WaterShapes

Design
Engineering
Construction

Volume 11
Number 8
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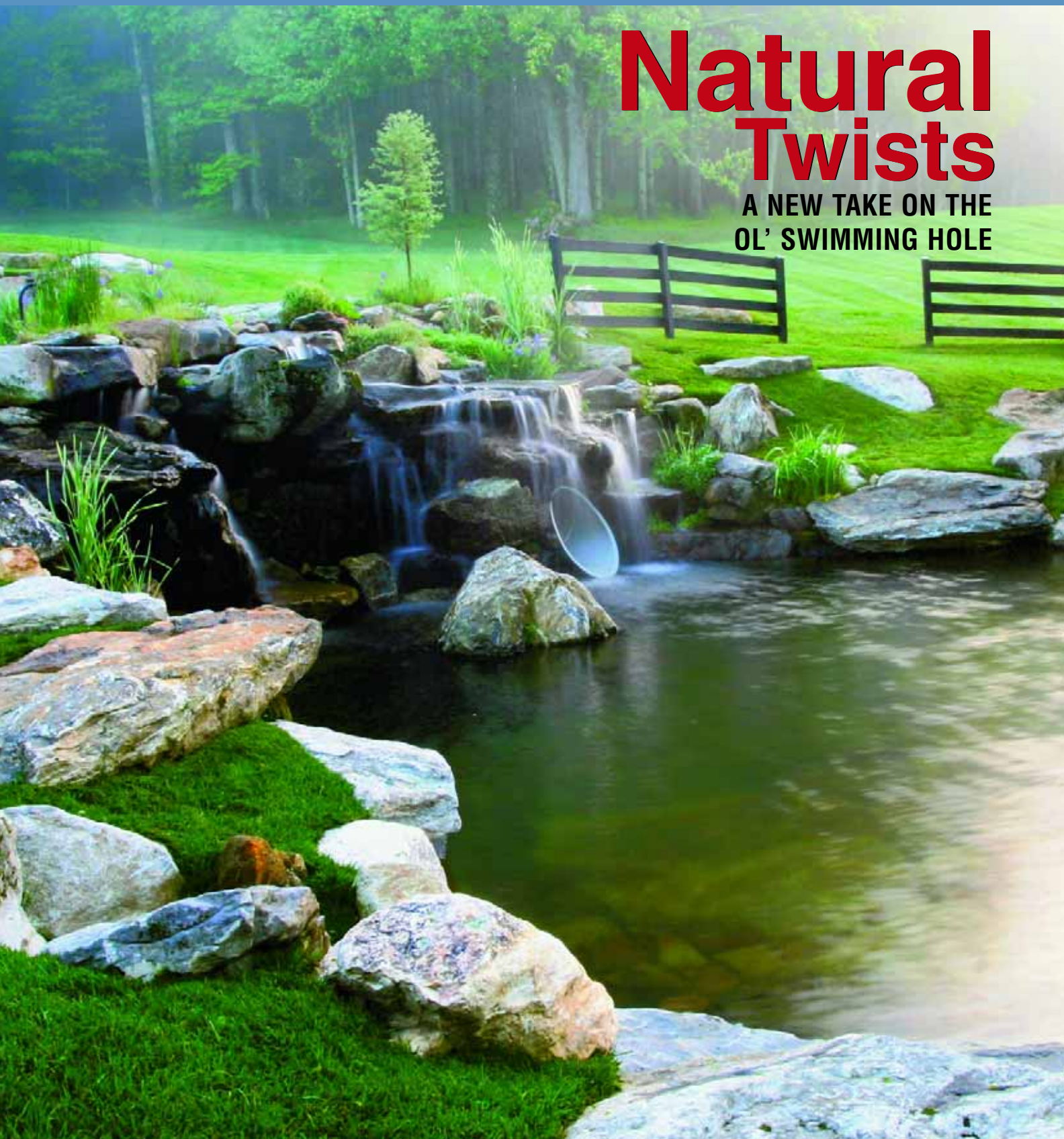

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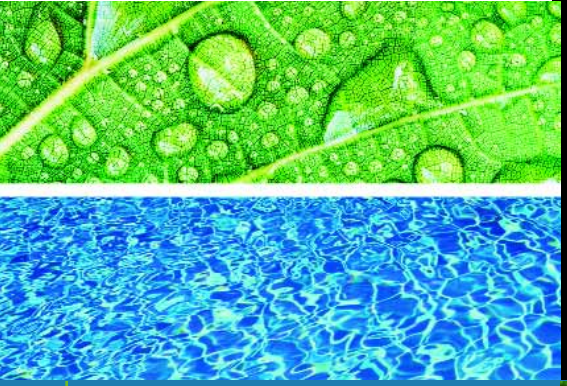

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On the Cover: Photo courtesy Bob Dews, Xstream Ponds, Cashiers, N.C..

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The Idea Factory

By Eric Herman

I'm constantly amazed by innovation: Just when you think a device or system or technology has reached its limits, something comes along to advance things a notch or two and the whole cycle begins again.

And the most interesting thing is that innovation often comes without truly being driven by need. Take telecommunications as an example: We were all getting along pretty well with land-based telephones when pagers and then cellular phones came along, and now it's reached a point where cell phones do more than most of us will ever need them to do, from taking digital images to sending and receiving e-mails – and you can still phone home as well.

This sort of thing was much on my mind as the August issue of *WaterShapes* came together – particularly as relates to two articles that take the basic concept of the swimming pool and push it in innovative directions that may foretell many interesting developments to come.

You'll find the first of them on page 26 in the form of "Swimming with Nature" by Bob Dews. Here, a longtime *WaterShapes* contributor and master of naturalistic ponds, streams and waterfalls describes a recent project in which, under orders from a client, he developed a pond that is not only made for swimming, but also includes play features I've never seen on such a watershape before.

As Dews points out, many people who want ponds to beautify their properties also end up using them as places to get wet, even though these watershapes aren't designed for such usage. When asked to make one deliberately functional as a "swimming hole," he went several steps beyond basic by including a tubular slide, a cave and several details borrowed from the bags of tricks of pool designers, including beach entries and zones for playing and swimming.

Of course, the "swimming pond" isn't a new concept, but nowhere before have I seen anyone push the hybridization process to such an extent. As Dews makes clear, this is *not* a swimming pool made to look natural, but is instead a pond meant to allow for safe and easy human interaction.

That hybridizing spirit takes an entirely different turn with the technology on display in "Rethinking the Pool" by Stephan Kanetis and David Stone (page 40). I first met these gentlemen at a trade show in 2008 and was stopped in my tracks by their "hidden-water pools," in which a pool becomes a patio and vice versa.

As they point out in the article, their system allows for multiple uses for a space, saves energy and chemicals and is unusually safe by any standard, basically because the water completely vanishes as a hazard when the floor of the pool rises to deck level.

It's immaterial whether either one of these ideas catches hold and results in wide pursuit of these watershaping options: What's most important – from my perspective at least – is that Dews, Kanetis and Stone (and others like them) are out there and entirely willing to play with the basic assumptions upon which the watershaping industry operates.

I tip my hat to all of them once for stepping up with extremely creative and innovative ideas. I tip my hat to them a second time for moving boldly into new realms at a time when so many talented people seem to be in holding patterns, waiting for the economy to turn around and a situation approaching normalcy to reappear.

I can't predict the future, but my guess is that Dews, Kanetis and Stone have exactly the kind of courage and gumption that will be required to advance our industry in the months and years to come.

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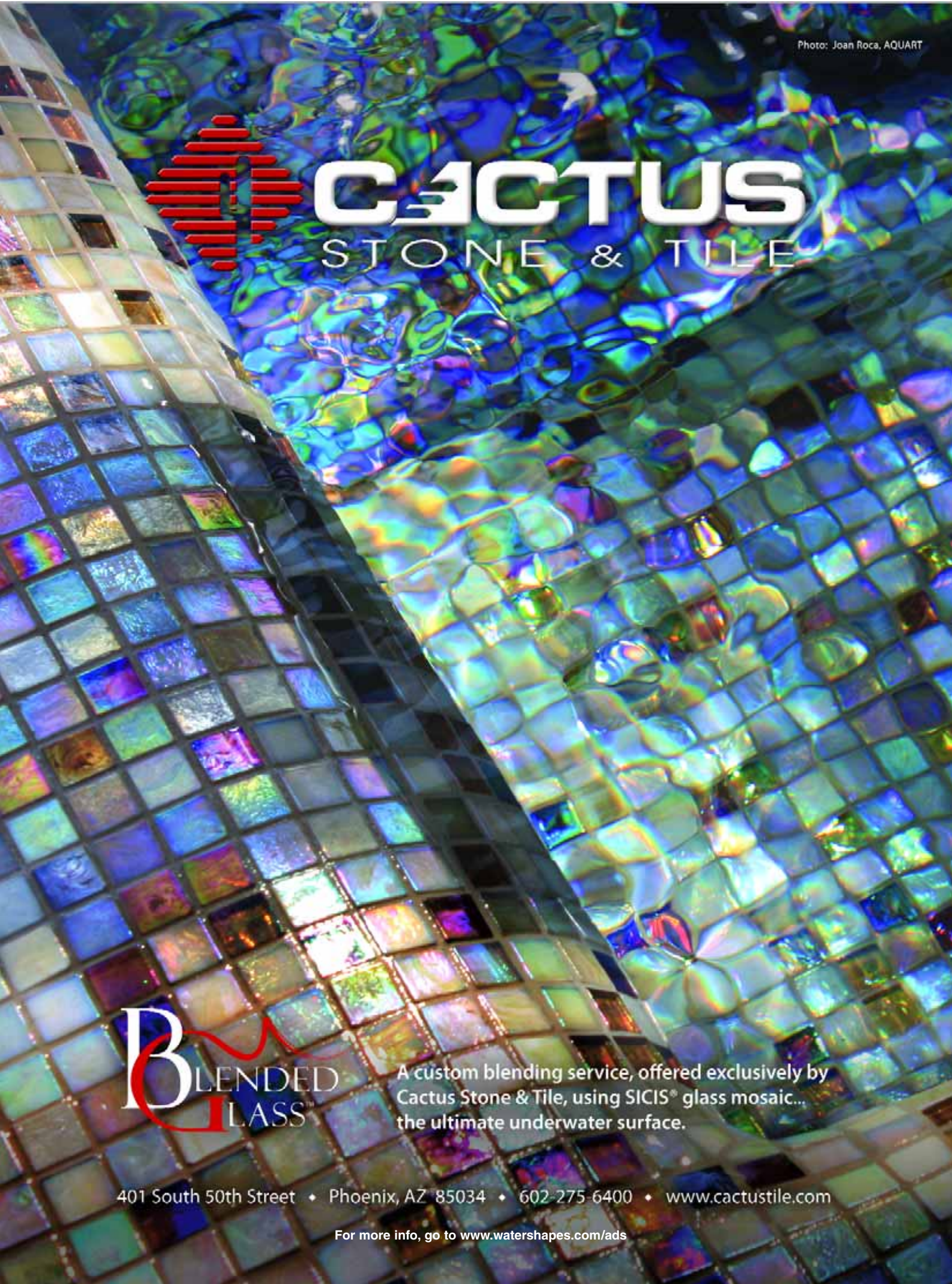
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In This Issue

August's Writers

Bob Dews is founder and president of Xstream Ponds in Cashiers, N.C. His focus is on designing and engineering watershapes that emulate the natural streams and cascades of the mountainous areas where he lives in western North Carolina, and he credits the abundance of these natural waterfeatures for his past and continuing education in the field. During the past several years, Dews has conducted seminars and written extensively in the pond industry to help educate the trade about the importance of "naturalizing" artificial water systems. When not designing and engineering his distinctive brand of watershapes in the Blue Ridge Mountains, Dews and his family operate a small motel they own in Cashiers.

Paolo Benedetti is founder and principal at Aquatic Technology Pool & Spa (Morgan Hill, Calif.), a firm dedicated to the design and construction of luxurious residential watershapes and exterior environments. He earned a degree in business management from California State University, San Jose in 1984 and has continued his education in watershape design and construction through courses in materials science, art history, architecture, color theory and many other topics. Among his accomplishments, Benedetti was one of the first designers to be certified by the Society of Watershape Designers through the Genesis 3 Design Group. He has performed countless forensic case studies involving failed pool structures, consulting for property owners and contractors alike, and is also a prolific writer, having written numerous technical articles for pool and construction trade magazines including numerous past contributions to *WaterShapes*. Benedetti is currently an instructor in the Genesis 3 construction schools and is a Genesis 3 Platinum member.

Stefan Kanetis is the founder and CEO of Hidden Water Pools, a San Diego-Calif., firm specializing in moveable deck systems for residential swimming pools. A career inventor and self-taught machinist and engineer, he holds numerous

patents for his inventions, including one for a 500-ton press used to make decorative glass – the largest machine of its type in the world. Raised in England, Kanetis moved to Costa Mesa, Calif., at age 17 and soon began developing a variety of machines for a range of industrial applications. **David Stone** is president and COO of Hidden Water Pools. A native of Pittsburgh, Pa., he earned a bachelor's degree from Penn State University with a concentration in business logistics. He has founded two multi-million dollar companies; serves on various advisory committees and boards of directors; and has been an angel investor in several start-up companies. Stone has also been featured in the publication *Walking With the Wise* along with other successful entrepreneurs.

Mark Holden is a landscape architect, contractor, writer and educator specializing in watershapes and their environments. He has been designing and building watershapes for more than 15 years and currently owns several companies, including Fullerton, Calif.-based Holdenwater, which focuses on his passion for water. His own businesses combine his interests in architecture and construction, and he believes firmly that it is important to restore the age of Master Builders and thereby elevate the standards in both trades. One way he furthers that goal is as an instructor for Genesis 3 Design Schools and also as an instructor in landscape architecture at California State Polytechnic University in Pomona and for Cal Poly's Italy Program. He can be reached at *mark@waterarchitecture.com.* **Jim Bucklin** is a professional salesperson and project manager specializing in providing solutions that are environmentally beneficial and make good economic sense. He holds a bachelor's degree in philosophy from the University of California at Santa Barbara and enjoys making even small contributions to the sustainability of the planet and improvement of our society. At the time of the Village of Hope project, he was an estimator for Richard Cohen Landscape & Construction of Lake Forest, Calif.

I recommend giving gifts that are integral parts of projects – unexpected features of some kind that clients don't know they're getting in addition to contracted details.

Giving to Receive

By Brian Van Bower

The notion that we should do all we can to exceed client expectations is one we hear trumpeted in almost every inspirational business seminar and in nearly every keynote speech during trade shows.

There are very good reasons for this: After all, when you perform beyond your clients' expectations, they're far more likely to be pleased with the process, more reasonable in their requests and, ultimately, readier sources of the referrals that will keep your business hopping. Not only that, but there's also something wonderful in making people happy – if for no other reason than in doing so, we tend to make ourselves happy as well.

In the watershaping world, conjuring those good vibrations is right up there for me alongside doing the work itself to the highest standards. Yes, we all need technical expertise, but as I see it, when you combine that competence with top-notch client relationships and a winning personality, you're basically unstoppable – even in the toughest times.

Through the years, I've learned a simple extra step in the relationship-building process – one that cinches the positive impressions I always try to make and that invariably ends up making my clients very happy indeed: I give them *gifts*.

throw it in

In raising this concept of gifts, I'm not referring to bottles of champagne or dinner out at a nice restaurant to celebrate completion of the job. Those are good thoughts, but they're not what I'm recommending here.

Rather, I'm after gifts that are integral parts of projects – unexpected features of some kind that clients don't know they're getting in addition to contracted details. My aim here is to surprise them with these bonuses at the end of our on-site work.

It could be in the form of spray jets on a deck, for example, or LED lights that change colors. Maybe it's a foam jet in a shallow lounging area or an added fire feature or a dimmer on the lighting controller or something as simple as an extra sleeve for an umbrella – or the umbrella itself. It helps, of course, to find something that you believe the clients will like, so what I often find myself doing is making mental notes about items they've brought up in passing or have deleted from their initial wish lists for one reason or another.

Why on earth, you might ask, should I give away money that way, especially if I'm bound and determined to make the clients happy anyway?

As I see it, you're not really "giving away" anything. First of all, a complementary add-on that doesn't gut your bottom line should be easy to find if you're in the practice of doing accurate take offs in the estimating process. Armed with a complete and accurate understanding of your material costs, labor, markups and profit margins, you can either choose to insert a line item for a gift, factor it into your markup or simply decide to make a bit less on a given project.

This accuracy is good business practice anyway, but when it comes to going the extra mile for your clients, good take offs

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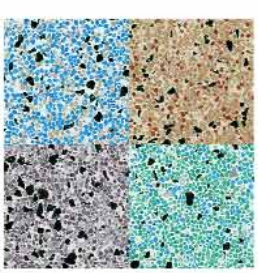

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and estimates help you know exactly what it'll cost to make your clients very happy indeed. Yes, I know some people who can look at a set of plans and almost instantly determine a price, but I've always believed in being very precise in estimating in the belief it gives me greater control over the entire process. My point here is no matter which way you choose to manage your business, I would argue that the costs of giving your clients a gift are far outdistanced by the benefits.

In fact, once you try this, you'll be amazed at what it does to your clients' mindsets and attitudes. I've found that not only are they happy, but they will almost instantaneously become the world's strongest advocates for you and your business. It's as if they just can't wait to advise their friends, relations and associates to give you a call.

In that sense, giving gifts and surprising clients with them is a straight investment in marketing and in building future business – one that is far more effective than any form of advertising or promotion I've ever found, bar none.

My own first experience with building a surprise gift into a project had to do with including four foam jets in this pool. Although it ended up being a more generous proposition than my partner or I thought it would be, this gesture set a pattern I follow and recommend to others to this day.

a toe in the water

My first foray into gift giving came back in the day when I built watershapes with my partner, Lars Wiren. He and I were both committed to the idea of making clients happy in ways that went beyond just doing a good job with respect to design and construction.

Lars, in fact, was something of a role model to me in going absolutely out of his way to do anything and everything he could to respond to clients' concerns in ways that fostered their comfort with the construction process. He returned calls immediately, listened to any and all concerns and never, ever left clients hanging. He was also truthful in discussing time frames – and when anything went wrong, he took responsibility and corrected the situation as quickly as possible.

As a team, we always focused on outperforming other businesses in communicating with our clients and in our on-site practices – and we had the referral business and client testimonials to prove our success along those lines. Even so, we were always on the hunt for ways to elevate our game in our clients' eyes, and we decided at one point to surprise a pair of them in a substantial way.

It was a wonderful project for a great couple, but the site had been less than fully cooperative: The soil was unstable, and we'd needed to install the pool atop a system of piles while also thickening the decks. As a result, the project had cost enough that, even though they stretched and kept a number of nice features, they'd definitely felt the pinch.

It was a cool project from end to end, with a large, shallow lounging area, nice lighting, a sheeting water effect we installed in the chimney of an existing outdoor fireplace/barbecue structure and a tile catch basin below the weir flowing into a spa that, in turn, appeared to spill over into the pool across an acrylic window. It all worked beautifully in the setting.

At that time, Genesis 3 was still a young organization and had just started what has proved to be an enduring relationship with the folks at Crystal Fountains of Toronto. As we all learned more about fountain technology, I began to think about ways of including fountain effects in swimming pools – and then it hit me: I called Lars and we quickly decided that we'd include something cool in this project as an experiment for us but also as a surprise gift to our clients.

With that settled, we asked the technical people at Crystal Fountains if they could modify their foam jets for flush mounting in the shallow lounging area. Being cooperative and creative souls, they came up with a modified component that was perfectly suited to the task. It was all going so well, in fact, that Lars and I decided to install four of them in the lounging area – and not to inform our clients about the addition until we turned the pool over to them.

We found that setting up the system was more involved than we thought it would be and so made the gift a bit more generous than we'd originally intended, but ultimately we completed our work and hid the nozzles so well that they were basically invisible on the big day.

the big moment

It was standard procedure for Lars and me to make a production out of demonstrating completed systems to our clients. We'd always present them with books of documentation that included sheets on every piece of equipment as well as plumb-

"I don't know where all of this is going to end up, because it's kind of been like riding a locomotive that's out of control."

— RANDY BEARD

The WaterShapes Interview

Randy Beard's Remarkable Watershaping Journey

Randy Beard, owner of Pure Water Pools in Costa Mesa, Calif., has built some of the most spectacular watershapes in Orange County—including the #1 Extreme Pool on HGTV's "Big Splash." Not bad for a guy who started out as a pool service technician at the age of 19.

To read the interview with Randy Beard, go to www.watershapes.com and click on Interviews.

WATERSHAPES ONLINE

ing plans and numbers (mostly ours) clients could call with questions or problems. On site, we'd go over every feature and show how to operate them in detail – and left plenty of time for questions, repetition of key points and letting everything sink in.

This process typically involved a bottle of wine – one of the many reasons we almost always scheduled these sessions for the afternoon – and we did all we could to make these events both upbeat and fun and yet another way to build a sense of happiness into the process.

In this particular case, when we were all finished with everything, we paused and said, "By the way, there's something else we want to show you." At that point, Lars pushed a button, and suddenly, four beautiful, two-foot-high plumes of water emerged from the lounging area.

The clients were stunned and immediately asked why we'd done all this. We simply said, "We thought you should have this," and then proceeded to tell them about the fountain jets and how to operate them. As they began to appreciate what we'd done, he asked how much it had cost, to which we said, "Nothing at all: It's a gift."

At first, they didn't quite believe it, but as the news sunk in, the delighted smiles on their faces spoke volumes. Not only did they love their new pool and think well of how we'd performed, but they had also become friends for life.

Shortly thereafter, Lars and I received a call inviting us and our wives to a dinner party. We showed up to find that the clients had invited two other couples for a lovely dinner, some good wine and a fantastic evening. Best of all, our clients made a huge point telling their friends that they absolutely should work with us when the time came to build their own pools.

From that point forward, it was as if we had engaged the services of an independent marketing firm. This couple referred everyone they knew to us, and to this day they're still great friends and amazing advocates for our work.

In this case, the gift was quite generous, given custom components and our learning curve. But when I consider the ultimate payback with respect to new business and good will, the investment yielded returns manifold times greater than the original cost.

As a designer, I can only advise those building my projects to follow my gift-giving lead. In this case, builder Ed Iannarelli went above and beyond by including a number of fiberoptic 'stars' in the lounging area of this pool at no charge – a gesture that may have played a role in the nice tip he received once his work was completed.

From that point forward, Lars and I were always on the lookout for gifts we could include in our projects. To be sure, few were ever as costly or complicated as that first one, but nonetheless, every one of them resulted in the positive responses we were after – and in additional business.

working for others

My partnership with Lars Wiren ended years ago and I only do design work these days, so including gifts for clients is much more difficult for me now. More often than not, however, I encourage the contractors who execute my designs to give it a try. Consistently, those who do report that it's worth the effort and the expense.

Case in point: I recently designed an elaborate waterfront project for a couple in the Daytona Beach, Fla., area. The pool included a large, shallow lounging area that spilled over a vanishing edge into a pool with a broad, radiused vanishing edge. There was also a separate circular spa with a perimeter overflow, an associated fire feature and a step-down overflow from the spa into the pool.

There were supposed to be two planters in the space between the lounging area

and the pool, but the clients decided to place fire features there as well. Completing the package, there were to be laminar jets arcing from the deck onto the lounging area, which also includes foam jets similar to those described just above. Suffice it to say that these clients wanted a complex and impressive list of features.

The builder for this project was Ed Iannarelli of Ed's Spas, Solar & Pools (Ormand Beach, Fla.). He's a great guy, and throughout the project I was impressed by his attention to detail and overall performance. (Sometimes I'm disappointed by the companies my clients choose to execute my designs, but in this case it was the opposite: Iannarelli is definitely one of those who "gets it.")

I ran into Ed at a trade show in February 2009, where he told me that, at the end of the project, the clients had given him a $10,000 tip!

Clearly, Iannarelli had exceeded their expectations and then some. He told me that, in addition to all the features designed into the project, he had also – on his own without consulting me or the clients – decided to install a set of color-shifting fiberoptic "stars" in the lounging area. It was a gift, he said, that he'd used to surprise the clients at the conclusion of the project.

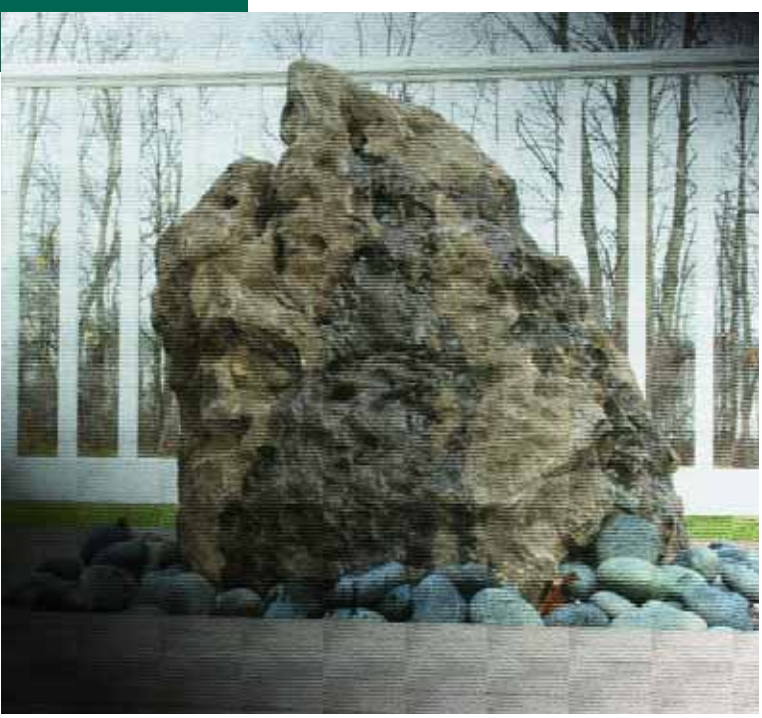
Whether or not the gratuity he received was entirely the result of his gift to the clients, I can't say for sure. There is no question, however, that it was part of a job done to near perfection and with outstanding client service and communication throughout. The gift was part of a great picture, in other words, but I like to think that Ed's generosity was the proximal cause of his clients' returning the favor.

If I have one final recommendation when it comes to this form of gift giving, it's that you need to do it with *panache*. Watershaping is all about luxury, pleasure, excitement and enhancing our clients' lifestyles. We create art by creating spaces where life happens, where play and exercise happen, where fun and happiness occur. So when you give a gift, be sure to do it with joy and enthusiasm and a sense of ceremony – and do your level best to make it a surprise: It's the proverbial icing on the cake.

Of course there are no guarantees that this approach will result in referrals or tips or any other sort of reciprocal gesture, but based on my experience and what I've heard from others, my hunch is that when you give a little, you stand to receive much, much more in return. WS

Brian Van Bower runs Aquatic Consultants, a design firm based in Miami, Fla., and is a co-founder of the Genesis 3 Design Group; dedicated to top-of-the-line performance in aquatic design and construction, this organization conducts schools for like-minded pool designers and builders. He can be reached at bvanbower@aol.com.

On the Level



What heartens me is that, despite the tough economy, people are *still* calling and *still* want to beautify their properties, even if they're pursuing the possibilities in unusually cautious ways.

Pint-Size Inspiration

By Bruce Zaretsky

I must say that I look forward to receiving my own copy of *WaterShapes* in the mail each month. It's *not* because I can't wait to see my own columns in print; rather, it's because so I'm amazed and inspired by the work watershapers put on display here that I always devour each and every page.

That's not, by the way, anything I'd say about the rest of the 30-odd trade magazines I receive via mail or e-mail. *WaterShapes* always seems to deal with the best of the best, and reading about how these incredible projects come together is a constant source of fascination and encouragement to me.

In surveying these articles and attending trade events (where I've gotten to meet many of the phenomenal watershapers who participate in the magazine), I'm stunned by the scope, scale and intricacy of the systems they describe. But what *really* gets me are the small things – the details, the grace notes, the brilliant touches, the intimate treatments of space, volume and light in small areas within overall projects. *This* is where I find all sorts of ideas I can readily apply in my own design and construction work.

Having such a fertile resource at hand is particularly helpful these days, when so many prospective clients seem to have stopped thinking big. Time and again these days, in fact, I'm called in by home- or commercial-property owners who want no more than a little "something nice" for a specific corner of a property or a waterfeature for the space right next to the front door.

going small

I know consumers in my region aren't alone in pursuing this sort of fiscal retrenching, which is why I haven't been surprised to see compact features receiving greater coverage in *WaterShapes* of late. For commercial and residential clients alike, these more modest projects represent less of a financial risk in uncertain times.

What heartens me is that, despite the tough economy, people are *still* calling and *still* want to beautify their properties, even if they're pursuing the possibilities in unusually cautious ways.

There's another factor at work here, too: Indeed, as I see it, the current economy has smacked into another reality I've confronted in my area for more than a decade now: The fact is that lots of residential and commercial clients – even the most upscale among them – are living or working in places where space comes at a great premium: Parcels are smaller, houses and building footprints are bigger and many of these homeowners and commercial clients simply aren't playing with that much open exterior space.

The combination of these two factors is something that makes me glad that small-scale waterfeatures have been a big part of my professional life for several years now. Indeed (and as I trust the projects reviewed here will show), it's reached a point where I've come to see these scaled-down projects as a vibrant genre filled with their own potential for phenomenal creativity.

Let's take a look at a few of them to get an idea of just how broad these opportunities can be:

The Power of Transformation

For more than a decade, the Genesis 3 Design Schools have influenced the professional lives of hundreds of watershapers. It's an unfolding story of elevation and transformation best told by those who've experienced 'life after Genesis.'

Come join us in La Jolla!

Elements of Construction

October 8-10, 2009
La Jolla, California

In keeping with our mission of advancing education on a global level, we are pleased to offer our three-day Elements of Construction course as the latest component in our design-certification program.

The school's curriculum covers plan review, excavation, layout, soil and drainage, steel placement, plumbing, utilities, gunite, tile and coping, decks and drainage, plaster and start-up and includes the Genesis 3 Edge Program as well as a key roundtable discussion. All sessions are taught by top-flight tradespeople, designers and engineers from the watershaping industry and beyond.

Fees: $3,900 includes four nights' accommodations, meals and course materials. (If a spouse or guest joins you, an additional fee of $1,150 will be charged to cover accommodations and meals).

Basic Perspective Drawing: An Eight-Hour Workshop

October 7, 2009
La Jolla, California

Before the next Elements of Construction school convenes, David Tisherman will lead an eight-hour, entry-level class in 'Basic Perspective Drawing.' This workshop will cover the essentials of one- and two-point perspective and introduce skills needed to communicate visually with clients, contractors and fellow designers. (Note: This class is a prerequisite for Larry Drasin's 'Design Communication – Measured Perspective,' a 20-hour course that will be offered in Las Vegas in November 2009.)

Fees: $799 ($699 if also attending The Elements of Construction); includes one hotel night and meals.

Don't miss us at the International Pool|Spa|Patio Expo in Las Vegas, November 13-18, 2009!

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Design Communication: Measured Perspective
Instructor: Larry Drasin

The History of Water in Architecture
Instructor: Mark Holden

Advanced Fluid Engineering
Instructor: David Peterson, P.E.

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Instructors: Anthony Archer Wills & David Duensing

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Rain Chain: This one couldn't have been more straightforward. At a garden show several years ago, we set up a pool house of which one side was a wall that served as part of a raised pool. The pool was overhung by part of the roof, which had been rigged with nozzles to create a rain effect using circulated pool water.

On the opposite side of the roof, we hung a simple rain chain that dropped down into a ceramic container. Our goal was to balance what was happening with the rain curtain, but we didn't give the rain chain much thought until someone approached us and asked if we'd install something similar with his pergola. We jumped at the chance.

First, we carved out the top of a small boulder, then set it atop a basin in which we placed a small pump. We ran plumbing up one of the columns and placed a nozzle in such a way that water seemed to issue from vines we'd trained onto the pergola before flowing down the rain chain.

The pergola is quite large (about a 25-foot span) and covers the entire patio area at one corner of the house. The trickling sound the flow down the chain generates is perfectly tuned to the setting – enough noise to be soothing, not enough to make conversation difficult. So for a cost of less than $1,000 seven years ago, the client now has what has become the backyard's most desirable area.

Tsukubai: This traditional water-feature from Japanese gardens was originally meant to serve as a place for washing hands before entering a home or its gardens. They make strong impressions in small gardens – quite beautiful while producing nice sounds and taking up very little space.

For this particular client, we purchased the bamboo tsukubai from an online service and decided to fabricate the bowl into which it would spill on our own. I chose an egg-shaped boulder about 24 inches long and 18 inches tall for the purpose and, using a gas-powered cutoff saw, a diamond grinder and stone chisels, carved out a good-size depression. We then core-drilled through the rock and

installed a small light fixture beneath the basin so the surface of the water would glow at night.

The bamboo tsukubai is mounted on a boat-shaped boulder that sits behind the egg-shaped bowl rock, giving the whole composition visual weight and lending it a sense of permanence. Beneath all of this is an off-the-shelf basin supplied by Aquascape (St. Charles, Ill.).

The simple design of this feature – once again quite inexpensive – plays very well into the Japanese theme of the entry garden to this home, which is located on one of the Finger Lakes in upstate New York.

Dolphin Fountain: Several years ago, a long-time client called to let me

know that he'd purchased a dolphin sculpture at an antiques shop while on vacation and wanted to know if I could "do something with it."

That sort of request can be pretty scary, because there's so much cheesy stuff available in the marketplace that you never know quite what to expect. In this case, however, the client had a good eye. Better yet, we discovered that the sculpture had originally been a fountain and just needed some help to become functional again.

To make the dolphin stand out in the setting, we built a simple, stacked-bluestone pool surround fitted with an EPDM liner of the sort commonly used in pond installations. To lend variety to the experience, we programmed the pump to run at varying hours of the day so that the water spent some time daily as a reflecting pool as well as a splashing fountain. We also installed low-voltage lighting at ground level and in an overhanging tree to give the space some nighttime pizzazz. The results were outstanding, and the rehabilitated dolphin performed to perfection.

The client subsequently moved away, but about a year ago I received a call from the new owner asking me to come by and review the lighting on the entire site. The first thing I did, of course, was turn on the fountain to see how it was doing, and it worked just fine – enough to remind me of how much I'd liked both the sculpture and what we'd done with it all those years before.

Soundgarden: In my many years of building displays for the Rochester Flower & Garden Show, few stand out in absolute silliness as much as the one we dubbed "Soundgarden."

Basically, it was a walled English-style garden in which we placed musical instruments in various poses – including a full-sized harp that I spent countless hours stringing with side-emitting fiberoptic strands.

The centerpiece (literally) was an old tuba we cut up and installed above a large cobalt-blue container. Water didn't just trickle out of the tuba: It *poured*, and this visual effect, coupled with the crash of the water into the basin below, was as dra-

matic as it was silly. (It also earned us a Best of Show award – something about which I'd never complain.)

This has always been a favorite of mine because one of my knocks on designers is that too many of them take themselves and, worse, their *work* far too seriously. This display was both whimsical and silly and had the virtue of being compact: Where a 15-foot tuba-centered fountain would almost certainly have pushed the limits of good taste, in an appropriately small scale, it's both delightful and fun.

Bluestone Scuppers: A few years ago, I designed all of the exteriors for a clients' new Arts & Crafts-Style home. In the original plan for a stone balcony just outside the first floor's master bedroom, I had set aside space for a "waterfeature," but I hadn't specified what it would be.

As the work continued, I recognized that I had to come up with those specifications sometime soon: We were about to set the base for the balcony and I needed to figure out the plumbing. In a lucky break, I happened upon some beautiful chunks of bluestone – each about six inches square and of varying lengths. Inspired by the work of David Tisherman and others who work sublimely with spillways and scuppers, I decided to turn these blocks into something unique and special.

Using a cutoff saw, I scratched and then chiseled channels into the stone. I then core-drilled the stones to accept plumbing feeds and lined the channels with thin copper flashing. Now the water spills out of the scuppers and disappears into a bed of black pebbles set atop off-the-shelf catch basins, then it flows below the wall and into a catch basin equipped with a submersible pump.

Three individual valves allow for adjusting the flow to any desired rate. We also installed up-lights to catch the water streams at night. (I like this project so much that I'll be covering it in greater detail in an upcoming column.)

Deck Waterfeature: We build a lot of decks for our clients, but I'm not content to do the same thing over and over again. That's why I asked these clients how they would feel about a "feature" for their deck without telling them what it would be (at least not at first). It was a large deck (more than 1,000 square feet), so I knew we could easily take up some space with what was to become a waterfeature centered on a large boulder.

Our local stone supply includes some dynamic specimens we call "moonrocks." They're riddled with holes and pockmarks that look wonderful when water flows across their surfaces – almost as though the water is quite literally flowing out of the stone's interior.

Beneath the deck, which was overbuilt under the stone to support its one-ton heft, we installed a plumbing-control panel that allows the homeowners to alter the flow from light to heavy. We then core-drilled the stone in several places, with the multiple outlets making it seem as though the surface is alive with water.

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All of these waterfeatures, although small in scale and generally modest in ambition, are unique to their sites and create dramatic impressions – and have done so without breaking these clients' budgets. Although larger watershapes are amazing to behold and wonderful sources of inspiration, they're not our *only* option! WS

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Lighting systems left unattended for years at a time in the rigors of an outdoor environment can be rendered either ineffective or even inoperable.

Light Service

By Mike Gambino

I'm always surprised when I run into clients or prospects who don't appreciate or fully accept the fact that landscape-lighting systems require routine maintenance. These are people who easily recognize the need for upkeep when it comes to their swimming pools or landscapes, but this perception simply doesn't extend to the lighting systems that frequently go along with them.

I suspect this is so because dealing with lighting inside a home is so simple – basically just a matter of changing burned out bulbs as the need arises. Some also believe that landscape light bulbs should and will last forever, which is unfortunate, because lighting fixtures in the landscape are much more exposed than indoor fixtures and face a variety of conditions that can render them less effective in fairly rapid order.

Light bulbs used outside, for example, are exposed to extremes in temperature, degradation of their reflectors from ultraviolet rays and shock (as when fixtures are kicked by gardeners). There's also the fact with halogen bulbs that, even if they are still lighting, they should generally be replaced after two years or so because they lose a good measure of their efficiency and light output while still consuming as much energy as a fresh bulb.

This is why I always make the case for regular maintenance in discussions with my clients – before, during and after installation – and for using my firm to do the work. I see this as a major win/win scenario: Not only do my clients protect their investments (which can be considerable on large projects), but it also enables me to reconnect with them periodically, gauge the performance of installed systems and make adjustments that keep the lights doing their job of enhancing these landscapes after the sun goes down.

wear and glare

My maintenance-related discussions with clients are usually uncomplicated, as I've found that it doesn't take much to convince most homeowners of the wisdom of routine service.

First, although maintenance is critical to the welfare of any landscape-lighting system, it's not an intensive or expensive proposition. In fact, where a pool or a landscape might require weekly service, a lighting system can get by with visits at intervals of every four to six months or so. And during those visits, the tasks involved in keeping things going are rarely complex or time-consuming.

By contrast, lighting systems left unattended for years at a time in the rigors of an outdoor environment can be rendered either ineffective or even inoperable. I've found that it's fairly easy to get this point across: Indeed, all it takes is a little explaining of the whys and wherefores of the situation to get homeowners to understand the need and come aboard with service plans.

Although (of course) the specifics will vary from client to client and setting to setting, I generally start these discussions by getting homeowners to consider the fact that landscape- lighting fixtures are inevitably exposed to water in the forms of both irrigation, rainfall and, in colder climates, snow. Yes, the fixtures are designed to withstand moisture, but this resistance doesn't mean that calcium deposits won't start forming on lenses and

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dramatically diminish light output.

Then there's the fact that, by definition, landscape lighting exists in the presence of plant materials that will grow and eventually interfere with fixtures' outputs. The plants will also drop material onto the fixtures (or will serve as perches for birds that leave behind a different sort of mess). And when fixtures are mounted on trees or other substantial plants, growth will have an effect on their angles and placements – and on their mounting hardware as well.

Finally, there's the human element. Through the years, I've found that gardeners and homeowners who work in these spaces pose what is possibly the greatest peril to lighting fixtures. They'll accidentally knock them out of place with rakes, hoes or shovels; bury them with mulch and debris deposited by their blowers; and seem to have a wonderful knack for adding new plants that completely block the light.

I also encounter do-it-yourselfers who try to save money by undertaking their own maintenance programs: Quite often, they'll change lamps with models of lesser quality or different wattages and beam spreads. (In my experience, rare are the clients who do accurate, adequate and effective jobs of taking care of their own systems!)

a basic regimen

Clearly, all of these issues disappear with regular service – a routine consisting of a few simple steps that can make the difference between a system that performs as designed and one that becomes both inefficient and ineffective.

Cleaning: As is the case with most electrical devices, lights work better and last longer when they're clean. With fixtures, this is a simple matter of clearing away debris in the form of leaves, mulch or soil that accumulates on their shields or baffles. (Not only does this accumulation disrupt light output and sap the useful life of the fixture, but it can also pose fire hazards in some cases.)

We'll also clean the housings and remove deposits from lenses by carefully scraping them with razor blades. Lenses are always made of tempered glass, so they aren't damaged by this type of cleaning. Better yet, a good lens cleaning can make a real difference in light output – upwards of 30 or 40 percent in many cases!

Pruning and trimming: This might seem an obvious point, but when plants grow, they often block out the light or create hot spots in the landscape. Indeed, it's not unusual for us to come back to a recently planted area six months after the fact and find that nearly all of the lights have been compromised to one extent or another.

With that in mind, we judiciously prune plants around fixtures – especially with young landscapes in which plants are striving toward mature size.

In all situations, we pay special attention to lights mounted on trees: The growth in girth of branches or trunks often requires us to adjust mounting hardware – which is not only important for the lighting scheme, but also prevents the hardware from damaging trees as they grow.

Routine maintenance is important with halogen bulbs in particular, because their performance declines in time despite the fact they keep on consuming as much energy as ever. We recommend swapping old lamps for new ones every two years.

Adjusting and retesting: As landscapes mature, we frequently find it necessary to fine-tune the aesthetics of our lighting systems by adjusting beam angles or repositioning fixtures during daylight hours. This is actually fun, as it gives us opportunities to tinker and enhance our clients' enjoyment of their outdoor spaces.

Along more technical lines, we also check amperages on all cables at their transformers. I recently returned to a project, for example, where half the lights were out in one area of the yard. That seemed odd, because it rarely happens that all lamps on the same circuit will burn out at the same time. As it turned out, the circuit read at more than 28 amps, tripping the circuit breaker inside the transformer. This led me to suspect that the client had been doing some maintenance on his own, and in fact he had replaced a line of 20-watt and 35-watt lamps with 50-watt versions that overloaded his system.

The fix was simple: We replaced the lamps with ones with proper wattages and reset the breaker, at which point the system came back to life. As so often happens when homeowners try to save money by doing things themselves, he ended up incurring substantial (and needless) expense in tackling the job on his own.

Repair and replacement: Fixtures are exposed to the elements, gardeners and the occasional aggressive pet or child, so sometimes they suffer damage that will require replacement. (Stray swipes of a powered hedge trimmer or shovel are often the culprits on occasions when significant work has been done to the landscape, and it never ceases to amaze me how much damage a determined pooch or spirited child can do.)

It rarely takes much figuring to determine the source of the damage, which is usually obvious with a quick visual inspection. The interesting thing is that the problem only rarely has to do with the wiring, even if it's just direct-burial cable rather than conduit. (And even if a cable is damaged, that, too, is usually only a mild challenge because we design systems with simple troubleshooting and repair in mind.) Whatever the issue, we simply deal with it and restore systems to full function.

As you can see, none of this is a very big deal at all if clients have decided to go with regular service visits.

work revisited

I've emphasized over and over again that lighting service is about as straightforward and simple as can be, but I haven't gotten to the best part of the arrangement, which has to do with the special benefits that flow from setting up these programs.

First, routine maintenance means that systems will perform correctly and as expected. These clients' landscapes will be both visible and enjoyable at night, and their investments in beautifying their homes will not be wasted. If clients are

Routine cleaning of landscape fixtures isn't complicated – all it takes is some careful scraping and a bit of elbow grease to restore them to optimal appearance and performance.

The output of lighting fixtures is often obscured by the growth of surrounding plants – an issue we take care of quickly with some judicious pruning.

happy, I've done my job and the systems we've installed and continue to maintain will serve to improve the quality of their lives. In other words, properly maintained systems represent us well.

As I see it, maintenance visits also give me opportunities to reconnect with my clients – a simple form of contact that often leads to system expansions or adjustments aimed at improving performance and appearance. Not only that, but these ongoing contacts help my referral-based business keep rolling along: Our best calling card is the work itself, and when our projects look good and perform as desired, our clients are happy – and so are their friends and relations who might want similar installations for their homes.

What I've found is that service calls also trigger homeowners' recollection of the fact that someone they know has expressed interest.

I'll go so far to say, in fact, that this strategy of revisiting past projects is a great way to keep business hopping, even in tough times. The service in and of itself is not a big moneymaker for us, but the opportunity these calls give us to update and expand systems as well as pick up the occasional referral is worthwhile and provides us with a steady flow of work. Furthermore, it's a service our clients need.

(I also see this "reconnecting strategy" as something that would work for wa-

In the Pipe

For the majority of my career in designing and installing landscape-lighting systems, I used direct burial cable – and seldom have I run into problems with lines being cut. That's due in large part to the fact that I take simple protective measures, such as installing lines next to the edges of hardscape, where they're less likely to be disturbed or damaged.

Recently, however, I've made a significant switch and now install wiring only in conduit.

Here's why: First, with conduit, what little chance there is of damage dwindles almost to zero. Second and more important, using conduit dramatically eases the process of eventually expanding lighting systems.

After clients have lived with their systems for a while, it's not uncommon for them to call and ask me to add more fixtures to enhance their nighttime pleasure. If lines are buried directly in the soil, such an expansion means re-digging runs and adding new lines, which can be a problem in mature landscapes: Disrupting the scene means compromising enjoyment for a time.

With conduit, by contrast, we can often install new runs by pulling new lines through existing pipes, which takes a small fraction of the time and offers little of the mess involved in retrenching. This is why it is now my practice to upsize conduit sizes, the idea being that I might need the extra space later on.

– M.G.

tershapers and landscape professionals who might be struggling for new work but have long lists of past clients who might want system enhancements or upgrades or be interested in pursuing additional improvements for their properties. It makes sense that installers who are also involved in service have a major step up on those who finish their work and then never see their clients again!)

One more thing: I see making routine maintenance calls as an opportunity to learn. Through the years, for example, I've been able to determine which suppliers' products perform best over time, which in turn informs my equipment recommendations. This sort of information also makes me much more persuasive in working with clients who want to compromise on quality and helps me steer them in better directions.

On top of that, revisiting projects has helped me refine my design skills by enabling me to see at first hand which effects stand up as landscapes mature and clients' tastes and desires evolve with ownership and they develop new ideas and wish lists of their own. Perhaps most important, I get to watch plants grow and thereby develop an understanding of the effects these changes have on my work – an invaluable edge because it helps me "see" landscapes as they will look in the future.

Finally, on a personal level it gives me great satisfaction to visit clients and ensure that they are experiencing my lighting systems as they are intended to be – at peak levels of performance and maximum efficiency.

open dialogue

That last point is, I think, critical: The fact is, everyone's landscape-lit yard looks good on completion day, but the key is anticipating how it will look six months or six years down the road. Unless you remain involved with settings you've designed, you'll never know how things unfold.

By providing reliable service, you not only guarantee your clients and yourself that the system will continue to perform as it did when first installed, but in many situations can also be made even more beautiful and interesting.

The key, I think, is speaking with clients about the importance of regular maintenance, early and often. That way, they won't be surprised when something happens: They'll simply know to give you a call – and they'll be far less likely to do it themselves or have their gardeners take up the task. You're part of the picture into the future and a resource they'll rely on as needed.

Nobody expects to drive a car without having to maintain it or use a swimming pool without regular service. Landscape lighting is no different: Routine maintenance should be a no-brainer, because both you and your clients have everything to gain and nothing to lose. WS

Mike Gambino owns and operates Gambino Landscape Lighting of Simi Valley, Calif. A licensed lighting contractor since 1990, he has specialized since 1995 on high-performance low-voltage systems. He may be reached via his Web site: www.gambinolighting.com.

Swimming with Nature

For years, pond/stream specialist Bob Dews has sought perfection in the art of creating naturalistic bodies of water. Just last year, however, a client challenged him to reconsider his usual approach to pond design and develop one expressly for swimming. The result seen here is a composition in rock, plants and water that, rather than serving as a home for fish and aquatic life, is instead a safe environment for people – and lots of aquatic fun.

By Bob Dews

It's no secret that many homeowners who have ponds on their properties use them to cool off or even for swimming. These bodies of water are seldom intended for such purposes, but because of humankind's affinity for water, the fact is that ponds often become "swimming holes" in which people are happy to take the occasional refreshing dip.

At Xstream Ponds (Cashiers, N.C.), we've built our ponds to date strictly for their decorative value. We've made them play host to fish and other creatures, and it has never been our thought to design them with bathers in mind – until last spring, that is, when a couple approached us with a simple mandate: They wanted their pond to be suitable for swimming.

It was the first time I'd ever received such a request, and I was a bit surprised by how challenging it was simply to wrap myself around the *concept*, let alone design and install a pond that would be safe, beautiful and, most of all, fun for them and their extended family.

As described here, the result is a hybrid between a pond and a pool. On the one hand, the vessel has many of the characteristics of a pond, including use of a liner, stone finishing material, extensive plantings and a large waterfall. On the other, the stone material was selected and placed to be conducive to safe entry and egress from the water, and the design includes a number of play features that are much more closely associated with pools than ponds.

A Family Place

The clients live on a 50-acre homestead horse farm in Cashiers that dates to the 19th Century. Typical of the area, the site includes both heavily wooded hills and expanses of pasture land that in this case have been manicured nearly to golf-course standards.

Through the years, they've turned the place into a compound, and it is their intention to keep it in the family and leave it to their children and grandchildren. Those grandchildren spend large parts of summer here, so the clients are interested in having ample places for them to play and enjoy the surroundings.

The property includes a large, natural pond surrounded entirely by grass. At first, the clients thought that perhaps we could modify that body of water for swimming. It's large at about 100

We found a great site for the proposed 'swimming pond' on a gentle slope on the far side (from the home) of the property's natural pond. We scraped away the turf, then began digging in earnest in preparation for installing a multi-level water-shape that was to be built like a pond (with a liner, bottom filtration and a natural stone finish) but was to have many of the interactive features of a swimming pool (including a slide and a cave).

by 50 feet in size, but it is *truly* natural, with a muddy bottom, murky water, lily pads and reeds. Without major reconstruction, there was no way we could make it serve the purpose – but in evaluating it, I couldn't take my eyes off a gentle earthen slope that rose up a few feet before flattening out as a large space overlooking the water.

It wasn't long before I suggested that we leave the natural pond in place and use that plateau to create a new pond dedicated to swimming. It would be simple to link the two bodies of water visually, I said, and make it all look as though it had always been there. The clients immediately liked the idea and hired us to get the job done.

As mentioned above, this is very much a pond, what with its liner-and-stone construction, edge plantings, waterfalls and overall naturalistic appearance. At about 30 by 40 feet, it holds approximately 20,000 gallons and has a maximum depth of five-and-a-half feet.

It's a basic fan shape, resembling an amphitheater, perhaps, or maybe the outfield of a baseball park. The wide area is essentially the "shallow end." As the pond narrows, it gets deeper – which is where we located the base of the waterfall and several other features to be described below.

At first glance, this looks nothing like a conventional swimming pool and is indeed every inch the pond. Behind the scenes, however, it's much like a swimming pool that uses natural filtration techniques, but there's an important distinction here: This is *not* a swimming pool that has a pond-like appearance and "organic" water treatment, but is instead a pond we've rethought and made suitable for swimming.

Entry and Egress

That conversion process led us to use a couple of approaches we'd never take

with a fully naturalistic pond. For one, we needed to make it simple for bathers to get easily and comfortably in and out of the water – and make certain they had good footing once inside the pond.

To make this happen, we organized the bottom as three broad terraces or shelves that step down into the water from the wide, shallow area over toward the narrower, deeper section. The deepest level is near the waterfall and is relatively small compared to the other sections. Then there's a mid-level area at a three-foot depth leading to a shallow level that encompasses much of the perimeter and is 18 inches deep. (There's also a kiddie-pond area just two inches deep; I'll discuss it below.)

Easing transitions from level to level, we created broad steps with six-to-eight-inch risers made up of large, flat pieces of Georgia granite – a material that is highly symmetrical by nature. Between those stairs, we established relatively smooth bottom sections using a tumbled Tennessee fieldstone laid out over the liner in a sort of flagstone pattern.

(We used this fieldstone because when it's harvested at the quarry, it naturally breaks into flat, broad pieces with squared edges. It's not exactly brick-like, but it's close enough that it let us fashion a basically uniform surface. We had the stone tumbled, too, so it lacks any sharp edges.)

Instead of grouting the stones, we filled the gaps with tiny pea gravel that allows water to flow down into our bottom-drain manifold. (The gravel also provides a measure of biological filtration on its own, but we didn't rely on it as anything more than a supplement.) As provided, the stones varied in thickness, so we also installed them on a bed of gravel to enable us to create a flat, even surface.

We went to great pains, in other words, to make certain there was nowhere inside the pond to stub a toe: To the touch, in fact, it feels like a stone patio surface.

For us, the most unusual activity had to do with installing and hiding the slide and cave features. They ultimately went in with no hitches – and ultimately left no visible traces other than the two access points on the top level and the mouth of the slide down below.

Once the terraced 'swimming pond' was ready and all of the surrounding rockwork and associated circulation systems had been completed to satisfaction, we filled the dozens of planting pockets we'd built into the structure and did all we could to make it look as though the pond was part of a rock outcropping that had been there for ages.

When you gaze down into this watershape, it looks nothing at all like a typical pond. The flat bottom, steps and terraces clearly reveal a human touch, and there's almost a sculptural look to it. Our intention wasn't to fool anyone here; rather, we wanted to make anyone entering the water feel comfortable and relaxed in moving from one part of the pond to another. To be sure, the bottom isn't perfectly flat and it certainly won't tempt skateboarders if the pond ever needs to be drained, but for bathing and swimming purposes, it's just right for comfort and safety.

We also placed sets of steps made with flat boulders on either side of the pond's broad area as additional points of access. You can easily enter the water from most places along the perimeter, but we figured there would be some who might use the pond who would feel more comfortable with this pool-like approach.

One goal we had in all of this was to make certain there were no spaces on the perimeter where anyone could fall into deep

Sleight of Hand

As mentioned in the accompanying text, the pond we built here is visually (but not physically) linked to the natural pond located just below it. The two bodies of water are, in fact, separated by an earthen dam that rises about three feet above the surface of the natural pond.

We installed a pair of small waterfalls on that sloping surface, making it appear as though water from the new pond breaks through its perimeter and flows down to the real pond.

In organizing this part of the project, we wanted to create an unobstructed path between the two bodies of water, so instead of creating false streams, we built something of a weeping-wall effect, making it seem as though the water had broken through its levee and was emerging from exposed outcroppings of stone.

In actuality, however, this water comes from and flows down into the natural pond: The two bodies of water have no shared circulation and are completely separate. When you walk across the earthen dam that separates them and look down toward the lower pond, you might get the impression that the levee is leaking badly and might be on the verge of rupturing. That may be unsettling, but it's also visually dramatic – and entirely an illusion.

– B.D.

On misty mornings and in the bright light of day, the swimming pond emerges as an overall environment that fits admirably into its surroundings. We secured that impression with countless details – the graceful waterfalls, the bog area that feeds water to the system, the ample plant material, the rockwork in the swimming area, the clarity of the water – all of it relating beautifully to the original pond and the home across the way.

water (as you can in most swimming pools). It's yet another way we walked the extra mile in making this body of water particularly safe for bathers of all ages.

Play Structures

At the pond's narrowest point – a span of about 20 feet adjacent to the deep end – we placed a waterfall structure that (at first glance, anyway) has the look of a great many of our ponds. Closer examination, however, reveals that this deeper area is where we became most creative in designing the pond for lively, interactive play.

For starters, the slope carrying the waterfall also includes a slide we buried in the rocks so that only the openings at the top and bottom are visible. It's a polyethylene tube slide made by Summit-USA (Kelso, Wash.); they were very helpful to us in providing schematics and installation guidance. Over its 18-foot length, the slide drops about eight feet, including two dramatic plunges and a sweeping right turn.

The top of the slide sits near the center of a 20-by-20-foot bog-filtration area that stands above the waterfall structure, with access to the tube provided by a series of five-foot-wide stepping stones. To wet the slide, we diverted a small amount of the flow from the bog, which also feeds the cascades and waterfalls.

Beyond the bog, there's a path from which you can enjoy a view of the thickly planted bog as well as the new pond and the natural pond below. Speaking for myself, I particularly enjoy this view from the top and the layers that unfold before my eyes.

Once a bather passes through the slide and reaches the water below, he or she can move to the right and swim over to a cave entrance that appears as a gap in the rock face. Once inside, you crawl deeper into the cave – about ten feet in all – before reaching a ladder that takes you back up to the top of the slide. We created this feature using 34-inch culvert pipe concealed within the rock structure.

Aside from those rather dramatically non-pond wrinkles, the rock structure is much like those we often build for naturalistic features. It consists of fieldstone indigenous to the area that has all sorts of irregular surface features and beautiful coloration. We also shaped a number of planting pockets into the rockwork to make the structure part of its surrounding landscape – although in this case those pockets are raised above the water's surface to allow various plants to trail down toward the surface: Basically, we didn't want too

much plant material in direct contact with the water itself.

As is common with most of our waterfalls, we did not want to encourage rock-climbing on the waterfall for safety's sake, but in this case we also had to set things up to discourage anyone from climbing up the waterfall from inside the pond – not an ordinary line of approach in our usual projects. Our approach here was to make the interior wall of the pond beneath the waterfall quite flat, vertical and hard to climb.

To satisfy kids' urges along those lines, we placed a large emergent boulder near the waterfall: It's easily accessible and rises about two feet above the waterline.

Clean and Clear

Looking across from the waterfall toward the wider perimeter of the pond (in what would be left field, to pursue the baseball analogy once again) is the area in which we placed the kiddie pond mentioned previously. This six-by-six-foot feature has a coarse, sandy bottom that serves as a return area for the filtration system while also providing a safe, comfortable place to play. The water here is just two inches deep – perfect for small children who comfortably crawl through the water and dig into the sand.

This area flows into the pond, separated from it by a set of flat stones over and by which water flows out of the shallow area.

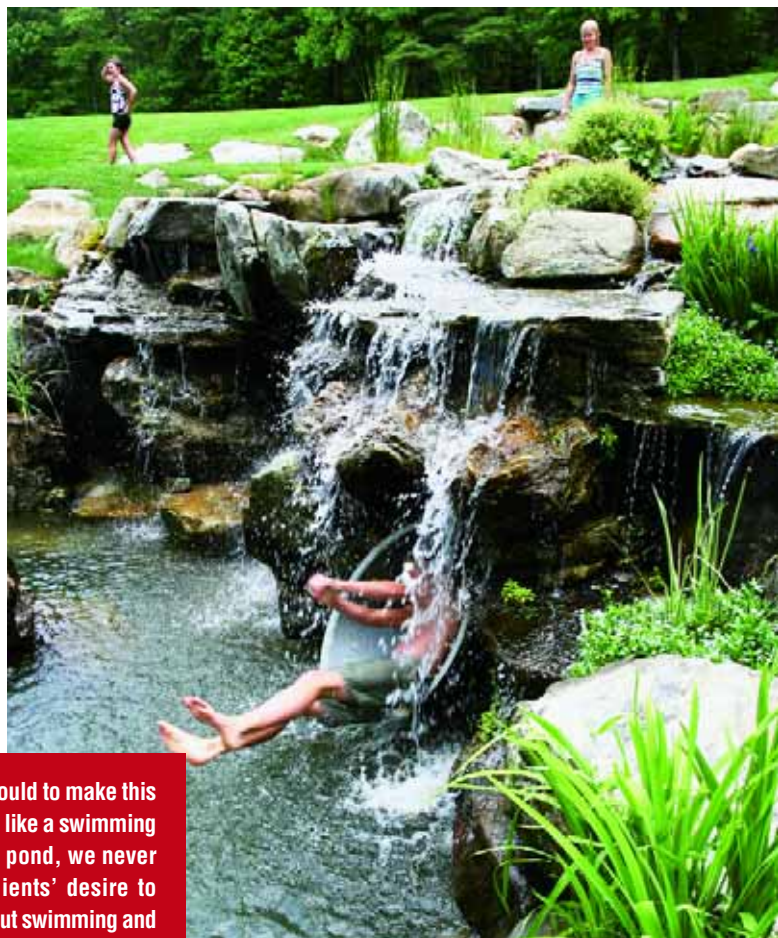
Here and elsewhere, the clients wanted us to organize things in such a way that no direct application of chemicals would be required to treat the water. We chose an ultraviolet sterilization system from Aqua Ultraviolet (Temecula, Calif.) along with a large bead filter, also from Aqua Ultraviolet. Although the pond system contains approximately 20,000 gallons of water, these components were upsized and would easily accommodate up to 30,000 gallons.

The filtration system has an under-drain system that pulls water between the flat stones on the bottom of the pond and through a gravel bed. Water removed from the system in this way is returned through upwelling systems located beneath the upper level bog and, as mentioned above, through the sand of the kiddie pond. We've found through the years that this circulation pattern produces extremely clear water.

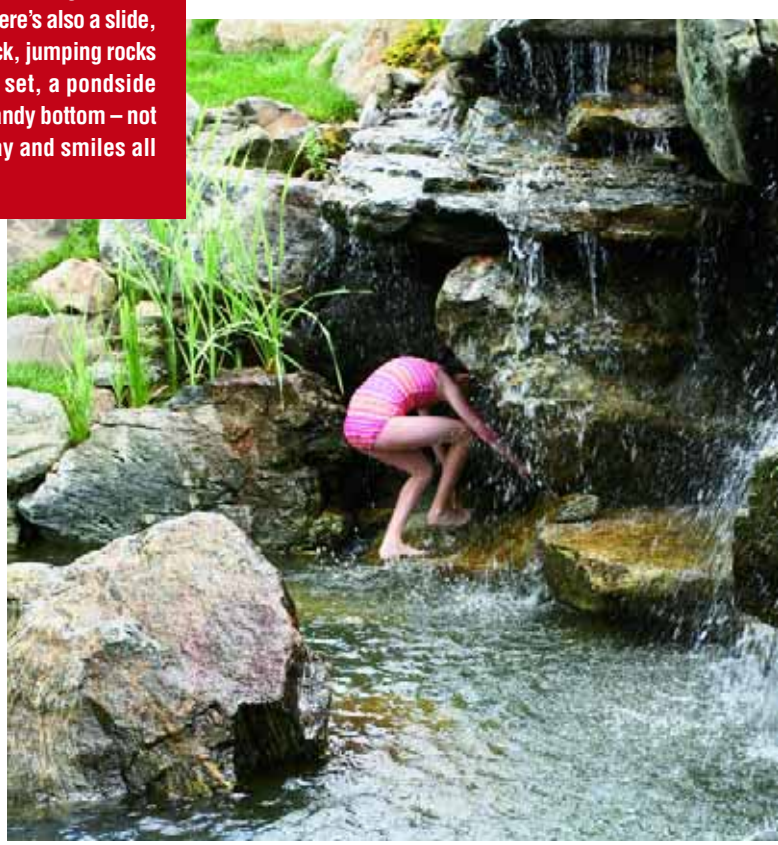
Finally, this is a pool built for swimming, so we completed the equipment package with a propane pool heater from Jandy (Vista, Calif.). All of this equipment, including pumps from Speck Pumps (Jacksonville, Fla.), is located in a subgrade, poured-in-place concrete vault measuring eight feet by ten feet with a seven-foot ceiling. It's accessed from above via a marine boat hatch.

Doubling back a bit, inside the pond itself we used an EPDM liner from Firestone Specialty Products (Indianapolis, Ind.) and skimmers from Savio Engineering (Albuquerque, N.M.).

In the year since we finished our work on site, the clients say that their grandchildren and other visitors have spent many

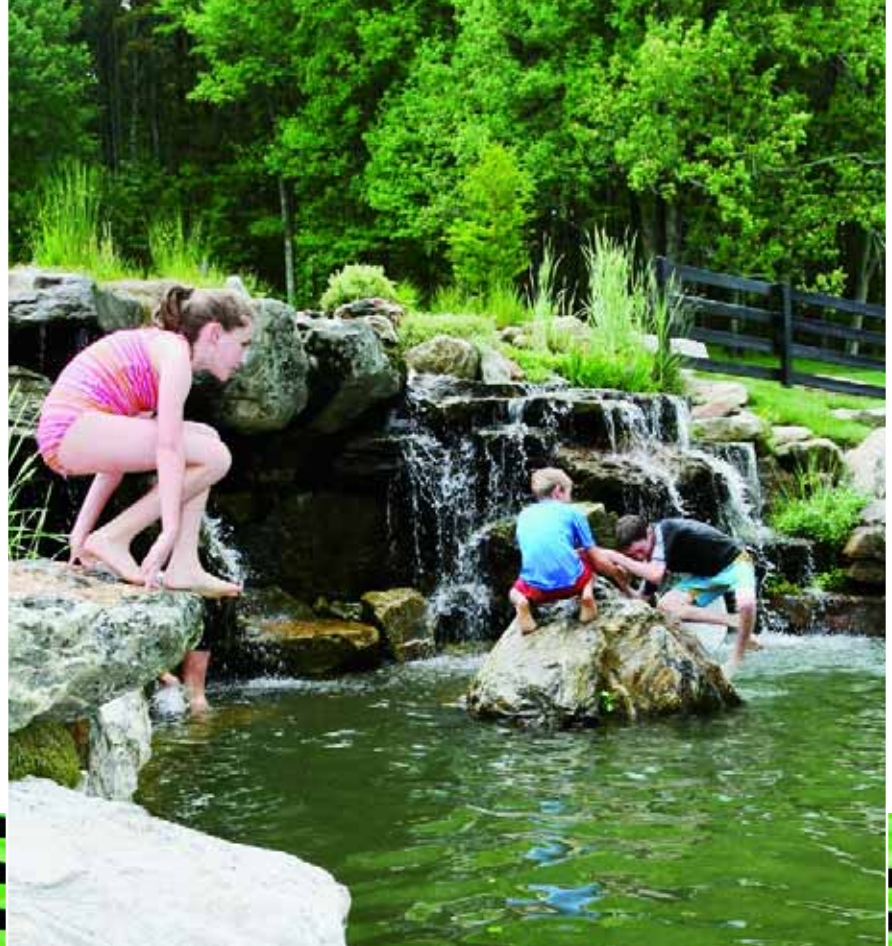


While we did all we could to make this composition look less like a swimming pool and more like a pond, we never compromised the clients' desire to make this area all about swimming and general aquatic fun. So along with the clear, heated water, there's also a slide, a cave, a climbing rock, jumping rocks and, for the younger set, a pondside wading area with a sandy bottom – not to mention active play and smiles all around.



hours enjoying the pond just as intended and that this area has become one of the most used parts of the property. They've also told us that nobody has yet ventured into the cave to gain access to the top of the slide, but they know it won't be long before that passage becomes another big part of the fun.

And that fun is what it's all about: For us, working on this project was a major learning experience, but throughout the process, we always enjoyed the challenges and the need to invent ways to meet the clients' desires and expectations. Will we build more? I certainly hope so, because it was extremely satisfying to design and build a watershape that not only has visual appeal, but also is a source of recreation for the entire family.



Keeping It Clean

By Paolo Benedetti

With water-in-transit effects becoming more and more popular, increasing numbers of watershapers find themselves in need of external tanks to give these systems the surge capacity they need to function at peak efficiency. Here, Paolo Benedetti discusses his preferences when it comes to setting up his surge tanks – and defines a number of issues designers and builders should consider in making them both reliable and serviceable.

As a rule, the surge tanks used in conjunction with water-in-transit effects take one of two forms. A number of watershapers I know use prefabricated plastic tanks that are delivered to a site, ready for installation. I take the alternative path, custom-making my own out of shotcrete at the same time I shoot my shells.

Whichever method is used, there's an issue too many builders overlook: In time, debris and other material will collect in these tanks and eventually become problematic. As someone who's spent plenty of time servicing pools, I am keenly aware of how important it is to make these remote or detached tanks both accessible and fully serviceable.

In addition, I'm aware that relatively few service companies will routinely drain, rinse out and vacuum these tanks: What's out of sight, it seems, all too often slips out of mind as well. This is why I take no chances and have done all I can to create surge tanks for my water-in-transit systems that are as self-cleaning as possible while also ensuring that, when direct service is needed, the tanks are as accessible as I can make them.

down the drain

The first self-cleaning measure I use with my surge tanks involves installing main drains in all of them. (This is something I've always done, and it's one of the reasons I make my own tanks: It can be *very* difficult to install a main-drain system with a prefabricated plastic tank.)

As always, I work with a hydraulically balanced approach, installing split drains with one in the center of the floor and the other on the floor right next to one of the walls. I do so because I've observed that debris settles in the center of these tanks as water circulates around the perimeter. The center drain collects this material, while the other drain pulls additional debris from the circulating water before it has a chance to settle.

To establish this circulation pattern, we use physics and a bit of mechanical assistance courtesy of strategic placement of the inlet drop-line and the auto-fill inlet at opposite ends of the tank. Knowing that water above the equator circulates clockwise (as seen from above), we give natural science a boost by placing these inlets so they effectively "go with the flow" and help in maintaining a robust clockwise pattern.

This is easily accomplished by placing elbows on the bottom of drop-lines so we can direct the flow where we want it to go. Similarly, we position the auto-fill inlet just an inch or two above the floor, stubbing it into the tank in such a way that it is directed into the flow pattern as well whenever the tank requires topping off.

As for the drain covers, I don't use the normal grate-style versions, either flat or anti-vortex. With these grates, debris will collect on top and the water's flow will be impeded or even obstructed. Instead, I prefer to use raised-platform-style drain covers that are open around the perimeter. The surfaces of these anti-vortex covers are solid, supported on posts at the corners and sides.

The ones I use have half- to three-quarter-inch gaps at the sides that easily allow debris to slip under the cover for passage to the sump. (We use these same covers in open surge tanks – the troughs of vanishing-edge system, for example – for the same reasons.)

internal filtration

Another self-cleaning system I install is designed to minimize the introduction of large foreign matter (leaves, twigs, chewing gum, pieces of pool toys and such) – and the best part of it is that I assemble it myself using off-the-shelf components.

These fixtures are large, so the incoming lines must be high up on the wall so the tank's operating level remains below the debris-collection basket that makes the system tick. (The alternative, of course, is making the tank deeper. Either way, using such a pre-filtering system requires some planning.)

The housing that carries the filter basket is a 12-inch-diameter, schedule 40 tee fitting. The "through leg" of the tee is positioned vertically, while the side leg of the tee is stepped down to the diameter of the inlet line and attached to that line. The top of the tee is left open and retains its full interior diameter.

On the bottom of the through leg, we install a slip-slip reducer bushing to take the diameter down from 12 inches to ten inches. This is important, because this new "lip" within the tee will cradle the strainer basket. Below the tee, the 10-inch opening of the bushing is reduced down to whatever size drop line you want to use and extended to the floor (where the abovementioned elbow fitting directs the flow as desired).

In our surge tanks, we allow the elbow to rest on the floor, thus letting it support some of the weight of the plumbing components stacked above it. As for the strainer basket, I have developed a preference for the stainless steel hair-and-lint-trap baskets Pentair (Sanford, N.C.) uses with its C-Series bronze pumps: These baskets rest perfectly within the taper of the reducer bushing.

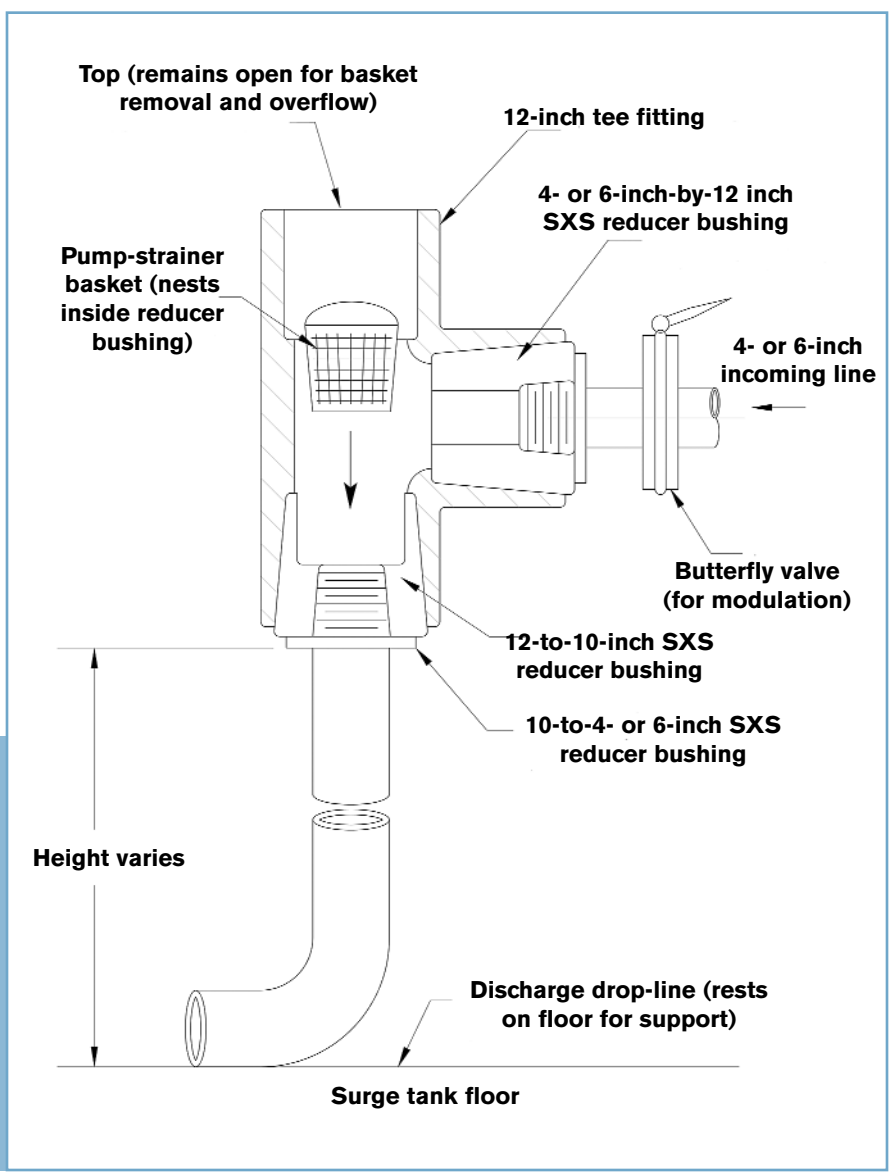
The bronze upper rim of the basket sits below the side inlet of the tee and is easily removed through the open top of the 12-inch through leg for quick disposal of any collected debris. If the homeowners or their technician fail to clear the basket, no great harm is done: Incoming water will simply "boil over" and flow out of the open top of the tee.

This grouping of parts and fittings is easy to assemble at any good pool- or irrigation-supply house and costs my clients about $1,000 in all. What I like most about it is that the system is simple, reliable and requires almost nothing by way of custom fabrication.

personal access

In time, even the best designed of all self-cleaning surge tanks will need some human intervention to keep things running smoothly. As a result, I build two access ports into the tops of my tanks – one large enough for a person and the other sized to allow for easy removal of the debris basket.

To make things as easy as can be, we position the larger port close to one of the walls and install "ladder rungs" below it during construction. We make the rungs from Grade 60 #5 or #6 rebar – either epoxy-coated or stainless steel – stripping the ends



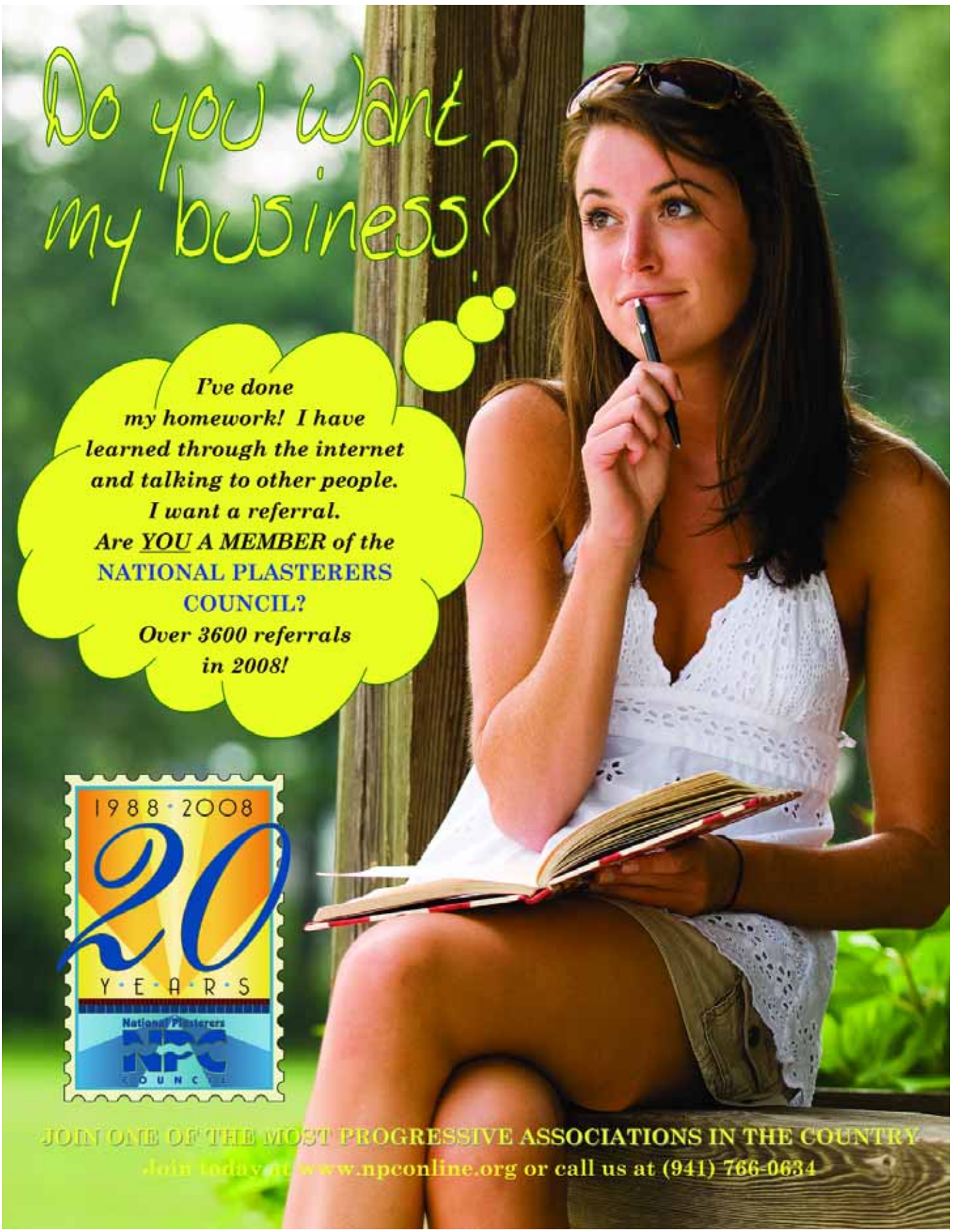
Here's a schematic of the debris-collection system I use in surge tanks. The basket slides down into the tee fitting to a point below the inlet and can easily be removed through the top, which remains open to allow for overflow in case the basket becomes clogged.

of epoxy-coated bars so we can bond them to the tank's reinforcing steel.

Inside the tank, we include a port in the floor of the tank that we tie to the pool's vacuum system. To make things even more workable, we'll install a light or two in the tank if the pool features either fiberoptic or low-voltage lighting – whatever we can do, in other words, to encourage those responsible for maintaining the watershape to get the *whole* job done.

Through the years, this attention to detail has clearly paid off: We've found that the self-cleaning features have gone a long way toward minimizing the maintenance needs of our surge tanks. Along with the care we take in setting things up to make it easy for technicians to get inside these tanks and clean them quickly and easily, we do all we can to make it easy for our clients to kick back and enjoy the special atmosphere their water-in-transit systems are meant to provide.

The strainer basket sits perfectly atop a 10-inch reducer bushing (A) that we'll place at the base of the 12-inch tee fitting (B). Once installed, this system collects all sorts of debris that would otherwise reach the main body of the surge tank and become a maintenance hassle.



Rethinking the Pool

Seeking to address his mother´s immediate need for warm-water hydrotherapy, inventor Stefan Kanetis developed a system that also addressed a range of common concerns expressed by many potential pool owners. Before long, he developed what is now called a Hidden Water Pool – a simple concept in which a body of water is gradually and deliberately transformed into a deck surface (and vice versa) at the touch of a button.

By Stefan Kanetis & David Stone

It's no secret that swimming pools have come a long way in recent years and are now graced with all sorts of functions, materials and features that, once rare or non-existent, have now become common and (in some cases) familiar. For all of that innovation, however, there really hasn't been what one might call a reimagining of the product or any fundamental reassessment of its nature.

In fact, as we and some prospective clients see it, there are problems with pools as they're traditionally designed and built. For one thing, bathers with physical limitations have difficulty getting in and out of the typical pool. For another, pools take up a good bit of physical space, which is increasingly an issue as residential lots become smaller and smaller.

And then there's the whole array of societal issues having to do with the use of chemicals, water evaporation and the energy required to keep water warm – all increasingly substantive considerations as the Green Revolution takes hold. Finally, there are safety concerns about accidental drownings and suction-entrapment incidents, especially where small children are present.

There's no question that the watershaping industry has dealt with each of these issues in innovative and creative ways. At Hidden Water Pools in San Diego, Calif., however, we've evaluated these challenges as a group through the past three years and have come up with what we consider to be an outside-the-box solution that offers designers, contractors and homeowners a unique approach that tackles these issues all at once.

A Simple Idea

In a nutshell, our design is a pool shell that includes a platform that raises and lowers on a column mounted in the floor of the pool. When the pool is not in use, the platform is at deck level, supported by a series of stabilizing legs. When the pool is in use, a hydraulic cylinder drops the platform to any depth below water level, taking on the characteristics of a shallow wading pool, a reflection pool, a play pool or a full-scale swim-

ming or hydrotherapy pool.

The platform can be finished with almost any type of deck material, and when the platform is at deck level, the pool essentially vanishes. When it's time to get wet, the platform can be lowered to any desired depth, from just an inch or two down to a full extent of five feet, six inches.

In the center of the platform structure stands a round or rectangular table that can be raised and lowered to any height, from flush at deck level up to bar height. This table includes an umbrella sleeve, making it suitable for outdoor entertaining and dining – or simply disappears to make way for a dance floor. And the table functions with the platform underwater as well, making it particularly useful with the pool at wading depth for children at play.

This concept of a moveable pool floor should be familiar to watershapers, but mostly in commercial applications as bulkheads or in providing access to aquatherapy tanks for the handicapped. We developed a completely new system that is affordable, quite simple to install and tailored to meet the functional and aesthetic needs of backyard environments.

Unlike previous moveable floors in which the water evacuates through the platform surface, when a platform rises and sinks in our pools, the water flows over the edge at the perimeter – meaning the platform's surface is solid. We accomplished this by creating a gap between the edge of the platform and the sides of the pool: When the platform reaches deck level, the gap closes by means of a slightly cantilevered coping that seals against the platform's narrow rubber flange.

In operation, the platform moves slowly to maximize safety – but quickly enough at two minutes per full cycle (up or down) that the process is not burdensome. We didn't expect it, but in our work with consumers we found that there is a "wow" factor in this process – something surprising and satisfying just in watching the deck lower and the pool emerge (and vice versa). Indeed, the system turns out to be fun to watch.

A simple control panel drives the platform. As a safety feature, it must be mounted at a spot within the pool's line of sight – important because we want homeowners to move the platform up or down only when no one is standing on it other than in cases where the platform is being used for handicapped access. As an added safety feature, controller use is password protected and must be unlocked before the system will work.

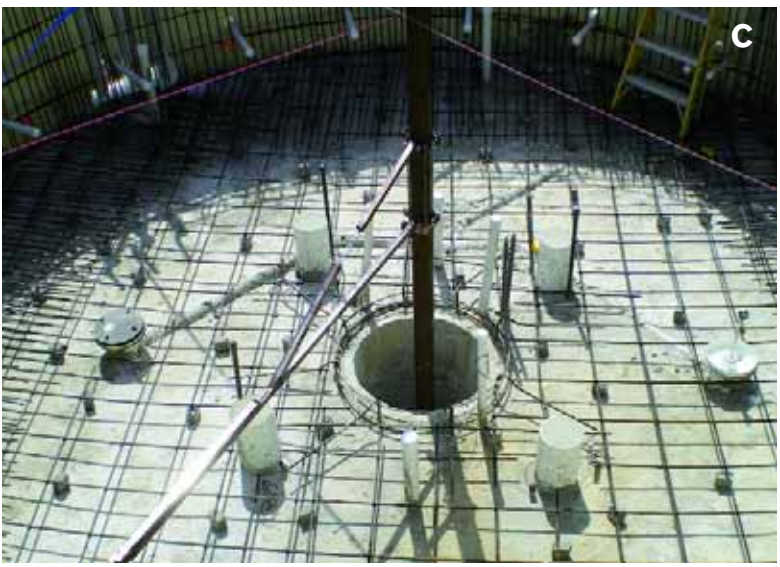
Finally, there's an important maintenance feature: The platform includes a panel that can be removed to allow access to the area below for periodic vacuuming of debris or leaves or removal of any toys or other objects that might find their way underneath the deck surface.

Unlike previous moveable floors in which the water evacuates through the platform surface, when a platform rises and sinks in our pools, the water flows over the edge at the perimeter – meaning the platform's surface is solid.

In the Field

The pools we've installed so far are circular and measure up to 18 feet across.

We've also developed models with 12-, 14- and 16-foot diameters as well as rectangular models measuring eight-by-14 and 10-by-18 feet. Although we're not quite there yet, we an-



ticipate being able to customize systems for use with freeform pools and foresee no real size or shape limitations: All these applications would take is installation of multiple platforms and lifting mechanisms.

(Our standard-size pools are relatively small, so we recommend swim jet systems to make them suitable for use in exercise programs.)

Beyond the presence of the platform, its hydraulic-lift system and a set of locking supports that hold the platform up in its fully raised position (with a total load-bearing capacity of 20,000 pounds), the construction of these watershapes is remarkably similar to installing a standard concrete swimming pool. To simplify things, we even provide a special jig the builder can use to mark the internal dimensions of the pool and then finish the inside surface to the exacting tolerances needed to accommodate the movement of the platform.

In thinking all of this through in the product-development stage, our goal was to develop a system, a component set and construction documents that would enable just about any competent pool contractor to get involved. It's not foolproof – no construction process is – but we've consistently been told that once a builder understands the basics, system installation is not intimidating by any stretch of the imagination.

The heart of it all is a 20-inch PVC hydraulic cylinder. We fabricate these units in our own shop to extremely low tolerances, and they are delivered to the site ready to install – no field assembly required. They operate with pool water: To raise the platform, water is pumped into the cylinder; to lower it, the water is drawn out.

What surprises people is how little pressure is required to operate the system. In fact, the platform can be raised using pressure of less than 25 pounds per square inch, which is about half the water pressure delivered by an average garden hose.

We refer to these hydraulic cylinders as "columns" for a simple reason: They provide much of the system's structural stability along with the locking structural supports. The outer sleeve of the two-ringed column is set in concrete, while the inner sleeve moves up and down with the platform.

Building one of these pools should be familiar to any pool or fountain contractor – the exception being the need to install a central column (A, B and C) to contain the lifting mechanism. Of course, precision is an absolute requirement, which is why we've developed special jigs to guide completion of the shell to exacting tolerances. Strength is critical, too: We designed the structure to support loads of up to 20,000 pounds.

There's definitely a 'wow' factor involved in watching the deck drop below the waterline, with water rushing across the surface to fill the void. It will drop all the way down to a depth of five and a half feet in just two minutes – and rise all the way back up to deck level in that same span.

All it takes to make the system work (in our standard sizes, that is) is a three-quarter-horsepower pump. In fact, if equipment-pad space is at a premium, this same pump can be used to drive the circulation system. Our cost analysis, however, leads us to recommend use of a dedicated pump to drive the system, basically because it's less expensive to install two pumps rather than set up a single pump with a pair of automatic valves.

Getting It Done

On site, excavation for these systems is straightforward and can be accomplished easily with a backhoe – no need, in other words, to bring in an auger rig. As mentioned above, we provide a pattern the builder uses to devise a simple plywood jig that spins on a device we call a "top hat" to shape the exact internal dimensions of the shell. (If you're handy with a skill saw, assembling the jig takes just a few minutes.)

The key to keeping overall project costs down is the ease with which the systems can be installed. Of course, there are variables involved, from prevailing soil conditions to local labor rates, but we've done all we can to prepare the system so that it's within reach of a broad range of prospective pool owners.

So far, the homeowner response has been more than en-

One of the more interesting system features is the tabletop that rises in the center of either the pool or the deck – particularly convenient for play in a shallow wading pool and a dynamic centerpiece for entertaining.

couraging. They like the convertibility factor and the fact that they don't have to sacrifice all of their deck space to a pool – a key factor at a time when lots are shrinking even in upscale neighborhoods and *any* outdoor space comes at a premium.

They also like the flexibility of being able to raise or lower the water level to any depth they choose, whether it's to create a safe, secure wading pool for small children, a shallow lounging pool for sunbathers, a splash pool for preteens or a swimming pool for older children and adults.

We've also run into homeowners who are increasingly conscious of environmental issues and see ours as a "green" system that reduces evaporation, keeps the water cleaner and thus involves less chemical treatment. Moreover, they like the fact that the solid cover retains heat, meaning it's possible to maintain comfortable bathing temperatures beyond the average "swim season" and makes the possibility of heating the pool on a year-round basis much more affordable.

Maternal Drive

The concept behind Hidden Water Pools (San Diego, Calif.) first emerged from my desire to help my mother.

Back in the 1950s, she started working as a featured dancer with "TV Toppers," a group that performed regularly on the British Broadcasting System. (In that role in the late 1950s, she performed in the BBC's very first color broadcast.) She moved to the United States in the early '60s, opening a dance studio in New York that taught ballroom dancing to future stars.

In 2004, her doctor told her that all those years of dancing had not been kind to her body: She had developed severe arthritis and suffered some muscle damage in her lower extremities. To avoid confinement to a wheelchair, he advised her to exercise daily in water at more than 92 degrees Fahrenheit, but by that point it was already almost impossible for her to transition from the floor to her feet or get in and out of a bathtub without assistance, let alone enter and exit a swimming pool.

I was with her for dinner one evening when she shared her doctor's recommendation with me, and I told her not to worry – that I'd build her something that would take care of her access problems at the touch of a button.

As a career inventor, this was a challenge I relished, and within a day I'd sketched out the basic concept for the first Hidden Water Pool system, which I installed soon thereafter in my mother's backyard. I'm happy to report she is doing quite well.

– S.K.

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There's also the fact that the platform can be finished using almost any type of stone, tile or concrete, adding an aesthetic aspect to the system that has lots of appeal to homeowners who like the thought of having a pool with a custom-finished floor and don't mind having a nice-looking deck as well. The deck aesthetics make it likelier that the homeowners will keep the platform raised when the pool's not in use – a key safety feature in that children aren't at risk when they can't reach the water or gain access to main drains.

As noted above, these are all issues that have been addressed by watershapers in a variety of highly successful (but nonetheless piecemeal) ways. Our pools tackle all of these issues at once, which we see as a real edge in overcoming consumer hesitation about getting into a watershape.

So far, the concept has met with a highly favorable reception. We've been the subject of numerous television pieces that have put us in front of more than 50 markets, and several consumer magazines have picked up on our story.

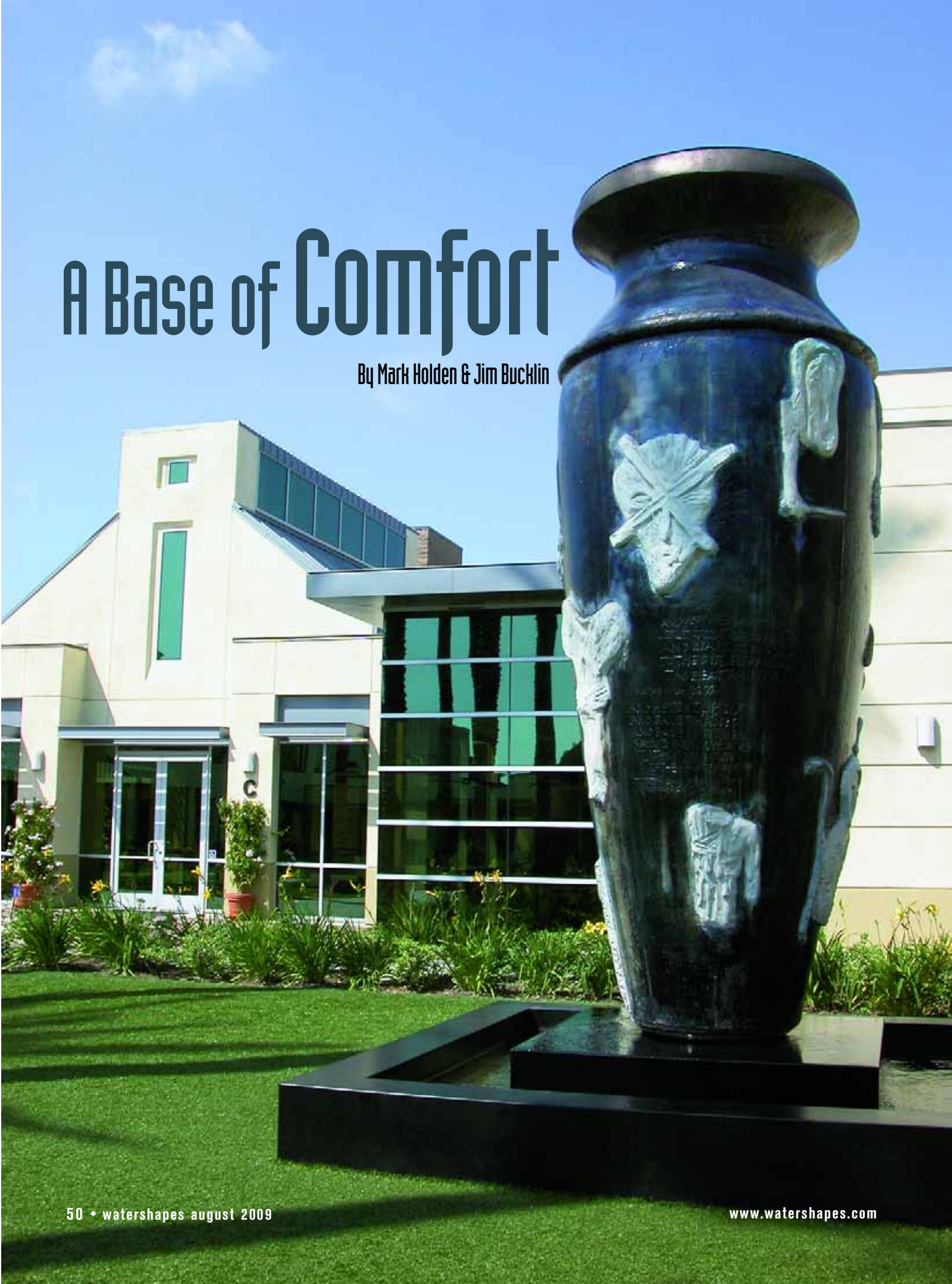
We're proud of our progress at Hidden Water Pools and optimistic about our chances of making a difference in the watershaping industry. Time will tell, but we're moving into the future with our thoughts set on making the joys of playing, bathing and swimming in water accessible to more and more consumers – and to doing so in ways that make sense for homeowners and their backyards.

Just about any surface material in any sort of style works atop the platform – so long, of course, as weight issues are brought into consideration. In this case, for example, the look is casual and almost rustic in distinct contrast to the elegant formality of materials chosen for the other project seen in these pages.

All through product development, we were aware of the fact that, for homeowners to derive maximum satisfaction, we had to make certain the system was fully functional both as a deck *and* as a pool. The inclusion of jets makes the water suitable both for swimming and hydrotherapy, while the adjustable depth makes it a safe, happy environment for small children.

A Base of Comfort

By Mark Holden & Jim Bucklin



Wanting to soften and humanize the austere appearance of a new facility for homeless families, the benefactors of the Orange County Rescue Mission in Tustin, Calif., commissioned an unusual watershape. The idea pulled watershaper Mark Holden and project manager Jim Bucklin into a whirlwind in which they had to create unique systems to accommodate the world's largest ceramic amphora — and do so within an extraordinarily tight deadline.

What happens when one of the country's wealthiest philanthropists provides funding for a truly unique art piece in support of a favorite cause? The short answer is, everyone jumps to make it happen.

That was literally the situation when a nonprofit organization that serves the needs of homeless families received a donation from its largest benefactor to fund construction of an unusual fountain system. The waterfeature, we learned, was to support the world's largest amphora, which at that time was just being completed by a Danish artist.

Destined for the courtyard of a new facility about to be opened by the Orange County Rescue Mission, the amphora was to be supported slightly above a monolithic granite base with an edge-overflow system and a reflecting pool – and all of it had to be set up rapidly in anticipation of the amphora's arrival just a few days before the facility was to open.

A conventional project-team approach would never have allowed for the completion of the base structure within the required timeframe. As a result, all participants had to set aside functional distinctions, put their heads together and get the job done. The outcome was a collaborative effort that included some of the most creative problem-solving we at Holdenwater, a watershaping/landscape architecture firm based in Fullerton, Calif., have ever encountered.

A Place for Caring

All of this occurred in support of a new Orange County Rescue Mission (OCRM) facility called The Village of Hope. Located in Tustin, Calif., it's something of a revolutionary idea in caring for families in desperate need in that it is the only homeless facility in the region (and perhaps the country) where families are given shelter without separating either parent from their children.

In this case, OCRM decided to use art throughout the facility to create a more pleasant, livable environment – a significant departure from the stark, utilitarian appearance that marks most similar institutions.

The village is located on a portion of what used to be the El Toro Marine Base, a site perhaps most famous before now for a pair of immense blimp hangars. The rededicated grounds consist of The Village of Hope shelter for families, OCRM's operations center, a nondenominational church/sanctuary and a medical/dental clinic serving the region's needy. OCRM's mission: "Serve the Least, the Last and the Lost of Orange County."

The organization is magnificently supported by the Ahmanson family, which has for many years devoted a large portion of its philanthropy to helping society's least fortunate. They were the ones who decided that beauty and art needed to be part of The Village of Hope and were also instrumental in making

"Art and Altruism" its motto. In joining this effort, we saw the fountain as a rare and special opportunity to get involved not only with a good cause, but also in construction of one of the most unusual features we'd come across in quite some time.

From the start, everyone who participated knew that thinking outside the box would be required – and that it all had to happen in a hurry to make everything ready for a much-publicized opening ceremony. Moreover, the amphora was now en route, out of the artist's studio and on its way to the Panama Canal, so we had to create an adequate support structure without ever having seen it as anything more than photographs.

There was no wiggle room: As mentioned above, the event had been widely publicized and was significant enough to include the debut of an original symphony commissioned by the Ahmansons and performed by the Orange County Philharmonic.

To say we felt pressure would be an understatement: We all had visions of the guided tours beginning with docents saying, "And here's where our beautiful, giant amphora would be standing if these bums had done their jobs properly." But the simple truth was, we had nowhere near enough time to get the work done unless we all put our heads together, forgot about egos and traditional roles and just plain went to work.

Even then, we needed a tremendous amount of luck to stay on track.

Ceramic Certainty

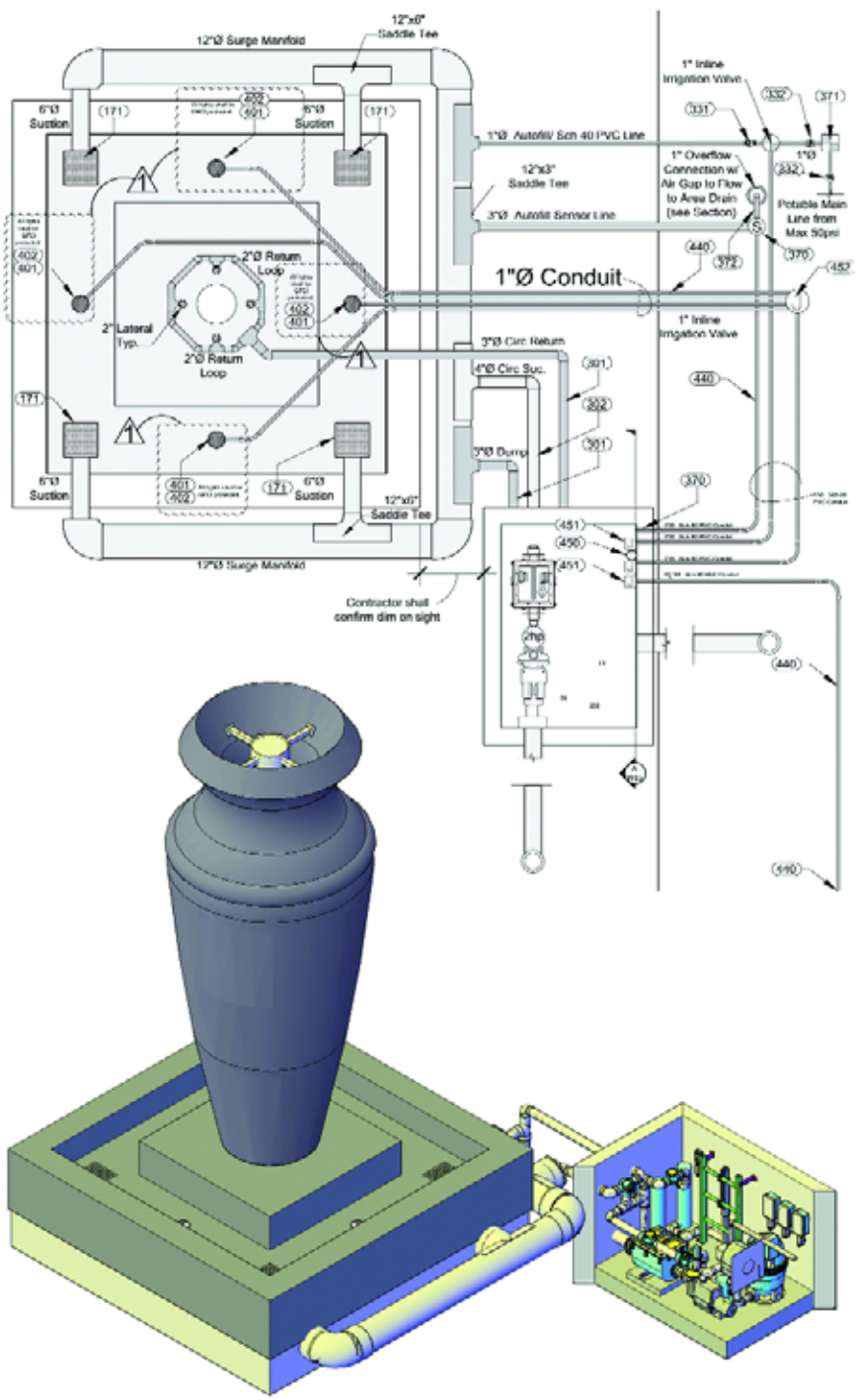
At the heart of the project is the massive amphora – shaped like an ancient Roman oil container but without the usual handles – by the Danish artist Peter Brandes, who specializes in the creation of very large ceramic vessels. He'd been commissioned to design and shape the world's largest ceramic container for installation atop a simple fountain, and he delivered big time.

(At this writing, in fact, the amphora is being certified by Guinness World Records Ltd. and appears to be well on its way to being declared the world's largest.)

As noted above, the composition is situated in the courtyard of The Village of Hope as its centerpiece and as a beacon for the ideals of the Ahmanson's renowned philanthropy.

Scenes depicting acts of mercy and charity appear on the amphora's surface. At its highest, the piece stands 16 feet, four inches tall and is six feet, ten inches across at its widest point. The base is 18 inches above grade, so standing on the pedestal the sculpture is more

Organization and clarity were critical in pulling off this project, which began just a month before the anticipated arrival of the huge amphora that was to crown our work. Good schematics and graphics helped everyone on site stay focused as we all set aside conventional roles and came together to get a big job done in a hurry.



than 18 feet tall. We were tasked with establishing this base so that, as soon as the amphora arrived, it could be installed and the system started almost immediately.

The base is a 12 foot square that encompasses a raised, six-foot-square pedestal with a hidden stainless steel plate and pole on which the amphora was to be placed in such a way that it would "float" two inches above the pedestal. Water emerges from a concealed void beneath that plate (without touching it), flowing over the edges of the raised platform and down into a large reflecting pool.

All of this base structure is clad in black granite to create beautiful surfaces reflecting the amphora. As a result of the unusual nature of this design and with all of the concrete in place, even the seemingly simple task of tightening the bolts at the base of the stainless steel post and waterproofing them was something of a mind-bending process.

Beyond such practicalities, the main

Once on site, we rolled back the artificial turf and moved rapidly through the excavation, plumbing, steel and framing stages. It's just a small watershape, but because of the unusual nature of the amphora and some of the specific features that needed to be included, it was actually quite an elaborate process.

trick in this design had to do with hydraulics. We knew that the volume of water needed to wet the granite monolith as a water-in-transit effect fell very close to the maximum we could get to flow from the tiny aperture beneath the sculpture: Only so much water, in other words, could evenly flow from the whole granite cube without causing an unacceptable surge. To make it work with such a precise flow – and no hardware showing! – was amazingly difficult.

We wanted no dry spots, so we needed a flow of 125 gallons per minute to keep the granite surface wet and ensure an even flow across every edge. As a result of concerns about the presence of stainless steel and the amphora's glazes, we also needed an ultraviolet sterilizing system to avoid the damage that would result from the use of typical oxidizers.

That was all well and good, but the clients also stipulated that they wanted to see relatively little water in the basin – no more than a few inches. This didn't offer enough surge capacity at about 200 gallons, so we had to add a subterranean PVC loop to increase the capacity and give ourselves the buffer we needed.

The loop consisted of a 12-inch-diameter manifold with more than 300 gallons of capacity. It was tough to install, as would be the case with 12-inch plumbing in any confined space, and it approached comical in the plumbing phase as a small army of people butted heads and elbows and uttered the occasional discouraging word. As luck would have it, the grass around the feature was artificial, so we could work very close to the surface – a big help.

Great Expectations

As we developed our plans, we knew that the artist thought the amphora required no lateral support. That might have been true in his studio in Denmark, but in southern California, we knew that seismic activity could easily take hold of his $250,000 masterpiece and shatter it into a ceramic jigsaw puzzle.

That in mind, we installed a 14-inch-diameter, tubular stainless steel column with radial support braces to hold the

Once the main structure was complete, we moved along rapidly to set up the oversized plumbing system that would provide the surge capacity the system needed, then made all of the connections to the nearby equipment vault. It's never easy to work with such big pipes; to do so in cramped quarters (and *fast*) was no fun at all.

As the amphora's arrival date came closer, we set up the pole that was to support its mass at a point just above the water level. We did all of this without ever having seen the amphora – a fact that added considerably to the stress we all felt as the deadline approached *and* to the sense of relief that settled in when it fit perfectly.

amphora in place and prevent any teetering. Eventually, we used a 50-ton crane to slide the amphora over the column, which we'd long before attached to the stainless steel base.

The amphora finally arrived, pretty much right on time, and everything was actually in place more than a day early. In totting everything up, we were all astonished by the per-square-foot cost of the feature: Between the amphora and our rapid design, engineering, construction and mechanical work, more than $700,000 was involved – about $5,000 per square foot for a waterfeature!

We wrapped up our work on the Friday before the final event, which was to occur the next day. We all knew at that point that we'd managed to do what we all thought would be practically impossible – and we'd done it with 24 hours to spare, even though none of us had any specific idea it would ever happen.

The party was a wonderful success, OCRM's coordinators were thrilled and we were all professionally and emotionally satisfied beyond belief – but there was one little mishap.

It seems that during the event, a group of children and a few bright adults came up with the idea of adding goldfish to the basin. In checking out the system afterwards, we found little gold-colored flecks in the industrial strainers. Not knowing what the children had done, it took us almost a week to figure out that we'd found the remains of completely pulverized fish.

The basin and surge loop had no velocity to speak of, so the fish had been free (for a while anyway) to swim through our custom-designed granite grates and into the surge manifold. Unfortunately for them, once they hit the main suction line, velocities increased and whisked them off to the strainer.

It never occurred to us to warn the village's residents that this was not a fish pond, although with the ultraviolet sterilizer the fish might have done fine if it were not for the way we'd set up the plumbing. That's a lesson we won't soon forget – and a mild note of sadness in what was otherwise a splendid performance that filled every one of us on the project team with pride.

Adaptive Thinking

One major factor made our success with the watershape described in the accompanying text possible: *collaboration*.

Hours and hours of daily communication with all parties involved were required to confirm and reconfirm every step to be taken – not to mention time spent in innumerable meetings and strategy sessions. Each of us arrived on site knowing that we hadn't been asked to submit a bid: Instead, we'd been selected as the area's "go-to team," and the expectation was that we'd figure out a way to get everything done on time.

Our first task was a real puzzler: What would all of this cost? Then, once we'd developed a general sense of how things would proceed, we started running into obstacles. For example, although the team's steel fabricator and granite installers were quite capable, in both cases we learned that it was likely materials would arrive only after The Village of Hope had opened!

It was at this point in the process that we noticed something interesting: Even though we all had confronted the basic impossibility of what we were being asked to do, everyone united in a determined effort to pull it off. We pooled our experience and insights in the name of the project's success and simply wouldn't give up.

Never had we been in such an environment before: Here were plumbers helping granite installers, landscape professionals helping plumbers and consultants getting their hands dirty, with everyone engaged in problem-solving on an amazingly high level. It was among the most satisfying processes we've ever witnessed.

In fact, we had the most fun when things seemed wholly impossible. Some had a bit of trouble, for example, with the notion of working extra hours to get through some tough patches. As a team, we spoke with each of these reluctant craftspeople to "enlighten" them about the nature of what we all were trying to accomplish.

It worked: Even when faced with sacrificing "free time" to the cause, each participant ultimately went the distance for the project, knowing that their own donations of time were meaningful to the overall success of the facility.

The pressure occasionally led to laughter as well. There was much punchy speculation, for instance, that the amphora was actually part of a network of communications devices being set up by extraterrestrials. Although we suspect the Ahmansons might not have fully appreciated the humor, we know it helped us get through some long days and keep our spirits light as the process moved forward.

– M.H. & J.B.

The amphora seems to float just above a skin of water flowing across its granite base – one of the more arresting visual details that set off a ceramic art piece wrapped in reliefs and incised with spiritual writings that speak to the Village of Hope's work on behalf of local citizens in need.

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In the Spotlight

For live links to the companies featured here, go to **www.watershapes.com/spotlight**

Compact Excavators

BOBCAT (West Fargo, ND) has introduced two M-Series excavators. Engineered to deliver increased performance in a lighter package, the compact, operator-friendly machines are designed to save time and labor in the three-to-four-ton weight class. The E32 is a conventional tail-swing excavator rated at 3.2 metric tons, while the E35 is a zero-tail-swing, 3.5-ton excavator ideal for space-constrained jobsites.

Deck Forms

FRANK WALL ENTERPRISES (Columbus, MS) offers Flexi-Form concrete-forming boards. Made of recycled HDPE, the 3-1/2-inch tall product can be used in forming and pouring pool decks, sidewalks, patios and any concrete structure with curves and tight radiuses. A recessed area on the back side of the form increases its stiffness without reducing its flexibility, and it's made to be used multiple times.

Fire Features

ECOSMART FIRE (Los Angeles, CA) offers environmentally friendly open fireplaces and burners fueled by denatured ethanol. Designed to burn cleanly and be virtually maintenance-free, the line features models designed specifically for outdoor use as accents or centerpieces – including Tower, a versatile, freestanding fireplace in which an elevated flame sits atop a solid plinth in a black or white stand.

Pool-Access System

REHAMED INTERNATIONAL (Homestead,FL) has introduced the aXs Aquatic Lift to meet the unique needs of the residential and small-hotel markets. Designed for reliability, easy operation, affordability and an attractive appearance, the battery-powered, 300-pound-capacity unit mounts easily, weighs less than 70 pounds (without the seat) and can easily be removed for storage when not in use with an optional transport cart.

In the Spotlight

For live links to the companies featured here, go to **www.watershapes.com/spotlight**

Digital Lighting Catalog

KICHLER LIGHTING (Cleveland, OH) has released user-friendly digital catalogs. Designed for professional as well as consumer reference, the web-based documents feature interactive searches and page-turning capabilities that allow for easy access and all the convenience and familiarity of print catalogs. Users can search by keyword, style/product category or model number and email results to others.

Patio Heaters

NAPOLEON (Barrie, Ontario, Canada) offers heaters for residential and commercial applications on patios and around pools. Using a concealed propane cylinder or natural gas and requiring no electrical connections, the portable devices generate infrared radiant heat, warming objects rather than the surrounding air – an efficient, clean-burning approach that uses less fuel while maximizing comfort.

Automated pH Control

IPS CONTROLLERS (Temecula, CA) offers the M820 controller system to provide automated pH control. Easy to install, operate and maintain, the system uses dual-ORP detection for maximum reliability and is designed to work with tablets, salt or liquid chlorine. It can be used with new pools, but it can also be tied into existing systems and customized for specific environments and equipment arrays.

Pipe-Sealing Plugs

HUNTINGDON FUSION TECHNIQUES (Burry Port, Carmarthenshire, United Kingdom) offers a line of expanding plugs to seal circulation piping during maintenance and repair work. Designed to reduce water loss down to small volumes, the plugs come in a wide range of base diameters. Inserted into a pipe and locked into place with the turn of a wingnut, the devices create fast, watertight seals.

Automatic Pool Cleaner

WATER TECH (East Brunswick, NJ) offers Blue Diamond Pro, an automatic pool cleaner designed to clean pools up to 25 by 75 feet in four hours or less. The unit operates independent of the circulation system and uses an algorithm to adjust its direction to cover every surface of the pool. It also has an infrared obstacle-detection system and a remote-control device that simplifies quick spot cleaning.

Filler/Adhesive Foam

CONVENIENCE PRODUCTS (St. Louis, MO) offers Touch 'n Foam landscape foam, an exterior filler/adhesive that bonds quickly to porous or non-porous rock, stone, cement, wood and cloth. It can be used in water for pond and waterfall applications either to secure rocks in place or to divert water as needed. Safe for fish and plants, the black foam retains its color even when exposed to sunlight.

Outdoor Ornaments

HADDONSTONE (Bell Mawr, NJ) has partnered with Robert A.M. Stern Designs to develop the Olympian and Athenian lines. All items are made with cast stone. The Olympian collection includes two bowls, two urns and a tall, slim amphora – all contemporary interpretations of ancient forms – while the Athenian Collection includes various urns in two designs inspired by ArtDeco or Art Moderne forms.

Pond Liners

CANADIAN GENERAL TOWER (Cambridge, Ontario, Canada) now offers vinyl sheets for use in ponds and aquaculture. Made using non-toxic materials, the liners are safe for growth of fish and vegetation and can be used in heavy-duty applications for outdoor facilities with ponds for recreational boating or fishing. The liners can also be calendared, printed, embossed and laminated for decorative purposes.

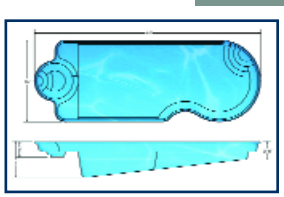
Landscape-Design Software

STRUCTURE STUDIOS (Las Vegas, NV) has introduced VizTerra, landscape-design software that produces three-dimensional views from two-dimensional site plans with the click of a button. The system includes hundreds of plants and trees, each of which can be viewed from every angle; has water-motion rendering for watershapes; and includes easy procedures for creating hardscape and raised areas.

Fiberglass Pergolas

EYE LEVEL CORP. (Trumball, CT) offers the Heritage line of pergolas. Hand-crafted using maintenance-free materials, the structures have cast-stone (glass-fiber-reinforced concrete) column bases textured and colored to look like real stone. The steel-reinforced double support beams are custom-notched, with inset cross beams for a solid fit and elegant looks. The system is both weatherproof and insect-proof.

Fiberglass Pool/Spa Combo



VIKING POOLS (Jane Lew, WV) has added the Trinidad model to its line of manufactured watershapes. The company's largest fiberglass pool/spa combination to date, it offers both a spacious lounging area and good swimming space. Made using the company's ten-step manufacturing process, the new model features a shell 16 feet wide and 44 feet long that ranges in depth from 3 feet, 6 inches to 7 feet.

Pond-Protection System

MOTION SCARECROWS (Ventura, CA) offers WhirlyBird HD, a bird-deterrent system designed to protect Koi and goldfish ponds from birds and other predators. Covering any area five feet in diameter and operable at any angle, the battery- and solar-powered units work 24 hours a day in all weather conditions with a continuous circular motion and non-lethal adjustable arms that keep pests at a distance.

Halogen/LED Lighting

COOPER LIGHTING (Peachtree City, GA) has introduced the Lumière Cambria 203 line of accent and landscape fixtures with halogen and LED lamping. Designed for low-voltage applications, the fixtures' modular design enables the integration of both halogen and LED fixtures on the same lighting circuit. The fixtures are offered in three color temperatures and in three optical distributions – 7, 20 and 25 degrees.

Step-Cleaning System

PARAMOUNT POOL & SPA SYSTEMS (Chandler, AZ) has introduced StepClean. Designed for installation on steps and benches and in spas, the units come in six colors and use pop-up cleaning jet technology to clean areas conventional pool vacuums don't. And the jets run in line with the watershape's hydraulic system, thereby enhancing water circulation and reducing both chemical and energy costs.

View More Images

More photos of interesting projects featured in *WaterShapes* can be found at www.watershapes.com. Click on **Image Gallery.**

Book Notes

Liking It Hot

By Mike Farley

It's hard to pin down exactly when it happened, but at some point in the past dozen years the concept of the outdoor kitchen took off – so much so that these features have moved from "relatively unusual" to "must-have" status on very nearly every upscale residential project.

That's certainly been the case in my practice, and I hear the same thing from most other watershapers and landscape professionals I've talked with in recent times.

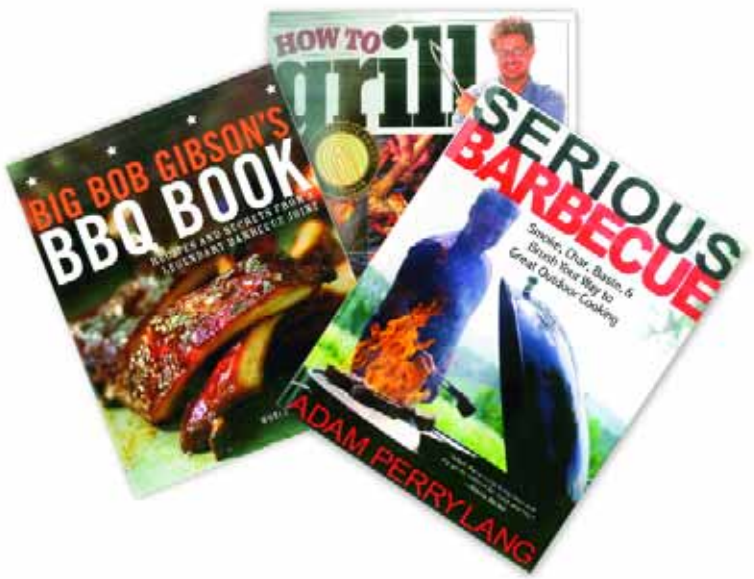
I've already covered some books intended to help us design these spaces and select among the variety of available components and options ("Book Notes," June 2007). This time, I'll take a different tack by discussing three books that are all about the art and joy of outdoor cooking. They are, in no particular order: *How to Grill* by Steven Raichlin (Workman Publishing Co., 2001), *Serious Barbecue* by Adam Perry Lang (Hyperion, 2009) and *Big Bob Gibson's BBQ Book* by Chris Lilly (Clarkson Potter, 2009).

Let me start by saying that these are all outstanding resources that cover a broad spectrum of recipes, equipment and cooking methods and techniques – and each one is loaded with useful tips. So rather than breaking down the structure and content of each (as is my habit), instead I'll use my remaining space to discuss why I think books of this sort are so valuable to us as watershapers.

Their utility begins with helping us understand and appreciate the cultural role of barbecuing and other forms of outdoor cooking and dining. Frankly, I was surprised to learn that "grilling" is an honest-to-goodness (and relatively recent) national obsession that has literally exploded across the country in tandem, not so surprisingly, with the increase in demand for outdoor cooking and dining facilities.

Long gone are the days when outdoor grilling was mostly pursued by people hunched over hibachis or Weber kettles: Nowadays there are multiple grill types including elaborate gas-powered units (both stand-alone and installed) as well as such exotica as indirect ceramic cookers, smokers and wood-burning grills. Barbecue contests now take place nationwide, scores of grilling gurus have become national figures and countless businesses (ours included) stage grilling events to attract clients.

Watershapers and landscape professionals are in the business of providing exterior environments that enhance clients' lifestyles,

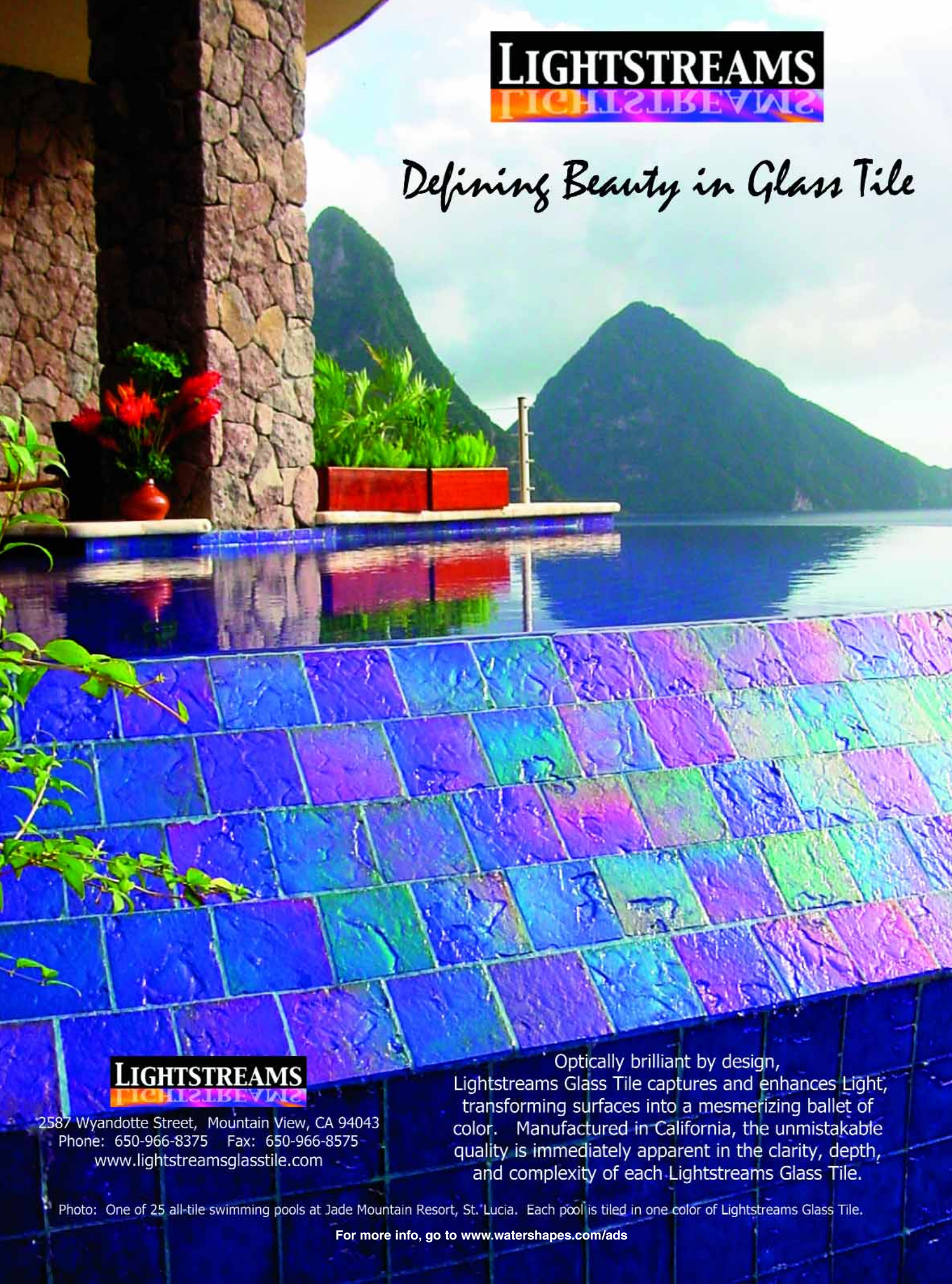


so it behooves us to be up to speed on this "sizzling" trend and the culinary traditions behind it. I'd also argue that, just as it's important for us to know about art and architectural history in evaluating sites and incorporating clients' tastes in our work, we should be just as informed about what's up with outdoor cooking and dining.

I look at it this way: When my clients are willing to spend tens of thousands of dollars on these facilities, it only makes sense for me to know all I can about how these spaces are to be used. Knowing a thing or three about barbecuing will advance my conversations with them on these topics and give my clients a sense of confidence that I understand their needs and will deliver, big time.

It also bears mentioning that the three books listed above carry recipes that are flat-out delicious. Even though I reached adulthood knowing very little about outdoor cooking, I've now made it my business to turn up the heat on the topic, and I must say that the rewards, both professional and at home, are well worth savoring. WS

Mike Farley is a landscape architect with more than 20 years of experience and is currently a designer/project manager for Claffey Pools in Southlake, Texas. A graduate of Genesis 3's Level I Design School, he holds a degree in landscape architecture from Texas Tech University and has worked as a watershaper in both California and Texas.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