly by one

Client: The City of Quebradillas, Puerto Rico Challenge: Design and build a skate park that addresses the needs and interests of the community while staying within the city's limited budget

Designer/Contractor: Stefan Hauser, owner of Placed to Ride Inc.

Consultants: Michael Dahl, of Michael Dahl Concrete Designs, Toledo, Ore., and Billy Coulon, of Dreamland Skateparks, Lincoln City, Ore.

Premium concrete supplier: Raymond Ready Mix

Inc. Hatillo, Puerto Rico

Number of certifications required by the territorial government to do the project: 18 Number of actual contractor's licenses required to do the project: 0



Workers tie the first sections of rebar.

in Sweden, another in Austria and a consulting job in South Africa — the list goes on. The Quebradillas park was Hauser's second in Puerto Rico, where he has lived for the last year.

Coming from the West Coast, where there's a lot of advocacy for the sport and a wealth of well-trained concrete contractors, Hauser was accustomed to high standards in skate parks, but those standards are not the same the world over. On the West Coast, Hauser says, about 7 out of 10 parks are really good. In Puerto Rico, that number is more like 1 out of 10. "It's a big world," Hauser observes, "which doesn't have the kind of stuff that the West Coast does." The Quebradillas skate park was a step towards changing that.

The original design that the city settled on was the brainchild of an engineering firm and a designer who had BMX bikes in mind, rather than skateboards. The planned park was going to be not only very costly to build and maintain (the plans called for expensively imported wood, not concrete), but also only useful for a small percentage of the athletes in the community. "When I got the contract," says Hauser. "I put it on myself to improve the design."

Obviously, the wood was the first thing to go, as of Hauser's winning the bid. "Concrete is smooth and fast — faster than asphalt or wood — and it lasts a lot longer," he says. Second to change was the slant towards BMX. Hauser talked to the local youth, the ones who would be using the skate park every day after school, about what they would like to see, and incorporated that into the design. In the end, he came up with a design with twice the skateable surface area of the original, plus elements for BMX bikers, in-line skaters and skateboarders alike.

Now, to build it. For a municipal project, the territorial government requires 18 different certifications (none of which, funnily enough, was a contractor's license, which Hauser says is only required for residential work). Once he'd secured those, labor was next.



Shotcrete is applied to a ramp. The bulk of this job was shotcrete work.

Like good skate parks, Hauser says, good concrete finishers are harder to come by in Puerto Rico than in the States, but he was resourceful. For the bulk of his labor, he relied on volunteers from the community. However, to get the flawless, smooth-as-glass finish needed for skating, he





Screeding a vertical wall extension in the afternoon summer sun.

outsourced, flying in Michael Dahl and Billy Coulon, two veteran skate park builders from Oregon, for the two weeks of pouring.

The other duck Hauser had to get in the row was his sand. The grading standards for aggregate are not nearly as high in Puerto Rico as they are stateside, and for a project where surface consistency is of the highest importance, that's a major concern. Fortunately, Hauser could turn around and use the money he saved by relying on volunteer work to cover the cost of going with a premium supplier. Not only did that ensure a consistent mix, but Hauser says the owner of the concrete company routinely came out to the job site himself to deliver the mud and make sure everything was going smoothly.

Licenses, laborers and materials acquired, it was time for the work to begin. After the site was excavated and the framework for the bowls and transitions built, the vast





Finishing the last transition within the main bowl of the park.

majority of the project was shotcrete work, followed by a thorough power and hand troweling. "You want the surface as smooth as possible," says Hauser, though apparently you can overdo it. "Some guys will throw water on, so it looks smoother," he says, "but that weakens the top layer — it won't last."

Aside from the skateable surfaces, Hauser's initial plans for the park included some stamping. Dahl, in particular, was excited for that, as it's his specialty. "I'm more obsessed with concrete than with skate parks," he says. "I try to get as much decorative stuff in there 'cause it's fun for me." But despite their plans for stamping on some of the vertical surfaces and coping, it was not to be. "There were just not enough guys, or time," says Dahl.

Hauser says that while purely aesthetic elements "are nice, they're more of a novelty than anything." And particularly because it was a community project, he wanted to make sure the city was getting the most functional park for its money. Dahl says that is always the rule for skate parks. When it comes down to it, he says, "every ounce of energy, everything that goes into the park is towards the skateable surfaces."

Despite having to forego the stamping, Dahl's and Coulon's expertise certainly did not go to waste. In the two weeks they were on-site, Dahl says the schedule was jampacked. But working straight through the day in Quebradillas is not an option. "It's such a hot climate, the concrete is getting hard the minute it comes out of the chute," says Hauser. So they erected tents over sections of the project



as protection from both sun and rain while they worked, and they did the bulk of the shotcreting in the mornings and evenings. They would alternate a two-pour day — one in the morning and one in the evening, each about 9 yards — with a one-pour day to recover their strength, Dahl says.

Aside from the heat, the volunteer workforce posed a potential problem. "It's extremely hard work," says Dahl. "Usually (with volunteer jobs) you lose all your volunteers on the first day." But fortunately for them, the folks in Quebradillas were made of tougher stuff. "There were six or seven guys who came back every day," Dahl says. "They were really cool and happy. They worked really hard and they were ready to drink beers afterwards."

In the end, that interaction with the community is what sets the Quebradillas project apart. From the in-liner who secured the funding to Hauser's early conversations with the local skaters, from the half-dozen committed volunteer workers to the regular visits from the local kids and their parents to check on the progress of the park, it was a project that was by and for the community. Dahl says this sort of project, with so much community and volunteer support, while once common in the States, has been "kind of lost and gone." Hauser was happy to have the opportunity to bring it back for Quebradillas.

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Design Ideas



The Illinois Holocaust Museum & Education Center is a 65,000 square-foot, \$45 million facility in Skokie dedicated to survivors.

Museums

by David Searls

n our newest regular feature, *Concrete Decor* magazine offers several stories exploring a common theme — how decorative concrete contractors answered the call on specific types of commercial or public jobs in ways that met or exceeded client expectations. This issue, we take a closer look at four decorative concrete projects for museums.

Illinois Holocaust Museum & Education Center, Skokie, III.

Contractor: Concrete Re-Surfacing Technologies Inc.

Concrete Re-Surfacing Technologies Inc. of Palos Park, Ill., was brought in to finish 8,000 square feet of plain concrete floor at the new Illinois Holocaust Museum & Education Center, one of the nation's largest memorials to the loss of millions of innocent lives during some of Europe's darkest hours.

Time was of the essence. In six weeks there'd be up to 15,000 guests, including former President Bill Clinton and internationally acclaimed Holocaust authority and Nobel laureate Elie Wiesel. "It was the first week in March (2009) and the museum was to open April 17," recalls Concrete Re-Surfacing Technologies president Jim Loughrey.

The museum's design scheme kept one wing of the space aesthetically stark, sharp-cornered, and somber in appearance and feel. The other wing had softer lines and felt more uplifting and inspiring. The main difference in mood would come from the abundant natural sunlight that would be allowed to filter

into the "lighter" space. The concrete floors would be natural and utilitarian throughout.

When Jim Loughrey and his crew took over, they were presented with a work in progress. The concrete contractor had intentionally burned the finish by slightly overtroweling in the final pass with the trowel machines. "The burn is created when the metal blades from the machine leave metallic residue on the surface, creating a marble look," Loughrey explains. "Higher areas on the surface pick up more residue. That surface was exactly what the architect had in mind for the look he wanted — but that surface would have been too porous and hard to maintain long-term. Our lithium-based polishing process enhanced the marbling and closed the floor for easy maintanance."

The team also tackled a couple of problems. There was lime run from the walls due to weather exposure before the roof had been installed.

Worse, an acid-based cleaning agent used to detail the concrete block walls had dripped onto the floor, removing the burned cream and graying the floor for up to about 18 inches out from the edges.

To fix the gray, Loughrey and his crew tried polishing first. "I figured we'd polish it to an 800 resin, but the color difference remained," he says. "We started with wet resin polishing pads, polishing from 100 to 800 grit. Then we densified with a Prosoco hardener/densifier."

Though faint, evidence of the damage remained. So, within weeks of the building's ribbon-cutting, the decision was made to spray on an acetone black dye to make the floor color uniform. "We applied more dye at the borders to catch those areas up with the center."

It worked. And it fit the low-key theme to everyone's satisfaction.

"We think it looks nice," says
Harold Di Vito, project manager for
Chicago-based Tigerman McCurry
Architects. "Much nicer than we
expected. It keeps the essence of the
concrete without compromising the
aesthetics." He's also pleased that he got
to choose from several color gradients
applied in sample sizes for his approval.



CMU walls and polished concrete floors dominate the museum's point of entry for tours.

"It's quite a dramatic place," says Loughrey. "The floors look like granite."

As he recalls of the frantic times, "We burnished the whole floor (with Prosoco Consolideck LS Guard) on the 14th or 15th and the facility opened on

the 17th."

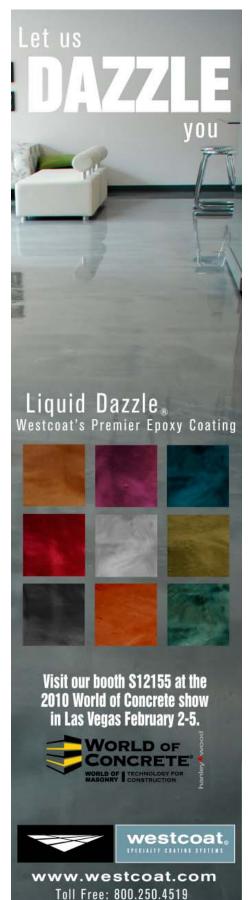
The museum opened with a floor that was striking in appearance, but not too pretty — perfectly appropriate.

www.barefootconcrete.net











U.S. Space & Rocket Center, Huntsville, Ala.

Contractor: Jeffco Concrete Contractors

The U.S. Space & Rocket Center in Huntsville, Ala., commemorates humankind's reach for the moon and eventually onward to the planets and constellations beyond. The museum's polished concrete floor is similarly forward-looking in terms of crowdpleasing durability. "It looks beautiful and you don't have to wax and strip it every year," says Jeff McCool, president of Jeffco Concrete Contractors.

The Tuscaloosa, Ala., company landed the contract to polish some 12,000 square feet of concrete poured as part of a major renovation to the Center, which serves as home to the internationally known Space Camp for bright and cosmically focused kids.

"Polished concrete is our mainstay now," says McCool, who reports a total of 20 grinding and polishing machines in his hard-working fleet. "It's about as close to maintenance-free as you're ever going to get."

Maintenance savings and rugged durability are vital for the Center. As NASA's first visitor's center, it's hosted more than 12 million wide-eyed kids

and parents since 1970. In 2007, when the Center undertook a major renovation that resulted in installation of a new main entrance and gift shop, polished concrete was specified.

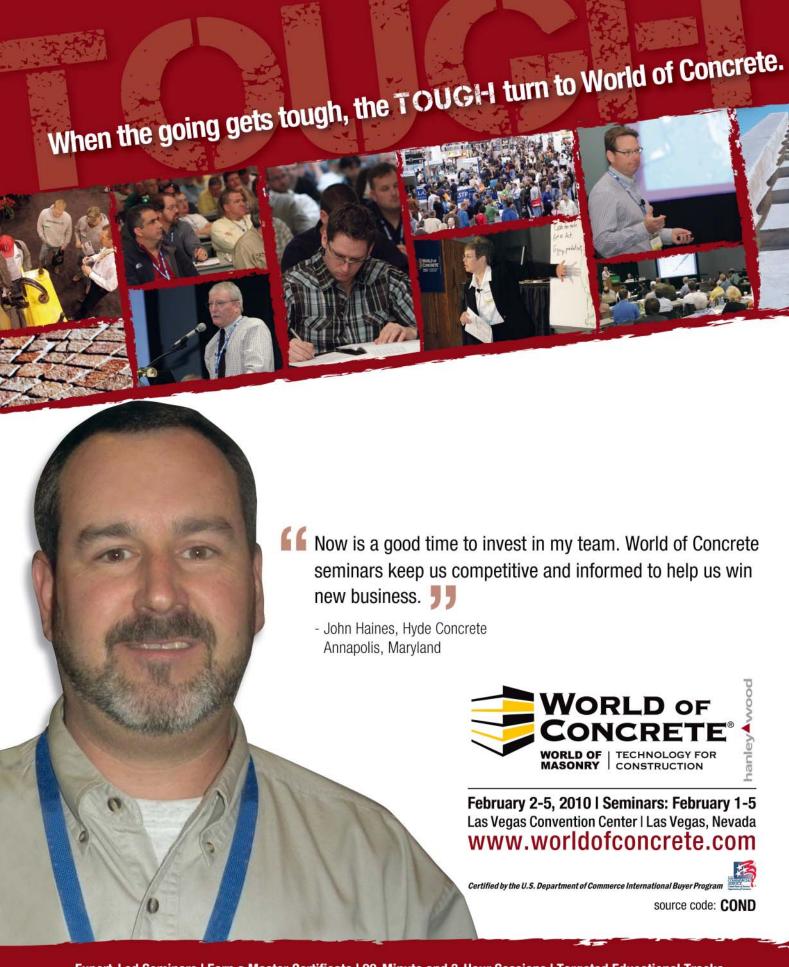
Brad Jones, who served as project manager for the general contractor, B.H. Craig Construction Co., of Florence, Ala., sees the visual appeal of polished concrete as being just as important a consideration as the material's endurance and pragmatic functionality. "This is a tourist site, after all," he explains.

As for the results? "The floor looks like marble," he says.

The patient process of joint-filling, seven-step grinding from 80 grit to 150 grit, multiple resin applications and burnishing lent a touch of, well, spaceage appeal to what would otherwise be rudimentary, low-tech concrete.

It took McCool's crew three days, but the results are worth it. Or at least it gets a high grade from the Jeffco boss, who is proud to boast about the job. "I took my daughter, Katie, and her fifth-grade class on a field trip to the museum last year," he says. "And you bet I told them who was responsible for the floor they were standing on."

www.jeffcoconcrete.com



North Carolina Maritime Museum, Beaufort, N.C. Contractor: Royal Coat Inc.

It was end-cut hemlock, a 1-inch by 5-inch inlaid floor installed 25 years ago that looked just as gorgeous today as it did then. But here's the thing...

"We're quite susceptible to hurricanes here," says Barry Kreager, a decorative concrete contractor and president of Royal Coat Inc. "We've had seven of them in the last 10 years."

And that was the problem with that exquisite hardwood floor in the 1,600-square-foot main lobby of the North Carolina Maritime Museum, in Beaufort. "It would jump right off the floor every time it got wet," says Bob Springle, the facility's business manager.

The last time, the cause of the damage was even more prosaic than one of the region's powerful hurricanes. It was a leaking toilet that sent the inlaid floor to the bottom of Davy Jones' locker.

"We got a quote of \$60,000 for the materials alone to replace it," says Springle. "I don't even know what the labor costs would have been."

For much less than the material costs, Kreager and Royal Coat, based in nearby Morehead City, promised a concrete floor that would fit right in aesthetically and take water damage with a smile and a dry mop.



"It's a nautical museum, so there's a lot of wood there, wood-framed cannons and the like," he says. "So the floor had to have the right feel."

Kreager's crew spent much of their time stripping off the existing wood and the stubborn adhesive, then using a diamond grinder over the entire length of the floor. They also had to apply fill material to gradually ramp up doorways and entries. And do all of this around

day-to-day foot traffic.

Meanwhile, says Kreager, "In our shop, we created a wood-grain concrete overlay system using a modified cement by Color Crown Corp."

Workers laid out the floor with tape to resemble planks and the seams between them and sprayed two tones of brown-tinted overlay coating for a dead-on wood-grain appearance. They used hard-bristle brooms for texturing, to knock off the glare and reduce the slip hazard.

"We've had quite a few positive comments from visitors, people who want to get in touch with the contractor and do something like this in their own homes," says Springle.

Sure, it's beautiful and nautically thematic, but the facility's business manager says the most attractive aspects of the new floor were the price and its virtual indestructibility. "We get 200,000 people a year coming here and tracking sand in from the beach. All we do with the floor is mop it."

Don't worry about that inevitable next hurricane, adds Kreager. "Just hose the mud out."

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Knight Museum and Sandhills Center, Alliance, Neb.

Contractor: Justrite Surfaces

You've heard of Stonehenge, right? How about Carhenge? It's an installation of half-buried cars, all laid out in a circular pattern that mimics the site's much older and more famous cousin. The pocket of western Nebraska that includes Carhenge and the nearby town of Alliance can seem about as windblown and mystically alien as the legendary British Isles site itself.

"It was pretty far from anywhere, that's what I remember most," says decorative concrete contractor Shane Siefken of Justrite Surfaces. Justrite, of Council Bluffs, Iowa, was given the contract to grind and polish the aggregate concrete floor of the newly constructed Knight Museum and Sandhills Center. Owned by the City of Alliance, the museum will showcase the region and its culture when it opens this summer.

The facility floor is textured with stones, some as large as an inch and a half in diameter, all brought to life with a grind and polish process using L.M. Scofield Co.'s Formula One Lithium Densifier and finish coat.

"They wanted it to look like the earth," says Mark Chew,



oto courtesy of L.M. Scofield Co

district sales representative for L.M. Scofield. "It will reflect the heritage of the Plains."

That's why those chunks of stone in the floor were trucked in from throughout Nebraska and the Plains region, a reminder as near as your feet of what the facility is all about. Chew, who worked with the client from the beginning to help bring their vision to life, calls the end product "the most beautiful floor I have ever seen polished."

It was conceived to be as naturally attractive and imperfect as the country it celebrates. Chew says that his clients told him that if the concrete cracked, that wasn't a bad thing.

As city official Shana Brown put it in an e-mail to Chew: "The design for the Knight Museum and Sandhills Center seeks to capture the spirit of 'place.' The essence of the Sandhills and the life that exists within it is a central theme to the structure. Keeping to that theme, the interior concrete floors are ground and polished to expose local aggregates, thus mimicking similar qualities to the surrounding earth. Over time, this concrete will crack and patina in just as the earth in the Sandhills does."

Becci Thomas, curator for the Knight Museum, says the new floor is "very attractive, kind of eye-catching and will provide a good backdrop for our displays. It fits in very thematically with what we're doing here."

It will also be easy on the budget. "They've got a very low-maintenance floor with no sealing and no waxing," says Chew.

For the roughly 9,000 residents of Alliance, Neb., it will be a floor as rugged and seemingly eternal as the land beneath them. Or at least as permanent a part of the landscape as Carhenge.

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Photo courtesy of Greenscenelandscape.com

Casting in place allows Scott Cohen of San Fernando Valley-based The Green Scene to run optical fibers through his counters in multiple directions. In this example, the top is lit by fibers shining through colored glass while fibers at the bottom of the pour (placed through holes in the mold) downlight the cantilever.

by Amy Johnson

ood lighting. Special effects.
Animated logos. All of these and more can be integrated with decorative concrete, thanks to fiber optics.

Everyone has seen novelty fiber optic decorations — bunches of clear fibers emitting points of colored light from their ends. Designers use these same fibers to carry light to the surfaces of unique, high-end concrete counters, bars, pools and floors.

The fibers are composed of an acrylic core with a very thin cladding of denser acrylic, according to Cyr Ryan, owner and president of Fiber Optic Systems Inc., a fiber-optic installation creator in Whitehouse Station, N.J. The

cladding acts as a mirror, reflecting light that enters one end of the fiber back and forth along the length of the fiber until it exits the other end.

The beauty of optical fibers for concrete is that there are no fixtures to embed, no individual light bulbs to burn out and no heat transferred to the surface. The light comes from an illuminator box installed in a cabinet, under the counter, in a subfloor or any nearby place where there is easy access to the bulb that lights the ends of the fibers. The box also houses a wheel that changes the color or brightness of the light. (For more about the illuminator, see the sidebar, page 46.)



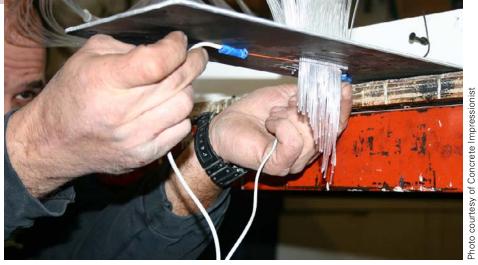
The diameter of the optical fiber will determine how much light is emitted, but there are other factors to consider in choosing a fiber. Dominick Cardone, owner of The Concrete Impressionist Inc., Brooklyn, N.Y., says the fiber must be thick enough to resist breaking, flexible enough to bend and small enough to be invisible when the light is turned off. Ryan recommends a fiber of 1.5 mm diameter to meet these requirements and still get enough light to make an impact.

Once the fibers are embedded in the concrete, they will conduct light and last as long as the concrete itself. "I've had fiber optic pieces in place 15 years now and haven't had an issue," says Jeff Kudrick, product manager for J&M Lifestyles LLC, Randolph, N.J.

Two casting techniques

A decorative concrete installation with fiber optics begins with the right mix. "Mix designs need to be very fluid or respond well to vibration so the concrete will flow and encapsulate the fibers," explains Jeffrey Girard, P.E., president of The Concrete Countertop Institute. Many contractors specializing in fiber optics formulate their own mixes, though a countertop bag mix may be used as long as it can be made fluid enough.

Countertops with fiber optics may be precast or cast in place. The most

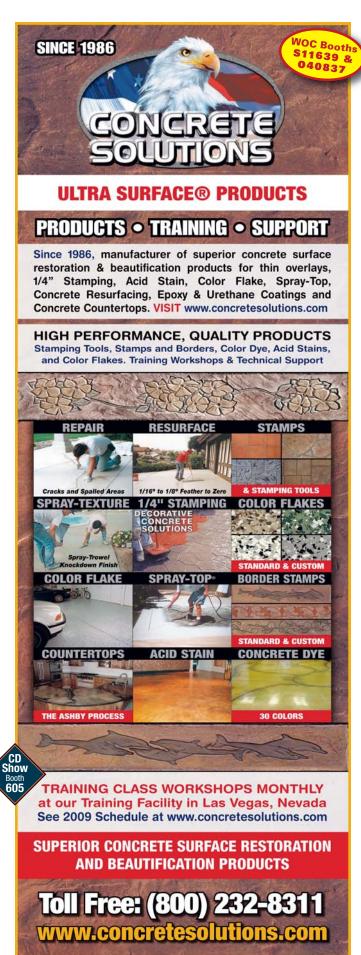


Fibers are fed through a metal plate in order according to the illumination program. The ends are cut with a hot wire for a clean edge that will not pull out of the plate.



A metal halide bulb lights the optical fibers in this concrete sample. Changes in the colors are created by a rotating wheel as each color passes over an illuminated fiber in turn.

Photo courtesy of Concrete Texturing Tool & Supply





common technique is precast. Dominick Cardone's method is a good example of how to install fiber optics in precast countertops, though every contractor will have his or her own personal style.

Following a stencil prepared by his lighting supplier, Cardone drills tiny holes, one for each fiber, in a birch plywood mold laminated with mica. (He warns that a melamine mold will expand if water gets into those holes.) There may be several hundred or even thousands of holes required.

Once the holes are drilled and the rebar placed, Cardone inserts a fiber through each hole by hand, extending about 1/4 inch to 3/8 inch past the mold. He gives the fiber a light tug at an angle perpendicular to the drilled hole to make sure it is secure. He places fiber bundles and labels them according to the illumination plan, then runs the bundles along the rebar, attaching them with zip ties, until they reach the point where they will exit the slab and connect to the illuminator box.

When he pours the concrete, he uses his fingers to flow it around the fibers. He vibrates it well to be sure it is consolidated so the fibers can't come loose. Two or three days after the pour, he inverts the mold on the edge of a table so the fiber bundles coming out of the concrete can hang freely.

Then comes the challenge of removing the mold. "Remember, you've got fibers sticking out of the top," he cautions. "You can't just slide the mold off — you'll break off the fibers." So he inserts cedar shims between the concrete and form all the way around. When the mold is loose he lifts it straight up. The fiber ends protrude above the concrete like

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whiskers. Using a widget with a singleedge razor blade he cuts the fiber tops off, making them even with the concrete surface.

At this point the counter can be ground and polished like any other precast concrete creation.

Once the counter is installed, the fiber bundles are connected to the illuminator through a metal plate that attaches to the box housing the light and the color wheel. Cardone pushes the bundles one by one through the holes

in the plate according to the program pattern. He uses a hot wire to cut the ends of the fibers, which gives a clean end for maximum light transmission and expands the fibers slightly so they won't pull out of the plate.

This method of precasting with optical fibers creates a look with pinpoints of light that can change color, twinkle, or appear to chase each other. Scott Cohen, author of "Scott Cohen's Outdoor Kitchen Design Workbook" and garden artisan for The Green Scene

Inc., based in the San Fernando Valley, Calif., creates a very different look in his outdoor kitchens with cast-in-place counters. He doesn't run the fiber all the way to the concrete surface for a single bright point. Instead, he diffuses the points of light by attaching fibers to chunks of colored glass with a hot glue gun. He uses one or two fibers for smaller or light-colored glass, two or three fibers for darker colored glass.

With the fibers attached, Cohen sets the glass in dollops of high-performance

The Illuminator **Creates the Magic**

The illuminator is a sort of "magic box" that performs several functions in a fiber-optic concrete installation. First, it is the place where the light source illuminates the fibers. Second, it is the matrix that holds the fibers in place in the order required to create a desired effect. Third, it houses the equipment that controls the color, brightness and sequence of the lights.

Three types of lights may be used in illuminators metal halide (HID), halogen and LED. They vary in size, brightness (lumens), and wattage (energy consumed and heat generated).

Metal halide lights are the brightest. They are often used in landscaping, pools or spas. They can also be used at lower wattage for interior fiber optic installations. "A 70-watt MR 16 halogen bulb has approximately the same lumens as a 25-watt HID lamp," explains Cyr Ryan of Fiber Optic Systems. "They are equally bright, but the halogen uses almost three times the energy and creates three times the heat." Metal halide illuminators are larger than halogen or LED illuminators, up to 15 inches on a side depending on the complexity of the installation, so space can be an issue. On the other hand, they can hold and illuminate more fibers, potentially reducing the number of illuminators required for a large job.

Halogen bulbs are smaller and less expensive than metal halide. They put out a warm, incandescent light, according to Jeffrey Girard of The Concrete Countertop Institute. The drawback is they consume more energy and generate more heat, so they usually require a cooling fan, which takes additional space and creates unwelcome noise.

LEDs are relative newcomers to fiber optic illuminators. They tend to have the lowest lumens and so are the dimmest of the three, though brighter LEDs are being developed all the time. They are the most energy-efficient and smallest of the three types, often as small as a soda can or even a deck of cards. Some



are battery operated.

The big advantage of LED illuminators is that they can be computer-directed to create special effects. "Take an LED illuminator for a bar top — once you have decided the amount of lumens you need, program in the colors and program in the sequence or set it for a random sequence." says Jeff Kudrick. "You can also program the lights to change to music via DMX controls."

Metal halide and halogen illuminators use a color wheel to vary colors or a sparkle wheel to change the brightness to create a twinkling effect. The effects are created mechanically, not programmed. Bundles of fibers are put through the holes in the illuminator panel in the order in which the designer wants those fiber ends illuminated with each color of the wheel. A cascade or chase effect is created by placing opaque panels at the right spots in the color wheel so the fibers light up or go dark in turn. More complex animated effects like fireworks or splashes can be created by placing each individual fiber in its own hole.





For this unique outdoor kitchen, Scott Cohen of The Green Scene designed a grapevine pattern in polystyrene foam. He ran optical fibers through the foam and secured them on bars placed above. He poured concrete around the foam. Of the 900 optical fibers in this pieces, 300 are programmed separately to create a chasing effect down the length of the grapevine, ending in a dramatic splash.

concrete at the anticipated top of the piece. After pouring concrete around the dollops, he vibrates it to consolidate it. To avoid damaging the fibers, he runs the vibrator outside and underneath the form. When the concrete is cured he grinds and polishes it, finishing with a penetrating sealer or protective coating as the application requires.

A unique offering for customers

Concrete with fiber optics is not for everyone. Not every contractor can tolerate the repetitive task of inserting hundreds of tiny fibers or keeping track of where each one goes. Not many businesses or homeowners can afford the added cost. (Cohen adds \$3,200 to a countertop job to cover the illuminator plus 300 fibers and large pieces of glass, and that is on top of an additional upgrade from plain cast concrete to polished hand seeded glass). But for those what want a truly unique look or are looking for a stunning effect, fiber optics are a cool, versatile option.

Cyr Ryan thinks the use of fiber optics in decorative concrete is poised

to expand beyond countertops and bars. "There's no reason why you can't use light animation in floors and walls," he says. "It's just using your imagination."

Fiber optic lighting specialists

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fiber optics







Photos courtesy of Chris Sullivan

This walkway in Florida was created with integral color. The integral colors used are Cranberry, Marina Green and Powder Blue, which were originally produced by QC Construction Products. They are now manufactured by ChemSystems Inc.

by Chris Mayo

hen it comes to colored concrete, the industry standard tends toward rich coloring that implies depth — a finish that draws the eye — and there are plenty of examples of colored concrete that achieve that standard. Unfortunately, there are also instances in which the coloring process appears to have gone horribly wrong: a mottled look, a faded or dull appearance, or blistering and delaminating of stains or dyes.

Why do some concrete pours result in the desired appearance while others fall short?

Most contractors know that water is the guiltiest of parties when it comes to faded integral colors. More water equals less vibrant color ... always. But water isn't the only culprit when it comes to unsatisfactory integral color.

"In general, anything you add to a

concrete mix can and will affect the color of integral concrete," says Chris Sullivan, vice president of sales and marketing for ChemSystems Inc., a manufacturer of decorative concrete additives. "With additives, color change can range anywhere from very slight to quite dramatic."

Admixtures allow contractors to manipulate the chemistry of a concrete mix. With admixtures, contractors can reduce the water ratio in a batch, speed up set time, or create a super-strong or maybe a more porous concrete. But what effect can admixtures have on the color of concrete?

Accelerators

Accelerators are used to reduce the set time of concrete and increase early strength gain. Speeding up set time allows contractors to pour concrete in cold temperatures and can also increase efficiency by reducing the amount of time a crew spends finishing. Unfortunately, the most commonly used accelerator, calcium chloride, is the admixture that has the most catastrophic effect on integral color.

"Calcium chloride is by far the most detrimental admixture to concrete coloring," says Dionne Ojeda, national sales manager for Fritz-Pak Corp. "It doesn't disperse well into the concrete mix. It tends to clump and ball up, resulting in a mottled look in integrally colored concrete. Unfortunately, calcium chloride is the accelerator of choice for most ready-mix companies. It's cheap, readily available, and it works well."

The chloride ion — one element of calcium chloride — is a very aggressive chemical, Sullivan says. "It attacks pigment and it's sometimes hard to control the concentration. The blotchy look you get with calcium chloride is a result of uneven distribution of the chloride in the batch."

Calcium chloride even has a damaging effect on acid stains and dyes, says Rick Smith, president of Richard Smith Custom Concrete, a Canoga Park, Calif., contractor. "It tends to repel stains and you end up with blistering or delaminating over time. With dyes the problem lies in the clumping aspect — calcium chloride tends to draw water to itself, even years after the concrete has been set. Because of that, even with a dye, you end up with darker areas where the chloride has clumped."

So what's the alternative? Ojeda offers a solution. "Contractors should always communicate with their readymix producer... if you're pouring integrally colored concrete, or plan to use an acid stain, make sure your ready-mix supplier uses a nonchloride accelerant. One option is to add your own accelerant on-site. Fritz-Pak sells a nonchloride powder for just that purpose."

Plasticizers

Plasticizers increase water reduction to achieve low water/cement ratios and increased slump for ease of placement. It stands to reason that if water has an



A walkway for Sheplers Western Wear at Festival Bay Mall at International Drive, in Orlando, Fla., features integral colors Purple Dawn and Bamboo, produced at the time by QC Construction Products.

Mixed Results: Admixtures and Their Effects on Color

Courtesy of Chris Sullivan

Admixture	Materials Used	Desired Effect	Effect on Color
Air-entraining (ASTM C260)	Salts of wood resins Some synthetic detergents Salts of sulfonated lingin Salts of petroleum acids Salts of proteinacious material Fatty and resinous acids and their salts Alkydbenzene sulfonates	Improves durability	Normally makes color lighter
Plasticizer (ASTM C494, Type A)	Lignosulfonates Hydroxylated carboxylic acids (the acids tend to retard set, so accelerator may also be added)	Reduces water required for given consistency	Initially darkens, but effect is reduced in later stages
Accelerator (ASTM C494, Type C)	Calcium chloride (ASTM D98) Triethanolamine	Accelerates setting and early strength development	Darkens color
Pozzolan (ASTM C618)	Natural pozzolans (Class N) Fly ash (Class F and G) Other materials (Class S)	Reduces costs; improves workability and plasticity	Usually lightens, but may darken due to plasticizing effect; inherent color affects final color
Water repellant	Stearate of calcium, aluminum, ammonium or butyl Petroleum greases or oils Soluble chlorides	Decreases permeability	Possibly darkens color

adverse effect on integral color, then an additive that allows you to reduce the amount of water in a batch should result in brighter and richer integral coloring.

Not necessarily, cautions Art Pinto, product manager for Solomon Colors. "If too much water-reducing admixture (plasticizer) is used, it tends to draw excess water to the surface of the concrete. When this happens, color is affected in much the same way as it would be by adding water to the surface of the concrete, which is a no-no when it comes to integrally colored concrete."

"For bright, rich color, the whiter a mix is, the better the result will be. In fact, if white cement weren't about three times as expensive as gray, the industry standard for colored concrete would almost certainly be white," says Sullivan. "Superplasticizers tend to be dark in color. While you gain a little by reducing the water ratio in a batch, you give some of that back because you're adding a

dark pigment to the concrete."

Retarders and air entrainers

Retarding admixtures slow down the hydration of cement, lengthening set time. Retarders are often used in hotweather conditions in order to overcome the accelerating effects of higher temperatures on concrete set times. Surface retarders are a class of retarders used for exposed aggregate finishes. Because most retarders also act as water reducers, they are frequently called water-reducing retarders.

Air-entraining agents entrain small air bubbles in the concrete. The major

benefit of this is enhanced durability in freeze-thaw cycles, an attribute that is especially relevant in cold climates.

Neither retarders nor air-entraining agents are particularly impactful on integral colors, though Sullivan warns: "Anything you add will have at least some effect on color. With that in mind, the real key to colored concrete is batch consistency. When you're pouring multiple batches, whatever admixtures are in the first batch should be in every batch."

Pozzolans

Pozzolans are technically not



considered admixtures — they are used as a replacement for a percentage of the cement in a concrete batch, not as an addition to a mix. However, like some admixtures, they can affect integral coloring.

Scott Thome is the director of product services for L.M. Scofield Co. "Pozzolans can sometimes adversely affect the color of decorative concrete," he says. "Fly ash and silica fume are byproducts of other processes, and they can vary in color from white to beige (Class C) to many shades of gray (Class F) with residual carbon and silica fume running in a wide range of gray colors. The color is not typically controlled on these byproducts, so it can vary from load to load, which can affect batch consistency. The carbon in fly ash is a strong black, so a little goes a long way."

Carbon also reduces air content in air-entrained concrete by absorbing the air-entraining agent, Thome says. "Metakaolins can also vary over a wide range of colors, bright white to dark gray, but these are not byproducts, and white metakaolin can be anticipated to have good color uniformity."

Thome says that some pozzolans can also have a negative affect on acid staining. "Pozzolans react with the calcium hydroxide produced by cement hydration. High-volume cement replacement with pozzolans can reduce the available calcium hydroxide in the concrete, which then will reduce the reactivity of chemical stains."

Make admixtures work for you

When adding any admixture, purity and proper dosage rates are factors, says Murray Clarke of Delta Performance Products, a specialty concrete color pigment and amixture company. "Generally speaking, cleaner ingredients in concrete result in better color, regardless of the admixtures you're using. Proper dosage rates of admixtures also play a critical role in concrete color, especially for long-term color performance."

When higher-grade concrete in general is used, colors hold up better in the long term, he says. "That means using a 'cleaner' cement, making sure the aggregate and sand is clean and consistent, and knowing the effects

admixtures can have on color. It really comes down to a matter of good, versus better, versus best."

Whatever a contractor chooses regarding admixtures, water ratio, and quality of raw ingredients, a good method for achieving quality is test samples. "The key to pouring quality integrally colored concrete is to establish a baseline," says Sullivan. "To really know what your color is going to look like in the end, you have to pour samples. Once you've established a baseline from your samples, mix consistency is the key."

Finally, when you understand the effects of admixtures as well as you do the rest of your job parameters, you can better control your pour results. "In Southern California, the temperature often changes dramatically during the day," says Smith. "Knowing this, we use the admixtures that we need during the hottest part of the day in the morning pours too — even though that can mean that the morning pours take longer to finish. It really comes down to controlling as many variables as you can."

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admixture













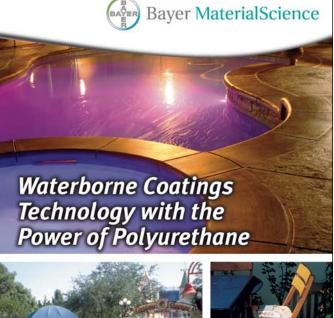


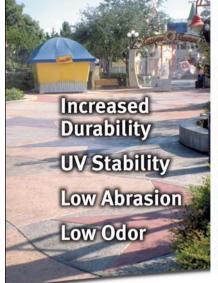
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Technology



Kenzo Unno, a Japanese architect in Tokyo, devised methods to cast beautifully shaped walls with thin, flexible textile sheets. These methods are collectively called "Unno Reinforced Concrete."

Fabric Formwork

by Stacey Enesey Klemenc

reen, clean, relatively inexpensive and incredibly practical, fabric formwork can be used with concrete to produce structurally efficient and architecturally compelling components in all shapes and sizes, ranging from footings, columns and beams to walls, sinks, furniture and an array of accessories.

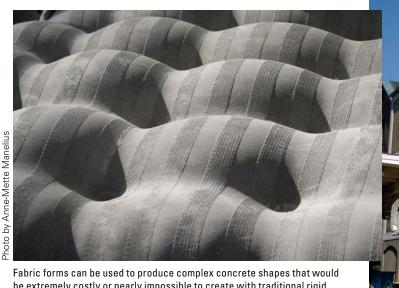
"It's allowed us to create masonry architecture using very simple skills," says Sandy Lawton, owner of ArroDesign, a design/build construction company in Waitsfield, Vt. With a background in carpentry, Lawton says, he found rigid formwork complicated and labor intensive. "Fabric formwork has given us the freedom to do complicated structural work in a very

different way that's not complicated at all. That's the bigger advantage. There's a lot more flexibility with this system."

Fabric formwork also has benefits from a sustainable viewpoint, Lawton says. "Fabric formwork basically reduces the amount of everything required to construct something — placement, storage and even building the forms. There are huge savings every step of

Also, he points out, depending on the type of fabric you use for the formwork, you can get a really nice finish. "You don't have to go behind and refinish."

Instead of using rigid forms made from lumber, plywood, cardboard, steel or aluminum, fabric forms use a flexible



be extremely costly or nearly impossible to create with traditional rigid formwork. Anne-Mette Manelius, an architect and doctoral student in Copenhagen, Denmark, made this chair as part of her thesis work on fabric formwork for concrete. She wanted the soft-looking chair to fool sitters.

textile membrane to form concrete in place. Wet concrete is poured into a tensile membrane, which produces efficient structural curves and extraordinary surface finishes.

The shape is determined by how the material is restricted. This can happen in a number of ways, from creatively using form ties to make "buttonholes" to placing a brick under a fabric form to make a relief. A row of 2-by-4s with fabric in between each piece of wood can form a lattice wall with a pattern of minor bulges.

A brief history

According to the International Society of Fabric Forming, the first practical applications for fabric formwork were introduced in the mid-1960s for erosion control and to line ponds, although there are several patents for 19th- and early 20th-century fabric forms. In the 1970s, the Spanish architect Miguel Fisac used thin plastic sheets as formwork for textured wall panels.

In the late 1980s and early 1990s, three men, each on his own, invented a variety of techniques for fabric-forming aboveground structures.

Kenzo Unno, a Japanese architect in Tokyo, invented a fabric formwork system for in situ cast concrete walls.

Rick Fearn, a builder and businessman in Canada, invented a number of fabric formwork techniques. This led him to develop a series of foundation footing and column products now manufactured and sold by Fab-Form Industries in Surrey, British Columbia, Canada. He is president of the company.

Mark West — an artist, architectural educator and builder who is now the director of the Centre for Architectural Structures and Technology at the University of Manitoba's Faculty of Architecture in Winnipeg — invented a series of techniques for constructing fabric-formed walls, beams,





surface prep • stain • sealer • acrylic polish











This eye-catching fabric-formed planter (left), made of quarter-inch-thick glass-fiber reinforced concrete, was made using an experimental proprietary process conceived by Brandon Gore. The 1-inch-thick GFRC Stingray Sink (above) was created by students of Gore's Pioneering Sink Workshop using the hardened-fabric method.

columns, slabs and panels. CAST is the first research center dedicated to fabric formwork technology and education.

Visualizing the end result

"Fabric is so much more efficient than plywood (for forms), but the industry is slow to change," says Fearn. "It's staggering how long it takes to get new ideas into the marketplace."

He thinks the biggest stumbling block to fabric formwork's acceptance is that many contractors cannot picture the end result before they start. "(Unlike rigid formwork), it's just a loose piece of fabric. What you get is not what you see."

To help contractors visualize an end product, Fearn has a computer program that predicts the shapes fabric forms will produce. He's hoping that as more contractors accept computergenerated virtual-reality scenarios, fabric formwork will grow in use. "Fabric is a tension membrane," Fearn says. "If you use a different fabric, it will give you a different texture, but the shape will be the same."

Also, some fabrics aren't coated, so they let excess water bleed out, he notes. This can make fabric-formed concrete products stronger than those made with traditional lumber forms.

"Fabric forming is at the forefront of concrete

- Brandon Gore, Gore Design Co.

In a world where resources are dwindling, he notes, fabric forms, like the ones he sells for columns, just make good sense. Fast-Tubes, made from highstrength polyethylene, come in 120-foot rolls that easily fit behind the seat of a truck and can be cut to any length with minimal waste.

"They're such a green product, so efficient. They take up 1 percent of the space cardboard does and they are 1/10 the weight." Plus, unlike cardboard, there is no waste to be hauled to the landfill after the column forms are trimmed to size or when the forms are

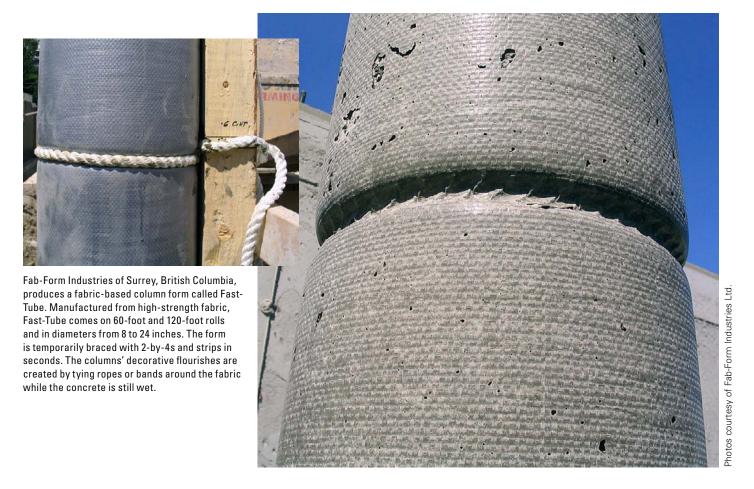
stripped. "Fast-Tubes can be put under a slab after they are stripped. They act as a moisture protector."

Besides allowing contractors to form sturdy columns of varying lengths - Lawton used Fast-Tubes to make 29foot columns for a treehouse he built in Vermont — Fearn's fabric-formed columns can be easily decorated by simply tying ropes or putting bands around the forms while the concrete is still wet.

Flexible fabric vs. hardened forms

While Fearn's fabric forms use flexible fabric that allows the weight of the concrete to dictate the final form, Brandon Gore of Gore Design Co. in Tempe, Ariz., prefers to use fabric and fabric hardeners to create a precise mold that can be used many times over. He primarily uses these forms for high-end custom sinks, but he says he's currently working on integrating fabric-formed structural walls into his new studio space.

"Using fabric as the mold is very conducive to concrete, the high-end







Under the direction of Kyle Bergman and Sandy Lawton, student architects with Yestermorrow Design/Build School designed and built fabric-formed walls for the Pomier Caves Anthropological Reserve in the Dominican Republic in 2007.



decorative sector in particular," Gore says. "Having this skill set opens up a world of design possibilities that would not be obtainable using any other method."

Gore uses fabric to form concrete in two ways. He either stretches the fabric over a frame he has made or he lets the fabric flow freely through framework openings. "At this point you can cast the concrete, or you harden the fabric and finetune the design into a specific shape, then cast the concrete," Gore says.

Fabric forms can be used with all types of concrete, he says, including glass-fiber reinforced concrete and traditional wet-cast concrete with steel reinforcement. The concrete can be colored, contain aggregate, be highly plasticized for an ultra-smooth finish or even include inlays. "Fabric forming is at the forefront of concrete, and much is being learned every day," Gore says. He recommends practicing on multiple pieces to understand the process and to learn how to properly harness the forces created by concrete when it's used in this fashion.

"Fabric-form shapes are impossible to render in advanced computer design programs," he adds, "and I have even been told by a designer that these shapes 'are completely impossible to create — they do not exist. I showed him photos of my fabric forms, and he revised his statement to, 'These shapes are impossible to create using a computer,' which which I concurred."

To help novices and experienced concrete artisans alike learn about fabric-forming using the hardened-fabric method, Gore has put together a 38-minute DVD that covers all the steps, tools and materials required to build a custom fabric-formed sink mold. The DVD can be purchased at ConcreteApothecary.com.

On-the-job training

Besides being used for high-end pieces, fabric formwork has also found its niche in Third World projects. In 2007

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- Photos of the project. You must send before and after photos in order to be eligible.
 - *Photos must be high-resolution (300 dpi) in JPEG format.
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Students place concrete into fabric formwork while building the walls of a guest cabin at the Yestermorrow Design/Build School campus in Warren, Vt., last summer. This year, together with the Norwich University School of Architecture, the school will offer "Innovations in Fabric Forming With Concrete." Slated for June 27-July 2, the hands-on class will involve forming and pouring a series of innovative concrete architectural components, with a focus on wall forming.

and 2008, for example, Kyle Bergman, a New Yorker and owner of architectural firm Bergman Design Team, of Warren, Vt., teamed up with ArroDesign's Lawton to build community projects in the rural area of El Rincon and the Pomier Caves Anthropological Reserve in the Dominican Republic. The jobs involved fabric-formed concrete walls, benches and seating areas.

On each trip, the two led groups of architectural students on an 18-day adventure offered through Yestermorrow, a design/build school headquartered in Vermont. The school's mission is to inspire people to create a more sustainable world by providing hands-on education that integrates design and craft as an interactive process. During the trip, students design the project on-site and then build it.

Bergman, whose experience with fabric-formed concrete is limited to what he learned on these trips, says it made perfect sense to use fabric forms and rebar in an area where wood was scarce. "Fabric is a very forgiving material, and the walls and benches we created were very sculptural in nature," he says. "We used rebar to hold the

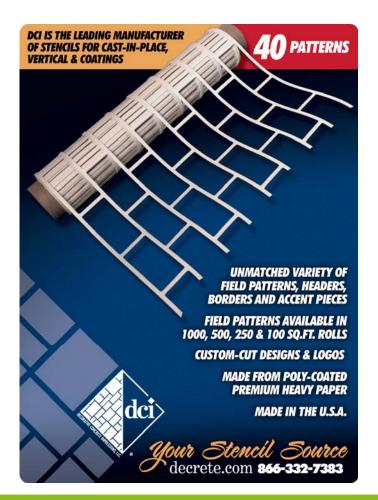


fabric in place. Once it was stripped away, we were left with curvaceous, undulating walls."

Bergman admits that fabric formwork is not as uniform as standard formwork. "We had to create some structure to gives us the appearance of what we wanted, but in the same breath it gave us a lot of design freedom. It's really an exciting medium," he says. As for fabric formwork's limitations, "It's wide open. We haven't tested its limits yet."

For those interested in learning more about fabric forms, Yestermorrow, in conjunction with the Norwich University School of Architecture, will hold a weeklong workshop on the Yestermorrow campus in Vermont in June. Lawton will be one of the instructors, along with Mark West, who is currently on sabbatical.

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Product Profile



Tru-Tex Complete Contractor's Kit for Vertical Concrete from Walt Tools

by Erik Pisor

s demand for vertical concrete work in the residential sector expands, more decorative concrete contractors and artisans are taking on vertical projects with the goal of achieving creative looks.

Because vertical decorative concrete projects often feature unique textures, shapes and colors, concrete contractors often spend a significant amount of time making their own tools, as the number of tools specifically designed for vertical work is small.

Realizing the demand, Walt Tools began offering the Tru-Tex Complete Contractor's Kit for Vertical Concrete in spring 2009.

The vertical kit allows concrete contractors to achieve a variety of textures and looks in conjuction with hand carving. Until now, says Don Ciesielski, sales manager for Walt Tools, many of the artisans had to make their own tools for each particular

"The industry itself, vertical concrete, is in its infancy. This kit meets demand and eliminates the need to purchase tools individually," says Ciesielski.

Since being introduced, the kit has been expanded regularly. Today, it is offered in two sizes. The basic vertical kit sells for \$500 and includes four rollers sleeves, four vertical skins, and four "trowels," which are small skins with handles. The trowels are used for spaces and corners the larger skins can't cover or reach.

The full kit contains more than 50 pieces and is sold for \$969. Not bad considering the cost of other texturing tools, Ciesielski



A "rock" wall created with products from the Tru-Tex vertical kit and a Tru Pac Mortar Conversion Kit, also available from Walt Tools.

claims. "For a set of stamps you might pay \$500 or \$600 for one look." Included in the full kit are 10 roller sleeves, 10 vertical skins, eight trowels, 12 three-way jointers, and Walt Tools' Original Wedge Set.

Also included in the full kit is a weatherwood end-grain skin, which creates the surface look of a tree stump after it's been cut and its rings can be seen, and three weatherwood vertical skins, which can portray a realistic rugged wood grain.

Three different trowels are featured in the kit, including a margin trowel, a 1/4-inch flexible trowel for touch-up work around edges and in corners larger trowels can't reach, and a 10-inch flexible steel pool trowel, which features a rounded blade that makes it easier for a contractor to avoid gouging or edging the trowel into wet concrete.

Some of the tools create multiple lines if pushed into the concrete, saving a contractor from having to individually draw each line.

"If you have all the skins and textures you're unlimited (in what you can do)," says Jody Smith, owner of Summerville, S.C.-based Overlay Solutions. "You have so many different varieties of textures and ways you can initiate something for a vertical wall"

Smith also uses his kit for work on fountains and doors. "I wouldn't step on a vertical job without it," says Randy Klassen, owner of Winnipeg-based Klassen Concrete, who specializes in decorative, conceptual concrete work. "This system gives you a lot of variation in texture and a lot of the right tools to achieve creative and natural-looking work."

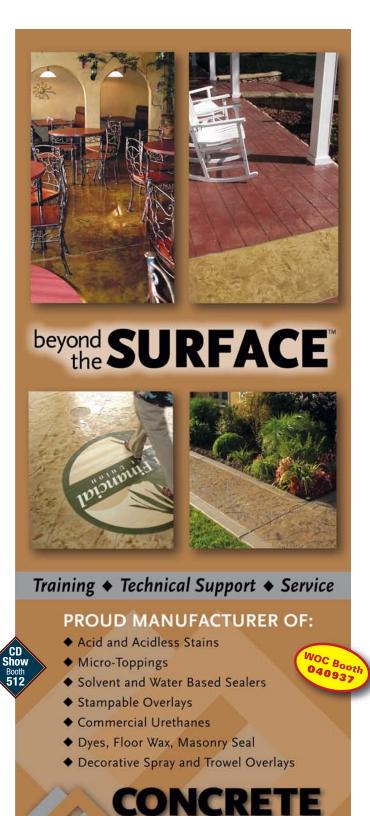
Klassen purchased the kit a year ago and says the buy has already represented a net cost savings.

Prior to its release the kit was used and reviewed by Nathan Giffin, owner of Vertical Artisans, a Web site that provides methods and techniques associated with vertical hand carving. "We ran a lot of testing through him (Giffin)," Ciesielski says. "He came to us and presented the wedge idea that we created."

The kit is sold by Walt Tools online and by distributors in Minnesota, Texas and the East and West Coasts.

Smaller kits portraying specific looks are also available. 🥗





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www.prolinestamps.com

L.M. Scofield Co. — Vermont **Slate Stamp**



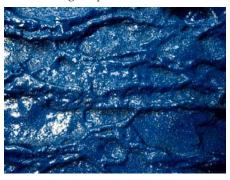
L.M. Scofield Co.'s Vermont Slate stamp is part of the company's naturalstone line of stamps. The random interlocking pattern comes in four different stamps, all 28 inches by 32 inches. These durable tools are made from high-quality polyurethane that produces realistic details.

www.scofield.com

Something Better Co. — Vertical **Concrete Texture Stamps**

Vertical Concrete Texture Stamps from Something Better Co. are ideal for use on sculpted vertical concrete at 2inch to 4-inch depths with lightweight mixes. They can also be used over freshly applied masonry mortar troweled

on a wall or surface at 1/4 inch to 1/2 inch thick. Measuring 5 inches wide by 6 inches tall, these stamps are flexible for achieving deep contours.



Available texture options are Rock Wood, Cliff Ridge, Deep Scale, Casual Stone, Deep Pocket, and two varieties each of small dimple and large dimple patterns.

(0 (800) 324-1719

www.betterpaths.com

StampMaster/Creative Urethane Concepts Inc. — TexFlex Skins

The StampMaster line of concrete texturing mats, from Creative Urethane Concepts Inc.,



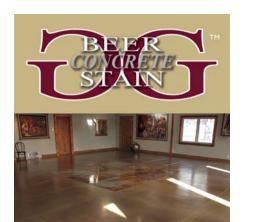
includes a line of seamless concrete texturing skins. TexFlex Skins combine the rigid durability of a standard seamless texture skin with the flexibility of a "floppy" mat.

The center of the mat is made from a high-density, durable urethane, while the outer ring is created from a more flexible, lower-density urethane. These two components are fused together seamlessly, so the texture is not altered. The varying flexural strengths provide contractors with more workability and a more affordable option for their concrete texturing needs.

TexFlex Skins are available in a variety of textures, including Oxford Stone, Roman Slate, Cracked Earth and Vegas Stone. 🥗

© (888) 901-6287

www.stampmaster.net



WOC Booth **040629**

Unmatched in versatility, this stain gives you everything you need all in one product. UV Protection makes this stain perfect for interior and exterior applications. You can add this stain to lacquer thinner, acetone, water, beer, wine, and denatured alcohol. It may also be added to most sealers. When combined with Beerbind and most densifiers/ hardeners, you can color, densify and polish in one easy process. If mixed in lacquer thinner or acetone, it will penetrate most sealers.

Application is easy and efficient, saving you precious time and money. The dry time is exceptional and the sealer may be applied as soon as the stain is dry to the touch.

Preparation is simple and jobs can be prepared, stained and sealed in hours instead of days.

Charcoal	Dark Chocolate	Chocolate	Saddlehorn
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Fern	Sandstone	Sonora	Basalt

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541-678-7364 www.gginnovativeproducts.com

Product News



Buddy Rhodes develops Ultra Green Concrete Mix

Buddy Rhodes Concrete Products' newest brainstorm, Buddy Rhodes Ultra Green Concrete, is billed as one of the greenest concrete mixes on the market.

After extensive research and development, the company teamed up with Clean Concrete Technologies to bag a concrete formulation that uses 91 percent recycled and by-product materials without sacrificing strength or durability. Buddy's Ultra Green Concrete (B.U.G.) also drastically reduces the amount of resource-intensive portland cement in the mix, thereby achieving 50 percent embodied energy savings over traditional concrete. Buddy's Ultra Green Concrete is strong, resilient, crackresistant and affordable, and can be used for any everyday concrete project.

"We have searched a long time to be able to offer an affordable concrete mix that meets our green product criteria," said Buddy Rhodes, president of Buddy Rhodes Concrete Products. "We required a high level of strength and crack resistance, a superior finish compared to any other concrete on

the market, and a mix that colors beautifully."

Buddy Rhodes designed the bag and nicknamed it B.U.G., mirroring the ant featured on the bag, because both the ant and B.U.G. work hard to do their part towards a common goal. Buddy's Ultra Green Concrete is available initially in the western United States from authorized Buddy Rhodes distributors.

(0 (877) 706-5303

www.buddysultragreen.com

L.M. Scofield introduces new **Scofield Refresh Exterior Stain**

An effective new way to restore color intensity to concrete, Scofield Refresh Exterior Stain was developed by L.M. Scofield Co. to improve the appearance of existing, unsealed exterior colored or uncolored concrete surfaces in need of refurbishment or renovation. It adds a measured amount of color to the concrete without producing a paintlike appearance.

Since Scofield Refresh penetrates and reacts with the concrete and no film is formed, Refresh colors become part of the surface. The resulting look approximates the appearance of newly placed concrete. Refresh is ideal for anyone who wants to bring faded concrete color back up to a new look or bring consistency to mismatched color.

Scofield Refresh is formulated for easy installation on horizontal concrete surfaces using hand-pump sprayers or rollers. It is available to approximate all the colors depicted on L.M. Scofield's color chart A-312 Chromix Admixtures for Color-Conditioned Concrete.

www.scofield.com

A stained concrete alternative

Stonhard now offers an alternative to stained concrete with its Stontop family of products.

Stontop offers the mottled, contemporary look of stained concrete, but unlike traditional stained concrete, which requires a sealer to be applied at least once a year, Stontop is durable, with superior wear resistance, and needs just minimal maintenance to keep its appearance looking fresh. This system can also be installed over damaged and worn concrete.

Offered in seven base colors and the ability to match and modify custom colors, Stontop is ideal for retail spaces, restaurants, stadiums, museums, malls and other public spaces.

www.stonhard.com

Prosoco reintroduces concrete color stains for floors

The new Consolideck Concrete Flooring Color System from Prosoco is a comprehensive package for coloring any concrete floor that is steel-troweled to a high polish, indoors or out.

The palette includes 18 ColorHard colors for one-step hardening, densifying and coloring unpolished concrete, plus 19 GemTone Stains for polished concrete. The water-reduced environmentally friendly colors can be used with each other or with any other concrete-flooring color product to create a near-infinite variety of tones, tints, effects and designs.

Prosoco is essentially debuting the GemStone line again — at World of Concrete 2010 — after having to recall it in December 2008.

Used as directed, the system's colors are permanent and stable in the face of traffic and weather. Easy application involves nothing more than spraying on, then spreading with a microfiber applicator. Colored floors are ready for traffic or further treatment after an hour. The color system is supported by and compatible with a full range of Consolideck topcoats, protective treatments, and prep, specialty and maintenance cleaners. This simple-touse, high-performance set of concrete flooring colors helps create unlimited options for everyone involved in creating colorful finished decorative concrete floors.

(785) 830-7343

www.prosoco.com

High-performance green cement

Eccorok, from Ceratech Inc., has been released to market. The environmentally friendly cement product is a high-performance nonportland cement derived nearly

ORLD OF

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entirely from waste streams and green sustainable materials. It gives you the ability to produce wet-cast or GFRC concrete with 97 percent recycled content (when you use recycled aggregate).

Building upon CeraTech's cement repair technology, Eccorok has been formulated to meet the unique requirements of the architecturalsurfaces and countertop professional.



Eccorok is pozzolanic in nature. Its manufacturing process involves a simple blending of powders, producing essentially zero carbon dioxide. Eccorok has little to none of the carbon footprint of portland cement production.

Performance characteristics of Eccorok include compressive strengths greater than 4,000 psi in 24 hours and 28-day strengths greater than 9,000 psi. Its particle distribution range is from 0.5 micron to 100 microns, resulting in a very dense matrix. You can use just about any type of aggregate with Eccorok, including glass, as there are no ASR (alkali silica reactivity) issues with it. Eccorok can be sprayed and integrally colored. It promises exceptional replication of detail.

Eccorok is available in 50-pound bags, 2,000-pound Super Saks and bulk containers.

(717) 823-7408

www.pavemend.com/ecco_friendly_countertops.asp

Three from Crown Polymers

Crown Polymers is promoting several products that serve a variety of needs.

CrownCrete is a modified novolac polymer concrete floor overlay, ideal for applications requiring fast placement and curing. It can be used in areas with dry or wet conditions, such as plants that process food, meat and poultry, bottling facilities, and industrial, pharmaceutical and manufacturing environments. CrownCrete has zero VOCs and HAPs, exceeds

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OSHA and ADA slip-resistance requirements and complies with LEED standards. It is available in industrial or decorative finishes with CrownSilver antimicrobial protection.

CrownPro SparkShield static-dissipating floor system, a classic standard, is now improved with a new primer: CrownLiquidCopper Primer. Crown's primer provides an improved layer of protection that dissipates static electricity faster and more evenly. Ideal uses include hospitals, laboratories, data storage areas and retail stores, as well as electronic, manufacturing and educational facilities or other environments where static electricity is potentially present. CrownPro SparkShield and CrownLiquidCopper Primer are 100 percent solids, nearly odorless, have zero VOCs and comply with LEED standards.

Finally, Antimicrobial CrownSilver provides sanitary protection using silver ion technology, eliminating the growth of viruses, bacteria and fungi on floor and wall surfaces. It is recommended that CrownSilver be added to all Crown Polymers floor and wall overlays and topcoats when these potential conditions exist. CrownSilver is odorless and colorless.

www.crownpolymers.com

General Equipment unveils polishing system

Designed for use with popular models of single- and dual-head, low-speed surface grinders, General Equipment Co.'s Pro Polish floor-polishing system produces high-quality

polished surfaces without the need for expensive and complex equipment.

The Pro Polish system utilizes a series of seven 10-inch-diameter diamond-polishing pads, which are easily secured to the appropriate surface grinder using Velcro. The



chemistry of the diamond pads is formulated to operate at lower rotational speeds commonly found in surface-grinding equipment, including General Equipment's SG12 and SG24 Series surface grinders.

Polishing pads range from 50 grit to 3,000 grit and are color-coded to simplify the progression from one pad to the next. Users need only follow the pad color sequence until the desired results are obtained. Hardeners can be combined with pads, usually 400 grit and higher, to help intensify the brilliance of the floor shine.

When properly used to maximize service life, the system will polish up to 15,000 square feet of concrete.

© (800) 533-0524

www.generalequip.com

New size offering for Engrave-A-Crete concentrate

Concrete Resurrection Water Reducible Concentrate (CR-WRC) from Engrave-A-Crete is now available in an 8-ounce bottle. The new size makes 40 ounces to 72 ounces of readyto-use stain and is available in 30 colors.

CR-WRC is a penetrating waterborne acrylic dye stain that is designed to deliver predictable results when creating natural, variegated colors or bright, solid colors. It can also be used for faux finishing, changing hues, or correcting errors after acid staining.

www.engraveacrete.com

Inside Edge expands services to include polishing

Inside Edge Commercial Interior Services LLC is now offering a new service, INspire! Polished Concrete Flooring. INspire! concrete floors offer remarkable durability thanks to CorMAXX Densifier and Sealer technology that penetrates deep below the surface to create floors that are up to two times harder than traditional concrete.

This new concrete capability is a direct result of an agreement between Inside Edge and Gail Marie Interiors LLC. Inside Edge will now provide concrete polishing services in addition to its extensive portfolio of flooring services. GMI, which specializes in concrete restoration services, is a powerful complement to the current services Inside Edge offers to national account customers.

INspire! Polished Concrete Flooring utilizes a dry polishing system, which eliminates the need for disposal of wet, hazardous waste by-products.

www.insideedgecis.com

Flex introduces polishers, mixers

Flex North America Inc. has introduced five new products to round out their offerings to the natural stone, tile and concrete industry.

The LCP 1703 VR three-headed polisher is planetary-geardriven and powered by 10 amps of variable speed, ranging

from 1,100 rpm to 3,400 rpm. Its rugged 12-inch platform is made of Duralumin, a hardened, anodized aluminum, which makes it ready for the toughest applications. Other features include a belt-driven design for quieter operation and less heat buildup, a center water feed for wet application that can be shut off for dry operation, and a Slurry Guard brush design for ease of movement on all surfaces. It uses 3-inch and 5-inch diamond polishing pads.

The PLW 923 S is a new Air Stone Sander/Polisher. Its compact, lightweight design will get into tight spaces with ease, and allows for all-day operation. Reaching speeds of 3,600 rpm, it features a central water feed with rear exhaust, and it accepts 3-inch, 4-inch or 5-inch discs. It comes with a 4-inch Velcro pad, bail handle, side handle, and more.

Other new products are the R 500 FR, R 502 FR, and R600 VR mixers. The R 500 FR and R 502 FR are a singlespeed and a two-speed model, respectively, each offering 1,010 watts. The R600 VR features 1,300 watts.

👣 www.flexnorthamerica.com

DC Holiday Detector released

The Elcometer 266 DC Holiday Detector from Paul N. Gardner Co. provides accurate detection of pinholes, flaws, inclusions, thin spots and bubbles in a coating.

The gauge has been specifically designed to revolutionize highvoltage DC testing of coatings, making it safer, easier and more reliable.

Key features include current limiting to avoid coating damage, an automatic voltage calculator, safety grip, and an internal jeep tester that eliminates the need for two gauges. It also includes interchangeable handles, with









ranges from 0.5 kilovolts to 5 kilovolts, 0.5 kilovolt to 15 kilovolts, or 0.5 kilovolt to 30 kilovolts, all adjustable in 0.1- kilovolt steps.



New angle grinders from Makita

Makita USA Inc. has released two new angle grinders that combine power and performance with added comfort. The grinders — GA4030/K (4 inches) and GA4530 (4 1/2 inches) are powered by a Makita-built industrial 6-amp motor that delivers 11,000 rpm.

The labyrinth construction seals and protects the motor and bearings from dust and debris for longer tool life. In addition, the machined bevel gears provide at least two times longer service life than competitive models, and the all-ball-bearing design and metal gear housing are engineered for added durability.

The GA4030/K and GA4530 have a small-circumference barrel grip — only 2 1/4-inches — for added comfort, with less weight at just 3.1 pounds. The gear housing can be positioned every 90 degrees for a range of cutting applications, and the side handle can be easily installed on both sides of the tool as well as the top.

Both grinders are built to suit the most demanding applications, including cutting brick and masonry, paint and rust removal, general grinding, cutting limestone and more. The GA4030/K and GA4530 include the tool, one grinding wheel, a wheel guard, side handle and inner flange. The GA4030/K includes a case.

👣 www.makita.com

Shortstop 3.5 mixer now available on new chassis

The Shortstop 3.5 concrete mixer is now available on a UD 2600 COE chassis. The UD 2600 features air/ hydraulic brakes, a pneumatic actuated parking brake and a special flywheel PTO drive that powers the mixer.

"The Shortstop 3.5 is designed specifically for a Class 6, 26,000pound, non-CDL chassis," said Mike Stute, who designed and developed the Shortstop, in a press release. "We have received many inquiries over the years for a cab-forward style chassis, but we were unable to find any meeting our requirements."

The mixer features a 9-foot 6-inch clearance height and holds 3 1/2 yards of concrete.

Shortstop Concrete Equipment is manufactured by Ernest Industries Inc., a manufacturer of small-load concrete equipment, OEM steel fabrications and highway line-marking equipment.

www.ernestindustries.com



Bucket Lid helps you cover up

L&L Innovations LLP has launched the Bucket Lid, specifically designed as a safety and dust-reduction containment lid to use over a 5-gallon bucket. It is manufactured as a snap-on lid with three customizable cutout ports for a wet/dry vacuum, a mixing paddle and a funnel. This lid allows the end user to mix wet and dry contents while containing the dust and liquid. An additional benefit is the elimination of product splatter.

(0 (818) 438-5247

www.thebucketlid.com

Time clock on a BlackBerry

Exaktime has introduced PocketClock/GPS for BlackBerry, software that transforms a BlackBerry



phone into a portable GPS time clock and management tool for supervisors in the field. Part of The JobClock System, PocketClock/GPS lets mobile employees or crews clock in and out at dozens of locations each week.

Using PocketClock/GPS, workers easily clock in or out and record what type of work they are doing. Each time punch includes a GPS fix so the office knows the location of every clock in/out and can quickly view the travel times between locations. Managers can also set a virtual perimeter around each job site to highlight employees clocking in or out when they are not actually at the work site. The system displays a map, pinpointing job sites and overlaying attendance data onto the map.

PocketClock/GPS for BlackBerry adds a completely new set of multimedia supervisor tools. A supervisor can use the BlackBerry's camera to take photos at the work site and can also record audio field notes.

Time records and field notes are securely sent to the office computer from nearly any location using the BlackBerry's Internet connection and Exaktime's JobClock.net service. After the information is transferred to the company's office computer, Exaktime TimeSummit software lets managers analyze and export work hours into the company's accounting or payroll system as well as review field notes.

(0 (888) 788-8463

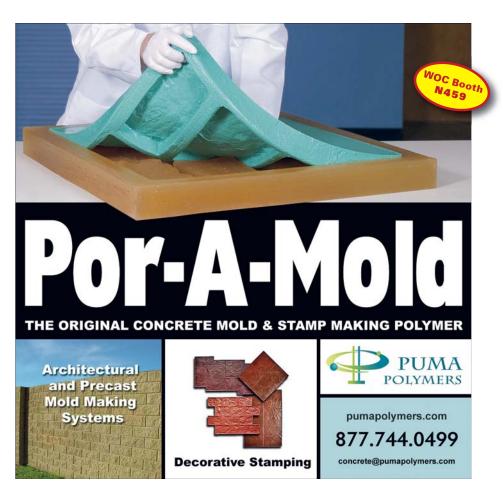
👣 www.exaktime.com



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Association News

American Concrete Institute Seminars and certification exams planned for World of Concrete

The American Concrete Institute has announced three ACI certification training seminars and examinations to be held during the World of Concrete show, Feb. 1-5, 2010, at the Las Vegas Convention Center in Las Vegas, Nev.

The ACI Concrete Flatwork
Finisher/Technician program focuses
on the ability of a craftsman to place,
consolidate, finish, edge, joint, cure,
and protect concrete flatwork. A passing
grade on the corresponding written
examination is required to achieve ACI
Technician certification. Also, verified
work experience is required for full
Finisher certification.

The ACI Specialty/Commercial Concrete Flatwork Finisher/Technician program focuses on the finishing procedures for Specialty Commercial/ Industrial Concrete Flatwork Finishing, including high-tolerance floor construction, application of surface treatments, silica fume concrete, and operating mechanized finishing equipment. A passing grade on the corresponding written examination is required to achieve ACI Technician certification. In addition, verified work experience, including certification as a Finisher/Technician in the basic ACI

Flatwork Finisher program and passing performance examinations, is required to achieve ACI Finisher/Technician and Specialist certifications.

The ACI Tilt-Up Supervisor/ Technician program focuses on proficiency in on-site administrative and technical management of tiltup projects. A passing grade on the corresponding written examination is required to achieve ACI certification as a Technician. Also, verified work experience is required for full Supervisor certification.

www.concrete.org

Portland Cement Association Forecast: Industry still weak

Although recent economic news and activity may technically suggest an end to the current recession, the conditions facing the construction industry are likely to remain weak for another year or more, causing a drag on cement consumption, according to the most recent economic forecast from the Portland Cement Association.

PCA expects 2009 will represent this recession's trough for total United State cement consumption — reflecting a 26.6 percent decline from already weak 2008 levels. A modest 5 percent increase is expected to materialize in 2010, with significant growth in

consumption expected for 2011 and beyond.

"Given this weak outlook for private sector construction, any near-term turn in overall construction activity will be dictated by public construction," said PCA chief economist Edward Sullivan in a press release. "Unfortunately, here state deficits are sterilizing the spending impacts of the federal economic stimulus plan."

According to the Center on Budget and Policy Priorities, 33 states are in severe deficit positions for fiscal 2010, compared to 21 for fiscal 2009.

More than 90 percent of all highway and street spending is put in place by state and local governments. State fiscal conditions influence discretionary public construction spending, and the harsh economic environment facing state and local governments may result in a double-digit decline in discretionary highway and street spending during 2009, Sullivan said.

www.cement.org

High-performance building requirements detailed

As part of the Portland Cement Association's effort to lead the way towards new standards in sustainability that promise safer, more secure and more energy-efficient buildings, a free webcast, "High Performance Building Requirements for Sustainability," is now available on the PCA Web site.

During the 45-minute program, Steve Szoke, PCA's codes and standards director, describes the key elements of "High Performance Building Requirements for Sustainability," a sample ordinance written in mandatorystyle language that amends and appends the International Code Council "International Building Code" to address highperformance and sustainable buildings.

The PCA high-performance building requirements go beyond the traditional issues of energy efficiency, recycling and reuse strategies. The requirements also address increasing a building's resistance to natural disasters.



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PCA has aligned the provisions with the concepts of both the Whole Building Design Guide and High Performance Building Council. Enacting and enforcing these provisions provides the basis for designers and owners to obtain LEED certification.

www.cement.org

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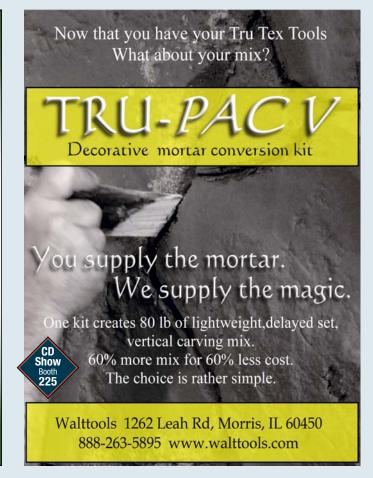
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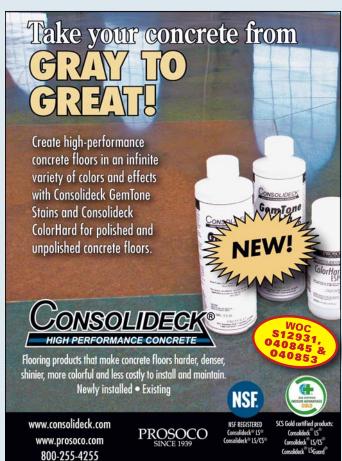
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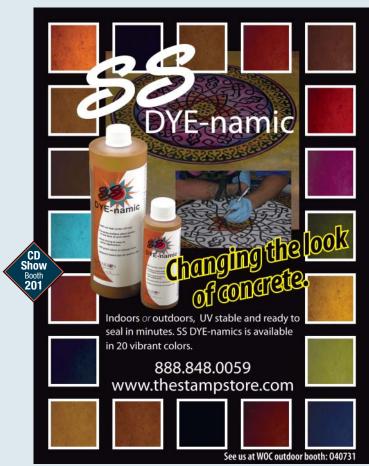
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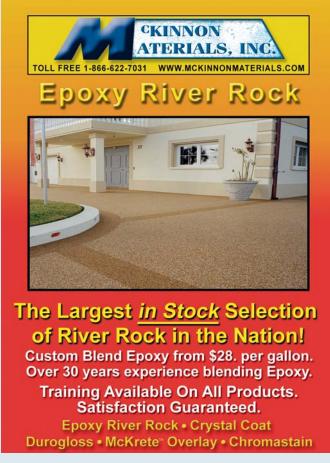
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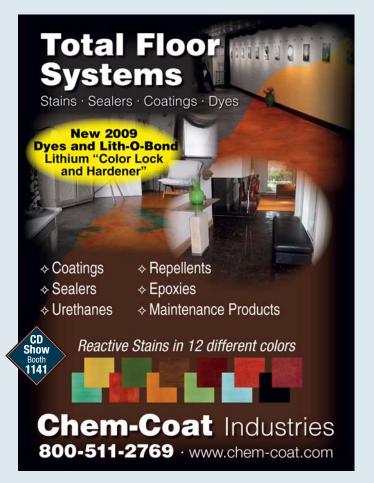


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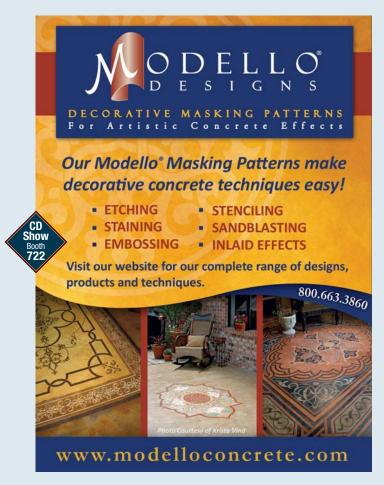














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Final Pour

Blessed Build

stupa is one of the most venerable icons in Buddhism. It's a structure steeped in symbolism, and building or maintaining one is said to bring a person close to enlightenment.

Which is good news for Renaissance Concrete Design and its owner, Nicholas Sproule.

When a private landowner in Calgary, Alberta, wanted to build a stupa in honor of the Dalai Lama's planned visit in September 2009, he approached Sproule to erect the 25-foothigh structure. "The project was a real challenge, as we only had a six-week timeline in which the stupa had to be completed," Sproule says.

The schedule wasn't the only challenge. Calgary-based Sproule was a veteran installer of residential and commercial flatwork, but he had no experience with stupas. So he sought advice from other artisans, most notably seasoned stupa builder Paul Kloppenburg of Colorado. "I was kind of out of my comfort zone, but it turned out amazing," Sproule says.

"The planning/building process was a truly amazing journey. Buddhist monks were present throughout the entire build and performed traditional rituals at certain points throughout the project. The chanting was truly amazing."

The stupa was poured in place over several stages, a process that was dictated in part by Buddhist tradition. It was also built hollow so offerings could be placed inside during construction. "There are three separate cavities that were filled with offerings," relates Sproule. "These offerings consist of everything mankind needs to survive. Weapons, guns, tools, food, gold, peacock feathers and scrolls were just a

few of the items offered in the stupa."

Workers sculpted the domeshaped piece at the top of the stupa with custom-made tools. The entire monument required 103 cubic meters of high-flow concrete with polypropylene fiber reinforcement, 10 mm washed pea gravel and Type 10 portland cement. "The copper work was all made in India and is truly a work of art," he says.

After the stupa was cast, the crew applied a coat of silicate-based paint recommended by Kloppenburg. "We

were going to go with white concrete, but the price was going to be ridiculous," Sproule notes.

Photos courtesy of Renaissance Concrete Design

Other concrete stupas have been said to take up to nine months to build. Sproule and his team finished theirs inside the six-week window. The Dalai Lama consecrated it on Sept. 30, 2009.

If a planned Dalai Lama Center is built at the site, Renaissance Concrete Design may be tapped to build more stupas, Sproule says.

💲 www.renaissanceconcrete.ca

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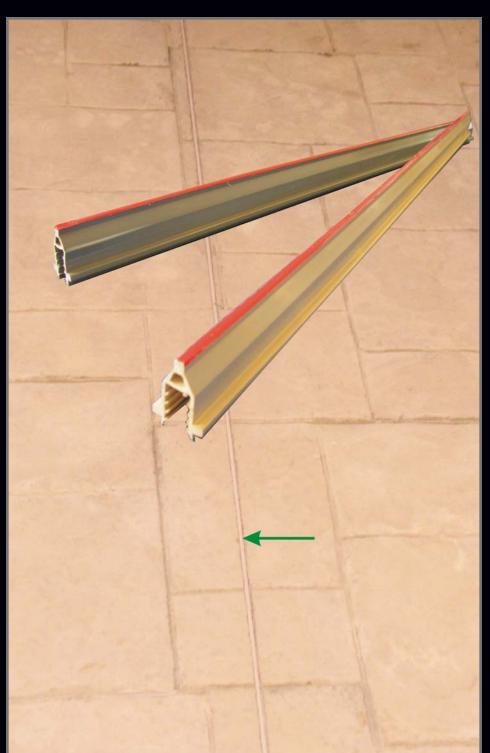






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